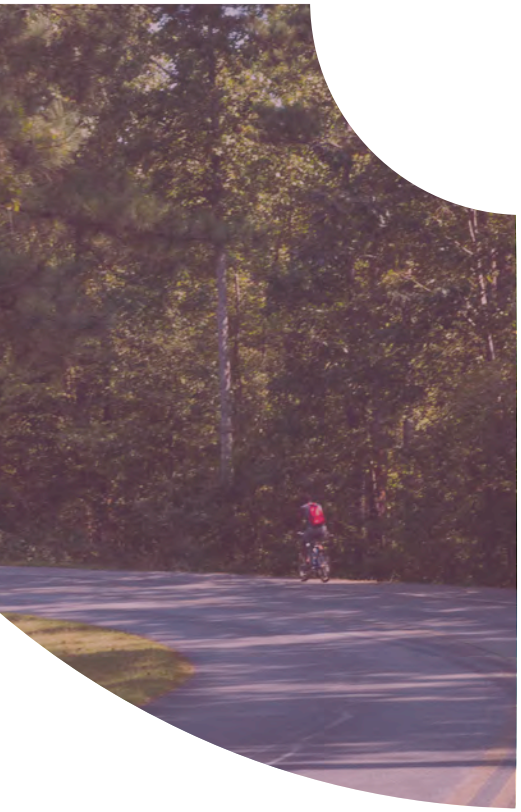
NEEDS ASSESSMENT

JUNE 2017



NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

THE CITY OF ALPHARETTA GEORGIA

Johns Creek GEORGIA be the exception

MILTON

Roswell georgia

SANDY SPRINGS GEORGIA

mountain park, georgia

ARC ATLANTA REGIONAL COMMISSION

Kimley»Horn

This page has been
left intentionally blank.

TABLE OF CONTENTS

FIGURES AND TABLES

TABLE 1

FIGURES AND TABLES

TABLE 2

This page has been left intentionally blank.

INTRODUCTION

THE REPORT

Transportation affects everyone. The North Fulton Comprehensive Transportation Plan (NFCTP) embraces this notion and represents a collaborative effort, between the cities and the different travel modes, to establish a cohesive transportation vision for North Fulton County. A comprehensive transportation plan requires a variety of transportation means and methods. By focusing on the ways in which people travel while simultaneously responding to local funding circumstances, a more efficient strategy for the system can be born. For North Fulton County, it is particularly important for the transportation plan to be responsive to and work in concert with the growth of the larger metropolitan Atlanta area while being able to leverage its existing form and function.

NEEDS ASSESSMENT

The Needs Assessment for the NFCTP dives deeper into answering questions about why, how, and when people travel in North Fulton. The report offers insight into changing multimodal travel needs and seeks to document the vision and priorities of North Fulton County.

PUBLIC OUTREACH

DEFINING OUR PRIORITIES

Public outreach—whether through direct engagement or by the input of community proxies—is an important part of a successful transportation plan. The objective of engagement for the NFCTP was to offer a grassroots, community-focused process that offered a variety of methods for public input. The menu of participatory opportunities ensured that the plan could truly reflect the values and priorities of North Fulton County. An extended summary of results from the first round of public engagement can be found at the end of document (Appendix).

PROJECT COMMITTEES

Stakeholder Committee

- FIRST MEETING – FALL 2016
- 50 STAKEHOLDERS INVITED
- 30 ATTENDED

PUBLIC WORKSHOPS

2 ROUNDS OF 5 PUBLIC WORKSHOPS HELD AT EACH OF THE MAJOR CITIES

*MOUNTAIN PARK INCLUDED IN SECOND ROUND OF WORKSHOPS

FOCUS GROUPS

5 ROUNDS OF MEETINGS HELD WITH LOCAL GROUPS & STAKEHOLDERS ACROSS THE 6 CITIES TO TALK ABOUT THEIR **VISION FOR TRANSPORTATION IN NORTH FULTON** AND DISCUSS MUCH NEEDED MULTIMODAL IMPROVEMENTS

PHONE SURVEY

CONDUCTED STATISTICALLY VALID SURVEY ACROSS NORTH FULTON

- 1000 COMPLETED SURVEYS
- 50/50 CELL PHONE AND LANDLINE SPLIT

ONLINE SURVEYS (2)

Responses

HELLO

1,807

Places Needing Improvement

3,130

- 1,484 roadway
- 801 transit
- 845 active transportation

Written Comments

2,116

Individual Data Points

11,365

PROJECT WEBSITE

MAINTAINED FOR THE **PLAN** WITH A PROJECT SUMMARY, RESOURCES, FAQS, AND SEVERAL HELPFUL LINKS

COMMUNITY EVENTS

5 COMMUNITY EVENTS TO "MEET THE PEOPLE WHERE THEY ARE"

- ALIVE IN ROSWELL
- ALPHARETTA SCARECROW FESTIVAL
- CRABAPPLE FESTIVAL
- JOHNS CREEK ARTS FESTIVAL
- SANDY SPRINGS FARMERS MARKET

OUR PRIORITIES

The transportation priorities for NFCTP reflect the community's vision for a future transportation system as well as the planning factors from the FAST Act, ARC's Vision, and GDOT. Taken as a whole, the priorities outline strategies to guide North Fulton's growth. The figure below describes the established priorities.

STATING OUR PRIORITIES

The NFCTP's priorities were further vetted to include supporting statements to clarify the vision for the plan.

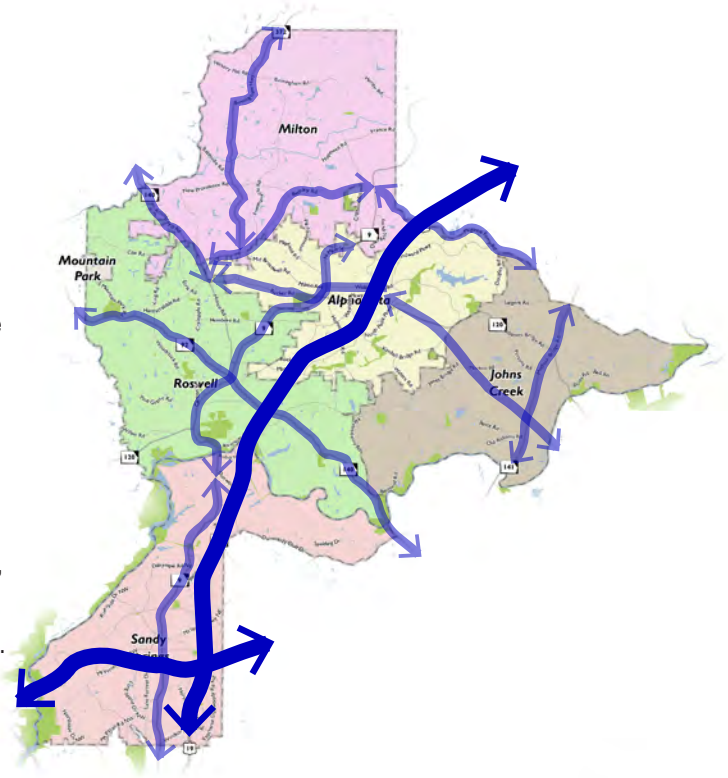
A QUICK ASSESSMENT

WHY WE TRAVEL

People travel for a multitude of reasons. This can include reasons such as commuting to work, going to the mall, and even taking the local transit bus to the mall. Although the purpose and ultimate mode choice may differ person-by-person, the underlying reason for traveling is to participate in activities. The local response to the inherent want and need to travel is metro Atlanta's robust transportation system that accommodates travel in all cardinal directions. When diving deeper into how and why people are traveling in and near North Fulton, it becomes evident that the study area is not only highly influential to its surrounding areas, it is also influenced by its surrounding communities, the City of Atlanta, Gwinnett County, Cherokee County, Cobb County, and DeKalb County. Because of this shared intellectual and economic capital, the study area has witnessed tremendous growth both in rooftops and jobs just in the past decade and a half.

The study area serves as the home of regional trip attractors, the Perimeter, North Point Mall, Tech Park, just to name a few. According to the U.S. Census Bureau (2013), over 200,000 people travel from all over metro Atlanta just to work in North Fulton. This number indicates the attraction of North Fulton as a place but also indicates a certain fluidity in travel that metro Atlanta enjoys.

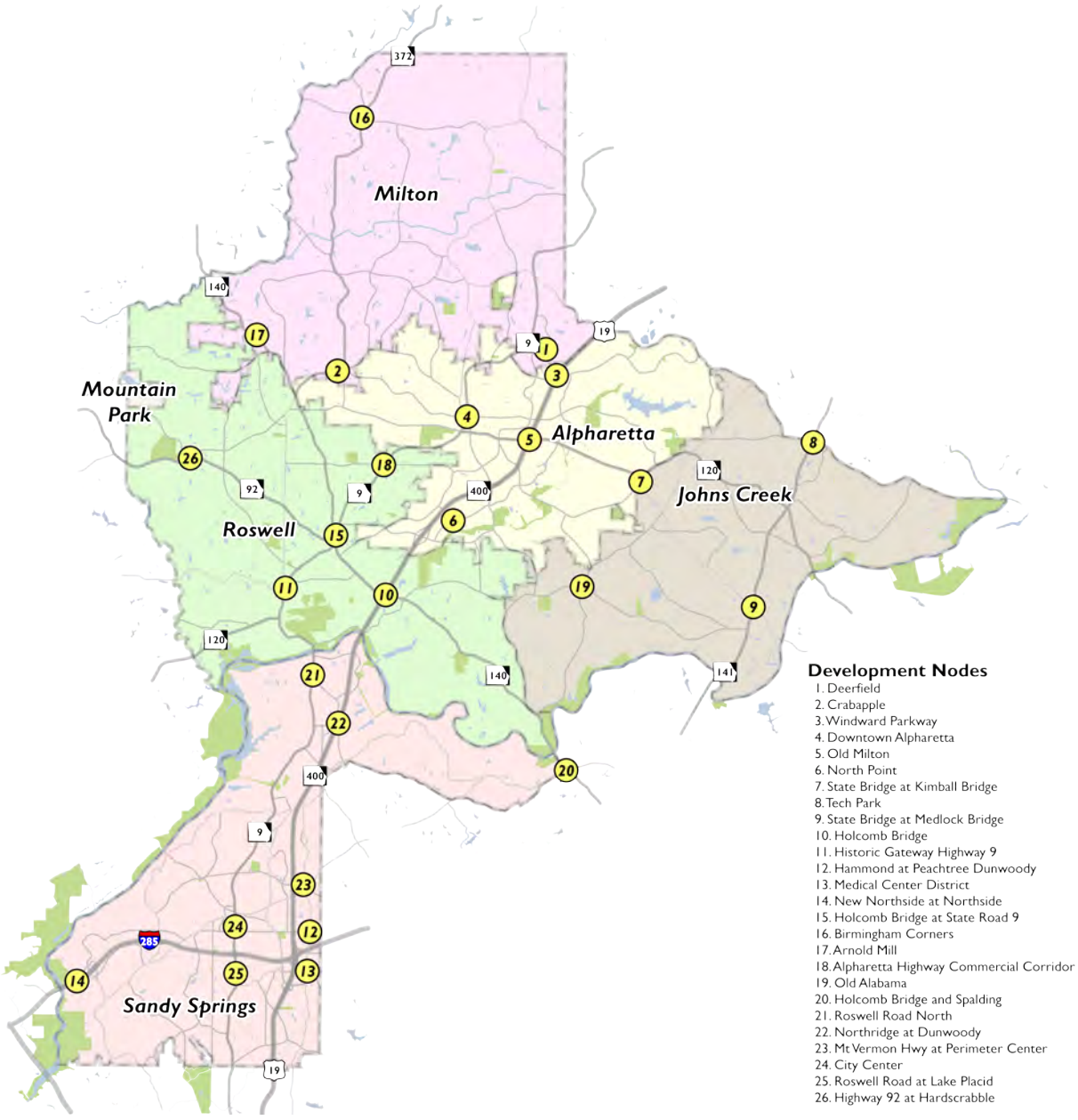
North Fulton's location within metro Atlanta and its many trip attractors has played a significant role in guiding the development of North Fulton's transportation system. The system is tested to balance both internal trips as well as cross-county trips, as its core roadway identity includes several state routes that provide connectivity to surrounding Gwinnett, DeKalb, Forsyth, Cherokee and Cobb Counties (see map to the right). GA 400 and I-285 are great examples. As one of the main north-south corridors connecting to Atlanta, GA 400 is often used to travel from north metro Atlanta through North Fulton to reach the heart of Atlanta. I-285, which runs through Sandy Springs, produces the highest traffic volumes in North Fulton, due to its role in the transportation system.



Location coupled with available transportation infrastructure requires consideration of trips that stay within North Fulton, trips that begin or end in North Fulton and end elsewhere, as well as trips that go through North Fulton.

WHERE WE TRAVEL

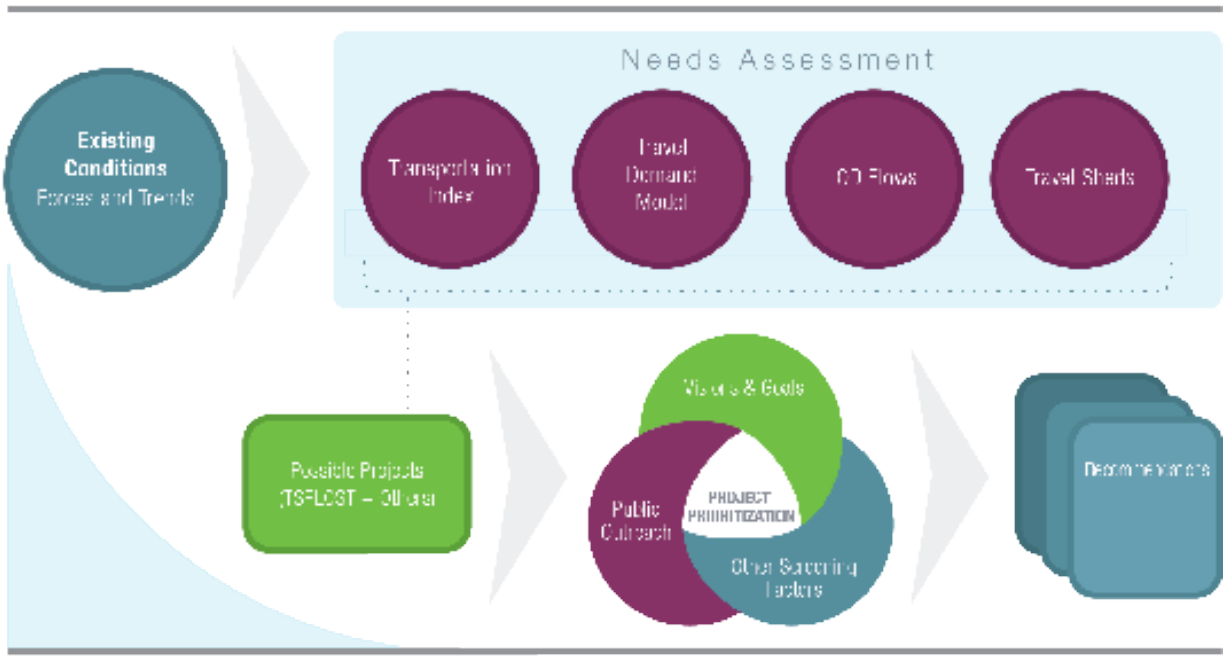
The Development Nodes in North Fulton were identified as a part of the Existing Conditions report, recognizing areas of concentrated development that serve as a destination point for a considerable amount of people. These hubs of economic and social activity have been identified as requiring adequate transportation infrastructure to access and to move between nodes and other surrounding uses. The Needs Assessment uses the Development Nodes identified in the map below as a foundation for where people want to travel to and from in North Fulton.



TOOLS

HOW THE PIECES FALL TOGETHER

The Needs Assessment leverages existing forces and trends that were investigated (Existing Conditions report) to look at transportation needs in North Fulton. The assessment uses tools to offer insight in travel patterns: transportation index; travel demand model; origin-destination analyses; and travel sheds. Once the needs have been established, the NFCTP will move forward to identify a list of possible projects, evaluate the projects, and then come up with a final list of recommendations that have been constrained to anticipated funding levels.



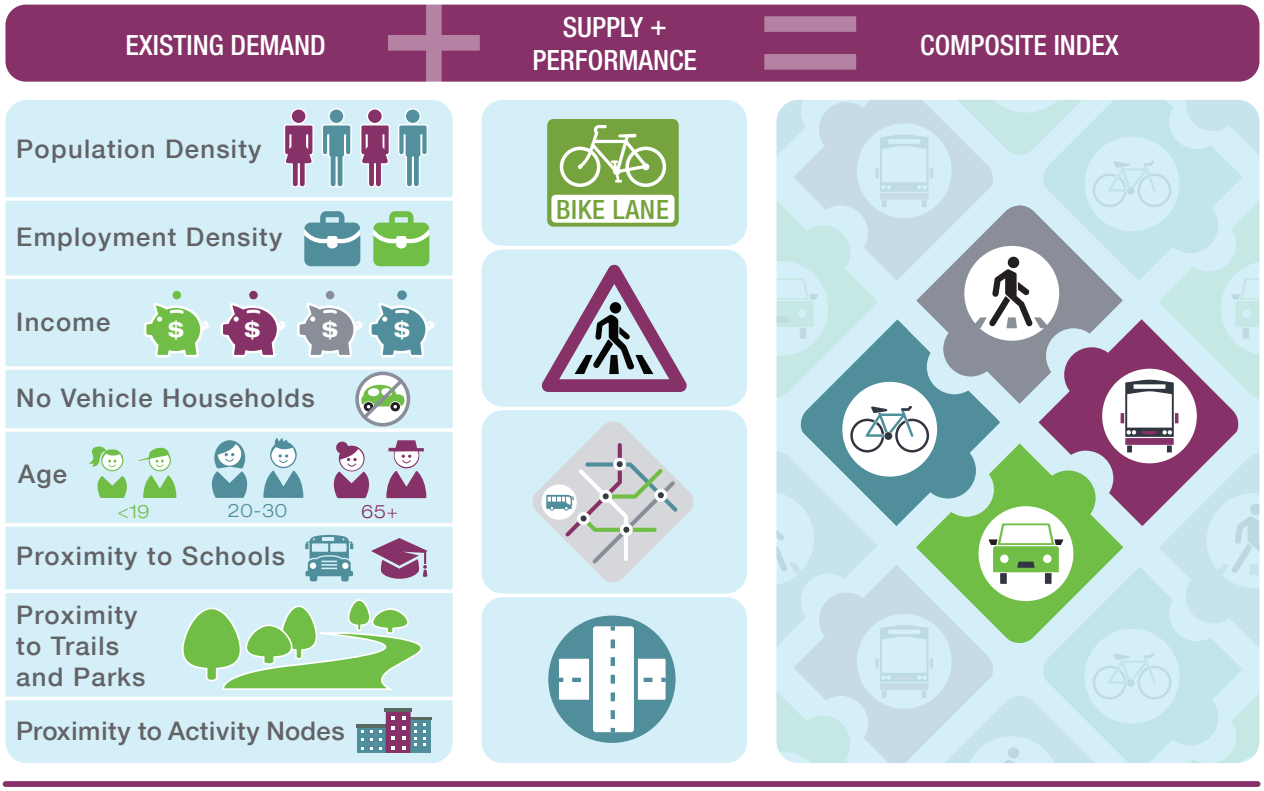
TRANSPORTATION INDEX : DEMAND & SUPPLY

Travel demand is traditionally attributed to population and socioeconomic characteristics like population density, household income, and vehicle-ownership. By looking at these factors concurrently, the index identifies geographies that represent potential demand for transportation—ultimately identifying areas of transportation need.

Supply and performance are critical pieces in determining the adequacy of existing infrastructure. In the case of the index, these components acknowledge two things:

- The presence of any facility is better than no facility at all
- In the case of active transportation, there can exist facilities that can serve as adequate substitutions for specific bicycle or pedestrian facilities given the right conditions (vehicular speed, traffic volumes, etc.)

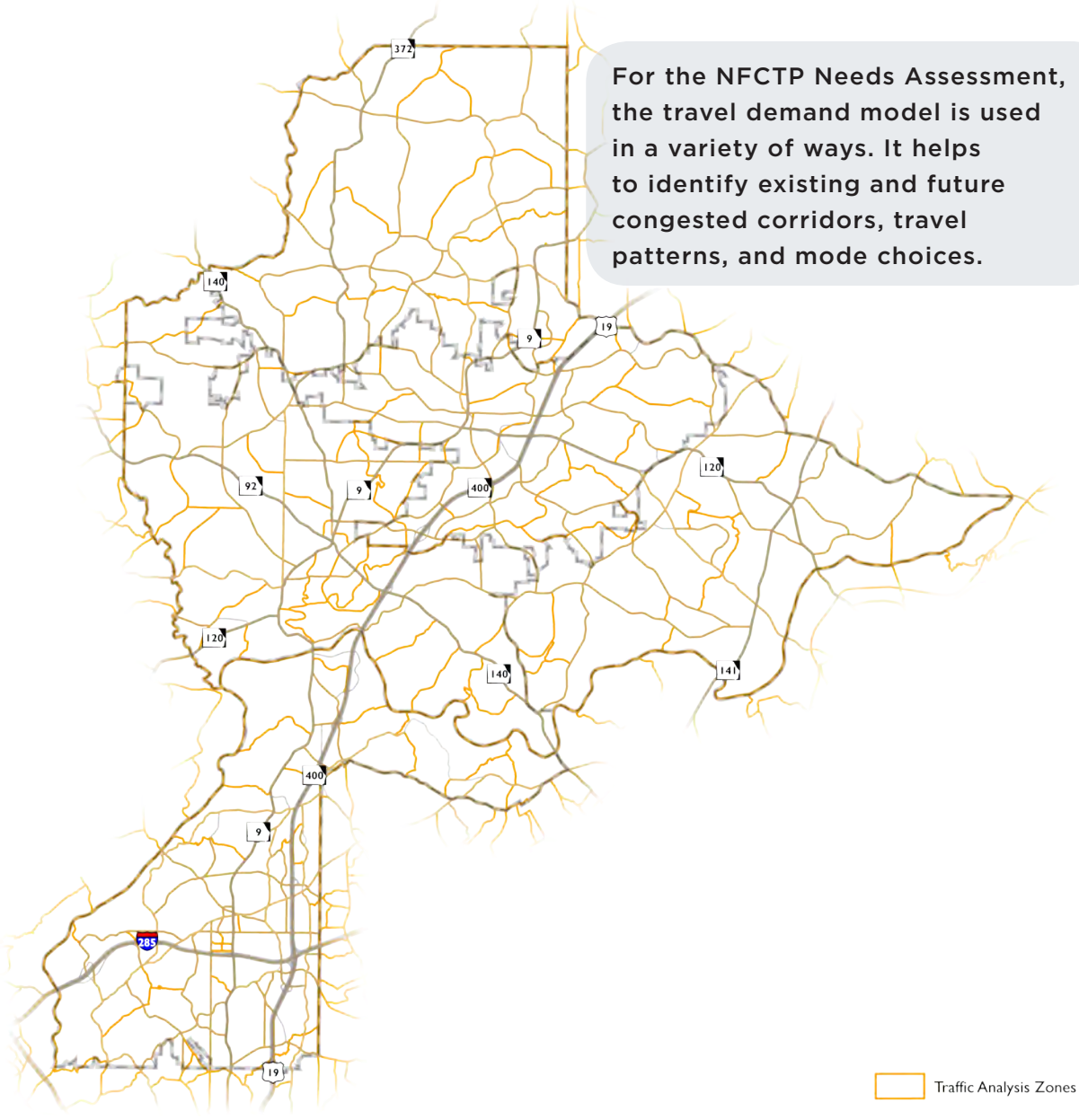
When demand and supply + performance are joined together to create a composite for each mode, a more complete picture emerges.



TRAVEL DEMAND MODEL : THE REGION'S MODEL

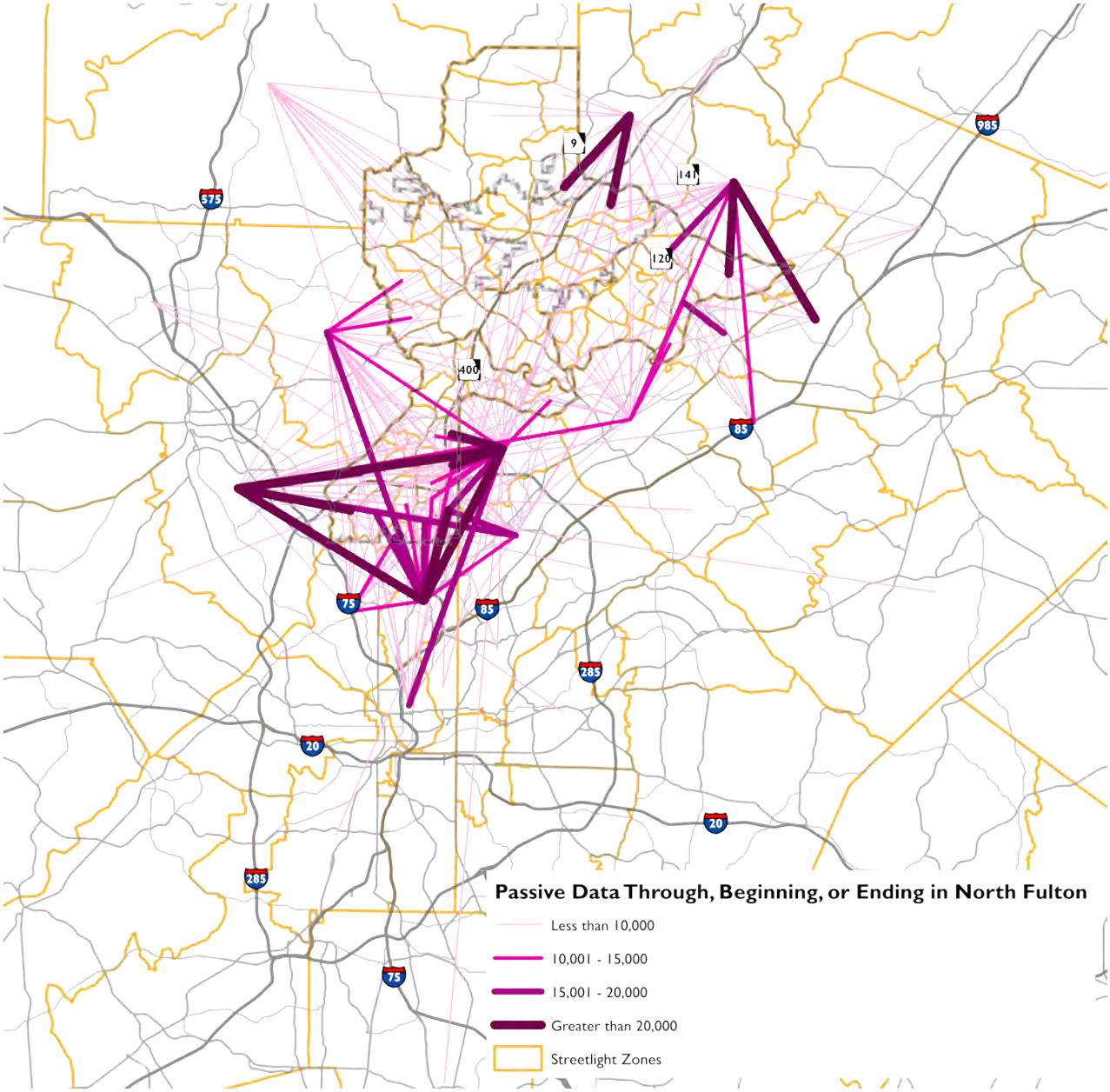
The 20 County Atlanta Regional Commission (ARC) Activity-Based Model (ABM) has 5,873 Traffic Analysis Zones (TAZ) and has been developed to ensure that the regional transportation planning process can rely on forecasting tools that will be adequate for new socioeconomic environments and emerging planning challenges. The ABM is based on the Coordinated Travel Regional Activity-Based Modeling Platform (CT-RAMP) which looks at travel choices at the household and individual level in addition to how household members interact.

For the NFCTP Needs Assessment, the travel demand model is used in a variety of ways. It helps to identify existing and future congested corridors, travel patterns, and mode choices.



ORIGIN-DESTINATION ANALYSIS: TRAVEL PATTERNS

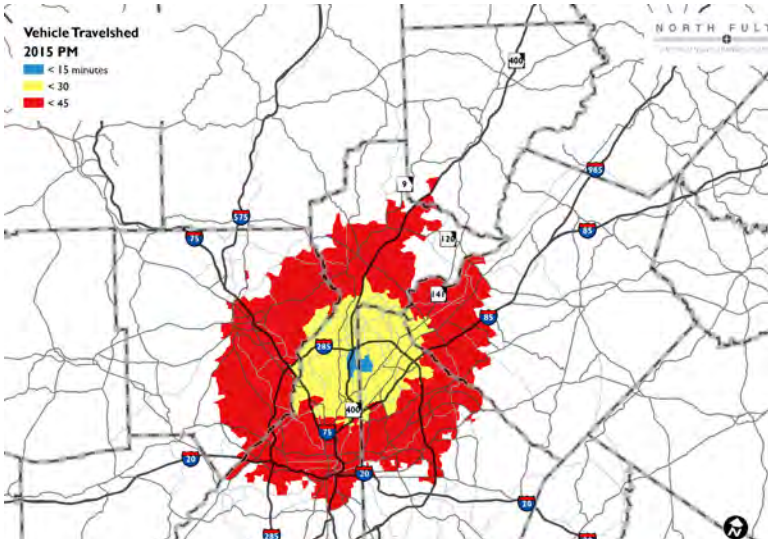
Beyond looking at geographic demand of where people live, looking at where they start and end trips gives an idea of where clusters of activity exist. Origin-Destination Analyses allow for just that. When looking at the full universe of trips that occur in metro Atlanta, one begins to see patterns of travel. Two sources of data exist for this analysis: the travel demand model and passive data. The travel demand model relies on regional forecasting tools while passive data uses existing GPS data (e.g., personal GPS devices) to offer insight on trips that are currently being taken.

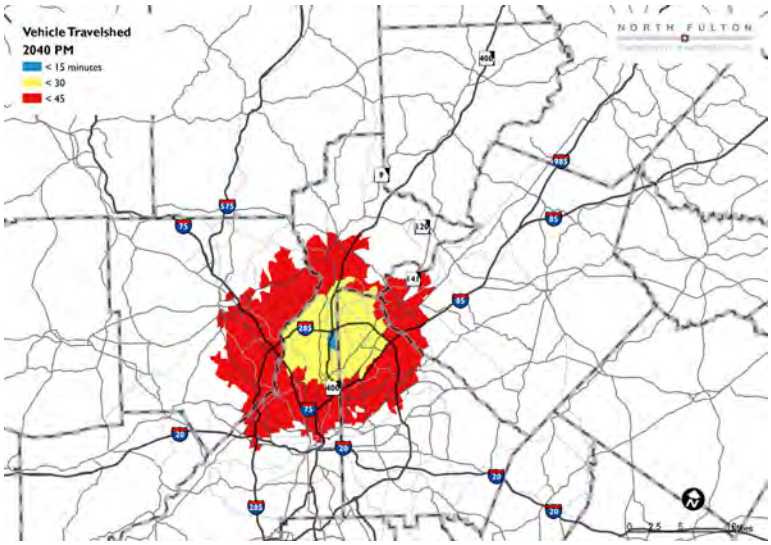


TRAVEL SHEDS : TRAVEL LIMITATIONS AND POSSIBILITIES

Travel sheds give an indication of how far someone can travel given the current transportation network. By looking at the ability to travel, issues with connectivity and accessibility start to arise—allowing for a deeper understanding as to how people choose to travel. For the NFCTP, the development nodes were used as the center point of activity from which the travel sheds were measured. Travel sheds for the roadway and transit networks were created using the travel demand model (based on travel times) while bicycle and pedestrian travel sheds were created using existing infrastructure as the basis for travel (based on mileage). A more detailed explanation is included in the appendix.

The following images highlight the differences in vehicular travel sheds for Perimeter from 2015 to 2040. The vehicle transit shed for Perimeter shows a spatial reduction in how far someone can drive in under 45 minutes in 2040 versus in 2015.

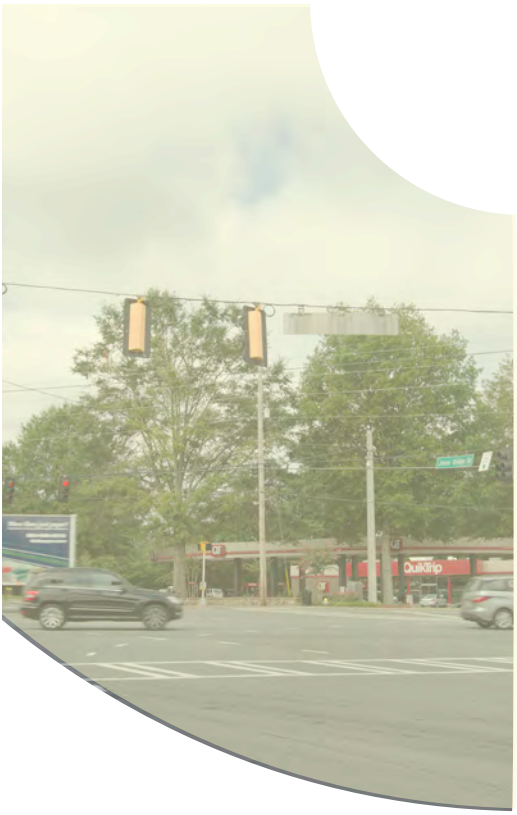




This page has been left intentionally blank.

ROADWAY

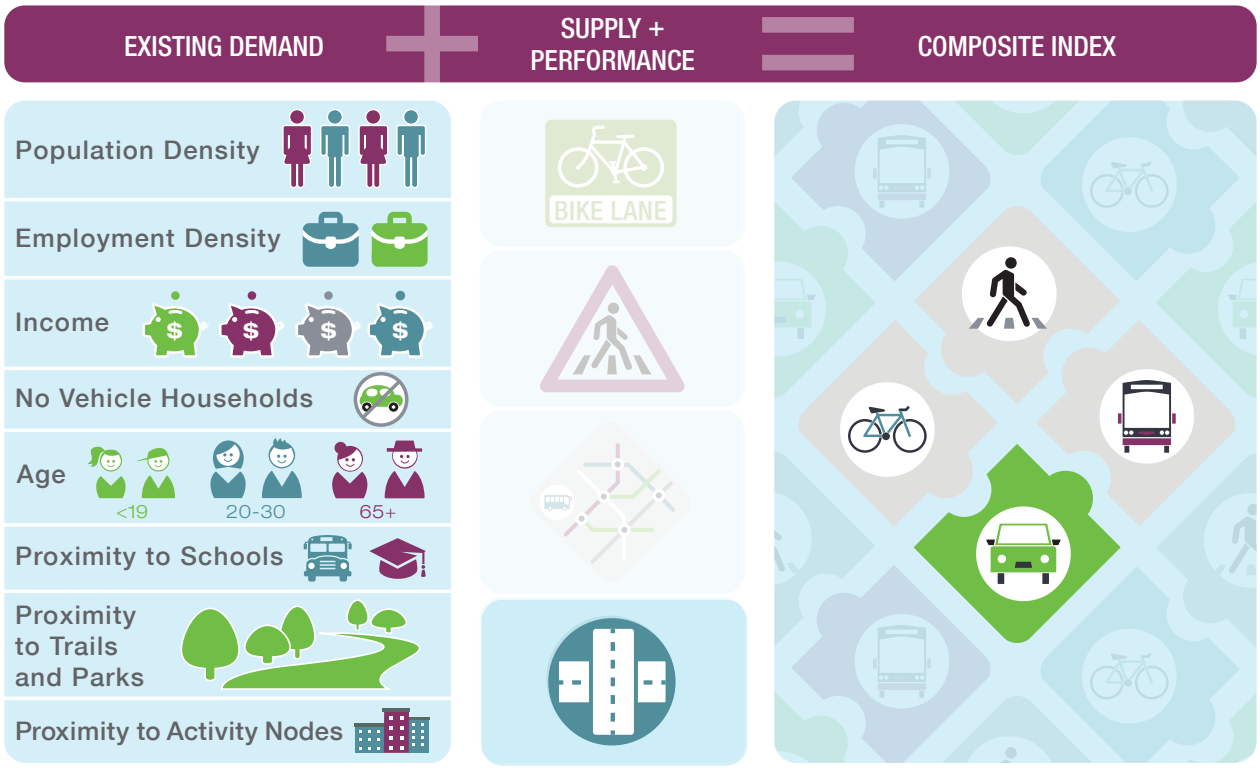
The roadway network is the backbone to movement across the Atlanta region. Identification of roadway needs better prepares the area's response to changing needs. When combined with analysis, this can serve as the foundation for a cohesive transportation strategy.



TRANSPORTATION INDEX - ROADWAY

INTRODUCTION*

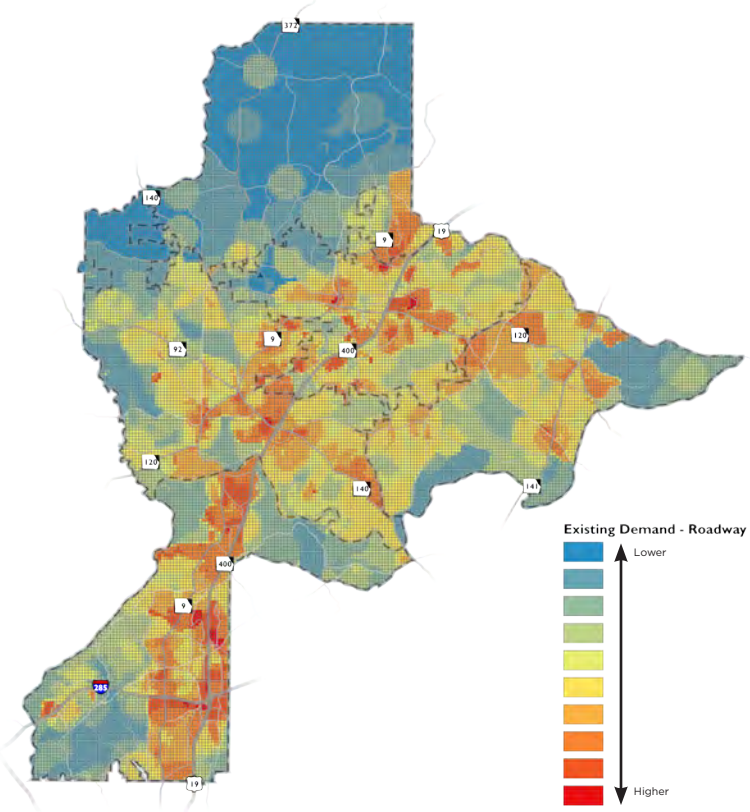
The Roadway Index illustrates the propensity for roadway needs in North Fulton. Potential demand for roadway mobility was generated through a variety of socioeconomic and land use characteristics. The supply of roadway mobility considers the ability to access major destinations and travel from one location to another. Geographically-based factors considered for the supply of roadways in North Fulton include elements such as existing functional roadways, maximum traffic allowed, average flow, and the number of total crashes.



*Additional details and full-sized maps of the index can be found in the Appendix.

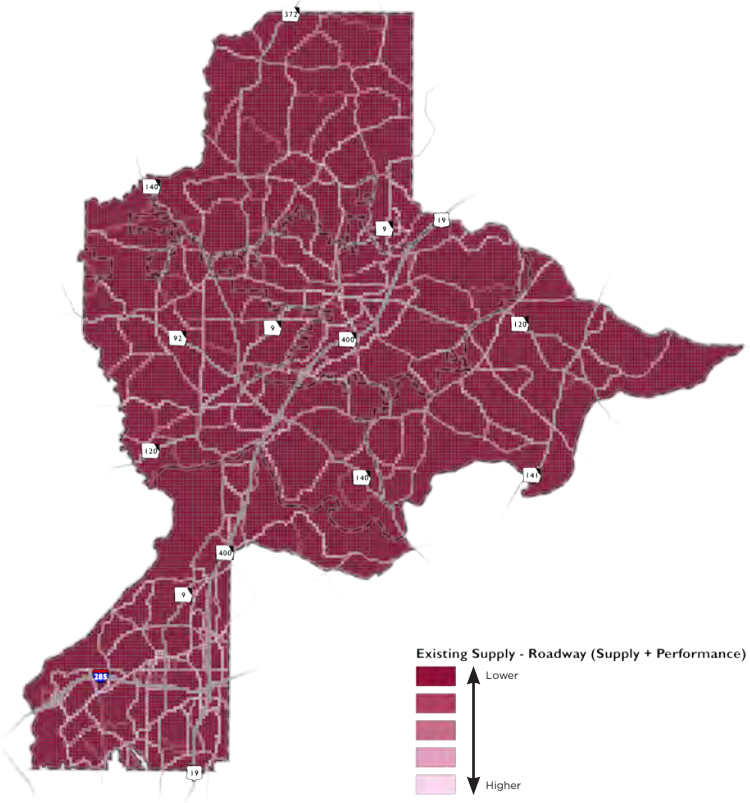
DEMAND

The demand of roadway in North Fulton appears to be concentrated around the corridors that people already heavily utilize. These major corridors include GA 400, I-285, Holcomb Bridge Road, Kimball Bridge Road, SR 141, State Bridge Road, and SR 9. These areas contain some of the highest population and employment densities in North Fulton County.



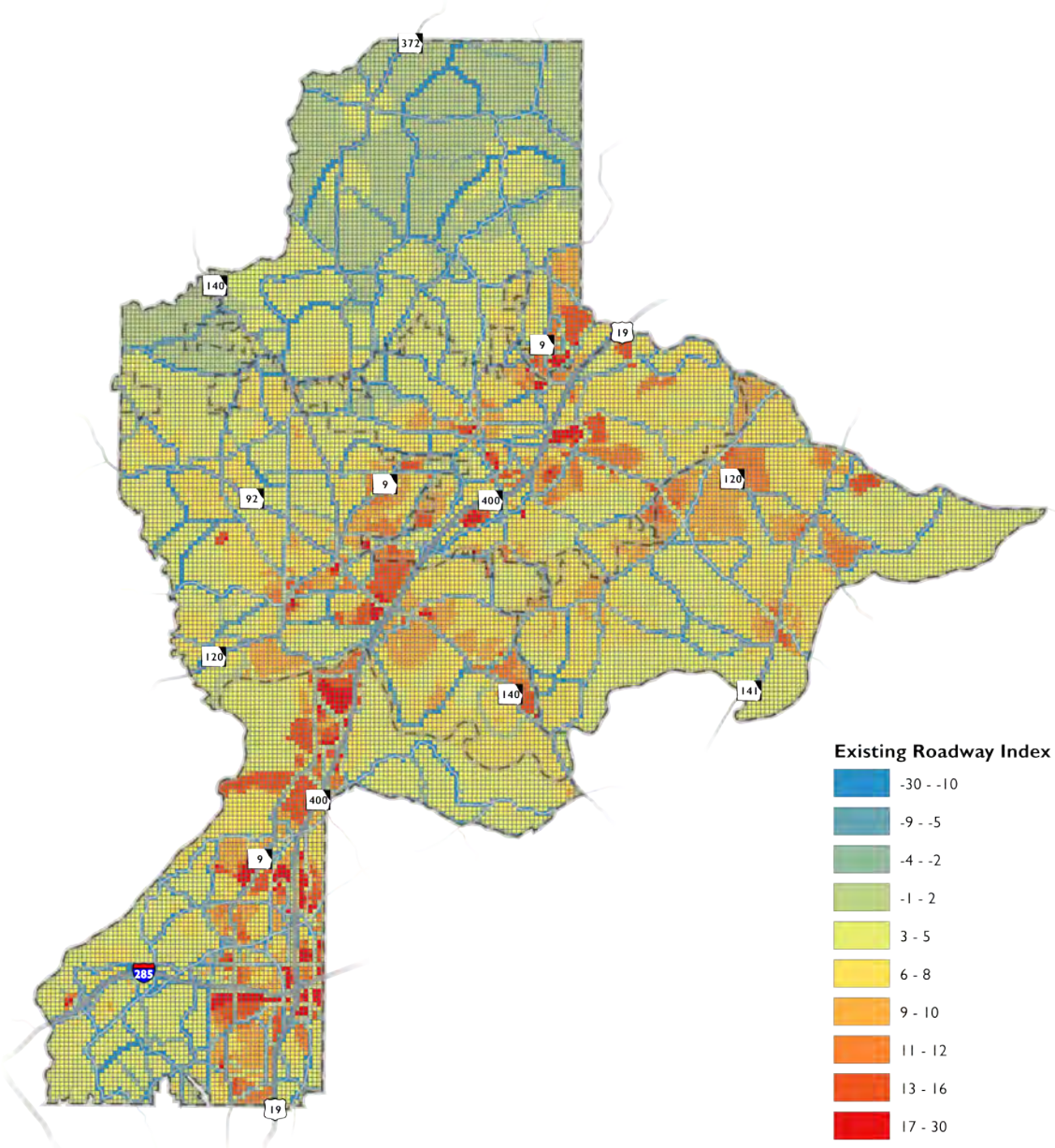
SUPPLY + PERFORMANCE

The locations of the roadway supply in North Fulton indicate areas that potentially have a higher roadway supply. Factors included in the roadway transportation index are output of the travel demand model. The largest concentration of roadway supply is in the City of Sandy Springs at the intersection of GA 400 and I-285. This area provides an existing roadway facility with high capacity for more traffic to flow through the interchange. Longer corridors such as GA 400 through the City of Roswell, Old Milton in the City of Alpharetta, and State Bridge Road in Johns Creek also exhibited high roadway supply conditions. Looking at existing supply and traffic volume in conjunction begins to illustrate a more complete picture of roadway needs moving forward.



COMPOSITE INDEX

The composite map illustrates where the need for roadway travel and mobility may be greatest. There exists a high concentration of roadway demand unmet by existing supply running parallel to the SR 9 and GA 400 corridors. This may indicate the need for roadway connectivity in areas surrounding the GA 400 corridor.

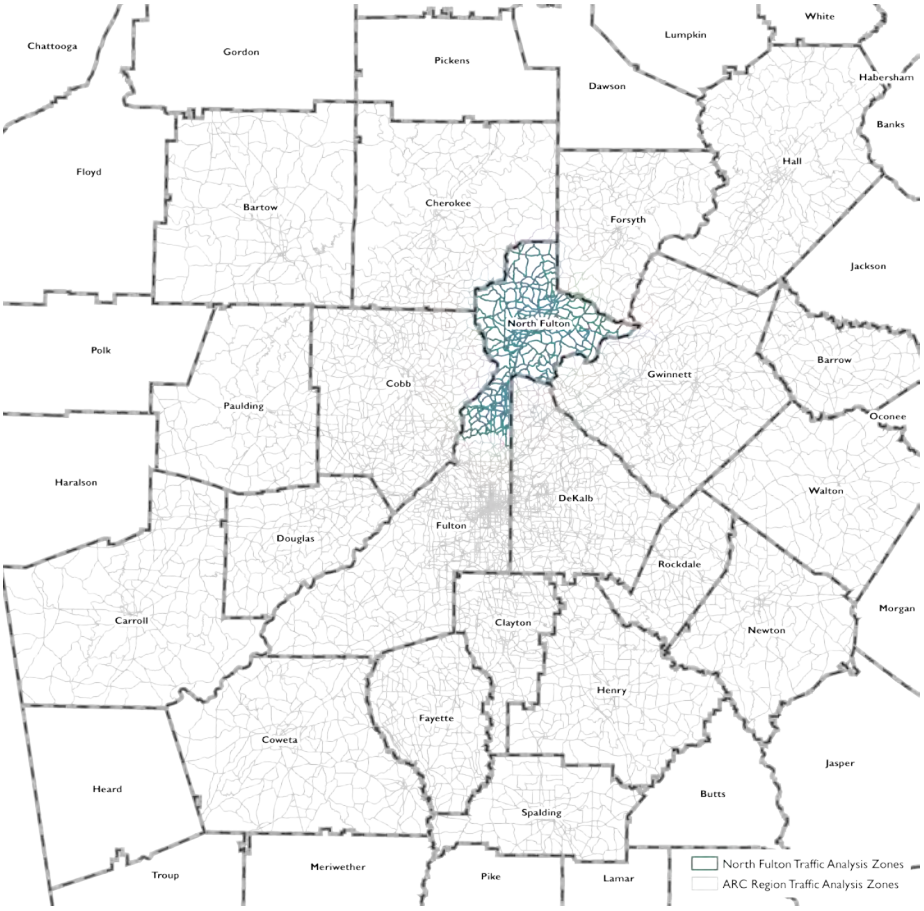


TRAVEL DEMAND MODEL

INTRODUCTION

The 20-County Atlanta Regional Commission (ARC) Activity-Based Model (ABM) has 5,873 Traffic Analysis Zones. The model has been developed to ensure that the regional transportation planning process can rely on forecasting tools that will be adequate for new socioeconomic environments and emerging planning challenges. It is also equally suitable for conventional highway projects, transit projects, and various policy studies such as highway pricing and high-occupancy-vehicle (HOV) analysis.

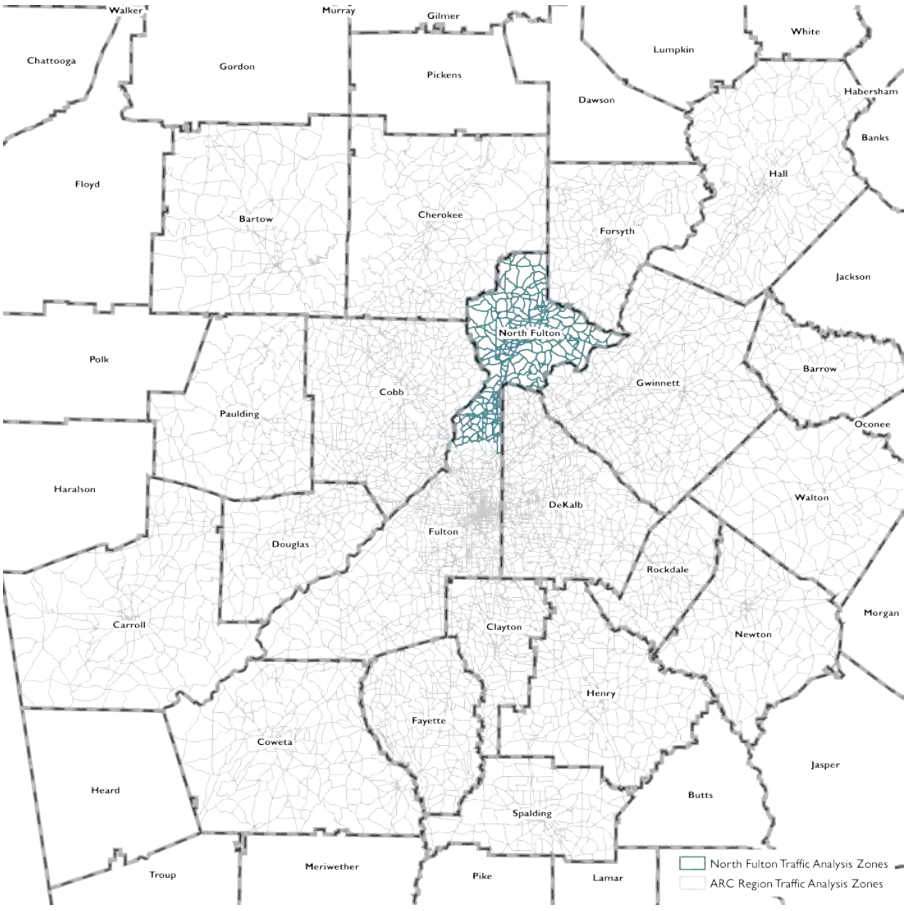
For the purposes of using this dataset, the 2015 Base Year (existing conditions) and the 2040 Existing + Committed (E+C) network was used. The 2040 E+C includes projects such as GA 400 managed lanes as well as projects that were identified through the North Fulton special purpose local option sales tax for transportation (TSPLOST), a referendum which passed November 2016.



SOCIOECONOMIC INPUTS OF THE ABM

The ABM includes socioeconomic data as inputs. The base year for the model is 2015 with a horizon year of 2040. While population in North Fulton is expected to grow annually at 0.4% (compared to 1% for all of Fulton County) through 2040, the annual employment growth rates for both North Fulton and Fulton County are both at 1%. Overall, North Fulton County's population is expected to grow by 11% and employment by 27% by 2040.

Year	Region	Population	Households	Employment
2015	North Fulton County	363,724	146,348	293,485
	Fulton County	938,259	415,311	889,795
	20-County Area	5,509,877	2,115,003	2,923,940
2040	North Fulton County	402,224	116,818	372,916
	Fulton County	1,214,715	560,266	1,136,421
	20-County Area	7,935,581	3,130,823	3,965,194



MODE SHARES

The ABM also illustrates a distribution of person trips across all modes and various scales. The model differentiates modes into drive, local and premium transit, walk, bike, and school bus. Local transit includes local bus while premium transit considers technologies such as MARTA Rail. Driving is and remains the dominant mode in both 2015 and 2040. By 2040, the share of trips taken on premium transit increases by 0.5% for trips going to and coming from North Fulton.

2015				
Mode	Region (Percent)	From North Fulton (Percent)	To North Fulton (Percent)	Within North Fulton (Percent)
Drive	88.4%	93.5%	93.5%	88.2%
Local Transit	1.0%	1.3%	1.3%	0.5%
Premium Transit	0.7%	1.4%	1.4%	0.2%
Walk	4.5%	0.5%	0.4%	6.2%
Bike	0.5%	0.4%	0.2%	0.6%
School Bus	4.9%	3.2%	3.2%	4.3%
Total	100%	100%	100%	100%

2040				
Mode	Region (Percent)	From North Fulton (Percent)	To North Fulton (Percent)	Within North Fulton (Percent)
Drive	88.7%	93.2%	93.2%	88.0%
Local Transit	1.0%	1.2%	1.2%	0.6%
Premium Transit	0.7%	1.9%	1.9%	0.4%
Walk	4.5%	0.4%	0.5%	6.7%
Bike	0.4%	0.2%	0.2%	0.5%
School Bus	4.7%	3.1%	3.1%	3.8%
Total	100%	100%	100%	100%

DRIVE MODE TRAVEL STATISTICS

Looking at statistics such as lane miles, vehicle miles traveled (VMT) and vehicle hours delay can point towards a need for solutions to meet travel demand. By 2040 Existing + Committed model, lane miles in North Fulton County increases by 10%, vehicle miles traveled (VMT) increases by 26% and vehicle hours of delay by 72%. In contrast, in the overall ARC 20-county region, lane miles increases by 5%, VMT increases by 36%, and vehicle hours of delay (VHD) by 118%. Careful consideration of these significant increases is needed moving forward.

2015								
	North Fulton County				ARC 20-County Region			
Facility Type	Lane Miles	VMT	VHT	VHD	Lane Miles	VMT	VHT	VHD
Interstate	200	4,160,343	89,481	23,611	3,038	50,917,073	1,021,512	216,289
Freeway	0	0	0	0	272	2,483,795	55,896	10,601
Principal Arterial	181	1,844,856	71,080	17,515	3,440	24,448,794	724,884	102,380
Minor Arterial	369	2,199,886	87,126	15,594	8,736	34,217,367	1,122,126	134,708
Major Collector	208	996,359	41,657	6,884	4,665	16,444,693	530,285	52,646
Minor Collector	15	85,965	2,394	266	737	2,087,656	59,050	4,781
Local	799	2,162,964	130,836	12,833	17,024	27,325,499	1,571,853	85,393
Total	1,773	11,490,373	422,574	76,703	37,913	157,924,877	5,085,607	606,798

2040								
	North Fulton County				ARC 20-County Region			
Facility Type	Lane Miles	VMT	VHT	VHD	Lane Miles	VMT	VHT	VHD
Interstate	274	5,160,986	122,242	40,792	3,341	65,538,022	1,474,191	438,967
Freeway	0	0	0	0	278	3,150,594	82,040	23,400
Principal Arterial	194	2,207,214	94,299	29,438	3,718	33,495,192	1,112,119	240,767
Minor Arterial	386	2,678,954	117,768	28,406	9,332	46,739,726	1,693,004	298,296
Major Collector	236	1,330,758	58,463	11,416	4,990	23,741,478	849,505	136,101
Minor Collector	15	124,167	4,188	926	794	3,376,658	107,128	15,927
Local	838	2,906,682	165,471	19,182	17,431	39,221,641	2,335,347	167,462
Total	1,942	14,408,761	562,432	129,917	39,883	215,263,312	7,653,333	1,320,921

LEVEL OF SERVICE (LOS)

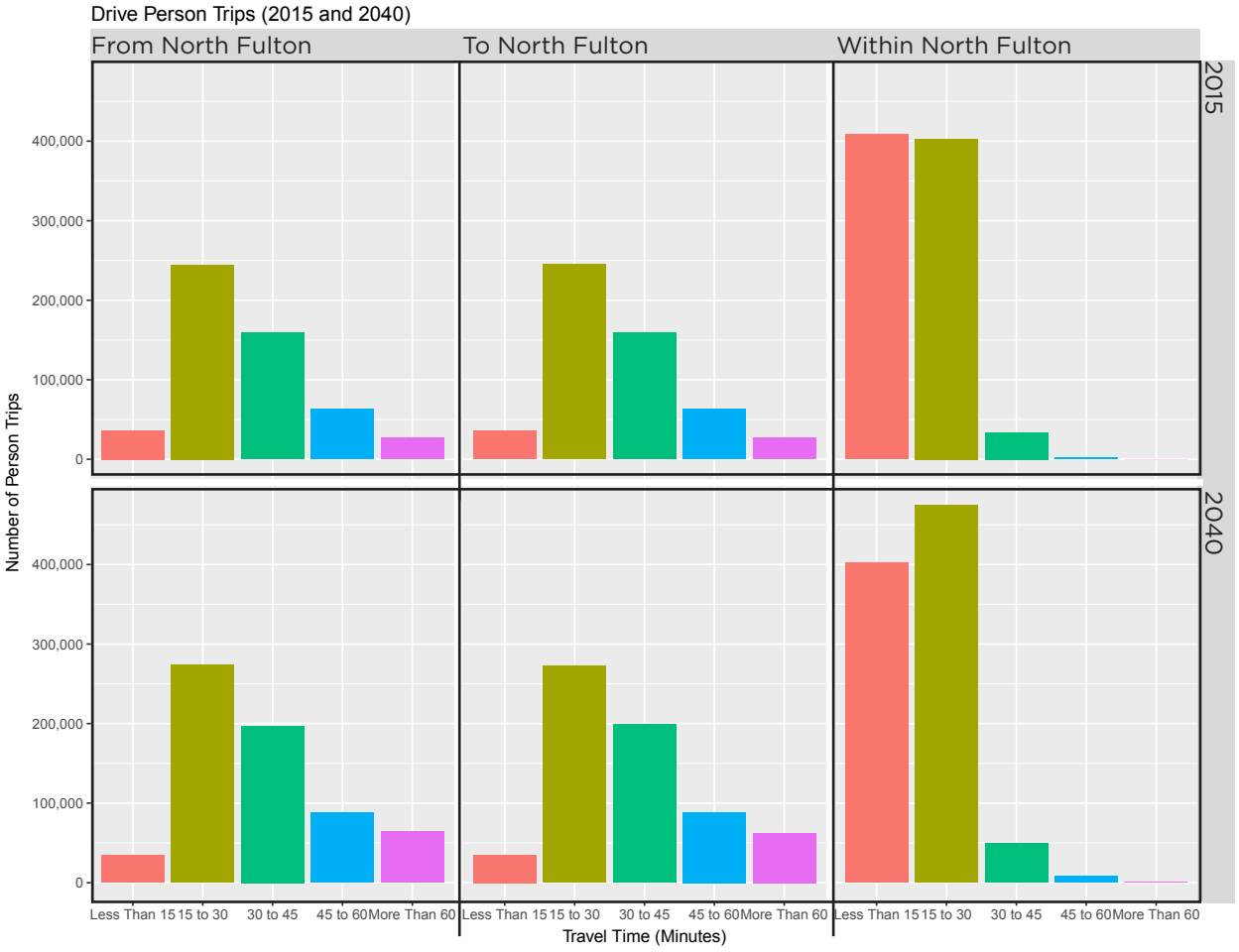
A mapping exercise for LOS was presented in the Existing Conditions Report. For more information about the LOS breakdowns, please refer to that report. In 2040, the LOS gets slightly worse during the PM peak period with over 43% of lane miles of D or worse compared to 39% in 2015. In both 2015 and 2040, the percentage of lane miles that are LOS A/B decrease indicating that traffic volumes are continuing to exceed capacity under current infrastructure plans.

2015 (Percent)					
Time of Day	A/B	C	D	E	F
PM Peak (3PM - 6:59PM)	41.5	19.5	17.7	11.5	9.8

2040 (Percent)					
Time of Day	A/B	C	D	E	F
PM Peak (3PM - 6:59PM)	34.4	21.8	14.5	12.4	16.9

TRIPS BY TIME OF DAY AND DIRECTION

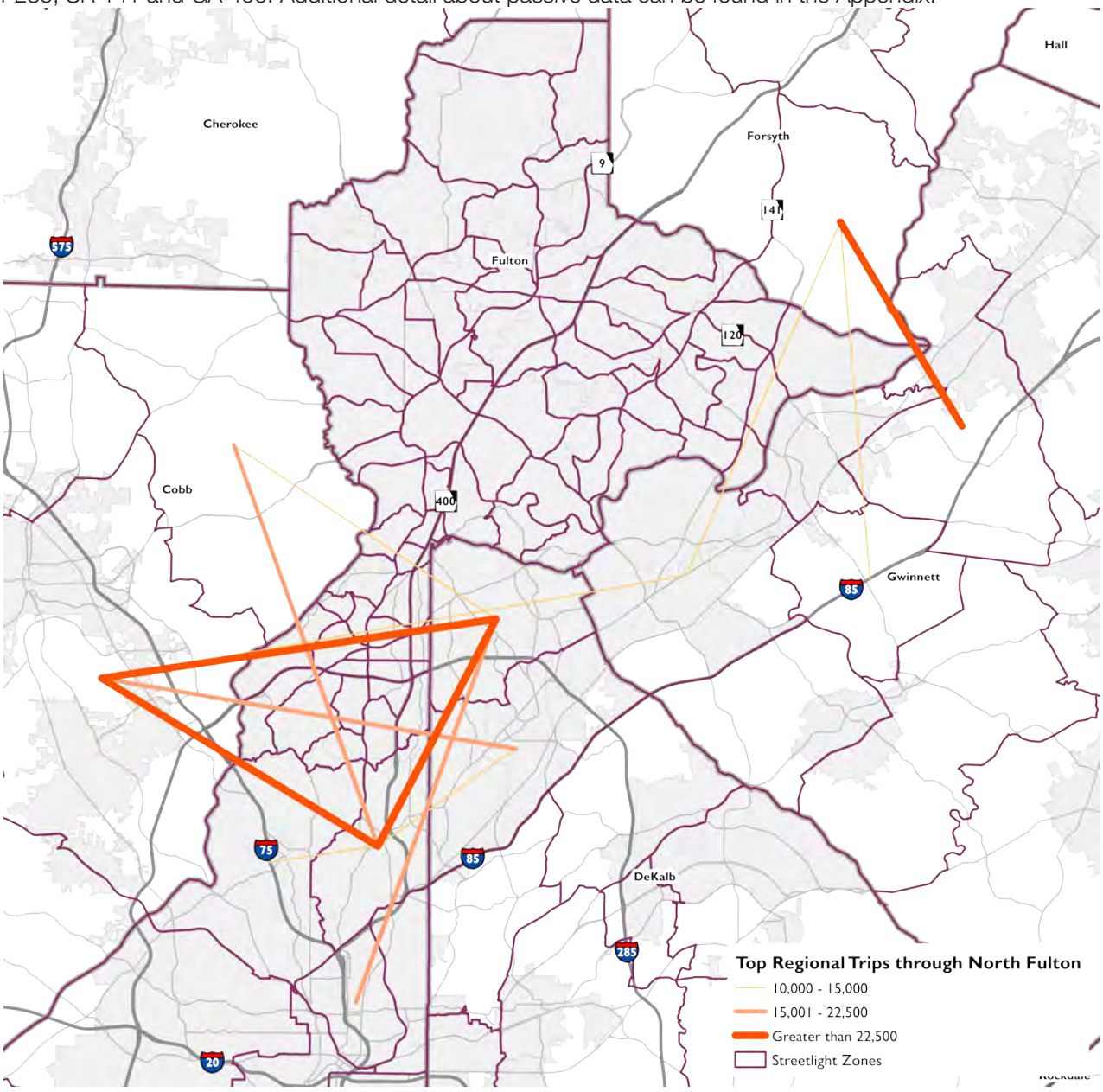
Another important data point to look at is the volume of trips for those driving in North Fulton. This gives a reference point of how many additional vehicles that might be expected on our roadways. When comparing 2015 to 2040, one can clearly see travel patterns trending towards a higher volume of trips and as a result, a higher average travel time. When looking at the travel time distribution by drive in North Fulton County, it is evident that most trips within North Fulton are less than 30 minutes in length, whereas the same cannot be said about trips to and from North Fulton.



ORIGIN-DESTINATION

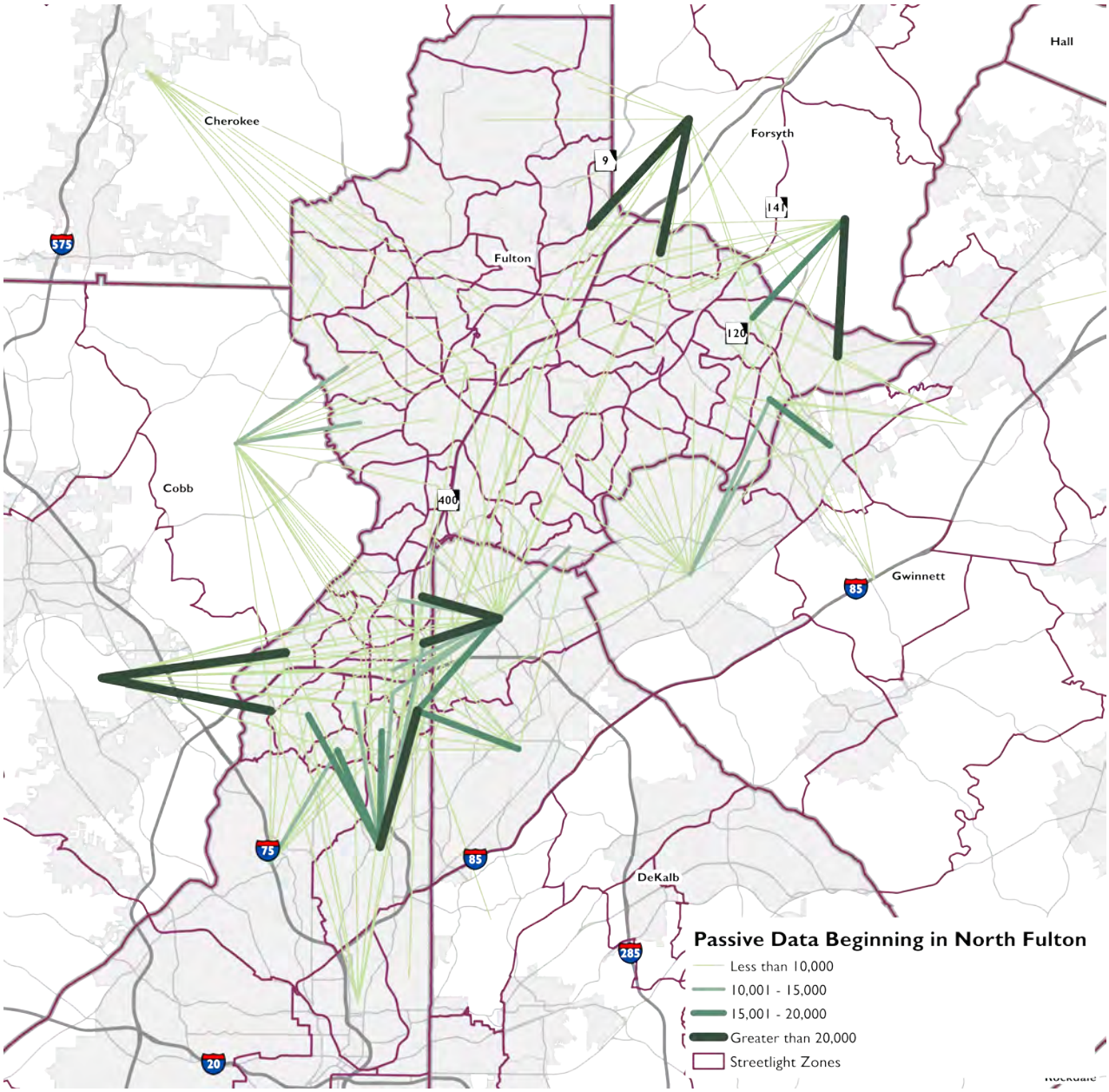
REGIONAL THROUGH TRIPS - PASSIVE DATA

The map below shows the top regional movements that pass through North Fulton from passive GPS data collected by Streetlight. The beginning and end points of the regional movements (orange lines) are represented by the centroids of the larger geography called Streetlight zones (seen in purple below). Not surprisingly, most cross-county through trips (non-North Fulton originatin trips that drive through roadways in North Fulton to get to their final non-North Fulton destination) involve the immediately surrounding Counties. Facilitating some of the major regional movements are the major corridors that traverse North Fulton, like I-285, SR 141 and GA 400. Additional detail about passive data can be found in the Appendix.



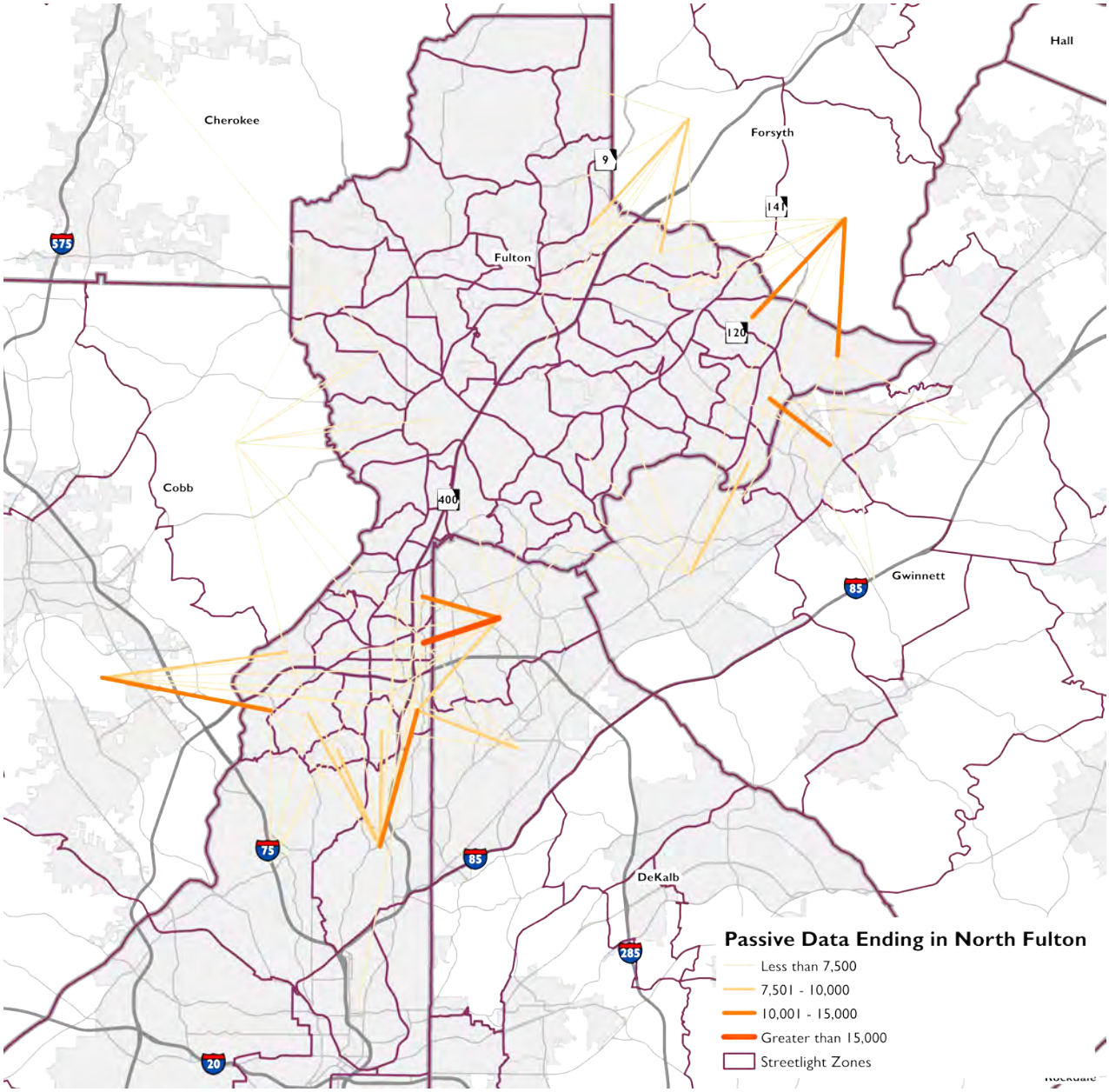
TRIPS BEGINNING IN NORTH FULTON - PASSIVE DATA

When looking at trips that begin in North Fulton County and end elsewhere in metro Atlanta, trip patterns begin to emerge. Some of the destinations that have a higher density of trips originating from North Fulton include south Forsyth County, north DeKalb County, east and southeast Cobb County, and north Atlanta. Other notable destinations include west Gwinnett County and Cherokee County.



TRIPS ENDING IN NORTH FULTON - PASSIVE DATA

Similar to the trips beginning in North Fulton and ending elsewhere in metro Atlanta, trips that are ending in North Fulton follow very similar patterns. Areas that have higher density origins include North DeKalb County, Southeast Cobb County, North Atlanta, and South Forsyth County.



INTERNAL TRIPS - TRAVEL DEMAND MODEL

North Fulton's transportation system provides critical connections for regional trips with the surrounding counties as well as internal trips within the study area. The map highlights the top 10 origin-destination Transportation Analysis Zone (TAZ) pairs occurring within North Fulton. The pairs that included the same origin and destination pairs were coupled to represent one line. These trip pairs are located around the Perimeter area, North Sandy Springs, Tech Park, along the Holcomb Bridge Corridor, and along SR 141.

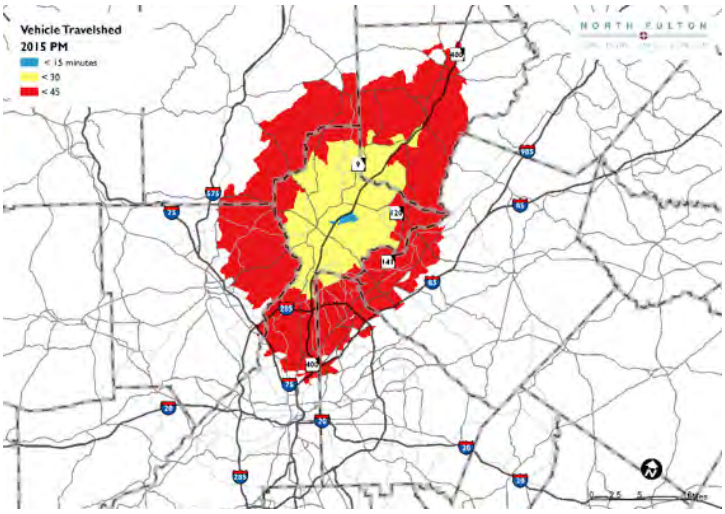
TRAVEL SHEDS

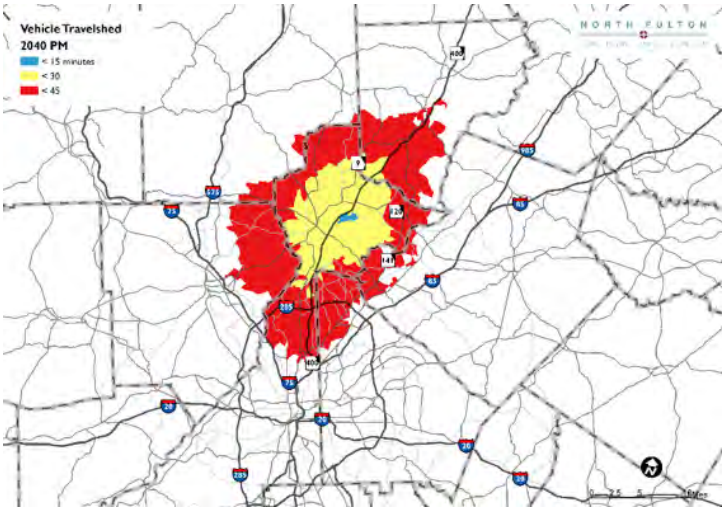
INTRODUCTION

In order to understand the impacts of improvements in the North Fulton region, representative activity centers were selected to determine the travel shed coverage by mode for both in 2015 and 25 years into the future, 2040. Vehicular travel sheds indicate the geographic bounds of how far someone could travel in all cardinal directions based on the existing roadway infrastructure. The following pages highlight a destination in each of the major North Fulton Cities and presents both the 2015 and 2040 travel sheds for the destination based on the ABM. The locations highlighted are: North Point; State Bridge Road at Medlock Bridge Road; Crabapple; Holcomb Bridge Road at Spalding Drive; and Perimeter.

NORTH POINT (ALPHARETTA)

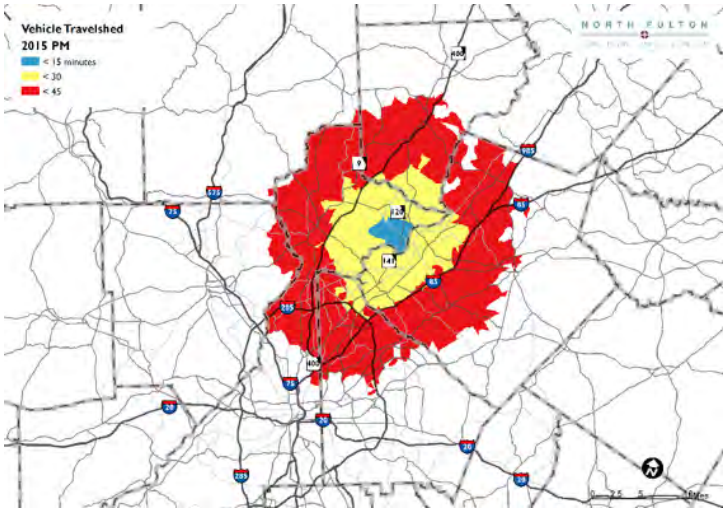
The travel shed for North Point decreases from 2015 to 2040 indicating that due to various increasing factors, the distance that one is able to travel within 15, 30, and 45 minutes will decrease. Decreases in travel distance occur at all cardinal directions but are particularly limited to the northwest and southeast.

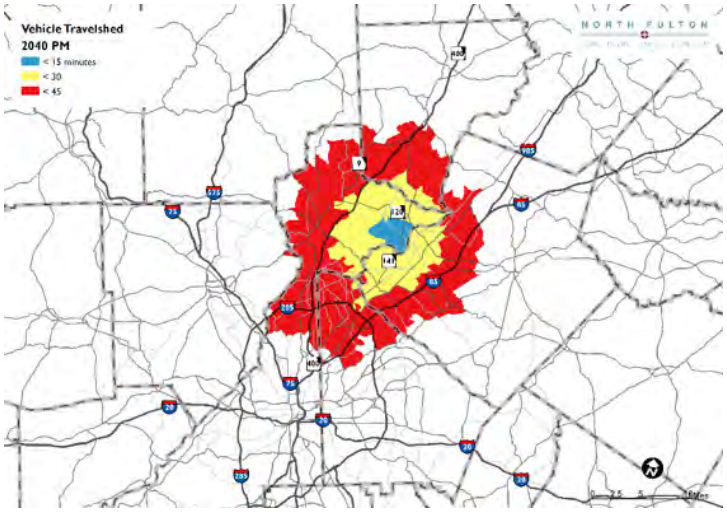




STATE BRIDGE ROAD AT MEDLOCK BRIDGE ROAD (JOHNS CREEK)

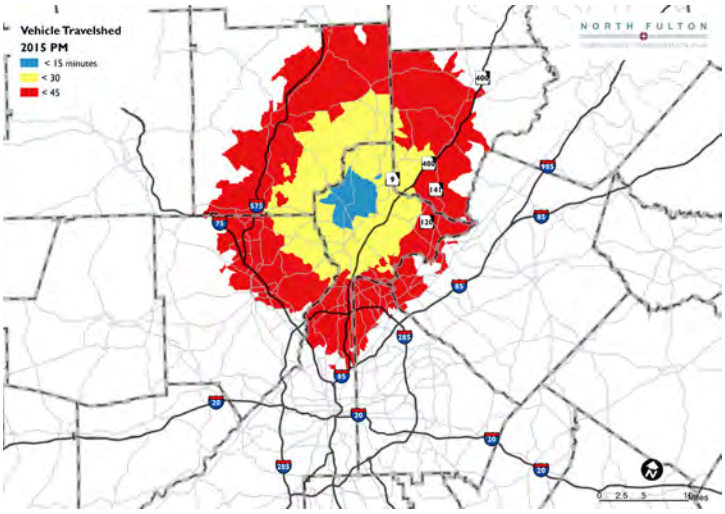
The travel shed for the area surrounding State Bridge Road and Medlock Bridge Road decreases particularly for the distance one is able to travel within 45 minutes. Although the decreases are evident in all directions, the biggest decrease occurs to

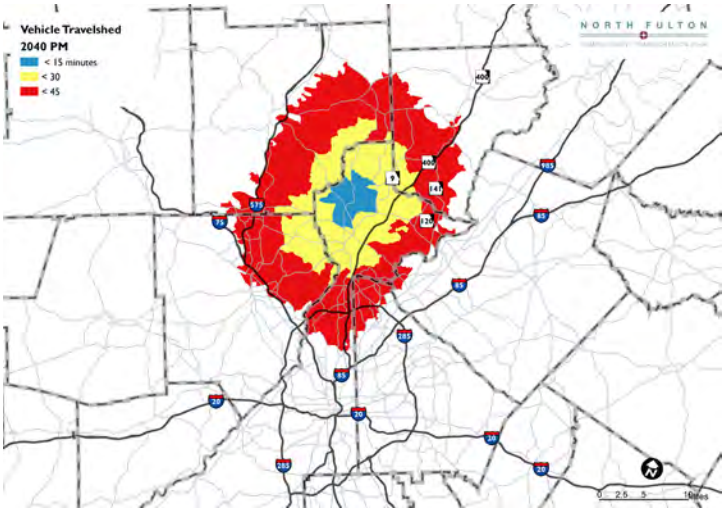




CRABAPPLE (MILTON)

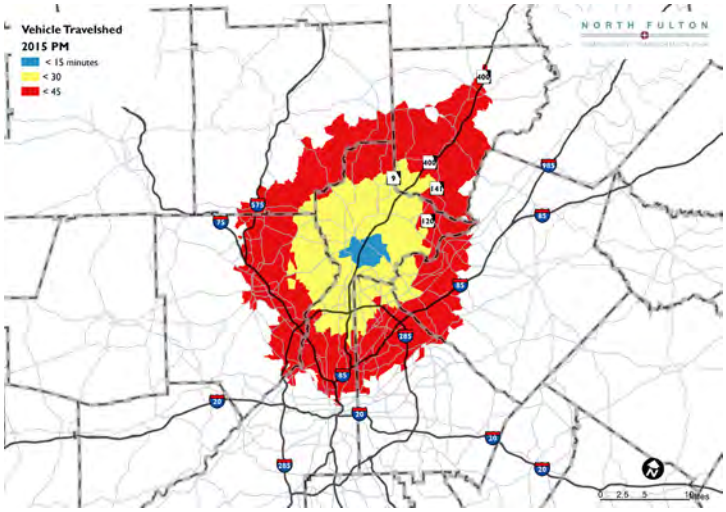
The Crabapple travel shed shows the most decrease in travel shed to the north. The 2015 travel shed indicates northward movement to the northern border of Cherokee County whereas the 2040 travel shed shows considerable decrease in that same northern direction.

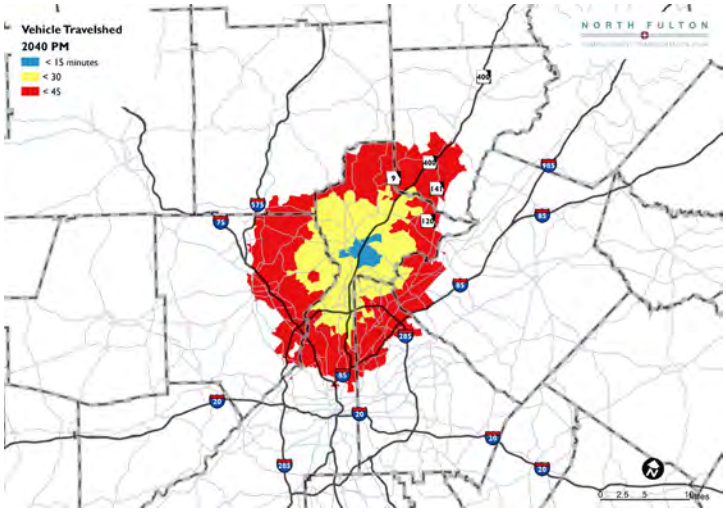




HOLCOMB BRIDGE AT SPALDING DRIVE (ROSWELL)

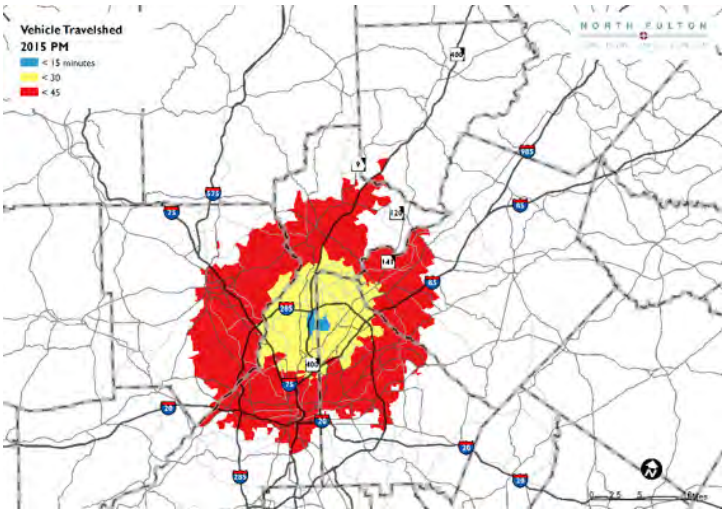
This particular travel shed finds its centroid at Holcomb Bridge Road and Spalding Drive. The 2040 travel shed decreases in all cardinal directions but in particular, observes a decrease in the ability to travel a longer distance up the GA 400 corridor.

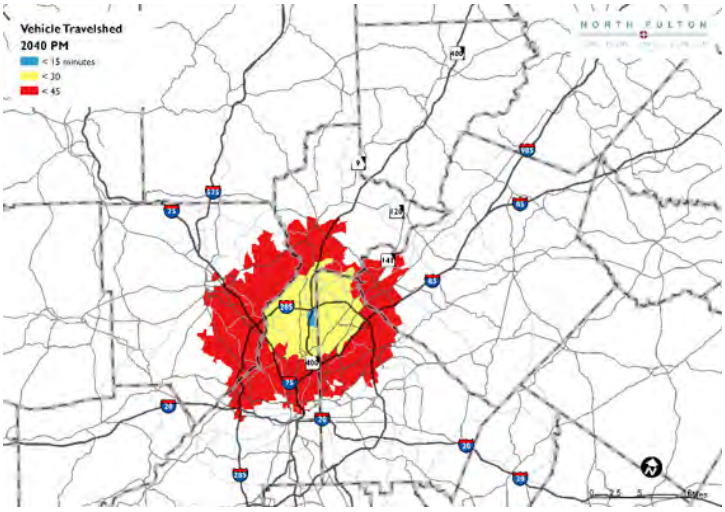




MEDICAL DISTRICT (SANDY SPRINGS)

The Medical District travel shed follows suit with the rest of the 2040 travel sheds with decreased distances in all cardinal directions in the 2040 model. The decrease is particularly evident again in the northeastern direction following GA 400.



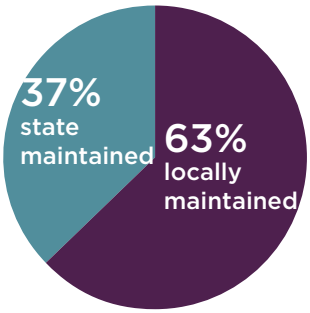


BRIDGE NETWORK

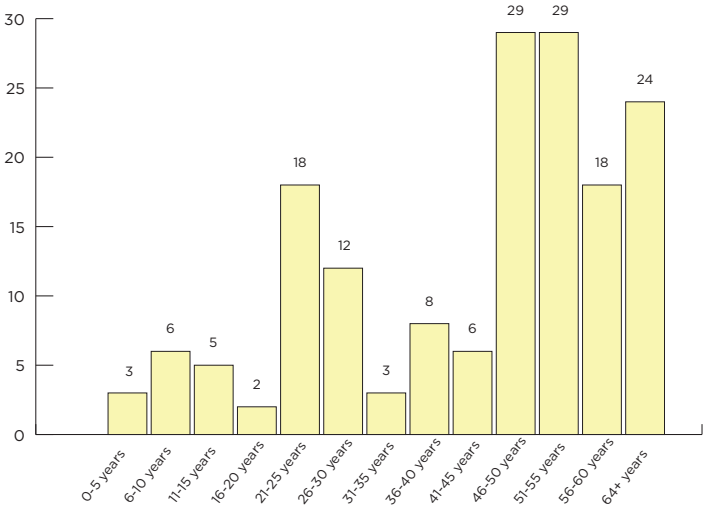
INTRODUCTION

Given the location of the Chattahoochee River among other environmental features, North Fulton has a unique perspective on the importance of network resiliency. Network resiliency is an important part of planning for the future of North Fulton's transportation network, as it provides a venue of preventing and mitigating potential catastrophic occurrences. Bridges, among other types of infrastructure, are critical to think about in the broad spectrum of the roadway network's resiliency. The following discusses two distinct characteristics of bridges: physical condition and environmental vulnerability.

The North Fulton study area has a total of 163 National Bridge Inventory (NBI) structures. Of this total, 24 are culverts and 139 are bridges. State-maintained bridges make up 37% of the structures, whereas the remaining 63% are locally-maintained. For a breakdown of bridge sufficiency ratings, please see the Existing Conditions Report.



As of 2016, the average age of all bridges is 45 years. Currently, 44 percent of the existing bridges exceed the 50-year average design life of bridges.



The functional classification of bridges located in the study area vary. The majority lie on roadways with lower functional classifications.

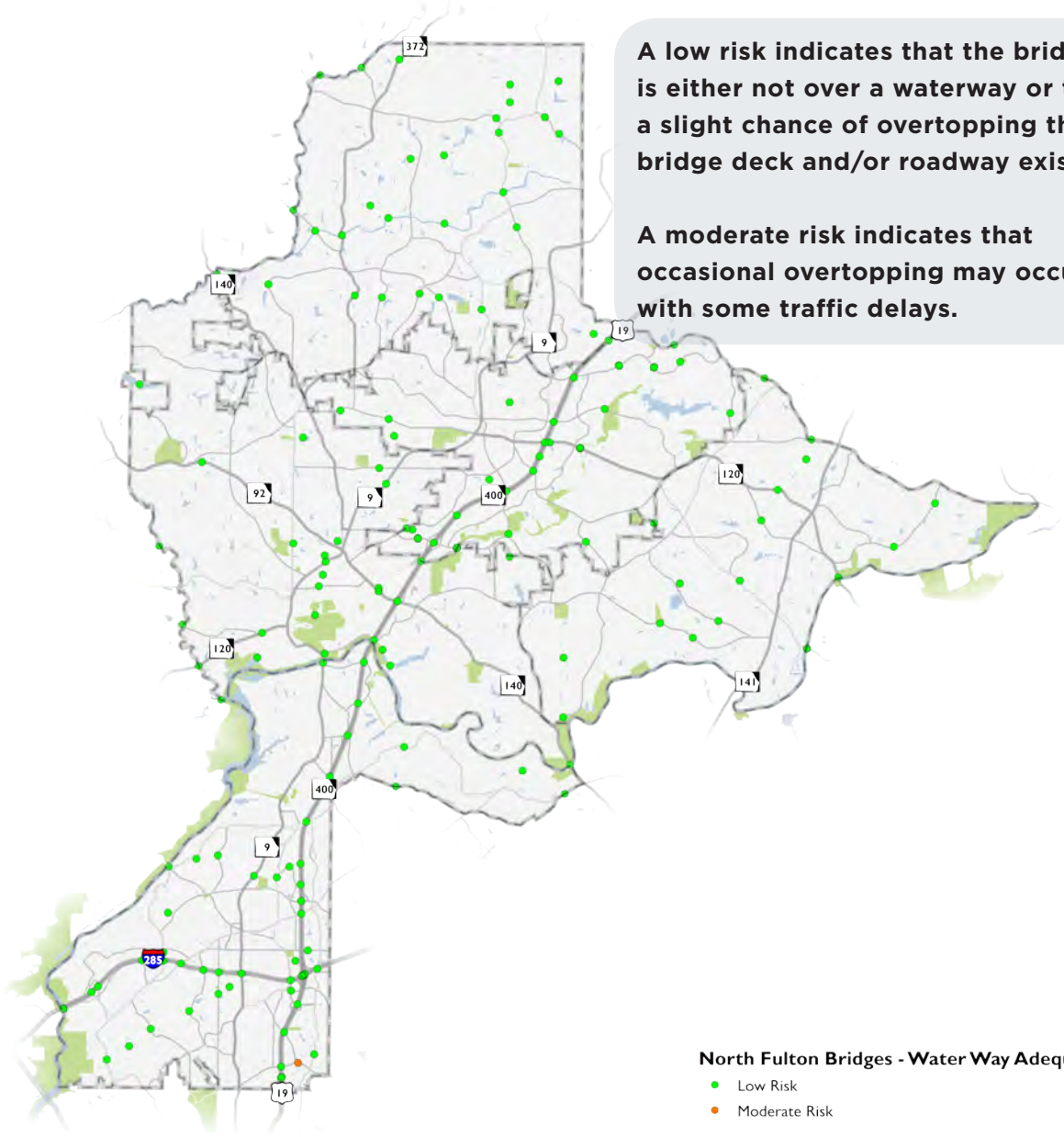
Functional Classification	Bridge Count
Interstate	6
Other Freeways/Expressways	13
Principal Arterial	19
Minor Arterial	41
Collector	40
Local	44

WATER ADEQUACY

Water adequacy is a critical assessment in an evaluation of a bridge. This factor looks at the potential for a structure overtopping during a flood event and the potential effects to the traveling public. Overtopping happens in two ways: 1) water level exceeds level of bridge structure; or 2) overwash from waves despite water level staying below structure elevation. With nearly 10 bridge crossings along the Chattahoochee River, it is vital to look at the risk levels associated with bridges across North Fulton. 162 out of 163 bridges are at low overtopping risk; 1 out of 163 is at moderate risk and is located in Sandy Springs, south of the I-285 and GA 400 interchange. The Georgia Department of Transportation (GDOT) inspects all bridge and bridge culverts within a two year cycle. Underwater bridge inspections occur every five years.

A low risk indicates that the bridge is either not over a waterway or that a slight chance of overtopping the bridge deck and/or roadway exists.

A moderate risk indicates that occasional overtopping may occur with some traffic delays.



North Fulton Bridges - Water Way Adequacy

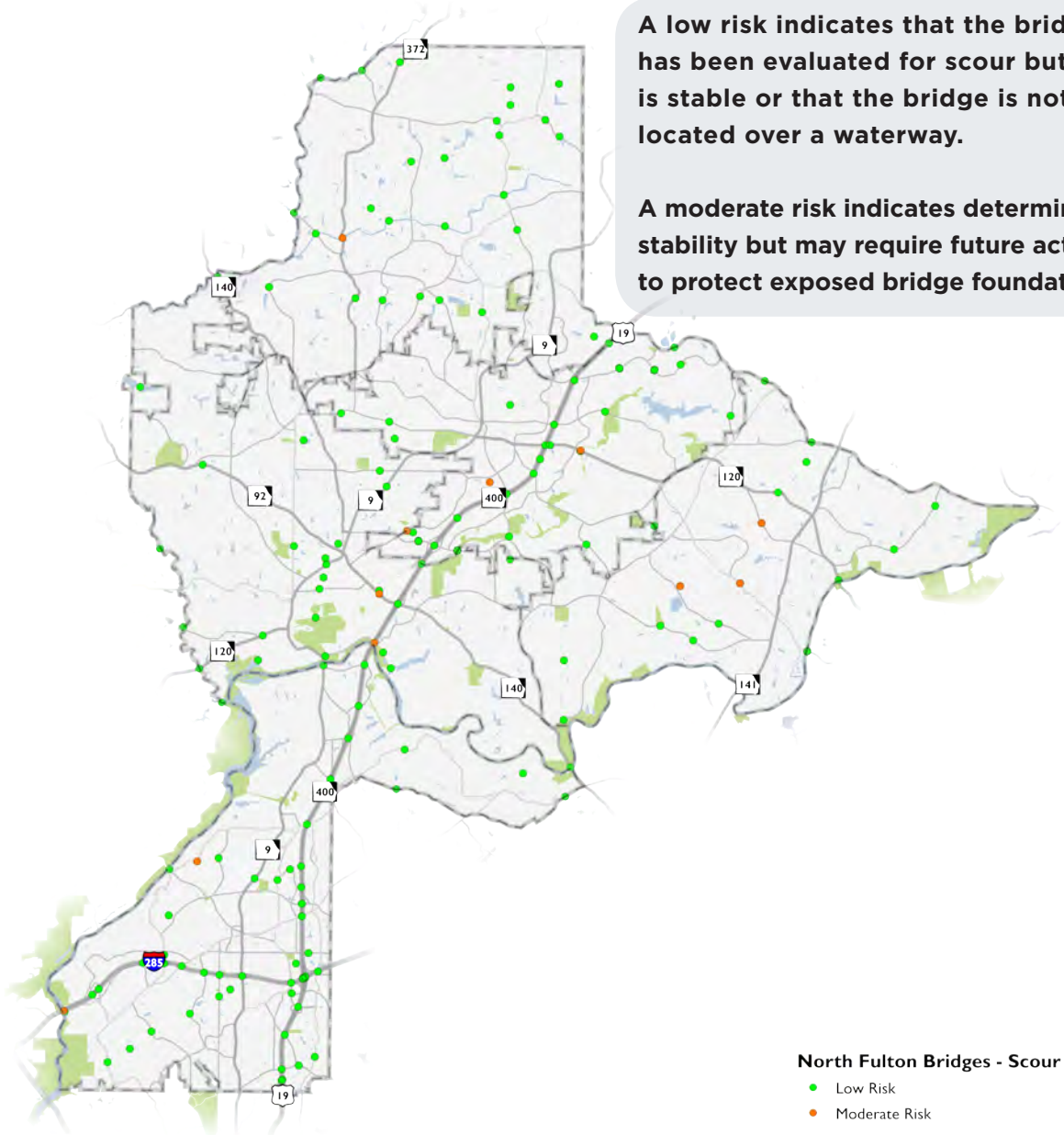
- Low Risk
- Moderate Risk

SCOUR RISK

Vulnerability to the loss of geo-materials such as soils and rocks due to flowing water around bridge supports is called scour. Scour is one of the main causes of bridge failure, which represents a much required assessment in North Fulton. These evaluations are made by hydraulic, geotechnical, and structural engineers and are represented by low, moderate, and high risk scenarios. 11 bridges in North Fulton are considered at moderate scour risk while the remaining 152 are considered low risk. In addition to the regular inspections of bridges conducted by GDOT, GDOT transportation officials also utilize a web-based monitoring service called Bridge Watch that alerts the agency about potential scour issues at select bridge locations.

A low risk indicates that the bridge has been evaluated for scour but is stable or that the bridge is not located over a waterway.

A moderate risk indicates determined stability but may require future action to protect exposed bridge foundations.



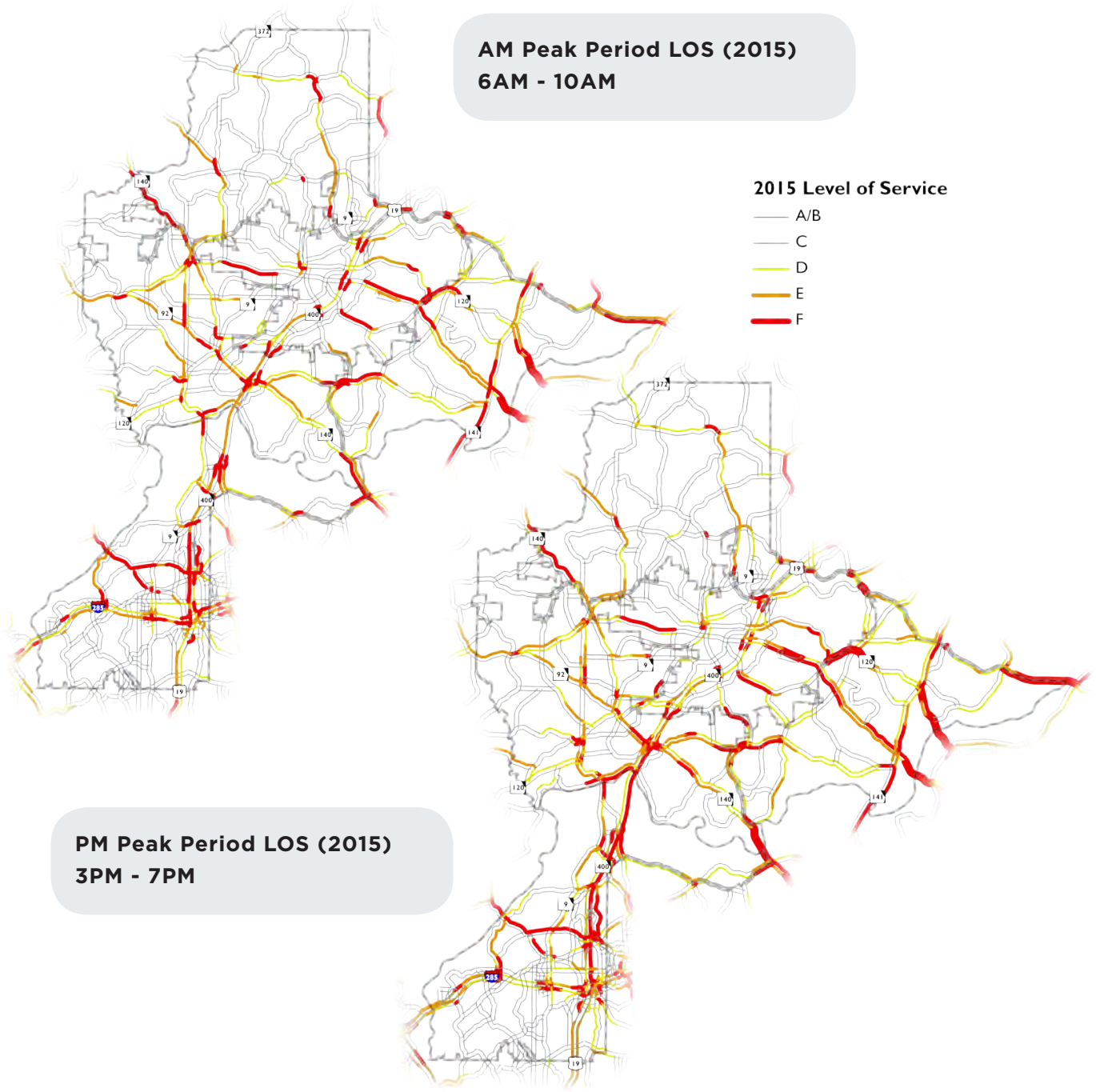
North Fulton Bridges - Scour Risk

- Low Risk
- Moderate Risk

LEVEL OF SERVICE - 2015

Level of Service (LOS) is a measure of operating conditions experienced by motorists. (For a more indepth review of the grading scales (A through F), please refer to the Existing Conditions report.) Below are maps showing 2015 Level of Service in the AM and PM peak periods. The maps on the following page show the 2040 projected Level of Service based on ARC's growth projections in population and employment, and with roadway improvements that are financially committed through construction.

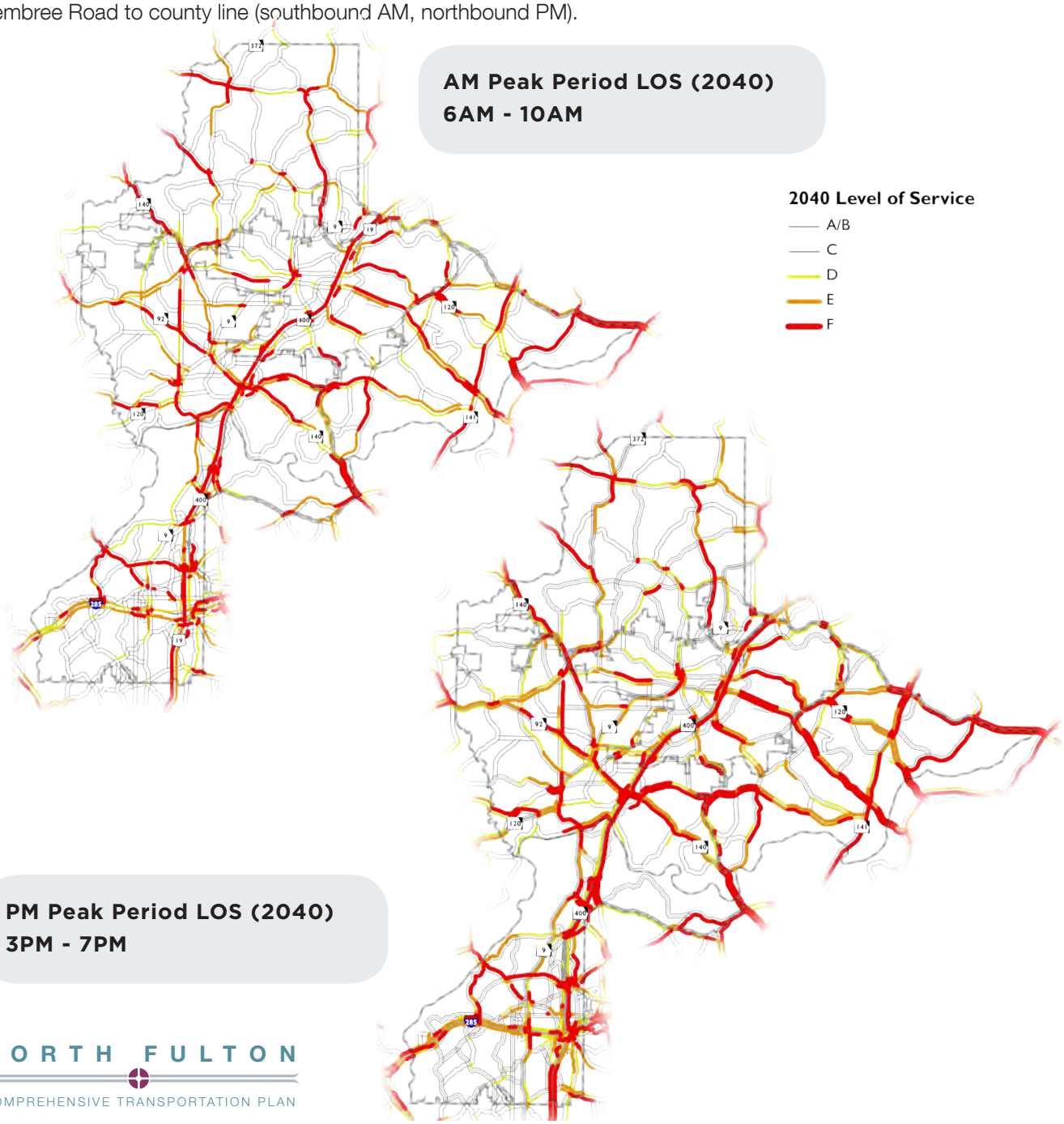
AM Peak Period LOS (2015)
6AM - 10AM



PM Peak Period LOS (2015)
3PM - 7PM

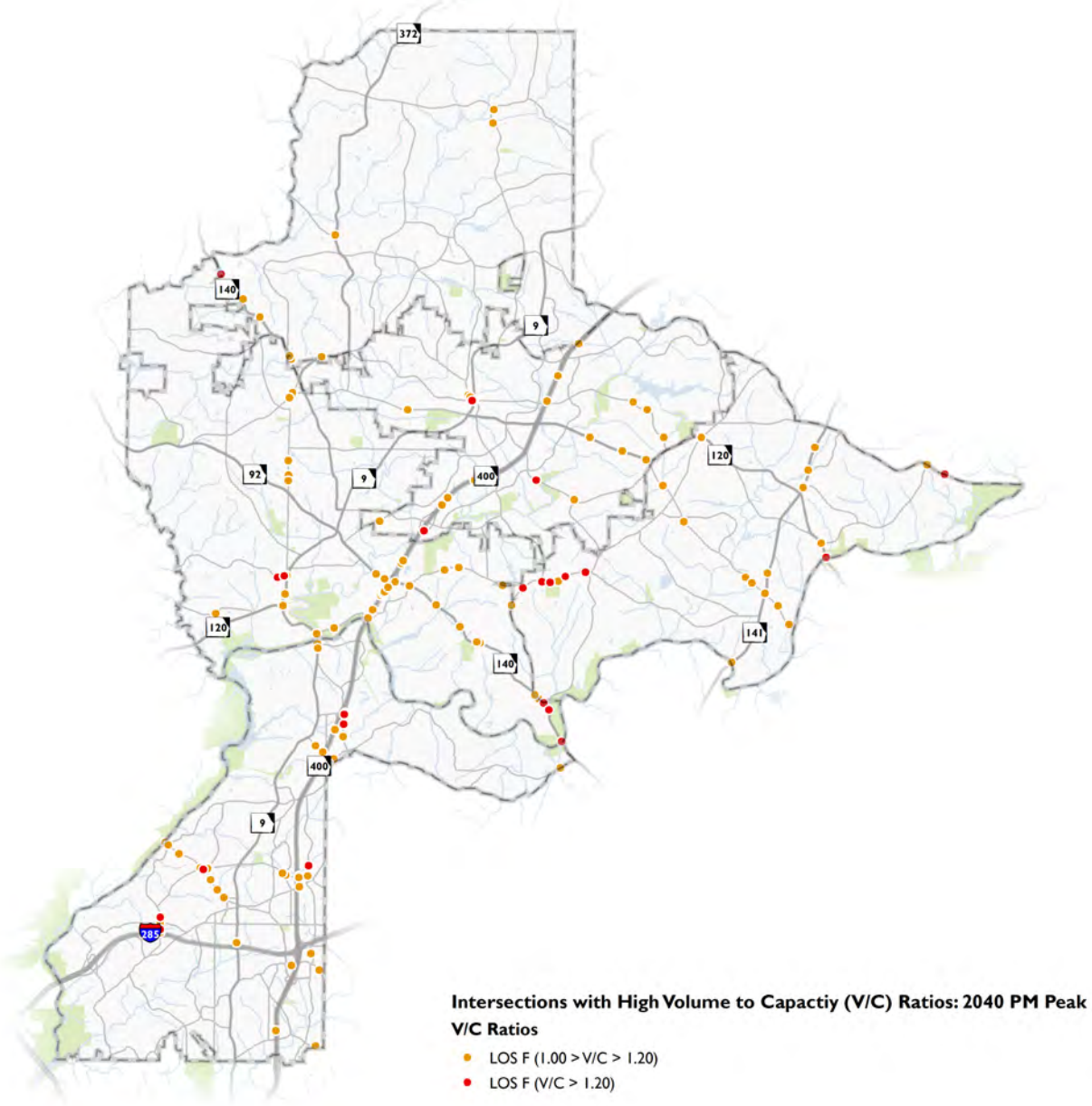
LEVEL OF SERVICE - 2040

As shown in the maps, without additional improvements, traffic congestion is anticipated to get notably worse throughout North Fulton County, particularly along major corridors in the southern and eastern portions of the study area. A review of the delta between the 2015 and 2040 maps reveal corridors of transportation needs: GA 400 (southbound AM, northbound PM); Abernathy Road into Cobb County (westbound AM, eastbound PM); State Bridge Road (AM and PM); SR 141 (southbound AM, both directions PM); Old Alabama Road from Barnwell Road to GA 400 (westbound AM, both directions PM); SR 140 from Hembree Road to county line (southbound AM, northbound PM).



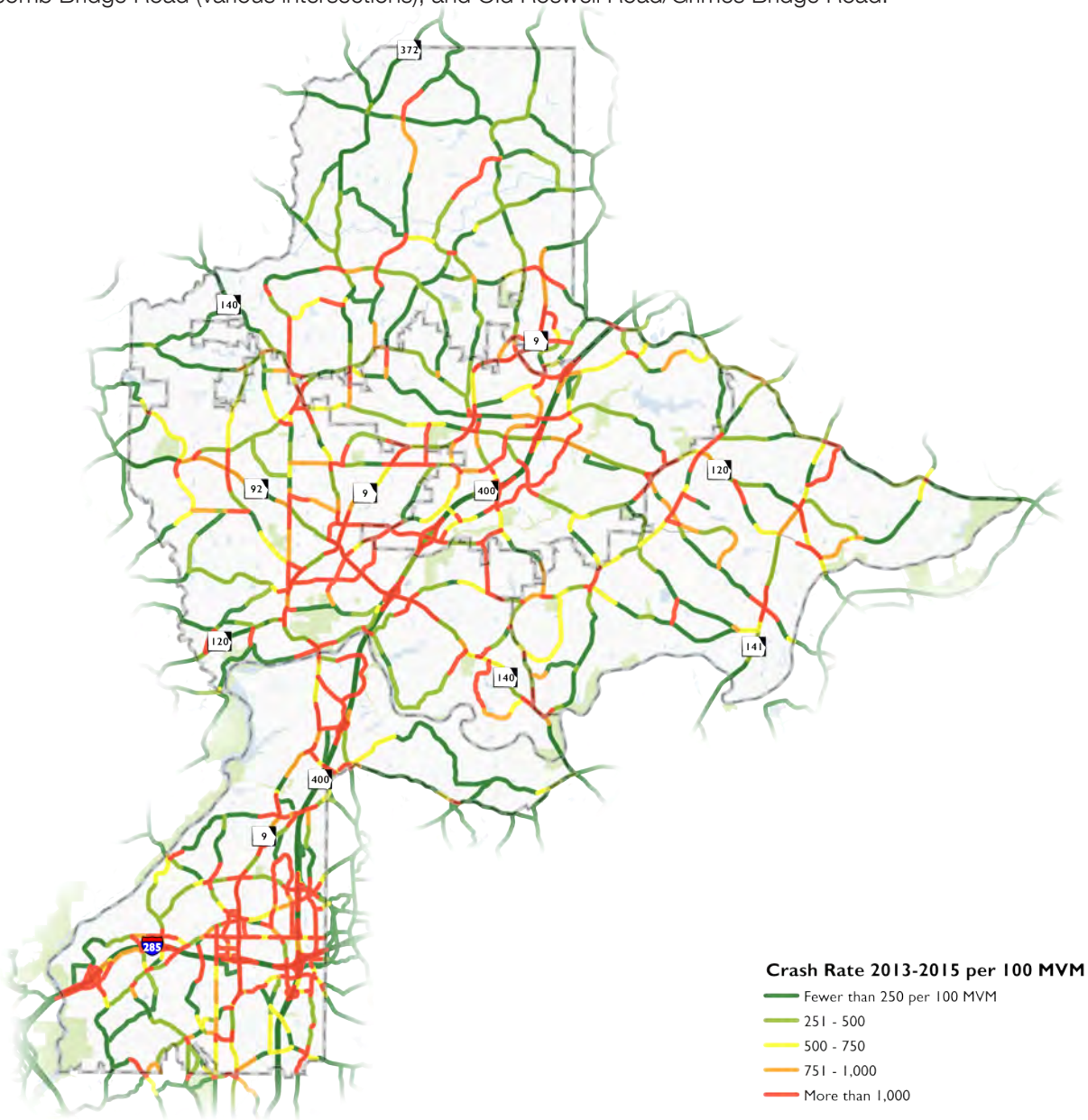
LEVEL OF SERVICE - INTERSECTIONS (V/C - 2040 PM PEAK)

Looking at volume to capacity ratios at specific intersections can offer insight into locations that have a low level-of-service. Some of the intersections that are revealed has having a "F" level of service are: Old Alabama Road at Nesbit Ferry Road; Johnson Ferry Road from Mt. Vernon Highway to county line (various intersections); Peachtree Dunwoody Road at Spalding Drive; Peachtree Dunwoody Road at N Park Place; SR 140 from Cox Road to county line (various); State Bridge Road from North Point Parkway to eastern county line (various); and Holcomb Bridge Road from GA 400 to eastern county line (various).



CRASH RATES PER MILLION VEHICLE MILES TRAVELED

While the crash heat map presented in the Existing Conditions report provided an understanding of locations with the highest number of crashes, the map below highlights crashes as they relate to traffic volumes. The crashes come from the GDOT GEARS dataset from 2013-2015; for more information, please review the Existing Conditions report. The rate of collisions per 100 million vehicle miles traveled notes the crash exposure among roadways with differing traffic volumes. This helps to determine locations that may need additional attention such as: Northridge Road (SR 9 to GA 400); Perimeter (various roads and intersections); Holcomb Bridge Road (various intersections); and Old Roswell Road/Grimes Bridge Road.



COMMUNITY INPUT

ROADWAY

A variety of outreach techniques were used to gather feedback about modal needs in North Fulton. Below is a summary of key themes pertaining to roadway needs discussed at public meetings, community events, and brief excerpts of the online MetroQuest survey results.

FREQUENT ROADWAY TOPICS OF DISCUSSION:

CONGESTION

TRAFFIC

NETWORK SAFETY

MULTIMODAL INTEGRATION

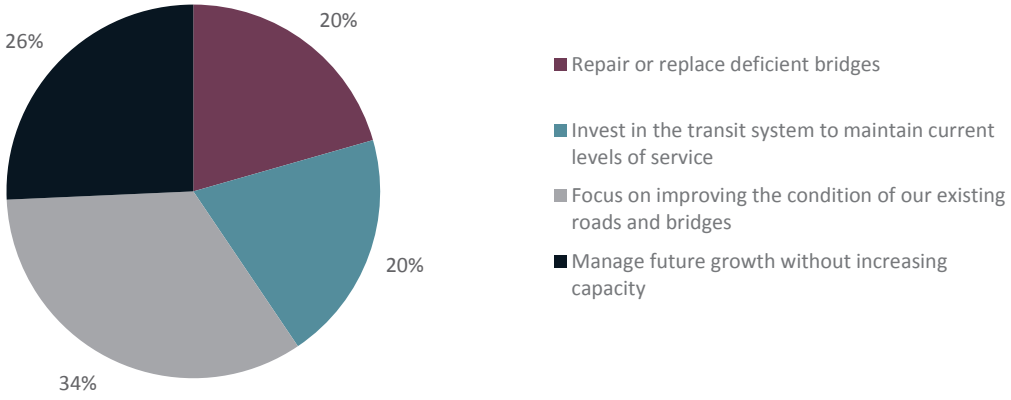
CONNECTIVITY

CONSIDERING LAND USE, WE SHOULD...

38% of respondents said to focus on making it easier to commute between home and work.

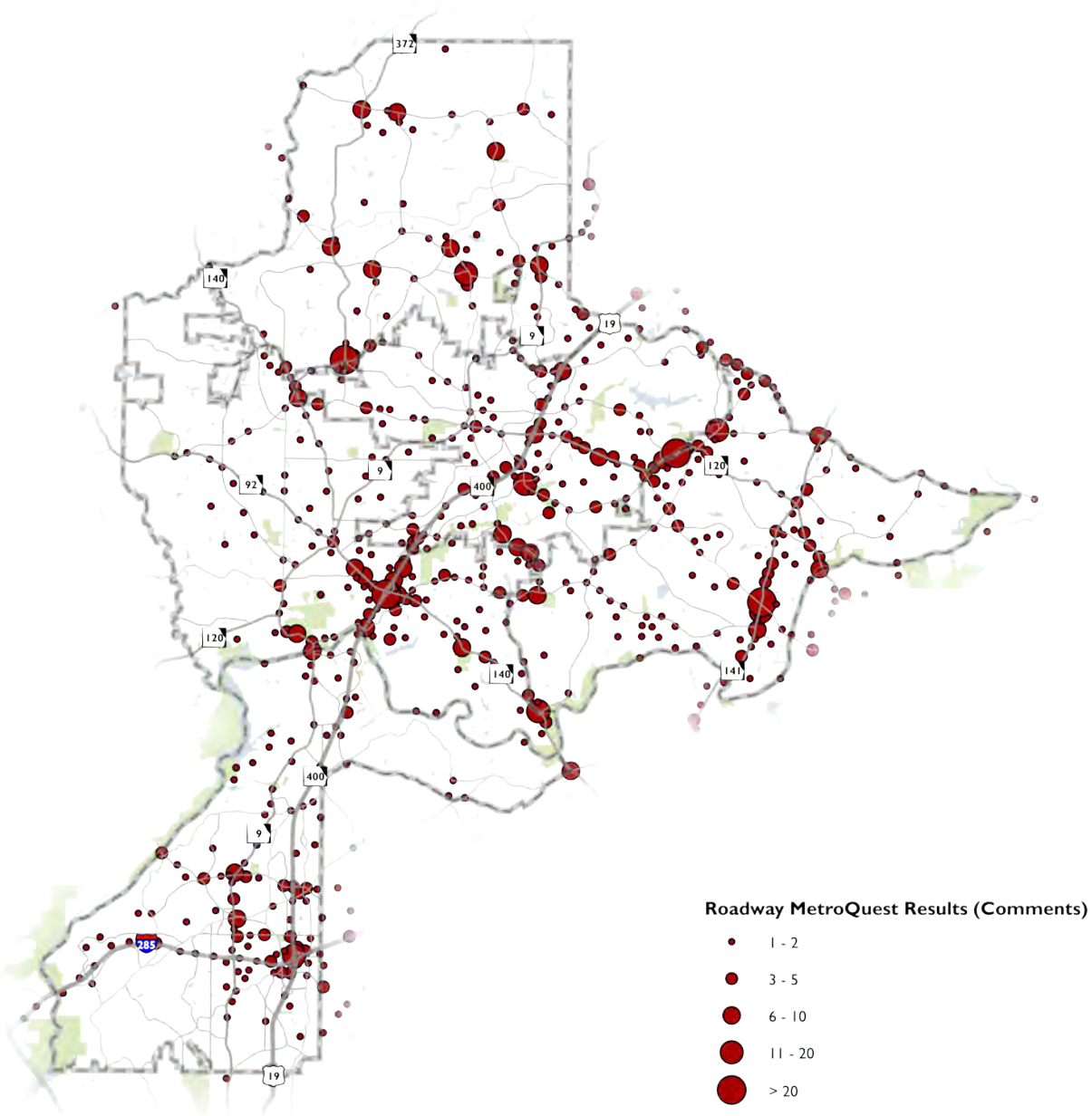
18% said to focus on strengthening connections between home and activity centers.

CONSIDERING SYSTEM PRESERVATION, WE SHOULD...



METROQUEST SURVEY

Respondents were asked to note areas needing roadway improvement on an interactive, online map. An option to leave comments was also included. Clusters of comments were included along major corridors including GA 400, Holcomb Bridge Road, SR 141, Kimball Bridge Road, and other roadways around the larger Perimeter area.



This page has been left intentionally blank.

TRANSIT

People are more likely to use transit when service is frequent, convenient, dependable, and easy to use. This requires a complete network of roads, sidewalks, and bikeways and demands connections to the places people need to go at a time when they need to get there. The design of communities can contribute to the effectiveness and efficiency of transit service.

This page has been left intentionally blank.

INTRODUCTION

UNDERSTANDING THE NEED FOR TRANSIT MOBILITY

People are more likely to use transit when service is convenient, dependable, and easy to use. While this level of service requires a complete network of roads, sidewalks, and bikeways, it also demands connections to the places people need to go at a time when they need to get there. The design of communities can contribute to the effectiveness and efficiency of transit service. Compact-walkable places are an example of transit supportive places. They create environments and places where the convenience and experience for all riders is increased (and have a greater likelihood of attracting new riders).

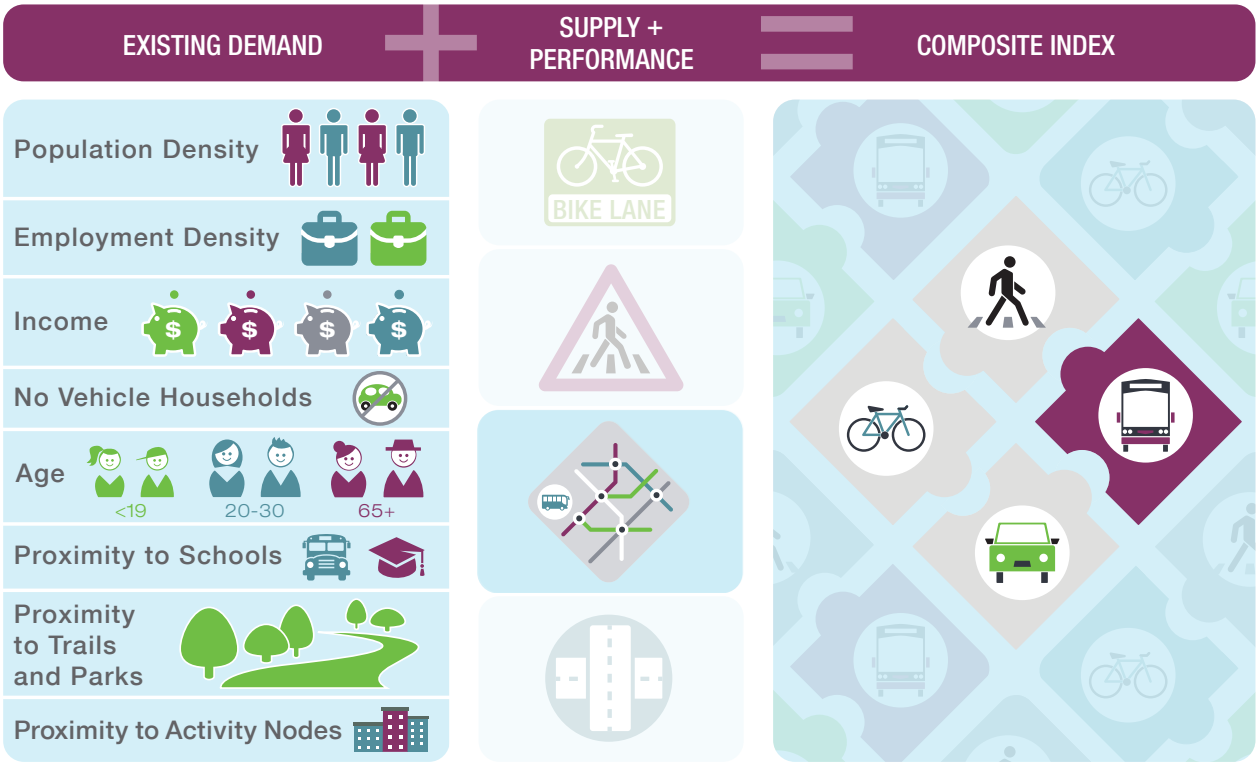
Generally, transit serves a variety of different riders. A recent study conducted by TransitCenter called Who's On Board 2016 describes three different trip types: occasional; commuter; and all-purpose. According to this study, occasional riders are those who only utilize transit for unusual trips. This may include riding transit into the city to visit a family member or to go to a baseball game. Commuters are the most obvious of the three and describe people who use transit to travel mainly for work. All-purpose riders take transit for a broad range of reasons including work, errands, and recreational activities. All three of these transit riders require varying degrees of walkability of the origins and destinations, frequent and reliable service, and faster travel time once on-board.

This chapter includes a detailed discussion of transit needs considering all transit riders in North Fulton County and the methods used to identify those needs. Beyond the tools presented in the preface, MARTA route and service characteristics, GRTA route and service characteristics, and community input were analyzed.

TRANSPORTATION INDEX - TRANSIT

INTRODUCTION

Transit needs analyses typically begin with an assessment of transit propensity based on demographic groups that have been shown to have a higher than average tendency to use transit. These demographic groups include zero-car households, seniors (persons age 65 and above), minority populations, low income, and disabled. Other factors that influence transit demand include both employment and population densities – the higher the employment and population density, typically the greater the demand for transit. In addition, proximity to important destinations such as activity centers (commercial, entertainment, employment) and parks can drive transit demand. To get a more detailed and comprehensive assessment of transit demand in North Fulton, employment density, population density, and proximity to parks, trails, and activity centers were added to the spatial analysis to create a Transit Index.

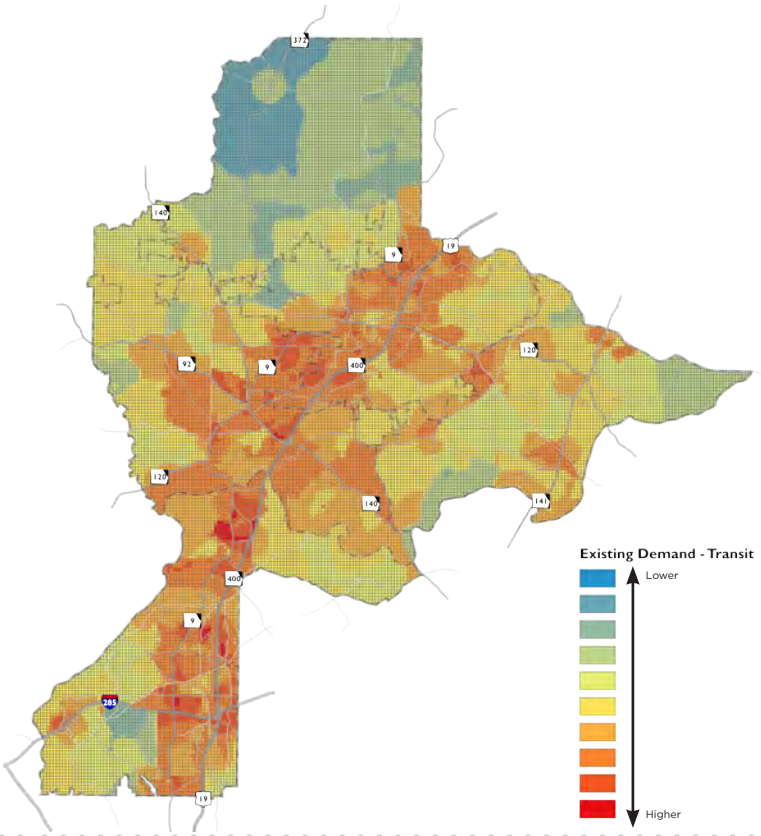


*Additional details and full-sized maps of the index can be found in the Appendix.

DEMAND

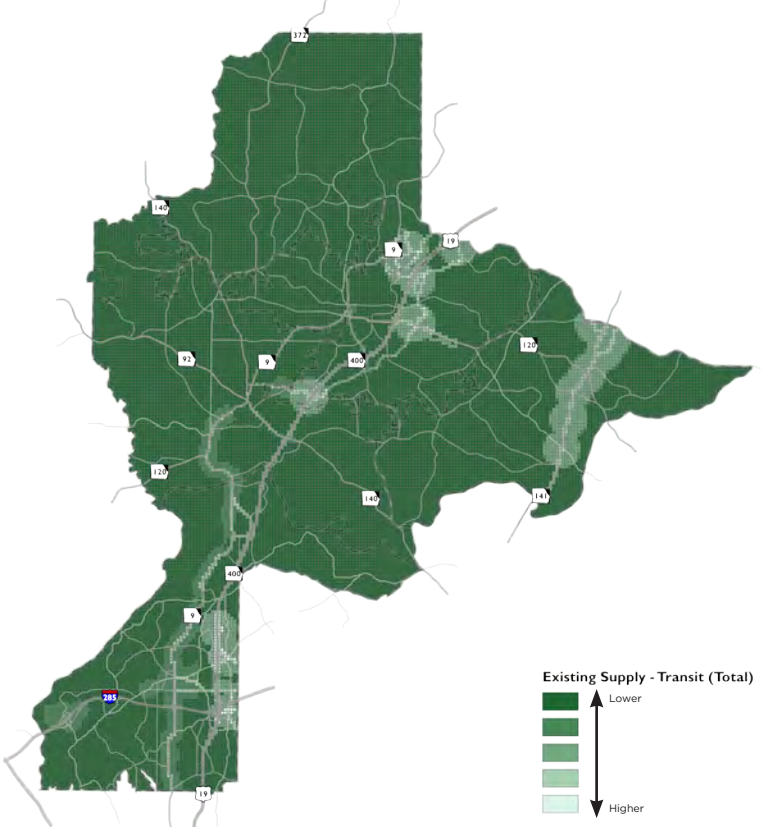
Demand for transit in North Fulton is strongest on either side of GA 400. Major nodes of transit demand include, from south to north:

- High density residential development at the intersection of Roswell Road and Glenridge Drive just south of I-285
- Downtown Sandy Springs
- Perimeter Center
- Roswell Road at Northridge Road
- Holcomb Bridge Road between King Road and Nesbit Ferry Road
- Historic Downtown Roswell
- Area bounded by GA 400, SR 140 to the south, SR 9 to the west and SR 120 to the north
- State Bridge Road at Jones Bridge Road
- Windward Pkwy between SR 9 and Windward Place/Windward Concourse



SUPPLY + PERFORMANCE

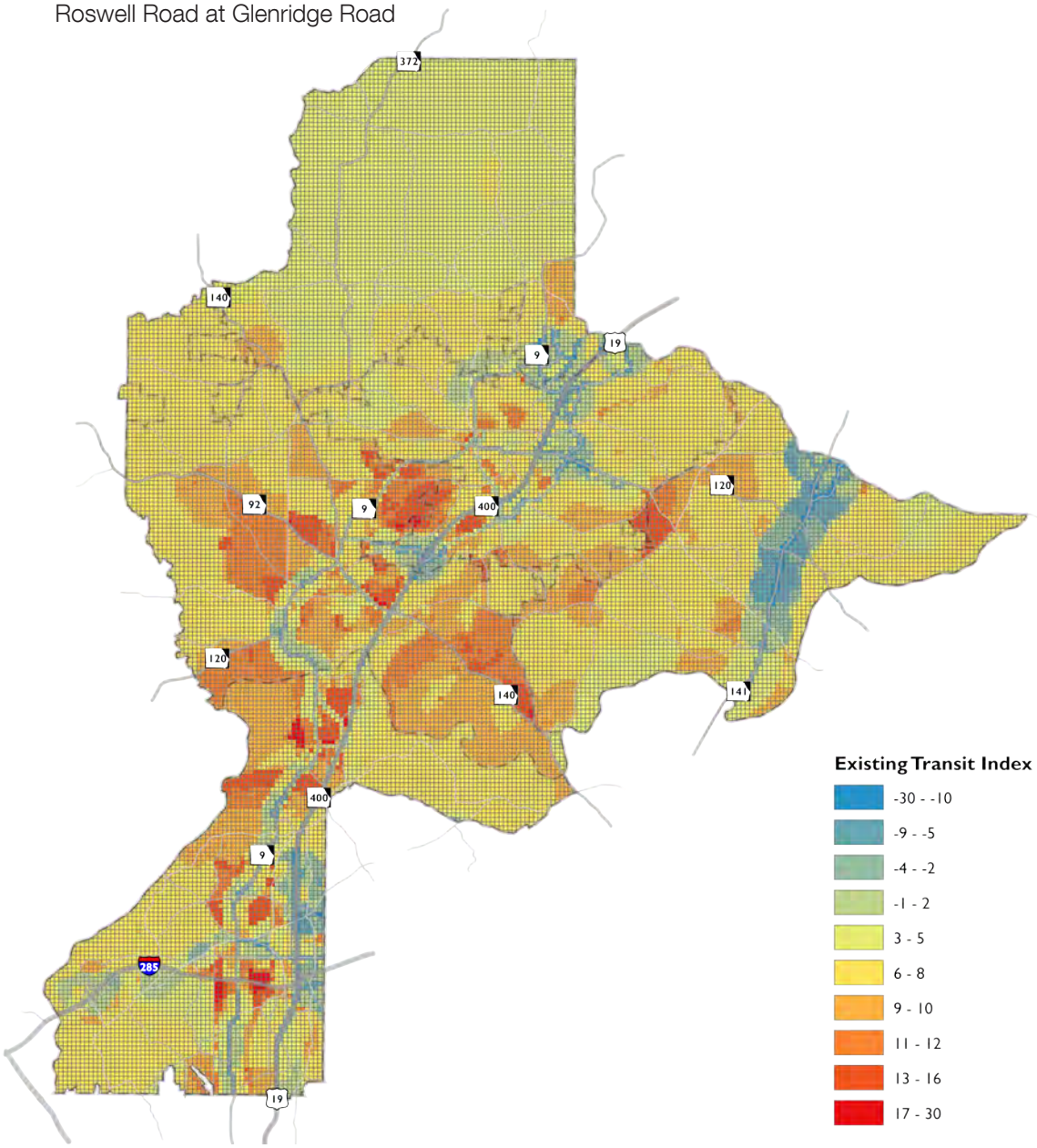
Transit supply in the study area is concentrated in the Perimeter area and flowing north on either side of the GA 400; predominantly serving the west side. Notable areas include existing MARTA rail in Sandy Springs, GRTA Xpress service down SR 141, and park & rides on the north end of the study area.



COMPOSITE INDEX

When combined, the analysis results for transit supply and demand show that some of the existing transit demand is satisfied. Remaining areas of unmet transit demand include:

- The Central North Fulton node centered around Hembree Road and Old Roswell Road
- North Point Mall
- The Holcomb Bridge Road Corridor
- Historic Downtown Roswell
- Roswell Road at Glenridge Road



TRAVEL DEMAND MODEL

TRANSIT TRIPS

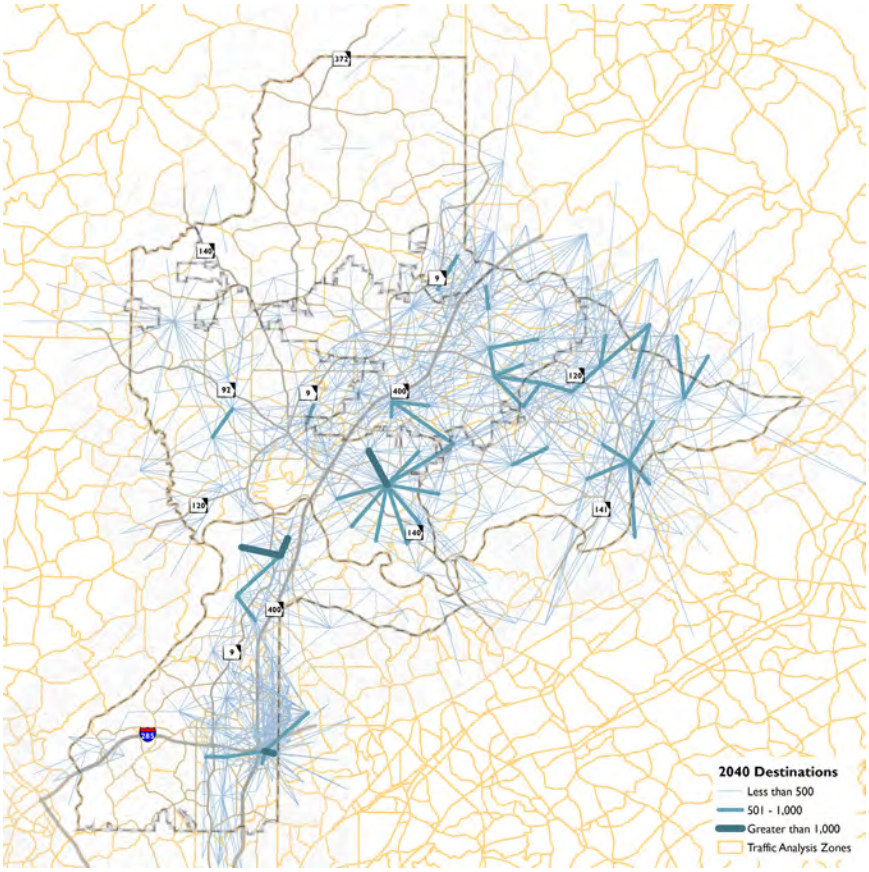
To analyze existing and projected travel patterns to, from and within the North Fulton study area, the ARC's Travel Demand Model was consulted. Desire lines (for all trips regardless of mode) were mapped identifying the most frequent origins and destinations between TAZs within the study area and surrounding region for 2040. The travel patterns displayed have implications for transit needs.

REGIONAL TRAVEL

The highest concentration of desire lines between the study area and the region include the connection between Sandy Springs and North DeKalb County. This connection is somewhat well served by MARTA rail and bus routes, but there is the potential need for enhanced bus connections between the Sandy Springs and North Springs MARTA stations and TAZs in North DeKalb.

Another high concentration of desire lines is present between Forsyth County and North Fulton. The ability to serve these trips through transit is severely limited as Forsyth County does not currently operate local fixed route transit service.

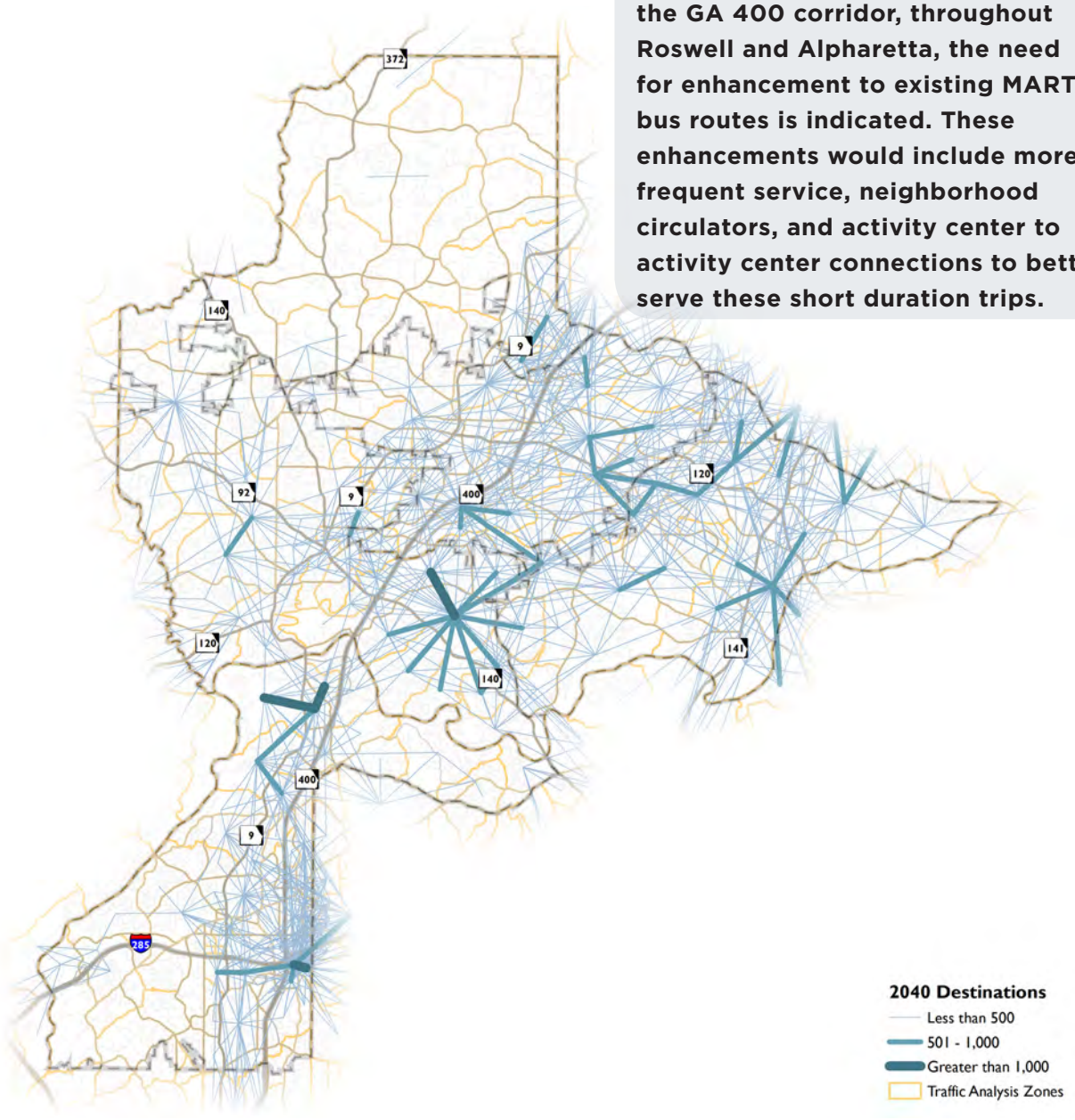
Another major regional connection is between the study area and locations in Gwinnett County, particularly Duluth. This suggests the potential need for cross-system operations.



INTERNAL NORTH FULTON TRAVEL

The travel demand model shows traveling occurring within the North Fulton study area. Although the travel patterns do not necessarily indicate transit propensity, the patterns can indicate trips that could be accommodated through transit. The most visible missing connection is transit service in Roswell along SR 140 and Old Alabama Road to serve high trip densities in this area. Another unmet need is east-west transit connections between Alpharetta and John's Creek needed to serve the dense network of desire lines in this location. This is particularly evident along the SR 120 corridor from Alpharetta to Johns Creek and beyond to Duluth in Gwinnett County.

Given the high degree of zone to neighboring zone trips along the GA 400 corridor, throughout Roswell and Alpharetta, the need for enhancement to existing MARTA bus routes is indicated. These enhancements would include more frequent service, neighborhood circulators, and activity center to activity center connections to better serve these short duration trips.



ORIGIN-DESTINATION

PASSIVE DATA

To assess travel patterns within, to and from the North Fulton study area, 2015 Streetlight data was analyzed in addition to data from the Travel Demand Model. This data was used to identify the top origin and destination pairs for trips that pass through the North Fulton study area in an effort to identify transit needs in the area. By taking a closer look at the trips that pass through North Fulton, potential improvements to the transit system begin to self-identify. See the Appendix for additional information about Streetlight data.

TOP 10

Five of the 10 top origin and destination pairs involve cross regional movements that pass through North Fulton. The numbers are represented by a trip index, where the numbers should just be compared to each other and not by actual count. The largest origin zone-to- destination zone movements include travel from North DeKalb County to Central Fulton County, Central Cobb County to North DeKalb County and vice versa. These movements are undoubtedly capturing the high volume of trips along I-285 and GA 400, as they pass through the study area. While these pass through trips have implications for regional transit planning, the emphasis of transit needs identification is focused on better serving trips that begin or end in the study area.

Origin	Dest-ination	Trip Index	From	To
138	210	25,655	Sandy Springs	Northern DeKalb County
210	138	21,605	Northern DeKalb County	Sandy Springs
157	157	20,400	Milton/Alpharetta	Milton/Alpharetta
210	226	19,658	North DeKalb County	Central Fulton County
226	210	18,544	Central Fulton County	North DeKalb County
113	113	17,923	Alpharetta	Alpharetta
208	210	15,293	Central Cobb County	North DeKalb County
210	208	15,119	North DeKalb County	Central Cobb County
226	226	13,279	Central Fulton County	Central Fulton County
155	219	13,262	Johns Creek	Southern Forsyth County

*The Trip Index column does not indicate true counts of trips. This is an index that serves as an output of the Passive Data. The numbers in the index should be looked at in comparison to each other and not by actual count.

REGIONAL CONNECTIONS - NORTH FULTON TO ATLANTA REGION

The biggest regional movements include travel from Sandy Springs to North DeKalb County, Central Cobb County, and Central Fulton County. They also include movements between Alpharetta, Milton, and John's Creek to South Forsyth County. These movements are all to neighboring zones outside of the study area.

These patterns suggest that there may be a need to improve transit service between Sandy Springs and North DeKalb County. The connections to Cobb County suggest the need for a transit link between MARTA bus service and CobbLinc service. A transit trip from North Fulton to Cobb County today would require a trip to a midtown or downtown MARTA station, in order to transfer to a CobbLinc route, which would then have to travel north along I-75 before being able to access locations in Central Cobb County. The connection between Sandy Springs and Central Fulton County is currently well served with the North Springs (Red) MARTA rail line providing a viable travel alternative in this travel corridor. The potential to serve connections between cities in North Fulton and Forsyth County is limited as the County does not currently provide any fixed route local transit service.

Origin	Dest-ination	Trip Index	From	To
138	210	25,655	Sandy Springs	North DeKalb County
135	208	12,504	Sandy Springs	Central Cobb County
113	221	12,411	Alpharetta	South Forsyth County
140	226	11,551	Sandy Springs	Central Fulton County
136	208	10,953	Sandy Springs	Central Cobb County
140	210	10,854	Sandy Springs	North DeKalb County
157	221	10,425	Milton	South Forsyth County
143	226	9,766	Sandy Springs	Central Fulton County
112	219	8,941	Johns Creek	South Forsyth County
144	210	8,927	Sandy Springs	North DeKalb County

*The Trip Index column does not indicate true counts of trips. This is an index that serves as an output of the Passive Data. The numbers in the index should be looked at in comparison to each other and not by actual count.

REGIONAL CONNECTIONS - ATLANTA REGION TO NORTH FULTON

These movements are largely the reverse movements from those identified. This indicates a high degree of bi-directional travel between these locations. The one exception is the connection between West Gwinnett County and Johns Creek. This suggests the need for a transit connection in this area between Gwinnett County Transit and MARTA.

Origin	Dest-ination	Trip Index	From	To
210	138	21,605	North DeKalb County	Sandy Springs
210	144	12,997	North DeKalb County	Sandy Springs
208	136	12,903	Central Cobb County	Sandy Springs
226	140	12,813	Central Fulton County	Sandy Springs
219	155	12,776	South Forsyth County	Johns Creek
236	159	10,686	West Gwinnett County	Johns Creek
219	112	10,070	South Forsyth County	Johns Creek
221	157	9,873	South Forsyth County	Milton
221	113	9,836	South Forsyth County	Alpharetta
226	132	9,440	Central Fulton County	Sandy Springs

*The Trip Index column does not indicate true counts of trips. This is an index that serves as an output of the Passive Data. The numbers in the index should be looked at in comparison to each other and not by actual count.

INTERNAL CONNECTIONS

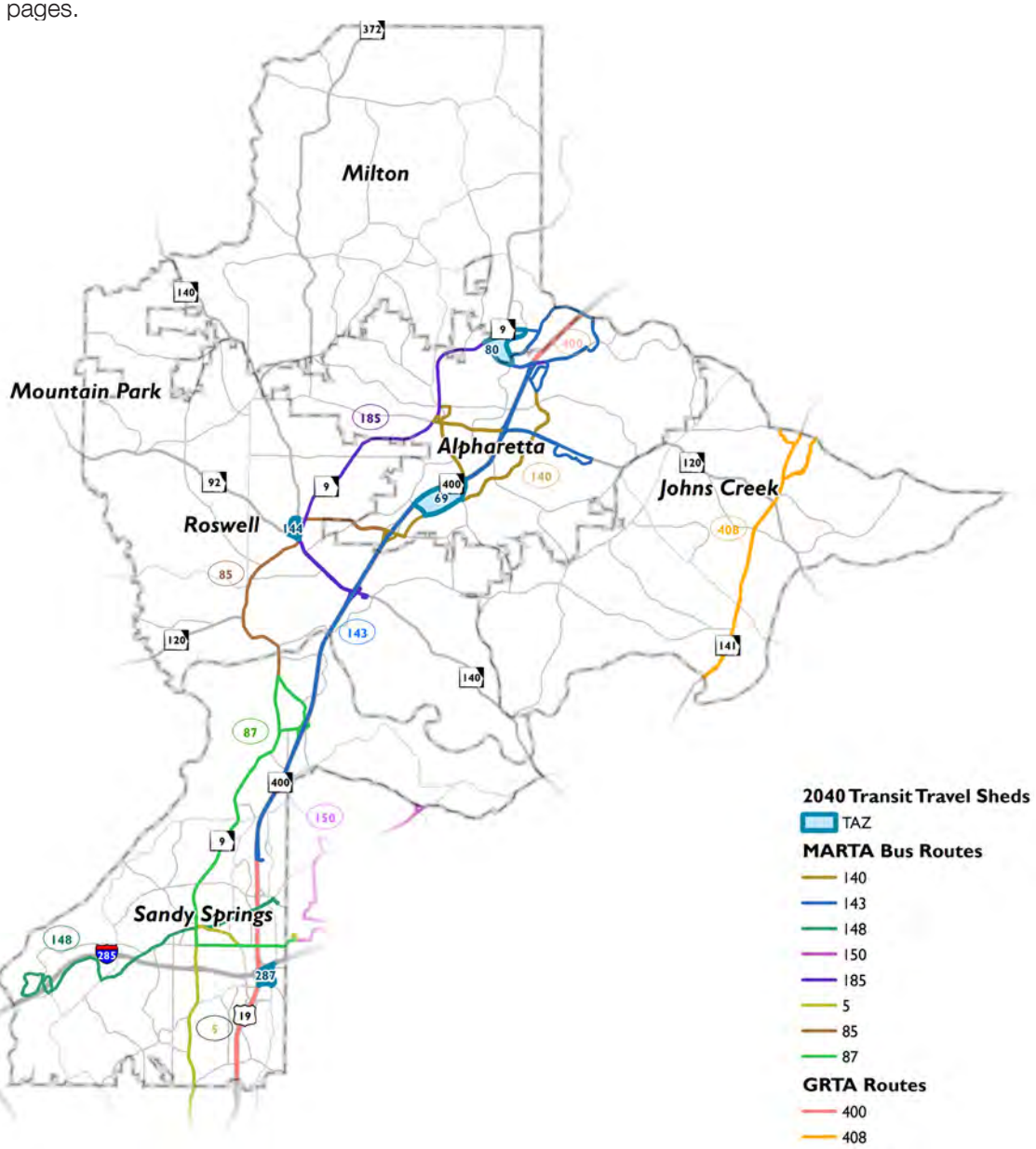
The largest origin-destination pairs within the North Fulton study area are primarily within the same travel zones. Only two origin-destination pairs that involve two zones are in adjacent travel zones. This suggests the need for local neighborhood circulator service in these areas. Improvements to existing bus service including more frequent headways, connections between activity centers, and adding service loops as opposed to direct MARTA Station feeder service would also serve this need.

Origin	Dest-ination	Trip Index	From	To
157	157	20,400	Milton	Milton
113	113	17,923	Alpharetta	Alpharetta
177	177	12,423	Alpharetta	Alpharetta
113	157	11,893	Alpharetta	Milton
159	159	10,998	Johns Creek	Johns Creek
164	164	10,380	Alpharetta	Alpharetta
157	113	9,910	Milton	Alpharetta
168	168	9,799	Roswell	Roswell
167	167	9,704	Roswell	Roswell
155	155	9,515	Johns Creek	Johns Creek

TRAVEL SHEDS

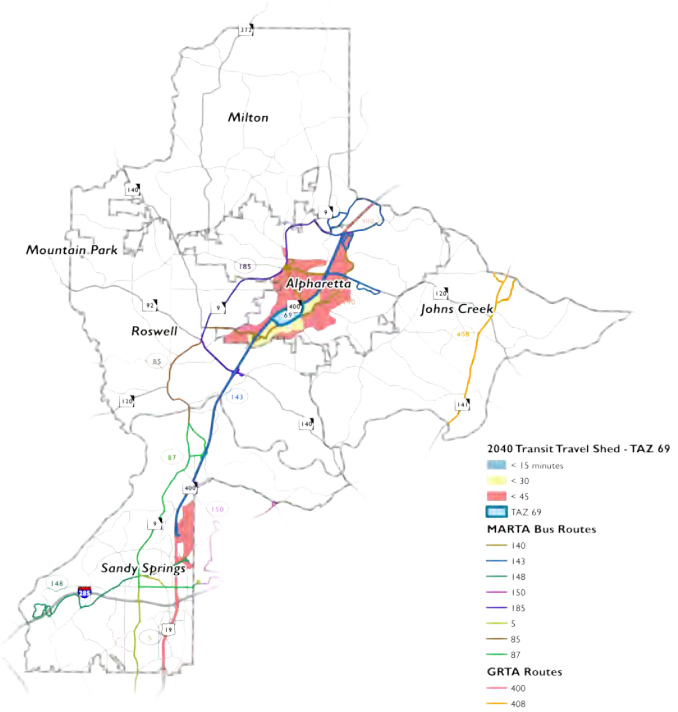
A CLOSER LOOK

The analysis of existing and future travel sheds illustrates that transit service in North Fulton primarily provides connections from activity centers to the North Springs MARTA rail station and connections to GRTA express bus service. The primary transit needs are a lack of connectivity between activity centers and the need for more frequent service to reduce travel times to a more practical level. The analysis also shows the need for expanded service along SR 92 to King Road/Woodstock Road, along SR 120 to Kimball Bridge Road and on Mid Broadwell Road to Crabapple. The following goes four specific transit travel sheds; Johns Creek does not have a transit travel shed represented in the 2040 ABM and thus does not have a travel shed on the following pages.



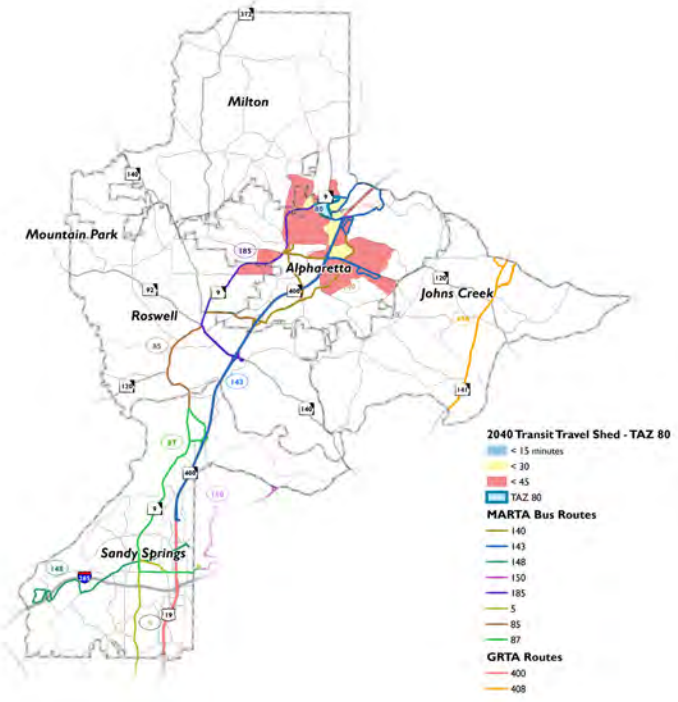
TAZ 69 (ALPHARETTA)

TAZ 69 is located in the City of Alpharetta and bounded by GA 400, Encore Parkway, Northpoint Parkway, and Haynes Bridges Road. This is a commercial district and wholly contains North Point Mall. The transit travel shed with 15-30 minute access in 2015 is to the immediate east and south of the mall. The travel shed has transit access within 30-45 minutes in 2015 to downtown Alpharetta and Avalon. The area is currently served by MARTA bus route 140. The 2040 travel shed shows no improvement in transit travel times. This highlights the need for improved bus frequencies and expanded service to better serve activity centers in the Alpharetta area, which include locations along Windward Parkway and



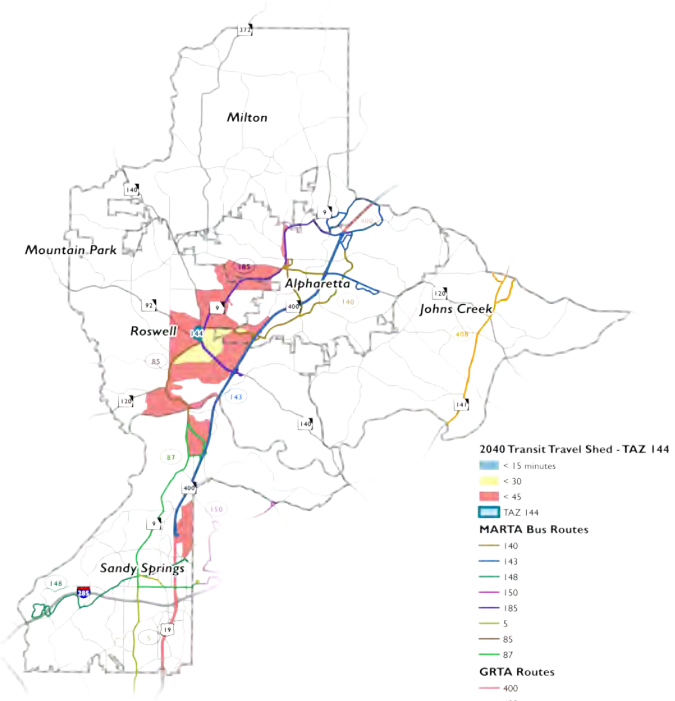
TAZ 80 (MILTON)

TAZ 69 is located in the City of Alpharetta and bounded by GA 400, Encore Parkway, Northpoint Parkway, and Haynes Bridges Road. This is a commercial district and wholly contains North Point Mall. The transit travel shed with 15-30 minute access in 2015 is to the immediate east and south of the mall. The travel shed has transit access within 30-45 minutes in 2015 to downtown Alpharetta and Avalon. The area is currently served by MARTA bus route 140. The 2040 travel shed shows no improvement in transit travel times. This highlights the need for improved bus frequencies and expanded service to better serve activity centers in the Alpharetta area, which include locations along Windward Parkway and the crossroads of SR 120 at Kimball Bridge Road.



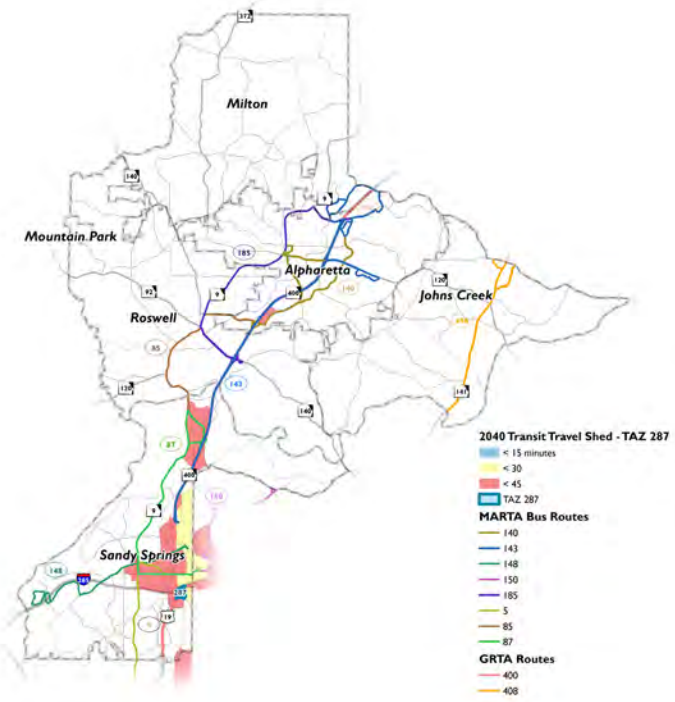
TAZ 144 (ROSWELL)

TAZ 144 is located in the City of Roswell and bounded by Mansell Road, Houze Road, SR 9 (Alpharetta Highway), and SR 92 (East Crossville Road). Transit travel in 2015 within 15-30 minutes comes from the east using existing transit service from MARTA bus routes 185 and 85. These same routes support travel from the south and north. The projected travel shed in 2040 does not show any expansion or improvement from 2015 levels. The lack of improvement highlights the need to expand service north along SR 9 (East Crossville Road) to better serve the commercial areas at King Road/Woodstock Road. It also highlights the need to improve service to activity centers in Alpharetta, particularly areas to the west of GA 400.



TAZ 287 (SANDY SPRINGS)

TAZ 287 is located in the City of Sandy Springs and is located near the Medical District and Perimeter. Transit travel in 2040 shows the ability to reach the Chattahoochee River in 45 minutes from this TAZ. The lack of improvement highlights the need to exppand service to the north along SR 400. Despite the transit coverage shown in the larger Perimeter area, transit still remains a difficult option when east-west travel from GA 400 area of Perimeter to SR 9 takes up to 45 minutes.



COMMUNITY INPUT

TRANSIT

A variety of outreach techniques were used to gather feedback about modal needs in North Fulton. Below is a summary of key themes pertaining to transit needs discussed at public meetings, community events, and brief excerpts of the online MetroQuest survey results.

FREQUENT TRANSIT TOPICS OF DISCUSSION:

EAST-WEST MOBILITY

EXPRESS

MOBILITY CHOICES

ALTERNATIVES

BALANCED

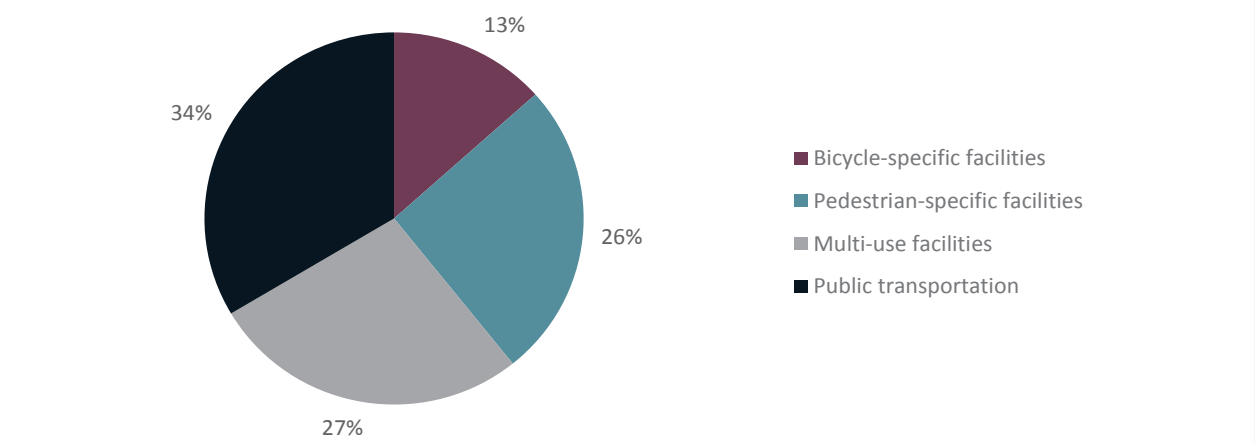
CONSIDERING MULTIPLE MODES...

34% said we should invest in public transportation.

CONSIDERING SYSTEM PRESERVATION...

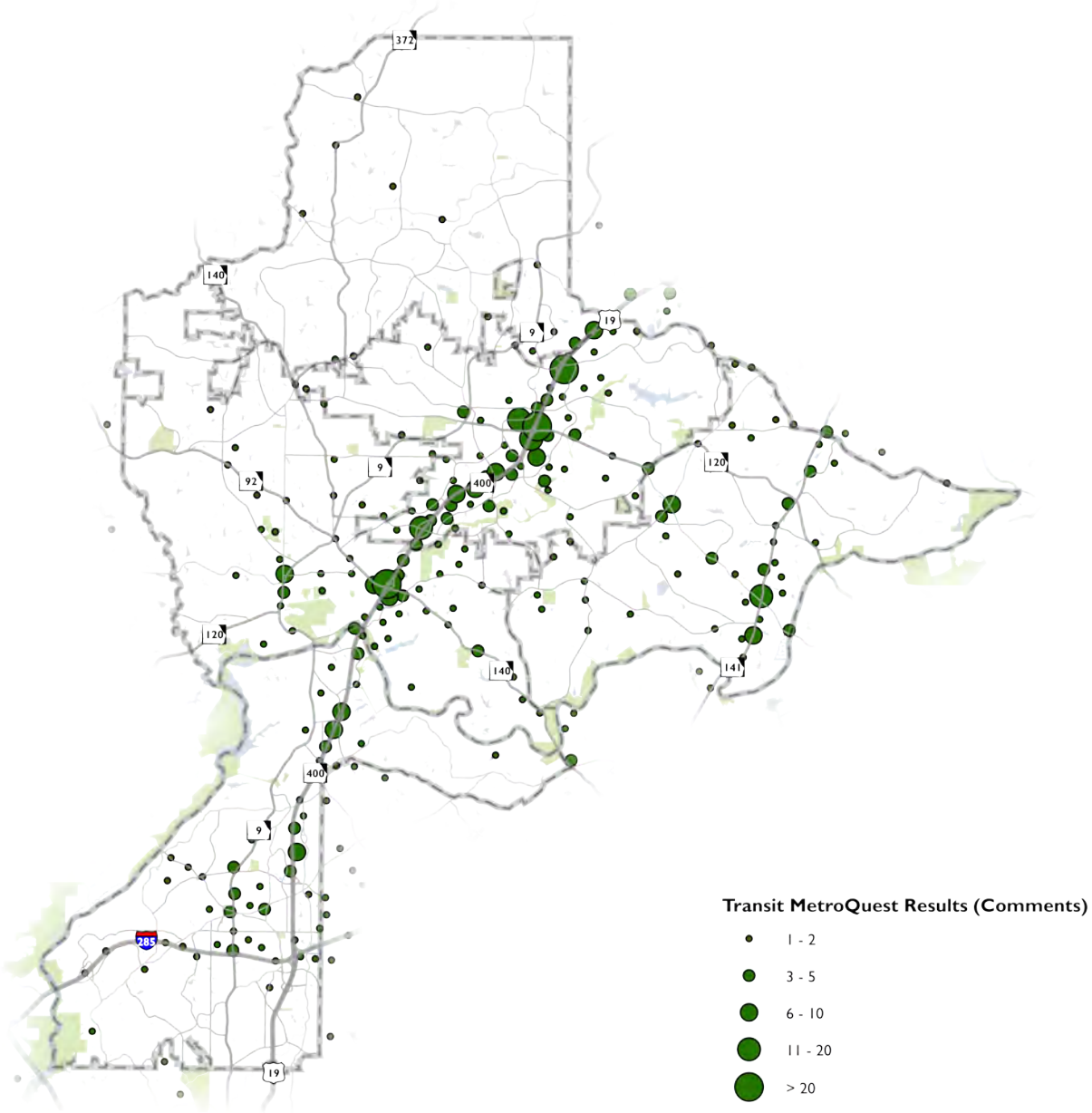
20% said to invest in the transit system to maintain current levels of service.

CONSIDERING MULTIPLE MODES, WE SHOULD INVEST IN...



METROQUEST SURVEY

Respondents were asked to note areas needing transit improvement on an interactive, online map. An option to leave comments was also included. Clusters of comments received were primarily along the GA 400 corridor, particularly near Alpharetta and Milton as well as SR 141 in Johns Creek.



This page has been left intentionally blank.

BICYCLE

Integration of a bicycle network into the overall vision of the transportation system requires a flexible and responsive approach. Taking a closer look at the potential demand for bicycling as well as travel patterns that could be accommodated by an alternative mode, allows for a more holistic bicycle planning approach.

This page has been left intentionally blank.

INTRODUCTION

UNDERSTANDING THE NEED FOR BICYCLE MOBILITY

More and more, communities across the United States are realizing the positive benefits of active transportation, specifically bicycling. At its core, bicycling is a key element to a healthy community's transportation system, helping to enhance air quality and healthy lifestyles. At a second glance, the availability of well-connected bicycle facilities plays an important role in encouraging the use of an alternative mode of travel to the automobile. This not only helps to relieve existing traffic congestion, cities across the nation have begun to correlate active transportation investment to economic growth.

This trend follows in metro Atlanta, where the desire to ride bicycles and engage in active transportation is gathering momentum. The NFCTP planning process acknowledges this and employs a variety of techniques to identify bicycling needs in the study area. These tools include the ones mentioned in the Preface. When conducting a side-by-side comparison, these tools provide a snapshot into existing and future bicycling needs in North Fulton County.

The bicycle needs assessment looks at creating a holistic network that understands and accommodates a variety of users of the system. Types of users can be described in terms of skill level and trip purpose. These categories include the types of riders listed below. According to a study conducted about bicyclists, approximately 60% of the population fall within the "Interested but Concerned" group while 33% of the population belongs to the "No Way, No How" group that would never consider bicycling.

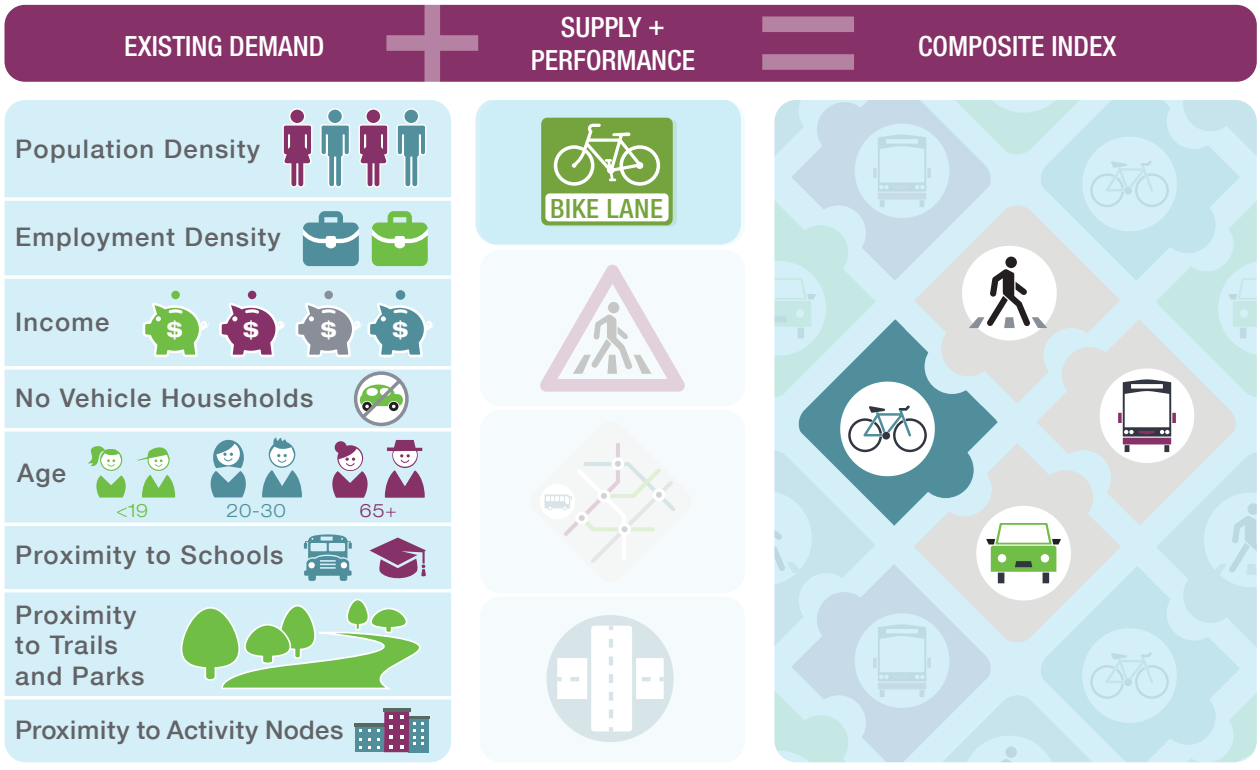
- No Way, No How: non-riders.
- Interested but Concerned: riders curious about bicycling who are afraid to ride on on-road facilities and typically only ride recreationally.
- Enthused & Confident: riders who are comfortable sharing the roadway but prefer bicycle-only facilities for recreational rides and for commute purposes.
- Strong & Fearless: riders who would cycle no matter the roadway conditions for the full spectrum of purposes.

*Roger Geller, 2006

TRANSPORTATION INDEX - BICYCLE

INTRODUCTION

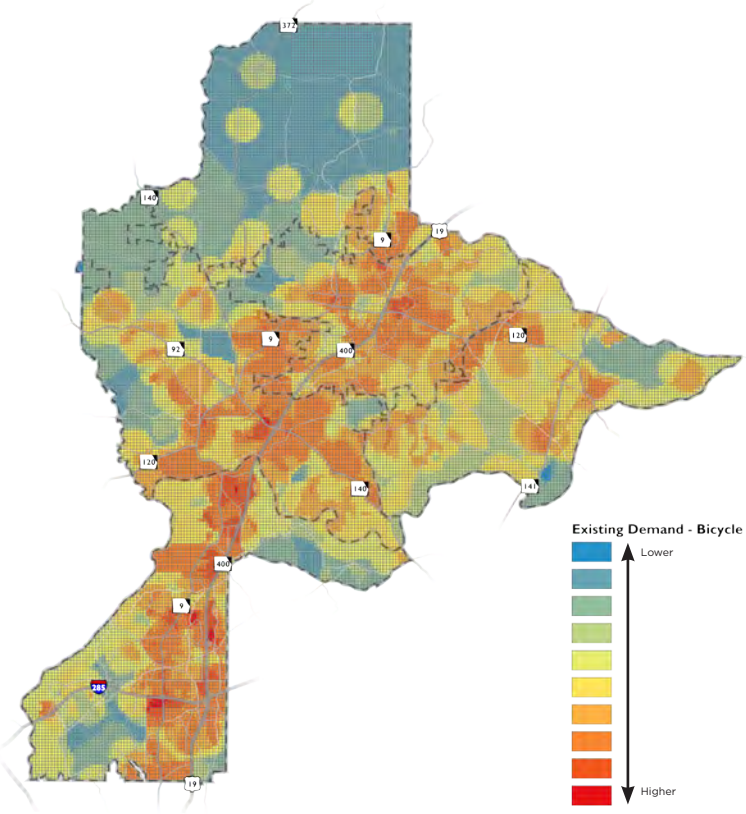
The Bicycle Index considers a multitude of factors to create a composite index that spatially highlights areas to start to answer the question of if bicycle demand is being met by the current supply and performance of bicycle facilities. Demand for bicycling for a given geography can be explored using a mix of population, socioeconomic, and land use characteristics. For example, age is a significant factor in gauging bicycle interest. Nationwide data suggests that a higher percentage of youth and older adults ride bicycles compared to other generations (39% and 6% of the total bicycling trips, respectively). The second component of the index, supply + performance is complementary, as it considers two distinct factors. The first is that if bicycle facilities exist, people will use them. The second is an acknowledgment that performance factors such as separation from traffic, posted traffic speeds, and traffic volume dictate the type of user that might use these facilities. Combining demand with supply + performance helps to identify the areas that are potentially underserved or adequately served. Additional details regarding the index methodology can be found in the Appendix.



*Additional details and full-sized maps of the index can be found in the Appendix.

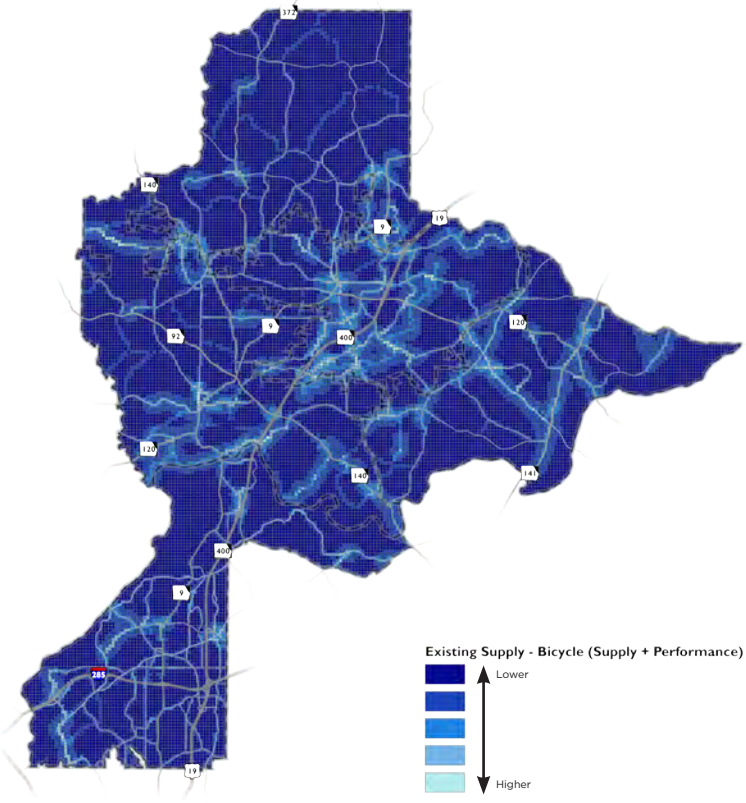
DEMAND

Hot spots of bicycle demand are highest along the GA 400 corridor and along specific east-west corridors, such as Holcomb Bridge Road. The hot spots are particularly evident near four activity nodes—Holcomb Bridge Road, Roswell Road North, Mt. Vernon Highway at Perimeter Center with Abernathy, and Roswell Road at Lake Placid—concentrated in Roswell and Sandy Springs.



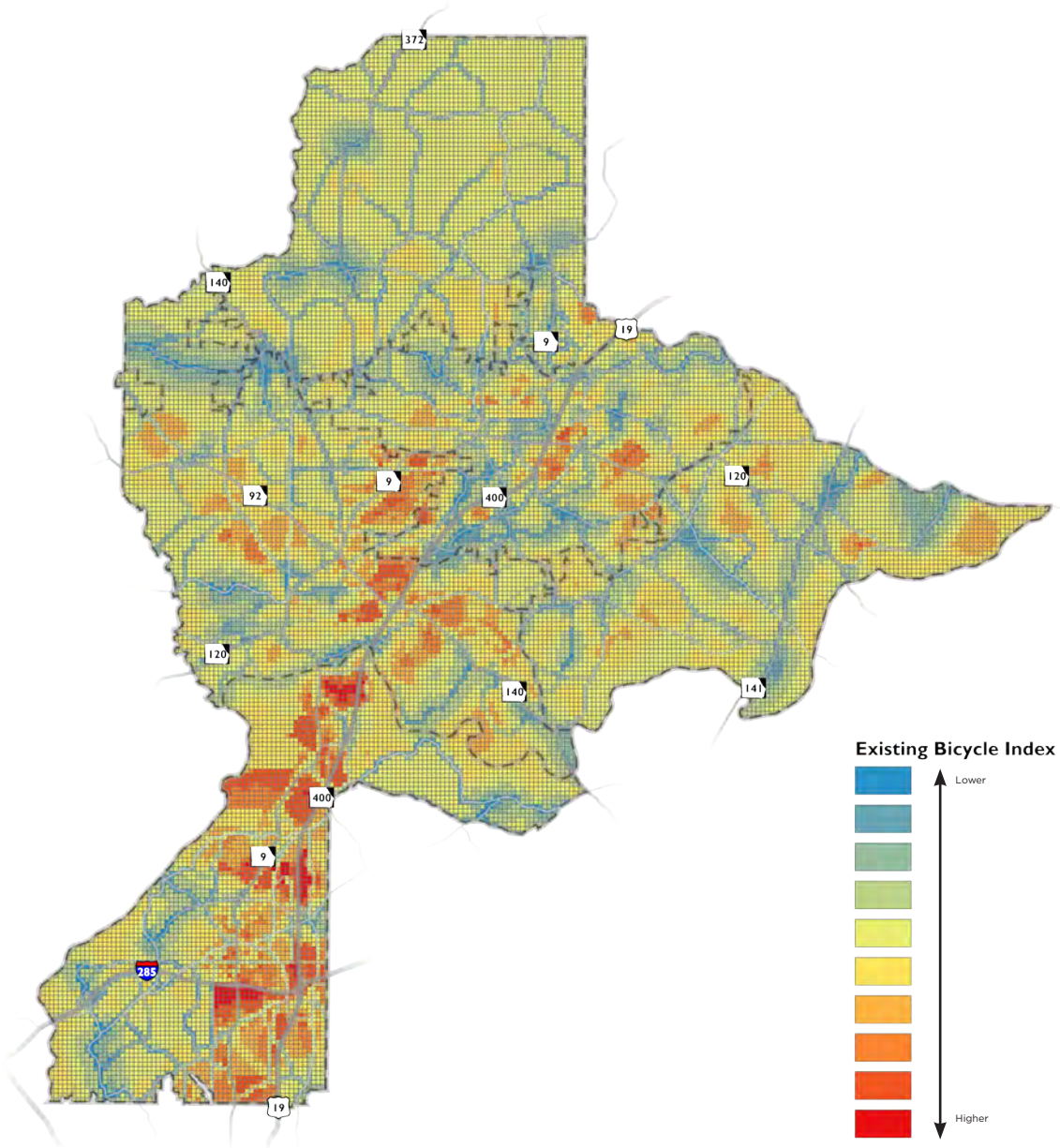
SUPPLY + PERFORMANCE

The largest geographic cluster is focused in and around Alpharetta, including the Big Creek Greenway, North Point, Old Milton, and Downtown Alpharetta activity nodes. Other notable clusters are in Roswell, along Roswell Riverwalk, Holcomb Bridge Road, Roswell Road North, and Historic Gateway Highway 9 and around Arnold Mill. Linear corridors such as Abernathy Road in the City of Sandy Springs also exhibited higher bicycle supply + performance conditions.



COMPOSITE INDEX

The highest concentration of underserved areas are in and around the City of Sandy Springs near four activity nodes - Roswell Road North, Mt Vernon Highway at Perimeter Center with Abernathy, City Center, and Roswell Road at Lake Placid. Other notable areas are in the City of Roswell around the Alpharetta Highway Commercial Corridor and Holcomb Bridge Road.



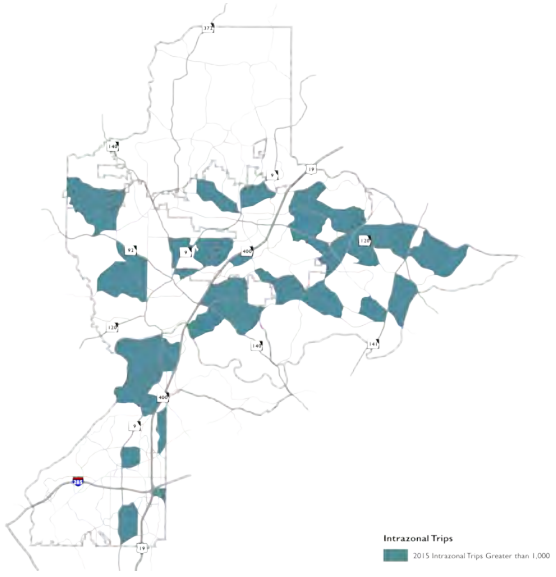
TRAVEL DEMAND MODEL

BICYCLE TRIPS

Data within the ARC's TDM can shed additional light into identifying areas for potential mode shift, where trips currently taken on vehicles could be shifted to bicycling. Because bicycling typically accounts for a shorter trip distance, the data that offers the most value comes from trips that begin and end in the same Transportation Analysis Zone (TAZ). TAZs with a high number of intrazonal trips may benefit from a closer look into possible improvements to the network.

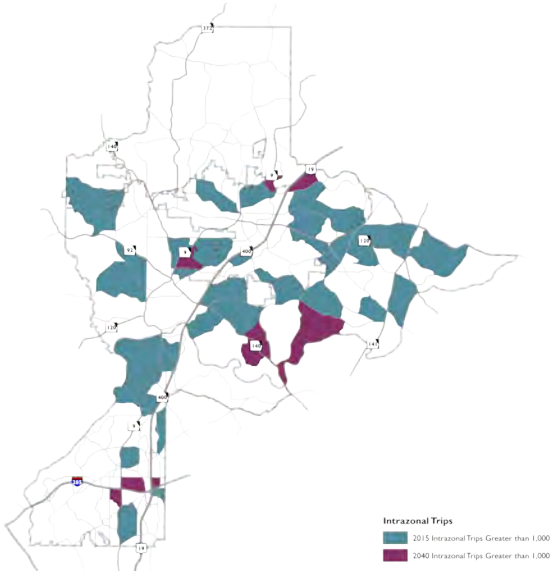
2015

37 out of the 300 TAZs in the study area have over 1,000 daily trips that begin and end in the same zone. Many of the TAZs are along corridors with existing bicycle facilities: Roswell Riverwalk, Big Creek Greenway, State Bridge Road, and Medlock Bridge Road. Although these areas may be served by existing facilities, expanding the reach through quality and connectivity of facilities could help to replace the intrazonal vehicle trips with bicycle trips.



2040

By the year 2040, the TDM suggests that the number of TAZs with over 1,000 daily interzonal trips will increase by 9 to 46 TAZs. Additional corridors that lie within these additional TAZs are highlighted: Old Alabama Road, Barnwell Road, Roswell Road, and Alpharetta Highway.

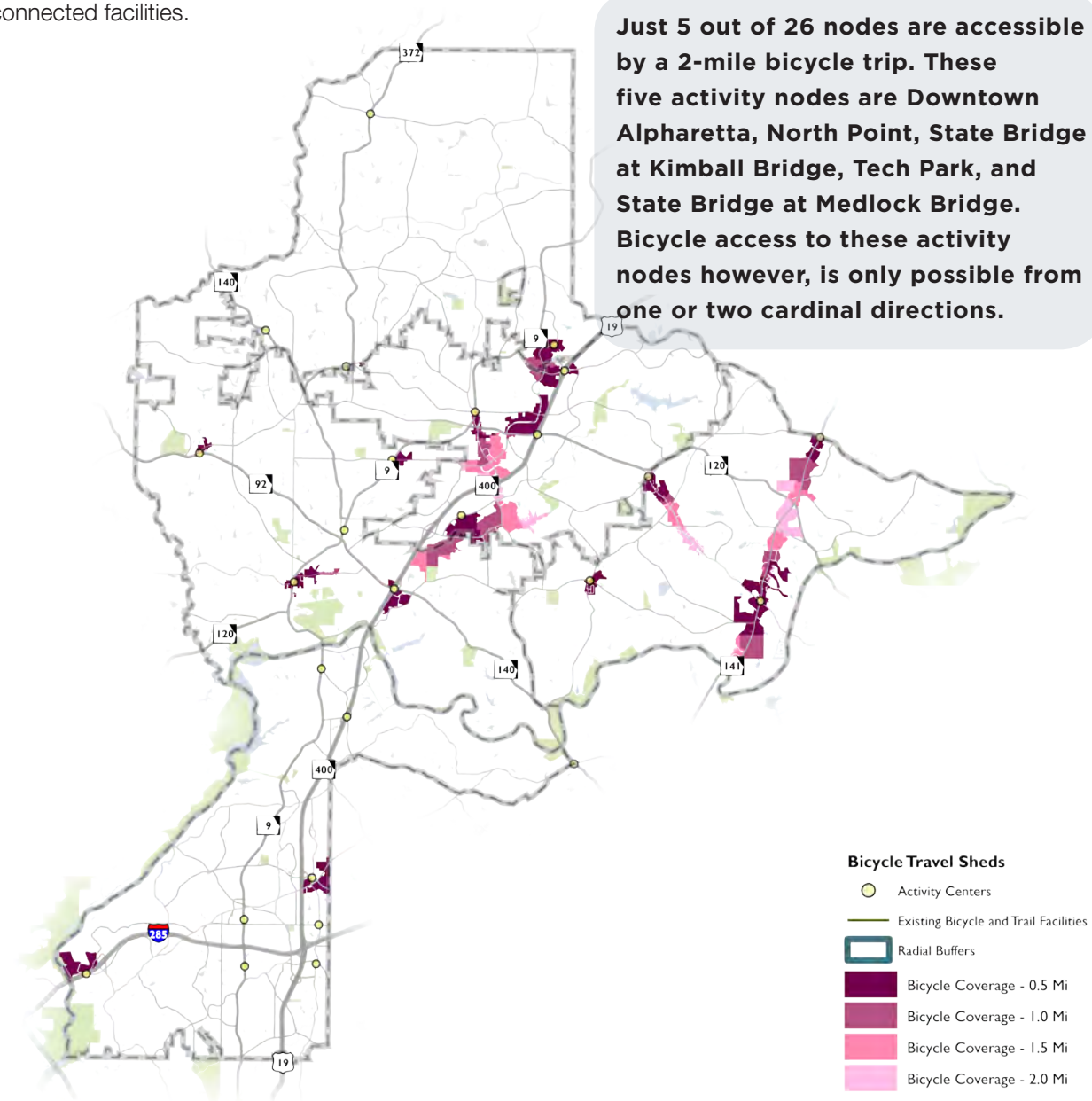


TRAVEL SHEDS

BICYCLE

"Path to nowhere" facilities discourage overall bicycle use and more importantly, can present safety issues for the lives of those who rely on bicycle mobility. Well-connected bicycle facilities that connect to activity nodes, on the other hand, foster mobility and can play a significant role in promoting social, environmental, and economic benefits. Bicycle sheds were completed at the activity node level to determine connectivity of existing bicycle facilities. This analysis is grounded on a parcel-basis resulting in a graphical display of specfic parcels that could reasonably covered by bicycle trips - half-mile, one-mile, one-and-a half-miles, and two-miles by connected facilities.

Just 5 out of 26 nodes are accessible by a 2-mile bicycle trip. These five activity nodes are Downtown Alpharetta, North Point, State Bridge at Kimball Bridge, Tech Park, and State Bridge at Medlock Bridge. Bicycle access to these activity nodes however, is only possible from one or two cardinal directions.

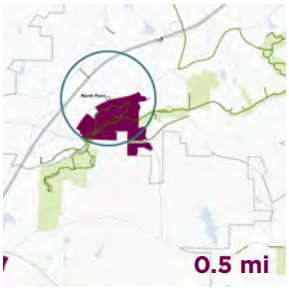


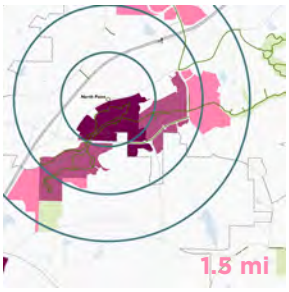
NORTH POINT

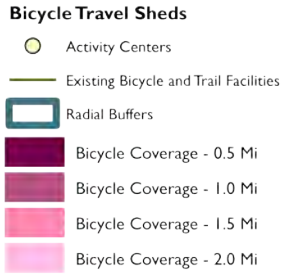
North Point is accessible by a 2-mile bicycle trip, one of five other activity nodes in North Fulton that carry similar characteristics. However, this is really in the east to west direction only. Biking to and from North Point is really only available to those south of North Point Parkway along the Big Creek Greenway.

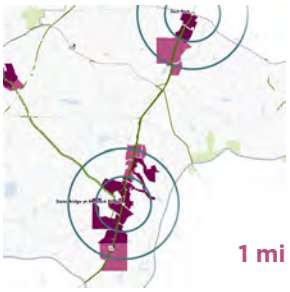
MEDLOCK BRIDGE AT STATE BRIDGE & TECH PARK

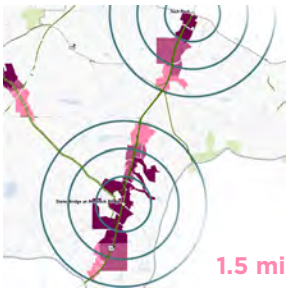
Medlock Bridge at State Bridge and Tech Park are accessible by a 2-mile bicycle trip through the facilities built along State Bridge. Cyclists trying to access the facilities more than one mile east and west of corridor are unable to bike to destinations.









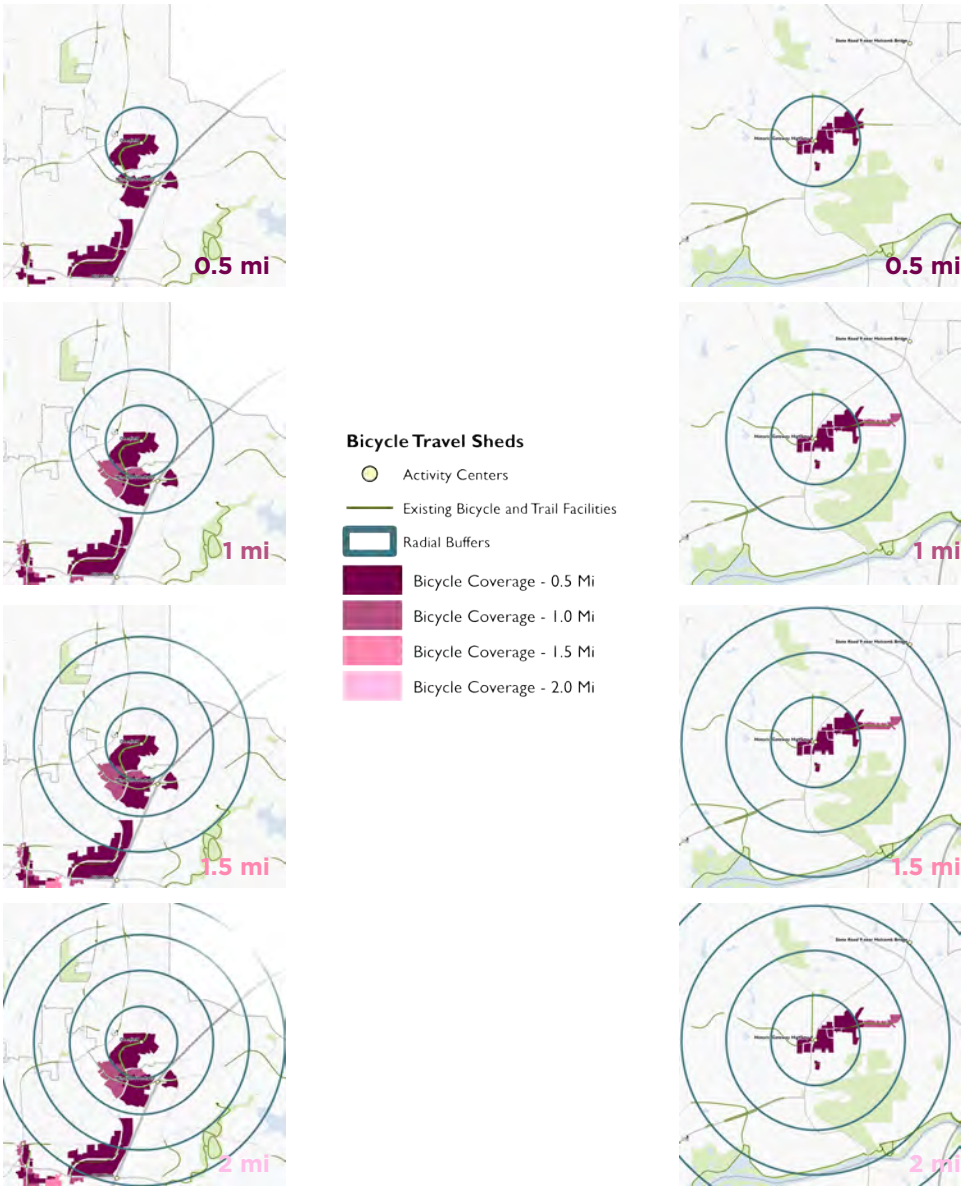


DEERFIELD

North Point is only accessible by a 1-mile bicycle trip through the facilities built off of Deerfield and portions of Windward Parkway. Cyclists who try to access facilities more than one mile west and a half-mile east of the corridor are largely unable to bike to destinations.

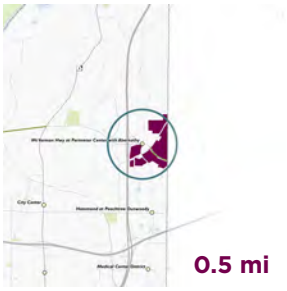
HISTORIC GATEWAY HIGHWAY 9

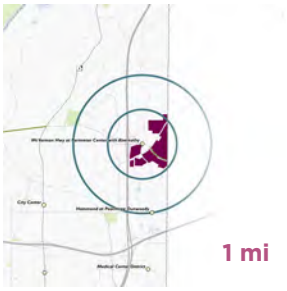
The historic gateway on SR 9 in the City of Roswell is only accessible from a 0.5-mile bicycle trip through the facilities that are built east to west on Norcross Street, Magnolia Street, and Pine Grove Road.

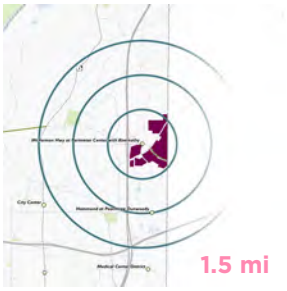


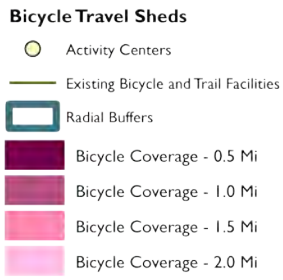
PERIMETER

In the larger Perimeter area, bicycle coverage is only accessible from a 0.5-mile bicycle trip through facilities that are built on Mt. Vernon Highway. The facilities in this analysis only look at the facilities provided in North Fulton County and not in DeKalb County, where Perimeter shares jurisdiction.









2 mi

COMMUNITY INPUT

BICYCLE

A variety of outreach techniques were used to gather feedback about modal needs in North Fulton. Below is a summary of key themes pertaining to bicycle needs discussed at public meetings, community events, and brief excerpts of the online MetroQuest survey results.

FREQUENT BICYCLE TOPICS OF DISCUSSION:

CONNECTED FACILITIES

SAFETY

LACK OF OPTIONS

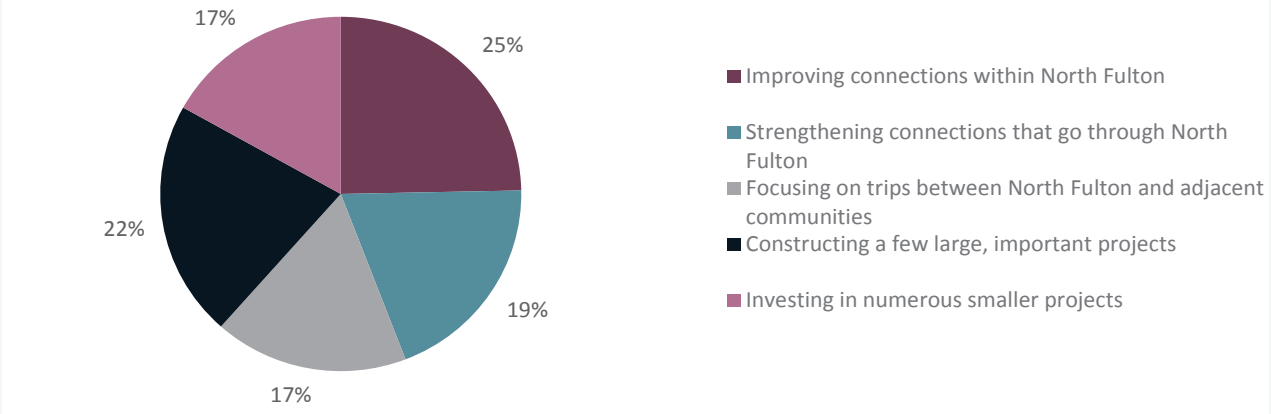
MULTIMODAL INTEGRATION

CONNECTIVITY

CONSIDERING LAND USE...

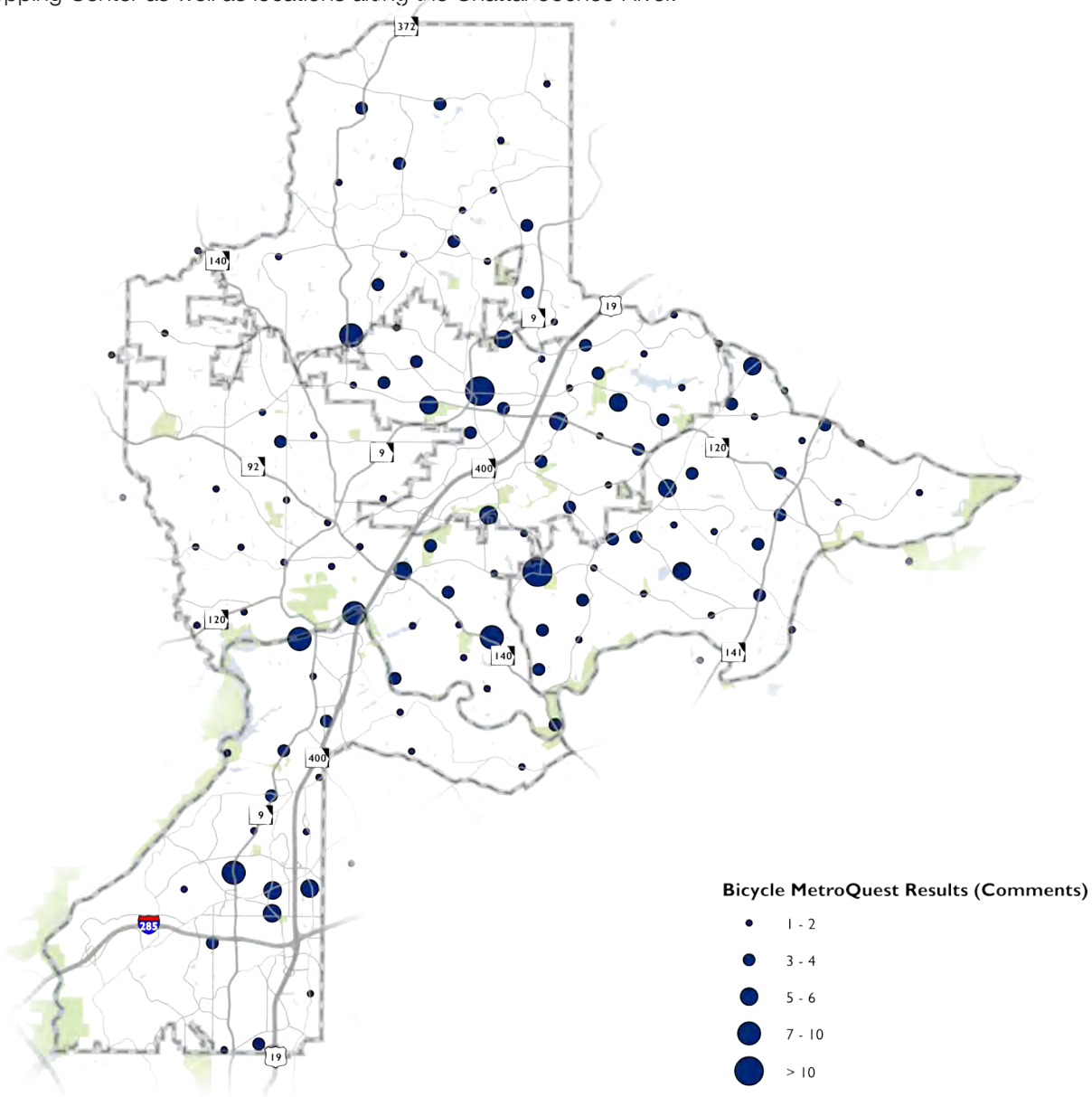
29% of respondents said we should focus on balancing a mix of land uses that permit alternative transportation

CONSIDERING MOBILITY, WE SHOULD WORK ON...



METROQUEST SURVEY

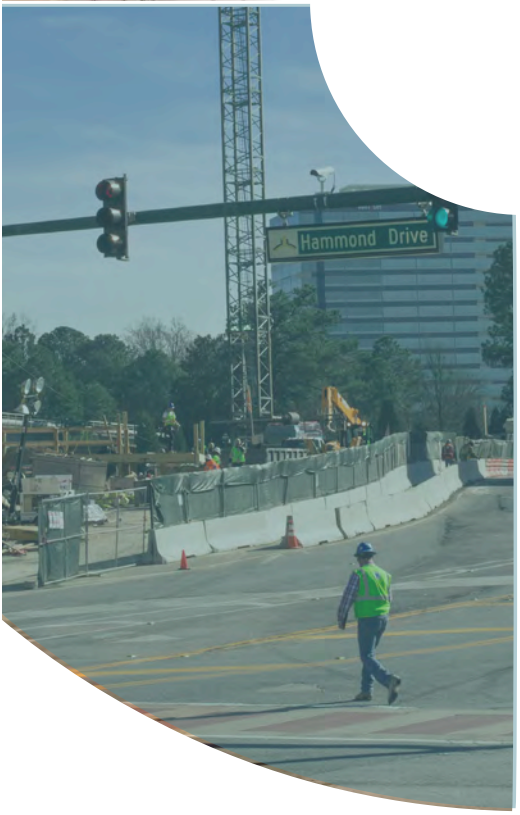
Respondents were asked to note areas needing bicycle improvement on an interactive, online map. An option to leave comments were also included. Clusters of comments received were at or near major activity nodes such as Crabapple, Perimeter, downtown Alpharetta, the area surrounding the Haynes Market Shopping Center as well as locations along the Chattahoochee River.



This page has been left intentionally blank.

PEDESTRIAN

Every trip begins and ends as a walking trip. Whether it is traveling from the front door to the car, to a nearby transit station, or from a parking garage to a store or restaurant, having safe and connected pedestrian walkways is a critical piece of daily travel. Having a well-connected pedestrian network allows for a more complete transportation system.



This page has been
left intentionally blank.

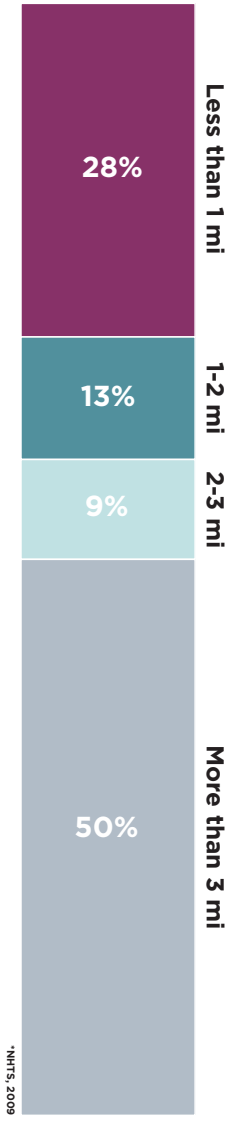
INTRODUCTION

UNDERSTANDING THE NEED FOR PEDESTRIAN MOBILITY

Every trip begins and ends as a walking trip. Whether it is traveling from the front door to the car, to a nearby transit station, or from a parking garage to a store or restaurant, having safe and connected pedestrian walkways is a critical piece of daily travel. When a proper pedestrian environmental is provided, walking can offer a practical transportation choice that benefits individuals and communities.

According to the National Household Travel Survey (2009), 28% of trips are a mile or shorter, 41% are two miles or shorter, and 50% are three miles or shorter. Despite the fact that half of all trips being made are three miles or less, more than 70% of these trips are driven. Walking can help to alleviate roadway congestion by providing a viable alternative mode of transportation for some of the shorter trips, Many streets and highways across North Fulton carry more traffic than they can handle, resulting in gridlock, wasted time and energy, pollution, and daily driver frustration. The choice to travel in alternative ways has a profound impact on overall livability of a community and begins to remove barriers to mobility that may stem from social injustice.

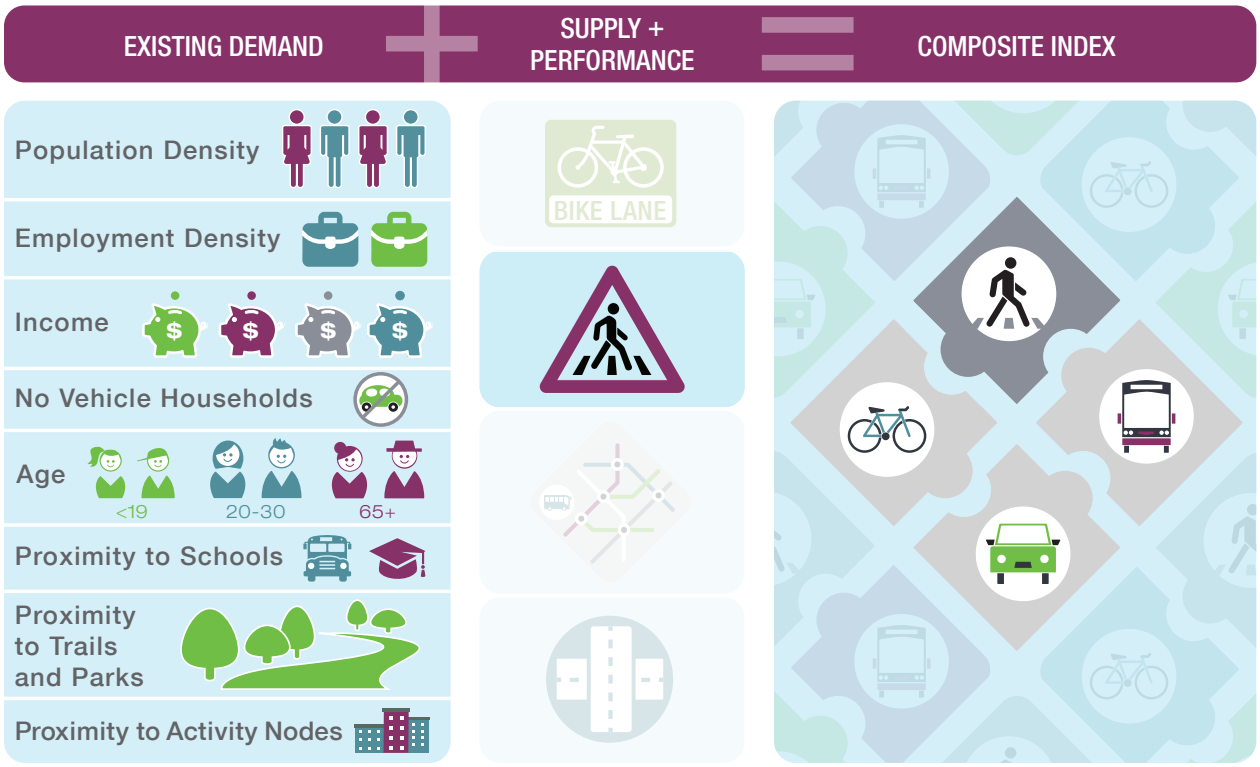
Understanding pedestrian needs in North Fulton County is critical to the quality of life of residents and visitors alike. The NFCTP planning process for identifying pedestrian utilized the Needs Assessment tools to illustrate the potential existing and future pedestrian mobility needs of the study area to take a closer look at areas in North Fulton that would benefit from a more walkable and pedestrian-friendly environment.



TRANSPORTATION INDEX - PEDESTRIAN

INTRODUCTION

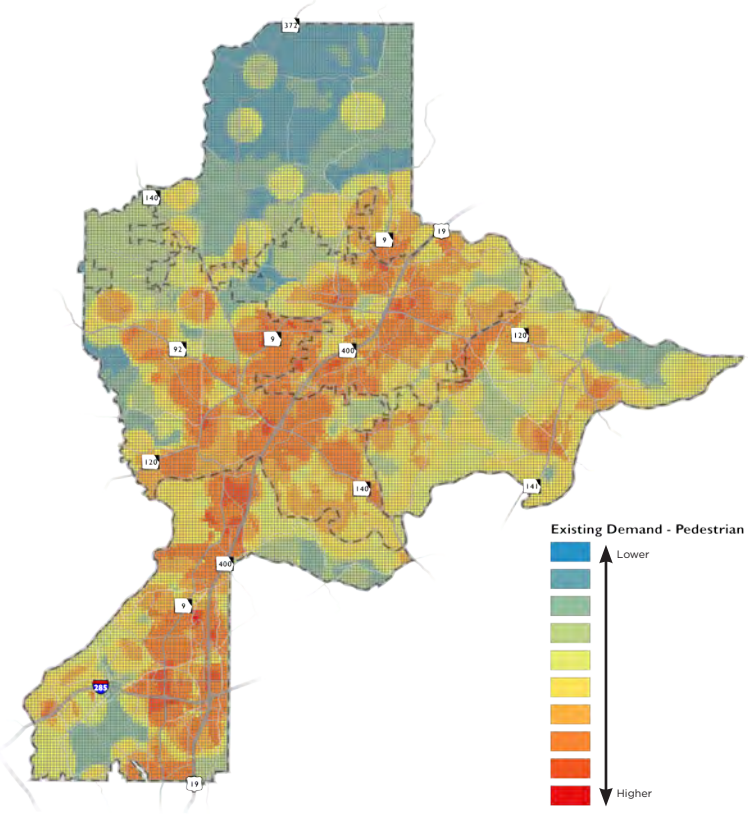
The Pedestrian Index maps walking propensity by combing the potential demand with the supply of pedestrian mobility. Like the bicycle index, potential demand for pedestrian mobility is generated when the right mix of population, socio-economic, and land use characteristics exist in a geographic area. National data indicates that population characteristics are good indicators for higher demand for pedestrian access. For example, lower income households make up a disproportionate share of those who walk to work. Close to 45% of people who walk to work earn less than $15,000 per year*. In large cities, this statistic drastically increases to 62% of people walking to work who earn almost $35,000 less per year than those who drive*. Understanding where these and other geographically-based demand characteristics co-exist help to identify where unmet pedestrian demand exists. (*ACS, 2009-2011)



*Additional details and full-sized maps of the index can be found in the Appendix.

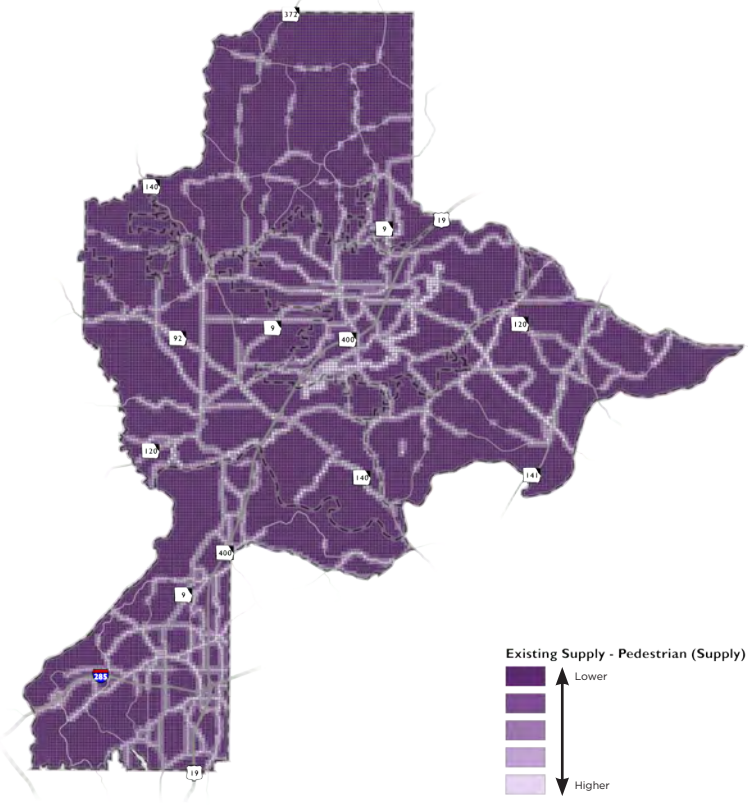
DEMAND

Pedestrian hot spots in the study area are the highest in the cities of Alpharetta, Roswell, and Sandy Springs near 14 of the 26 activity nodes. These are concentrated largely around activity centers near major corridors such as GA 400, Holcomb Bridge Road, SR 120, and Jones Bridge Road.



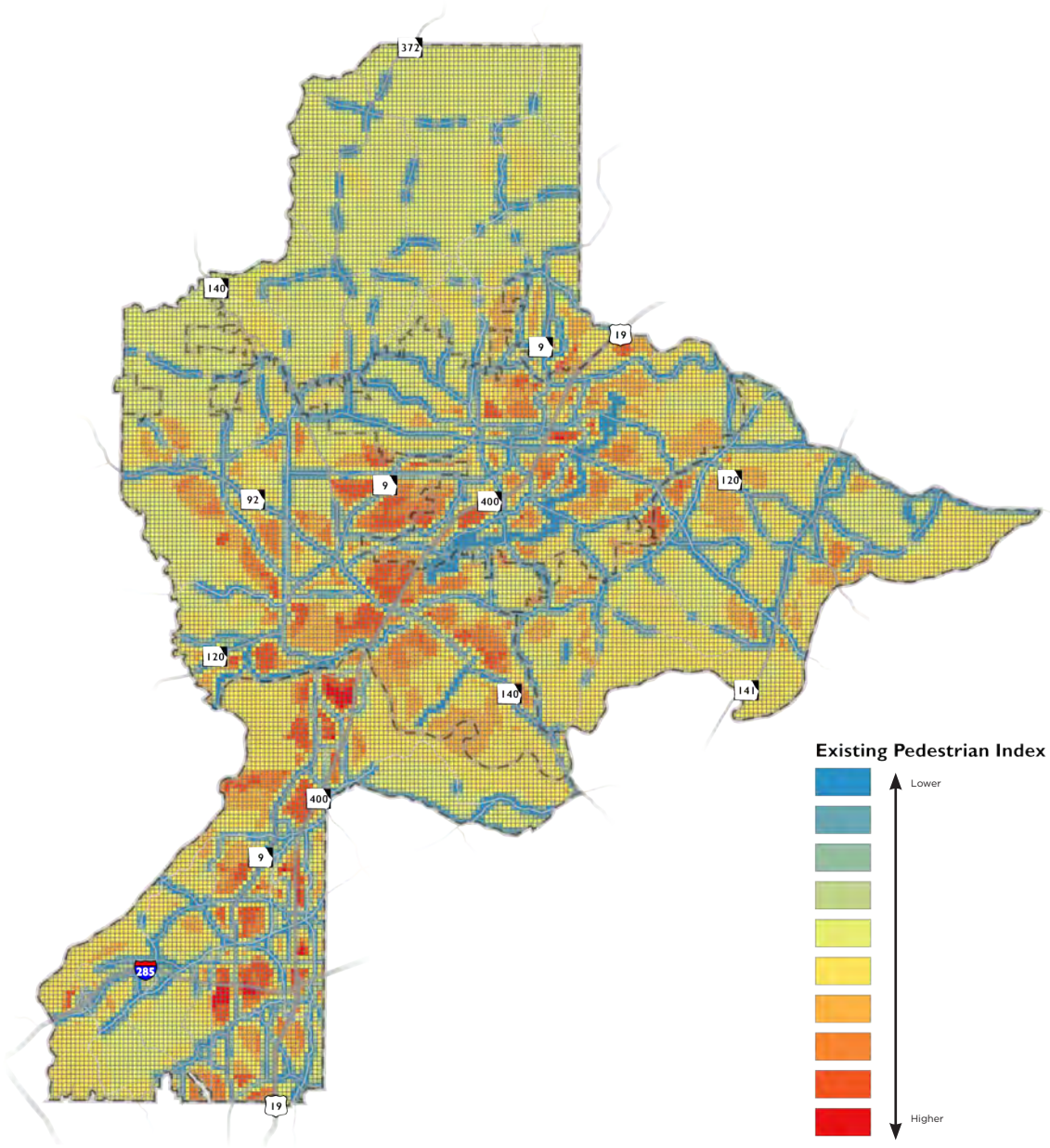
SUPPLY + PERFORMANCE

A good majority of the major corridors in North Fulton have high pedestrian supply conditions. Concentrations of high supply pedestrian conditions include North Point, Northside, and Big Creek Greenway.



COMPOSITE INDEX

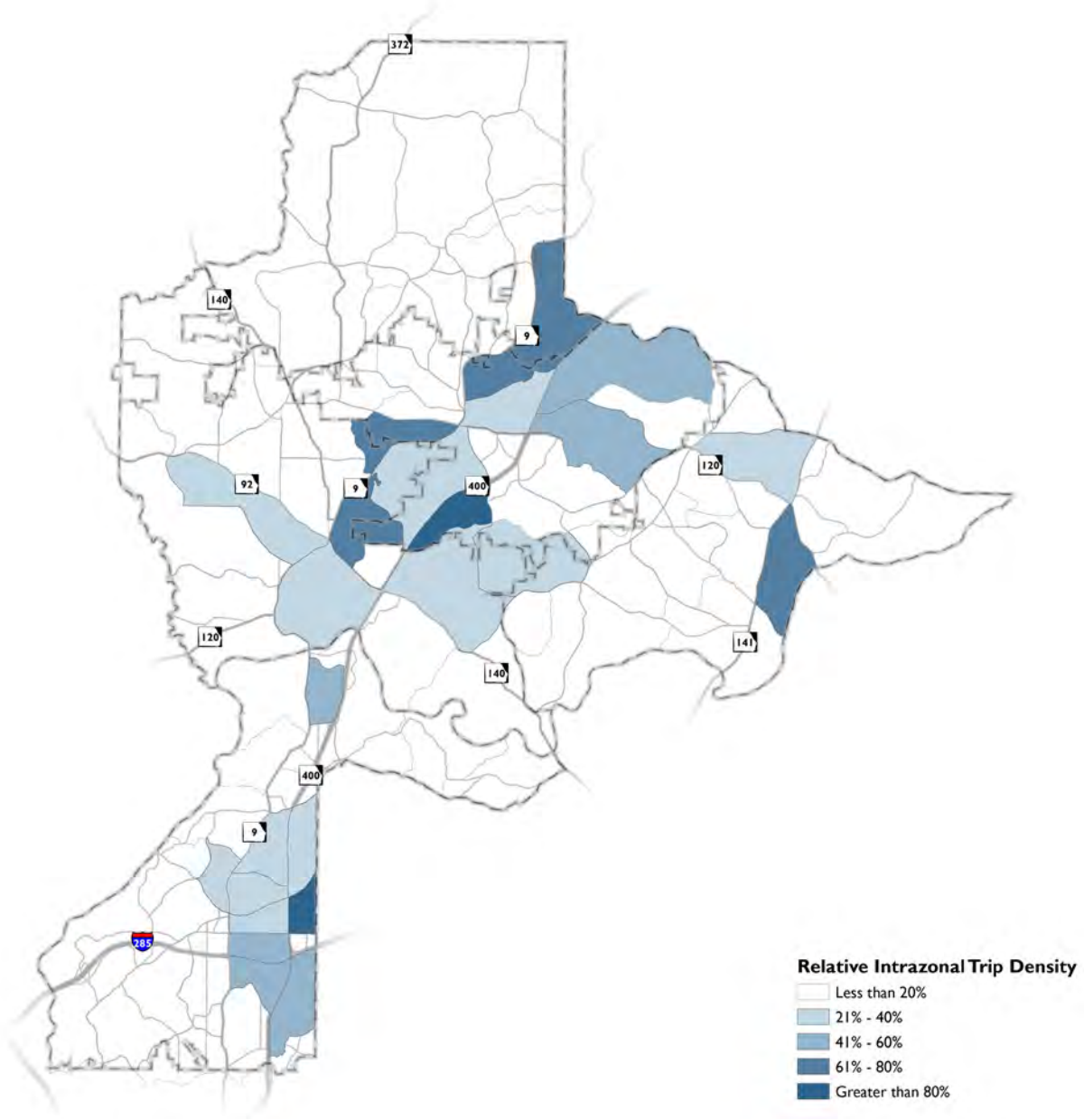
The highest unmet pedestrian need appears to be in the City of Sandy Springs near three activity nodes: Roswell Road North, City Center, and Roswell Road at Lake Placid. Other areas indicating higher-than-average unmet pedestrian needs are located in the City of Roswell around the Alpharetta Highway Commercial Corridor and Holcomb Bridge Road activity nodes.



PASSIVE DATA

PEDESTRIAN TRIPS

Passive Data (Streetlight) can help to identify zones that have a high number of trips that stay within the same geography. More specifically, looking at zones with a higher intrazonal trip density can shed light into areas that could be accommodated by an alternative mode, like walking. Areas that have greater than 70% intrazonal trip densities include the Perimeter, Alpharetta, Windward Parkway, and State Bridge and Medlock Bridge Roads.

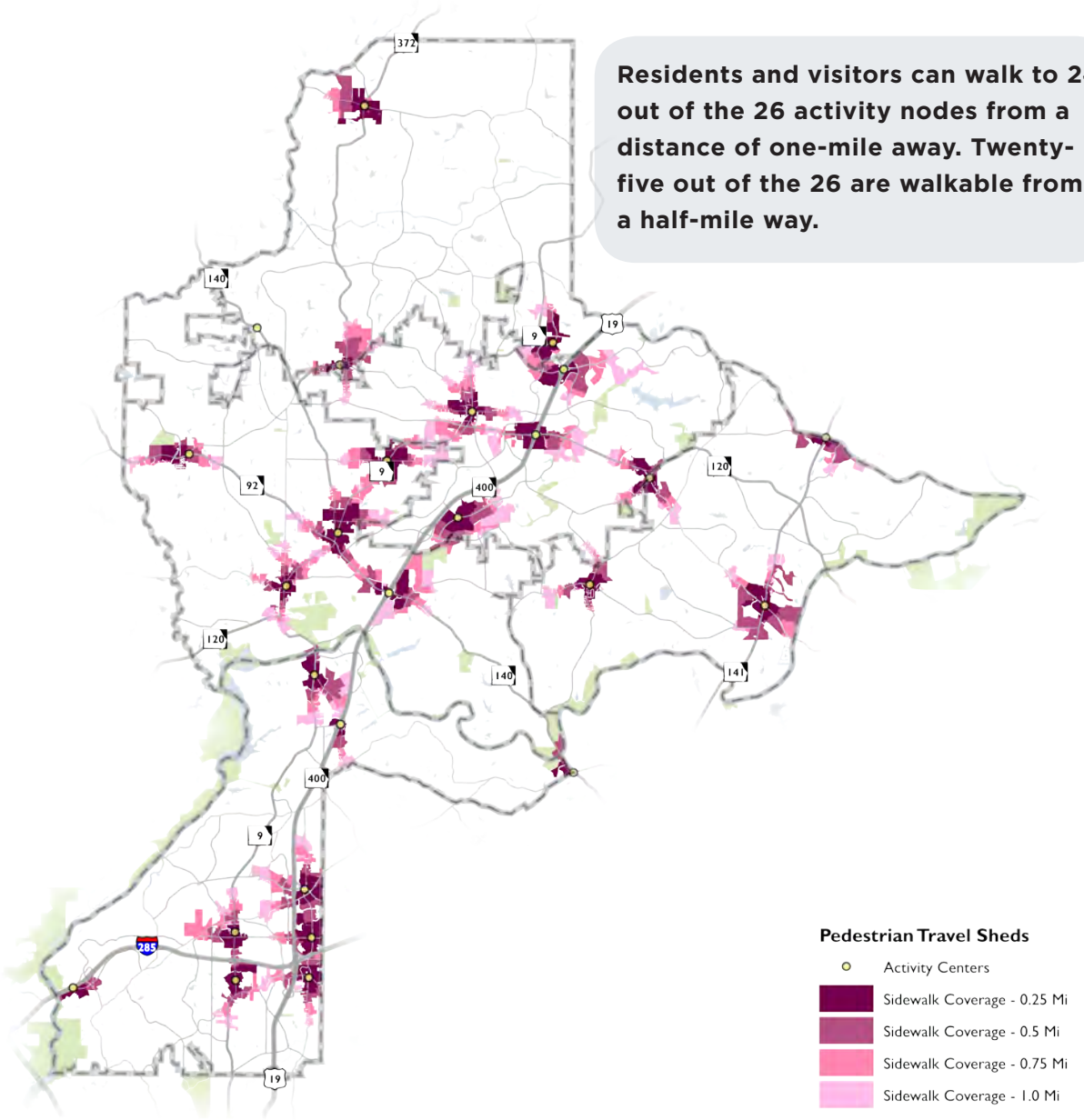


TRAVEL SHEDS

PEDESTRIAN

Ensuring that North Fulton's activity nodes are walkable is important for retaining and attracting people to the study area. In order to understand the extent at which activity nodes in North Fulton County are accessible through sidewalks and trails, pedestrian travel shed analyses were completed. These analyses were completed at distances reasonably covered by pedestrian trips– quarter-mile, half-mile, three-quarters-mile, and one-mile - from the center of the activity nodes to the surrounding areas.

Residents and visitors can walk to 24 out of the 26 activity nodes from a distance of one-mile away. Twenty-five out of the 26 are walkable from a half-mile way.

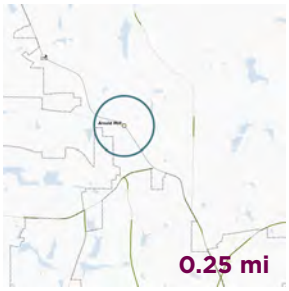


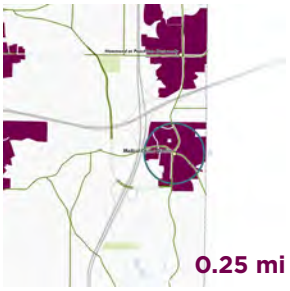
ARNOLD MILL

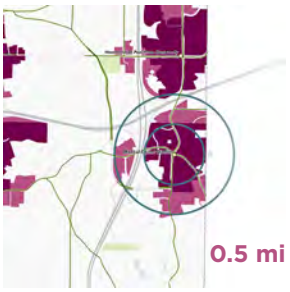
The Arnold Mill activity node in the City of Milton is the only activity node that is not walkable. While sidewalks do exist along Cox Road located about a half-mile south of the center of the activity node, not having sidewalks along Arnold Mill Road really limit access to and from Cox Road.

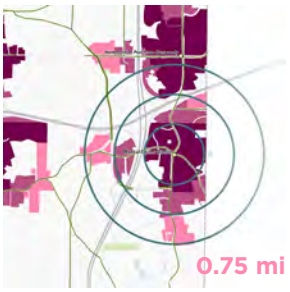
PERIMETER

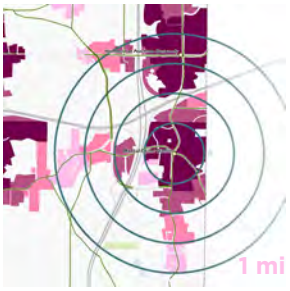
The land use and transportation system here lends itself for making shorter trips. The travel shed for the existing pedestrian facilities is already robust but maintaining the sidewalk network should be a priority to continue encouraging people to take their shorter trips on foot.





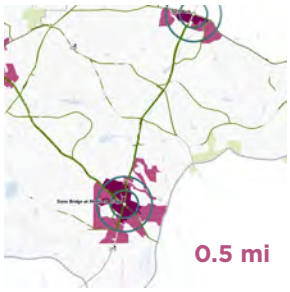


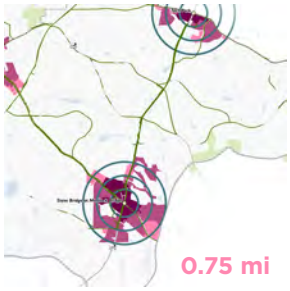


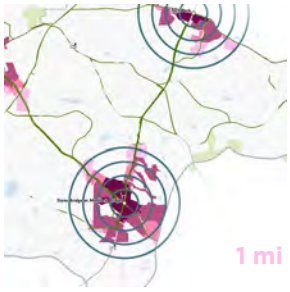


STATE BRIDGE ROAD AT MEDLOCK BRIDGE ROAD

This activity center is accessible through a 1 mile walking trip through facilities on both roadways. Although connectivity exists in the north, south, east, and west directions, connectivity is scarce in the primary intercardinal directions (northwest, southeast, southwest, northeast).





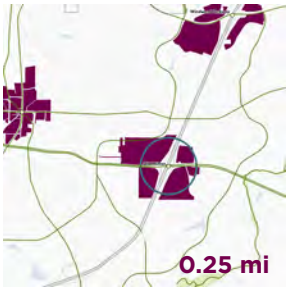


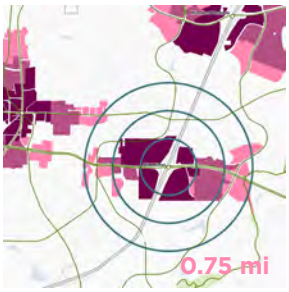
SR 9 NEAR HOLCOMB BRIDGE ROAD

SR 9 near Holcomb Bridge Road is an activity center that is accessibile through a 1-mile walking trip. The sidewalks are connected in this area and connect to nearby destinations.

OLD MILTON PARKWAY

The Old Milton Parkway activity node is accessible through a 1-mile walking trip. The sidewalks serving this area are connected in the east-west direction and do not serve north-south trips due to GA 400. The east-west serving sidewalks do connect to nearby activity centers.





COMMUNITY INPUT

PEDESTRIAN

A variety of outreach techniques were used to gather feedback about modal needs in North Fulton. Below is a summary of key themes pertaining to pedestrian needs discussed at public meetings, community events, and brief excerpts of the online MetroQuest survey results.

FREQUENT PEDESTRIAN TOPICS OF DISCUSSION:

HEALTHY MOBILITY

SAFETY

QUALITY OF LIFE

CONNECTIVITY

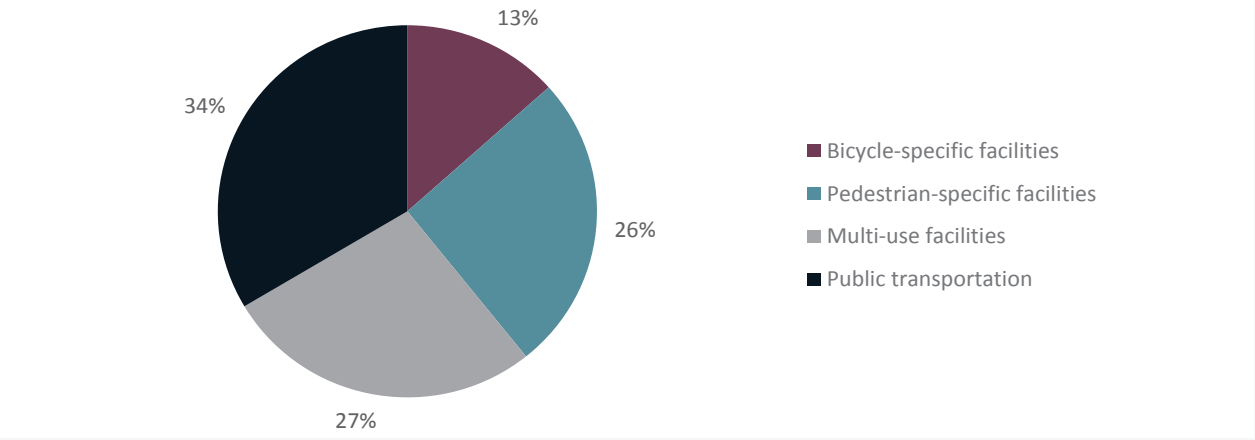
INTEGRATION

CONSIDERING SAFETY...

19% of respondents said we should make it safer to walk and bike.

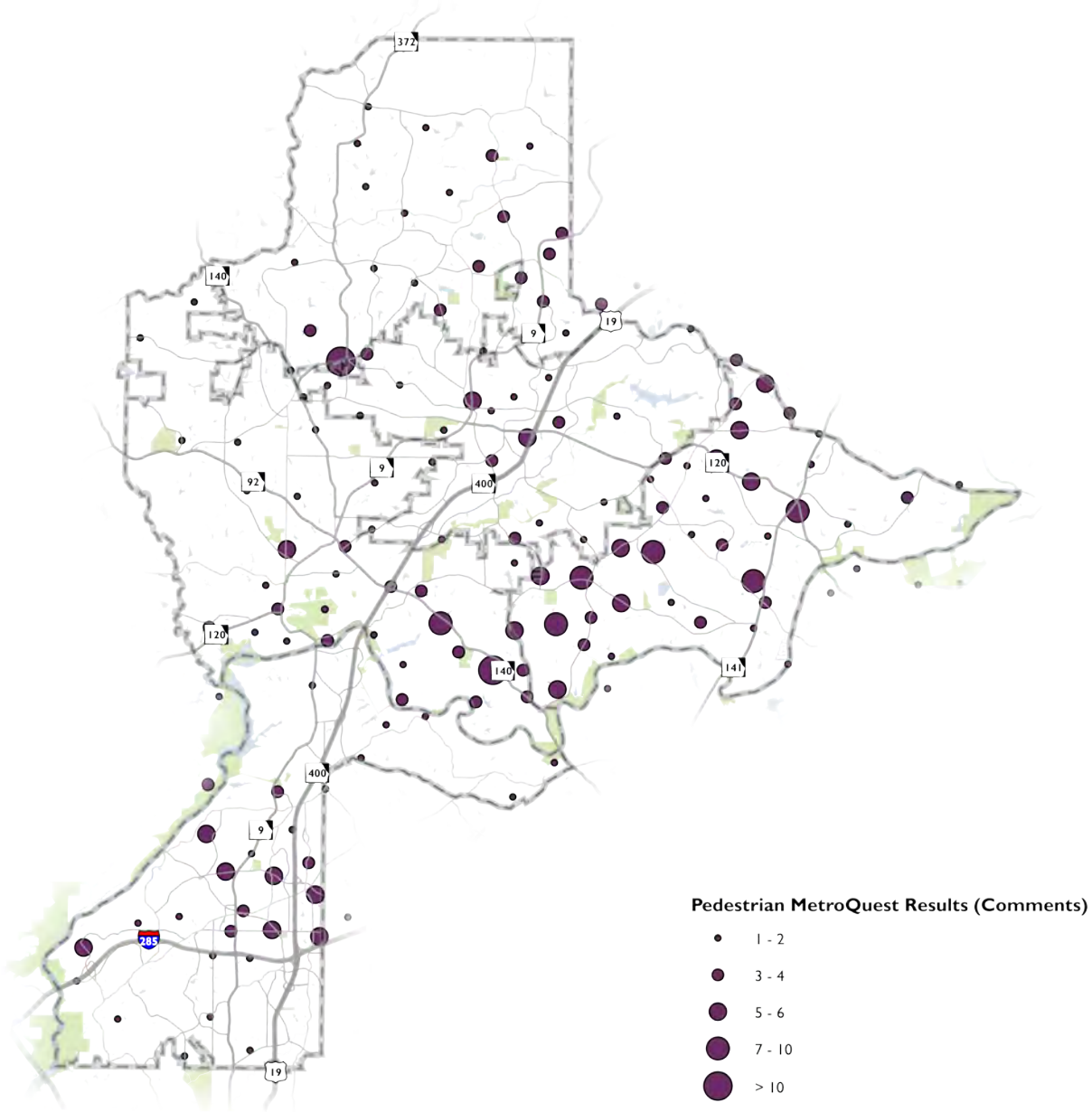
40% said to focus on improving safety at dangerous intersections and reduce overall fatalities and injuries.

CONSIDERING MULTIPLE MODES, WE SHOULD FOCUS ON...



METROQUEST SURVEY

Respondents were asked to note areas needing pedestrian improvement on an interactive, online map. An option to leave comments were also included. Clusters of comments received were at or near major activity nodes such as Crabapple, State Bridge Road at Medlock Bridge Road, and the Perimeter.



This page has been left intentionally blank.

NEXT STEPS

The North Fulton Comprehensive Transportation Plan communicates a desired balance between functional classification and more multimodal elements. By creating streets that can safely and conveniently accommodate multiple modes of travel, communities can improve the safety of roadways while promoting an environment where alternative transportation can thrive.

This page has been left intentionally blank.

INTRODUCTION

NEXT STEPS

Successful multimodal places include community-oriented streets that are supportive of public objectives and blend street design with the character of the area that is being served. The planning process for the NFCTP aims to create a connection between mode-specific recommendations and contextual features by presenting a needs assessment that is modal in nature but considers how a multimodal facility relates to the destinations served by the road to how people are affected by the elements on the roads that they travel on.

The next steps for the NFCTP is to develop a full universe of projects that include projects developed from previous plans, those developed through this needs assessment, city service requests, and public and stakeholder outreach. Once the project list is developed, a careful evaluation of the projects given NFCTP-specific criteria will take place. The projects will ultimately be scored and costed and move forward in the planning process to be considered in the financially constrained list of projects.

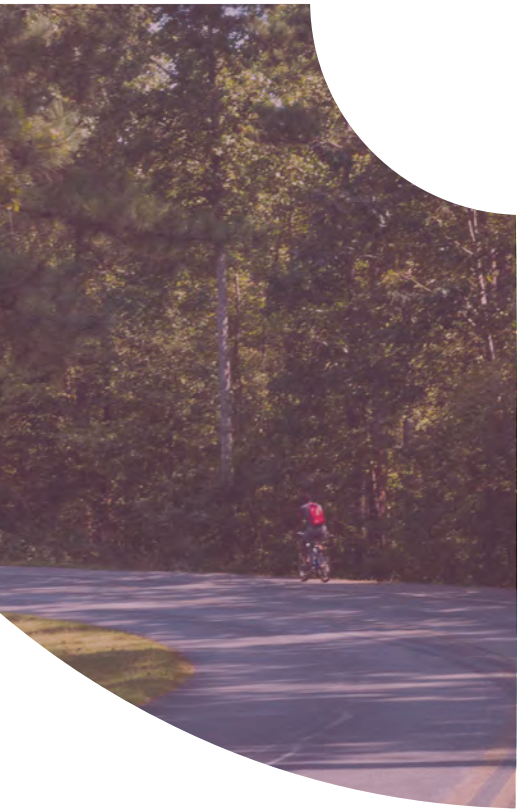
The final report will be the Recommendations Report, which will include the financially constrained list of projects based on funding considerations, policy guidance on transportation-supportive elements, and finally an action plan that lays out what steps need to be taken to move the projects forward into implementation.


COOLER

This page has been left intentionally blank.

THE APPENDIX

VARIOUS DOCUMENTS



NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

THE CITY OF ALPHARETTA GEORGIA

Johns Creek GEORGIA be the exception

MILTON

Roswell georgia

SANDY SPRINGS GEORGIA

mountain park, georgia

ARC ATLANTA REGIONAL COMMISSION

Kimley»Horn

Public Meeting Events

- **September 27 | 6PM-8PM**
  Roswell City Hall
  38 Hill Street
  Roswell, GA, 30075
- **September 28 | 6PM-8PM**
  Johns Creek City Hall
  12000 Findley Road
  Johns Creek, GA, 30097
- **September 29 | 6PM-8PM**
  Sandy Springs City Hall
  7840 Roswell Road, Building 500
  Sandy Springs, GA, 30350
- **October 5 | 6PM-8PM**
  Alpharetta City Hall
  2 Park Plaza
  Alpharetta, GA, 30009
- **October 11 | 6PM-8PM**
  Milton City Hall
  13000 Deerfield Parkway, Suite 107
  Milton, GA, 30004

Format

- Check-in followed by Open House activities
- Welcome & Presentation
- Interactive Table Exercises hosted at each table with participants
- Next Steps

Summary

Open House Activities

Meeting attendees were engaged in three Open House activities. The “One Word” activity asked attendees to give one word that describes North Fulton now as well as one word that describes the future of North Fulton. The responses were collected and displayed as word clouds shown collectively for all public meetings.

One Word Describing North Fulton Now

One Word Describing North Fulton in the Future

Priority Pyramid

The second activity was the "Priority Pyramid" which asked attendees to select their top six priorities out of eight options. Input collected from all public meetings resulted in the following priorities in order of importance:

1. Mobility
2. Multimodal Options
3. Quality of Life

4. Economic Vitality
5. Safety
6. Integration of Land Use & Transportation
7. Environment
8. System Preservation & Efficiency

Thought Wall

Lastly, the "Thought Wall" exercise invited participants to provide more input on the eight priorities. Participants received five comment cards (one blue in color; three yellow) and were asked to express the most important comment in writing on the blue card for their top priority area. Other comments for other priority areas could be written on the remaining yellow cards. The comment cards were then organized in accordance with the eight categories. Input from the public resulted in the following comments. Priority comments (written on blue cards) followed by general comments (written on yellow cards) are shown collectively for all public meetings:

Economic Vitality

- Priority: N/A
- General:
    - Strong economic development strategies to attract and grow businesses in North Fulton
    - Seems priority given to people not EVEN HERE YET.

Environment:

- Priority: N/A
- General: N/A

Integration of Land Use & Transportation

- Priority:
    - The integration of smart mixed-use land use planning incorporating transportation/transit options (in the right places!)
    - I do not understand how our transportation improvement efforts fir into an overall plan to accomplish overarching goals. It seems that transportation improvement focuses on fights the problem of the day as opposed to implementing a vision or plan
    - Land use pan on main roads
    - Excessive and unnecessary curb cuts on Secondary Roads (like Roswell Road and Cobb Parkway) Visit Route 17 in Saddle River Paramus NJ to see what happen to roads with too many curb cuts. Be smarter with development and create parallel roads connecting shops, gas stations, coffee shops, etc...and bring traffic out at a stop light
    - Regional cooperation / coordination. Regional solutions!

  - Needs a better balance between population and infrastructure growth. It takes 2x as long to drive just 2 mile to the store as 3 years ago. Transportation infrastructure growth has not kept pace with population growth for last 3+ years. There are too many schools in too small areas.
- General:
  - There is plenty of room on the other of the road where the road would still be removed and allow them to have privacy
  - You can build all the new shopping and dining areas you want, but if you can't get there, what's the point
  - Unmitigated suburban sprawl
  - All the building of new apartments and multiuse projects did not take into account the lack of traffic control and number of cars we already have
  - Residential development around rail stations
  - Fewer apartments
  - Transportation needs to places other than shopping and restaurants within community (grocery, drugstore, doctors and health professions, recreation, faith-based activities)

Mobility

- Priority:
  - Improving congestion
  - Traffic at the intersection of Medlock Bridge Road and State Bridge Road
  - Too many cars crammed into too little space
  - Congestion: impeding economic development and quality of life, reflecting poorly on metro Atlanta for not proactively dealing with it, concerned for lack of vision and leadership, convened that Dallas, Denver, etc. can do "it" and we cannot seem to, T-SPLOST a good beginning
  - Stop light at Roberts Drive and Highway 9
  - Rail (the need to use rail stations to facilitate transportation to other parts of the metro area)
  - Roswell Road and River traffic
  - Haynes Bridge Road - Mansell to Old Alabama: Please widen to 4 lanes with center turn lanes - curbs, sidewalks, street lights, path sides, reflectors on road, and bury the electrical lines underground
  - We live in Bethany Oaks Subdivision and it is very difficult to split our subdivision onto Hopewell Road. Can a stop sign be put on Hopewell? Very dangerous! Many accidents!
- General:
  - Connectivity, including vehicular connectivity is important to our overall, long term community quality of life
  - Transit plays an important part in our mobility choice options
  - Better traffic light timing
  - The plan for mobbing traffic north and south in Johns Creek is highly dependent on 141. An alternative north-south route is Jones Bridge, but traffic is still forced to turn onto Old Alabama and rejoin 141.
  - Traffic on 285 at 400 and 400 at 285

- Too many cars
- East-West connectivity
- Traffic light at intersection of Roberts Drive and Roswell Road
- Bottleneck intersections
- 1. Gasoline tax is not available for non-asphalt solutions. We need access to OUR gas tax for non-asphalt transportation solutions. Ergo reversal or revision of Gas Tax Restriction Constitutional Amendments is necessary 2. Focus on multimodal is a fad and we need to stop wasting time on it (bikers reject concrete seam multimodal paths) 3. Cobb continues to build roadway plans/paths that cut though Fulton County to get to a highway (remember Johnson Ferry and now Braves) - Fulton needs to block Cobb before they build roads/stadiums. This means attend Cobb planning meetings 4. Infrastructure Impact fees/requirements of new developments are needed. Not enough is collected. Do not waive. 5. Based on your demographic research this community are large lot single family homes. Stop planning for people to walk or bike. 6. Too many plans do not match current demographics they desire a change in demographics in order to live/work and walk from home to work to groceries.
- East-West mobility limited: vehicle traffic and limited transit

Multimodal Options

- Priority:
  - Without heavy rail to windward, there is no traffic relief. There is only pretending.
  - Bus lines do not integrate well with one another
  - Lack of public transportation
  - Lack of multimodal options
  - Extend Marta up 400
  - Transit network with central rail system
  - Lack of options
- General:
  - Sidewalks and bike lanes contribute to a healthy mobility network
  - Cars need to expect bikes on the road
  - More sidewalks
  - Why is Johns Creek eliminating bike lanes? They should be adding them!
  - I support transit, but I see that we do not use the best transit system out there, which is the school bus system. If kids do not ride school buses, what makes us think that they will ride transit as adults?
  - I am concerned about the trend of building sidewalks everywhere even though they are distanced from any destination and are very unlikely to be used. Do we understand to what extent sidewalks are a realistic transportation alternative?
  - Limited bike access to places of employment
  - Not walkable
  - Over reliance on vehicles - creates problems as residents age
  - Expand Marta north to at least Windward Parkway
  - Need for top-end 285 East-West transit (Doraville to "Braves Stadium")

- Should have express bus service to Sandy Springs, Lindbergh and Buckhead (public transit)

Quality of Life

- Priority:
  - Integrations of successful, safety, environment and quality of life is the primary and, in fact, only driver of economic viability and multimodal options which in turn determine the integration of land use and transportation
  - Concerned about McGinnis Ferry Road widening and affecting 7-oaks homes value and resale! Stop trucks using McGinnis Ferry!
  - We have just purchased a house and found out that the road next to us is going to be widened towards us. The road will be 2 lanes and a sidewalk closer to us. This leaves us with safety, sounds, and property devaluation issues. All we know at this point is that the city would like us to donate the land they will take in exchange for 'homeowner improvements' that are not improvements and minimal and this does not address our concerns. Wider roads are good but need to be done without running over residents.
  - DO NOT WANT THROUGH TRUCKS FROM 85-400 IN MY BACKYARD. Re: McGinnis Ferry
  - Priority needs to be given for the residents of Johns Creek City to support property values. Transportation planning is not transparent and does not set a priority for Johns Creek residents
  - Quality of life is my #1 priority because I do not want to live somewhere unpleasant, even if other factors such as mobility or economic vitality are high. Mobility and Environment come right after.
- General:
  - Plan for affordable live-play-work developments to provide housing and entertainment for our workforce population
  - I am a pediatric ER nurse that works 7PM-7AM. I sleep during the day. How am I going to do that when there is construction 5-10 feet from my headboard? (Short-term) All vegetation will be cleared, which is my sound barrier that keeps the traffic noise down. (long-term)
  - Finding ways to encourage / support people to live, work, and play in the same area - thus reducing commute time and the number of cars on the road
  - Limited recreational opportunities along Chattahoochee River
  - Promote more open "green spaces" to include neighborhood "Pocket Parks"

Safety

- Priority:
  - Network safety should be our highest priority
  - It is important to get more cars through the region, but not sacrifice safety in doing so.
  - I am directly affected by the Jones Bridge Road expansion project. My concern is for safety as the planned expansion places the road dangerously close to my residency. The city seems unconcerned about safety as they often very little to address solutions

to the issues that have been expressed. While I have no issues with expansion, I just believe safety should be taken into consideration.
    - My house is 37 feet away from the road currently and preliminary designs would make it 22ft away. That is my bedroom. SO the concern is a cars coming through. Designs to change my driveway, making it even more difficult to get into and out of my house. I will get hit. A sidewalk close to my bedroom. Construction 5-10ft from my house.
    - Traffic congestion (Ex: SB on GA 400 and exiting onto Holcomb Bridge Road)
    - Concerned about proposed raised medians on Highway 9
    - Traffic safety enforcement (Ex: crosswalks, speed limits)
- General:
    - Traffic calming
    - Safety reducing crashes
    - Hazmat, red lights not synced
    - Pedestrian safety
    - Bad / dangerous driving habits
    - Lack of traffic enforcement : ped safety, red lights, speed

System Preservation & Efficiency

- Priority: N/A
- General:
    - Think we need some new major roads. I have lived here over 20 years and cannot think of a new major road.

Presentation & Facilitated Discussion

After the Open House period, each meeting began with a welcome from City staff who serve as participating members of the North Fulton CTP Project Management Team. Members of the Consultant Team, led by Cristina Pastore of Kimley-Horn, delivered identical presentations at each meeting. The presentation explained the purpose of the CTP update; the TSPLOST referendum and how it relates to the NFCTP, as well as the profile of North Fulton through a demographic review. This included discussions on population density, income age, and zero vehicle households. Continuing this discussion, the Consultant Team talked more about demographic, economic and real estate considerations and specifically how transportation might be impacted by trends in each of these areas. The Team mentioned the many plans that have been collected for review and how this update will focus on leveraging the good planning work and projects that have been implemented over time.

Next, information regarding commuting behaviors and typical commute times was presented. The Team discussed specifically where North Fulton workers live and where North Fulton residents go to work. Passive location data has also been used to determine total trips in the study area, and whether these trips are personal or commercial. Lastly, meeting attendees were engaged in table discussions regarding transportation modes. Each discussion was prefaced with a presentation of current data and information pertinent to the conversations. Facilitators at each table led the committee members through the discussion. Input has been summarized per meeting and by topic below.

Roswell

Roadway

- SR 120 & SR 9 by Roswell Town Square
    - Congestion with people wanting to turn left toward Cobb Co. Lane is too short and turning traffic blocks through traffic.
- Holcomb Bridge between SR 400 & SR 9
    - Signal coordination problem. Referenced Mansell Road as a corridor that performs well.
- Crabapple Road (Near new STEM School between Chaffin Road and Strickland Road)
    - Too many conflicting movements and very high volumes coming NB on Crabapple Road.
- Kimball Bridge Road & North Point Parkway
    - All SB traffic is forced into one lane as a free-flow right turn merges with thru traffic causing congestion from Waters Road back to the intersection
- Coleman Road & SR 120
    - E/W movements have short turn lanes that often spillover. This is especially true when someone goes straight through the light into Kroger. Also aware of new development coming soon and fears it will get worse
- Crabapple Road and Rucker Road
    - Signal poorly timed
- Rucker Road and Charlotte Drive
    - People often back up on Rucker Road waiting to turn left on Charlotte Drive

Transit

- SR 400 Corridor
    - Marta bus/managed lanes vs. heavy rail
- Holcomb Bridge Road/Old Milton Parkway/Windward Parkway
    - Extensions of rail stops to these locations
- Downtown Alpharetta
    - More bus service and stops
- Overall
    - More bus shelters

Bicycle & Pedestrian

- Coleman Road
    - Sidewalks to fill in gaps and connect to SR 120

Johns Creek

Roadway

- State Bridge Road at SR 141
    - U-turns are frequent and pose a safety concern
- SR 141

    - Signal timing is terrible
- Barnwell Road and Holcomb Bridge Road
    - Intersection congestion
- Kimball Bridge Road at Jones Bridge Road
    - AM – EB backed up to Parsons Road
    - PM – WB backed up to Old Milton Parkway
    - many driveways near the intersection; some with offsets that cause safety concerns
- Turning from left from SB Kimball Bridge Road onto Waters Road in the AM
- Exit 7 SB SR 400 at Holcomb Bridge Road
    - AM congestion
- EB McGinnis Ferry Road
    - Bell Road to Chattahoochee River heavy PM congestion
- Haynes Bridge Road at Old Alabama Road
    - Signal timing concerns. States that people frequently run the light.
- SR 140 from SR 400 to Old Alabama Road
    - AM congestion
    - AM congestion in the WB travel lanes
- Jones Bridge Road between Plantation Bridge Road and Waters Road
    - Making left turns is impossible and big safety concern
- Several anti-widening sentiments from residents along Jones Bridge Road

Transit

- E/W connection between SR 141 and SR 400
- Most concerned about the safety of transit
- More frequent GRTA service
- N. Fulton connection to Gwinnett County

Bicycle & Pedestrian

- Sidewalk gaps on SR 120
    - Filling gaps would make it easier to get to Willis Park on foot/bike
- Frequent cyclists on SR 141 & McGinnis Ferry
    - This is more prominent around the soccer fields
- Old Alabama traffic is too fast and makes using the sidewalk scary and unsafe
- SR 141 side path is not attractive and speeds along SR 141 make using the path unappealing
- Sidewalk gaps on SR 120 between SR 141 and Parsons Road

Sandy Springs

Roadway

- Johnson Ferry Exit (400) – signal timing
- Congestion: 400 and Roswell Road

    - Widened: bad to okay
- New connection to Cobb Co. (commuter route)
    - 285 (Papermill)
- Riverside and Hertz Ferry Road – signal timing
- Roberts to Roswell Road (no signal = NEED LEFT TURN LANE)
- Roswell Road: Widen from 3 lanes to 4 lanes (add turn lane)
    - 92 to Riverside
- PROPOSED: new ramp on 285 from Sandy Springs Circle until Alan Road
    - CONCERNED: residence want more walkable (less vehicles)
        - Roswell Road needs less vehicles – find alternate route/can't always widen roads.
        - ***Need closer analysis on Roswell Road near 285 for possible solutions
- Abernathy Arts Center Roswell Road, Dowell Temple. Not enough time for E/W traffic during peak hours (Signal timing)
- Possibly limit left turns during specific times from Roberts Road onto Roswell
- SB left turn lane onto Roberts from Roswell is too short
- Hertz Ferry and Riverside signal problems causes roundabouts to get blocked
- Roswell and Hammond Signal Timing
- River Valley and Abernathy at the arts center and remove excessive center stripping and add extra turn lane (right turn lane)

Transit

- Many people don't want transit near the neighborhoods
- Current transit doesn't have good destinations
    - More concert venues
    - Stadiums
    - Museums
- Marta Train to Wynyard
- More park and Rides on 400
- Lots of concern on how to rally other North Fulton cities to be interested in extending MARTA
- MARTA Rail up 400
- Transit Rail Station: Holcomb Bridge and Mansell
- Local transit on North River Parkway – connects to Roberts (more apartments)
- New Park and Rides / Expand parking at Pill Hill
- MARTA on Hammond Drive (stops already there)
- Should all schools be concentrated areas? How to get students home from school? Kids are not allowed to walk home from school
- Park and Ride on border of SS and Cobb Co. – stop people from crossing SS
- Northbound morning bus from SS to Alpharetta / Subway and reverse at night
- New transit at Old Milton

Bicycle & Pedestrian

- KHA Action:

  - Check bike lanes on Roberts Drive
  - Where is Path 400 proposed?
- MARTA Rail (medical) – Bike path on Mount Vernon
- New ped path bridge near Roberts Drive
- Expansion on Big Creek Greenway South to Roberts Drive to connect new bike/ped bridge
- New trail following 400 to use as commuter
- Bike path down Roberts Drive
- New bike path on Hammons Drive
- Kroger (new ped crosswalk or signal)
  - Senior housing (Lenox Tower) – women crossing to go grocery shopping
- Check proposed bike path connector to Buckhead – Medical center
- Connect sidewalks to high schools
- Brandon Mile – finish out sidewalks. People walk along grass / road to get to Abernathy
- Riverside Drive sidewalks, plenty of recreational walkers already
- Pedestrian crosswalks not frequent enough on Roswell Road causes pedestrians to dangerously cross midblock and get stranded in the center turn lanes
- Cobb Park is a destination that would be convenient to walk to
- Mount Pager and Mount Vernon one very narrow and unsafe for cyclists
- Johnson Ferry between Sandy Springs Circle and Abernathy removed bike lane. Why?

Alpharetta

Roadway

- Devour: turning left onto Devore and turning onto Highway 9
  - Add median to restrict left-turn movement
- Windward: Highway 9 – Deerfield Parkway
  - EB cannot turn into retail
  - Use different routes and different times of day
- Haynes Bridge and Old Milton
  - NB on 400 exit (backed up)
  - 400-Old Milton (parking lot – no movement)
  - Dual left-turn lane (dangerous)
  - SB turn onto Old Milton (dangerous)
- Focus on redevelopment
- Haynes Bridge (E of 400):
  - Streetlight until Mansell, then has bad lighting and 2 lanes
    - Widen, add lighting, underground utilities (until Old AL)
  - Middle schools around
- Old Milton: North Point – State Bridge (congestion)
- Great Example: Holcomb Bridge – Kimball Bridge
- Highway 0: Roswell City Hall – River (dangerous) – commuter traffic
  - Inability to turn
- Perimeter Area

- Old Milton – Haynes / 4 – I-20 / 85 – Jimmy Carter
    - Add signage ("Keep Moving")
- Windward Parkway between North Point Parkway to Highway 9
- Old Milton from 400 East out
- Highway 9 – I-285 to SR 92
- Hopewell Road
- Traffic to Cherokee in the PM
- All routes identified as truck routes are bad
- SR 141 in entirety of study area
- McGinnis Ferry good until it goes back to 2 lanes near Jones Bridge / Sargent
- Canton St. / Old Milton to Highway 9 Roswell Street
- Webb Bridge – backs up to the East between 400 and SR 120
- More bridges across the river/
    - Need more access across river
- Look into the reversible lane on SR 9
    - Possible widening
- Make better use out of lanes that you have
- Reversible lanes on arterials – major routes
- Accidents?
- Roundabouts – get rid of the roundabouts
- Eliminate lights at subdivision
    - Look at Michigan u-turns
    - Remove traffic lights to improve flow

Transit

- Heavy rail to Windward Parkway
- East West connections between Gwinnett and North Fulton
- Frequency of service
- Longer service hours – to get to airport earlier and later hours
- For rapid transit to work needs to be more efficient than car
- Transit shouldn't eliminate vehicular traffic lanes
    - Buses are in the way
- Fixed guideway for bus okay if doesn't take lane for cars
- Willingness to pay highway fare if efficient over traveling in car
- Think about regional plan (E-W connection)
    - 285 & I-20
- Ways to connect to location other than shopping and restaurants
    - Ex: work, doctors office, grocery store
- MARTA Stations:
    - North Point Parkway (Medical)
    - North Springs
- Local Shuttle System (operate at peak hours):
    - Avalon – DT Alpharetta (N. Point)
        - Then expand to housing and office complexes

- Help employees without driver's license to travel around
- Help emergency vehicles travel through Alpharetta
- Assisted-living (senior housing) – transportation to doctors office for those without Driver's license or with medical disabilities
- Add MARTA in Alpharetta
    - Fighting congressman who don't like transit. They keep "studying" MARTA

Bicycle & Pedestrian

- BC Greenway connection to Forsyth – Fowler Park
- Core downtown Uber/ped-friendly
    - Marietta St to Salt (restaurant)
- Improved Intersections:
    - Avalon – multimodal (more walkable)
        - Consider pedestrian bridges / tunnels?
    - Highway 9 and State Bridge (Old Milton)
    - West Side Parkway
- 400 and 285 Interchange (2-year project)
    - Long term benefit?
    - Not NF resident benefit
    - New Braves traffic?
- Bike Facilities focus on recreational / connections
    - Safety / capability
    - Put money in educating community about bikes
- Parking deck DT Alpharetta
    - Concerned about parallel parking on Highway 9
- Places to bike or walk to
    - Avalon – nice safe connector between downtown to Avalon
    - Shopping
    - Access to transit station
- Windward Parkway – has sidewalks but the access from sidewalks to destinations is complicated because you have to walk through parking lots
- Deerfield Parkway – splits to Morris Webb Rd
    - Creates a nice sidewalk loop
    - Promotes walking
    - Heavily used
- Brick work is harder to maintain
    - Aesthetic elements can become safety issues with poor elements
- Multiuse trail – SR 400 up Avalon to North Point on a bike
- Unable to get to BC Greenway without a car
- Connect trail along road to Greenway
- If trees in sidewalk – they need to be maintained because it is a visual issue
- Audible crosswalks at busier intersections
- Intersection at Deerfield and Windward
    - Right turn lane is difficult to cross without a stop bar

- Complete box crosswalks at busy intersections
- Need skywalks for pedestrians over wide roads
- Build nice pedestrian bridges when replacing or building bridges
- Downtown Alpharetta Academy and Main
    - Do away with the right turn on red
- Smart traffic signals that can communicate with cars
- Pedestrian walkway all the way up Highway 9

Milton

Roadway

- Congestion – Bethany Bend / Bethany Way / Hopewell Road
    - Out plans about a roundabout?
    - Turn lane recommendation?
- Congestion – Spalding and 140
- NB traffic on Hopewell travels very fast, and it's very hard to get out of subdivisions
    - Many crashes – no fatalities
    - Too many directions to look at when trying to exit subdivisions
- Several schools on Bethany Bend
- SB left into subdivisions very difficult AND leading to rear end crashes
- Overall, people like the roundabouts
    - A lot of people don't know how to use them (too much hesitation)
    - Education efforts for roundabouts?
- 40 minutes to travel from Peachtree to Spalding on Holcomb Bridge Road
- Bethany Bend at Highway 9 = unsafe!
    - Alignment issues
    - To be improved as part of SR 9 widening
- Signal Timings on Holcomb Bridge in Roswell
- People like the small roundabout alternative for Bethany and Hopewell
    - Concern over LT movement from Bethany Oaks Point neighborhood
    - Concerns about SBL at Bethany Bend queuing past Bethany Oaks Point intersection
- You can only get out of Bethany Oaks Points only is someone from Hopewell is feeling nice
- Potential widening of Hopewell?

Transit

- Rather than bringing in buses or widening roads, take advantage of Uber
    - This can be an option to connect to Marta
- Make it mandatory for kids to ride school buses

  - Most elementary aged kids do
  - Middle school and high school – it's not cool
- Freemanville from Cherokee backs up
- Difficult to get from Point A to Point B on MARTA – 40 minutes bus ride from Park and Ride to train station
- Concerns about NB congestion improvements (C/D system) after 285/400 interchange improvements
- DDI @ GA400 and Holcomb Bridge Road
- Why are we "locked" into heavy rail that no one uses
- More Park and Ride facilities!
- Problems with East-West connectivity
- Desire for transit around 285
- Desire to go South on 400 from North Springs MARTA
- North Springs accessibility from NB 400

Bicycle & Pedestrian

- 2x2 rule low compliance
- Bikes won't let motorists pass
- Bike team in a house across from Bethany Oaks Pointe – adding more trouble to that intersection
- Wide walking path along Chattahoochee – not wide enough for cyclists
- 2x2 doesn't work well for families riding with children
- When living in a subdivision, people aren't going to walk peace
- Positive reaction to driving places and then walking around at the destination
- Better bike/ped facilities where all the schools are clustered (Cogburn)
- There are new sidewalk connections to Roswell parks and library – these are loved

Next Steps

The meetings concluded with a discussion about next steps, which include an inventory of existing conditions and the needs assessment phase. Public meetings have been scheduled in each municipality. Other ways to engage including an online survey, social media, project website and email were also presented before adjournment.

Community Events

- Alive in Roswell – September 15, 2016
- Sandy Springs Farmers Market – September 24, 2016
- Scarecrow Harvest Festival (Alpharetta) – October 1, 2016
- Crabapple Festival (Milton) – October 1, 2016
- Johns Creek Art Festival – October 15, 2016

Summary

Community outreach events were held throughout the study area in the fall of 2016 to "meet the people where they are". One event was scheduled in each of the five municipalities. The purpose of such events was to continue to collect input, to spread the word about the planning process, and to direct people them back to more long-term sources of information and data gathering like the website and MetroQuest survey.

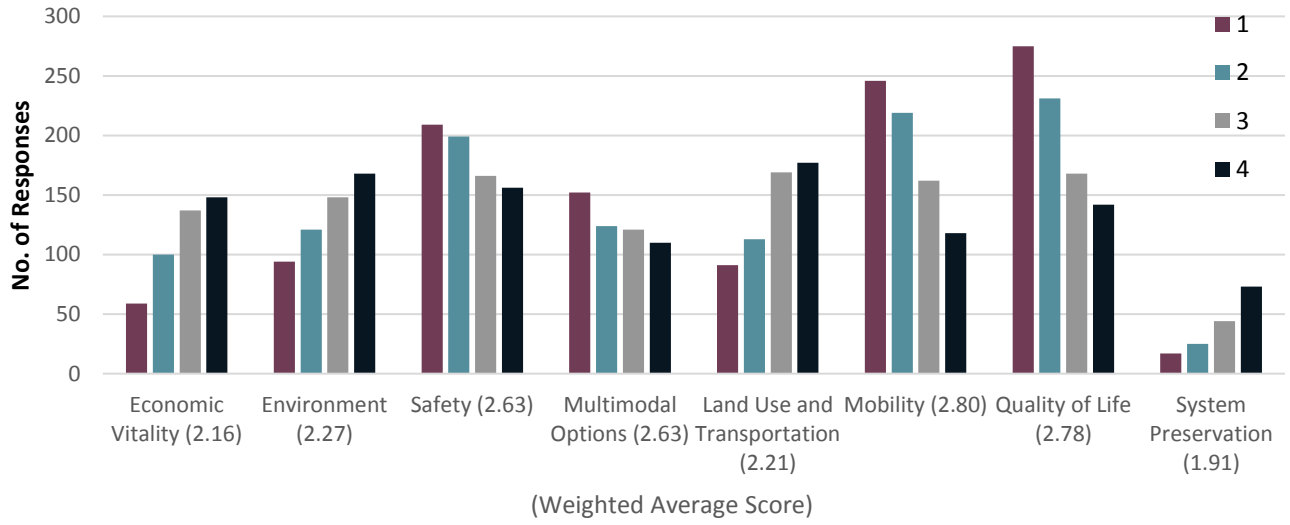
Materials used in these community events were similar to those presented at the public meetings. Additionally, the public was engaged in a prioritization activity similar to one used during the first round of public meetings. This activity asked individuals to select their top six priorities out of eight options by placing their votes into color coded buckets representing the eight plan priorities. These priorities are also consistent with those being asked in the MetroQuest online survey. The results of input collected from the fall 2016 community events is shown below in order of importance.

1. Mobility
2. Multimodal Options
3. Safety
4. Quality of Life
5. Environment
6. Economic Vitality
7. Land Use & Transportation
8. Sys Preservation

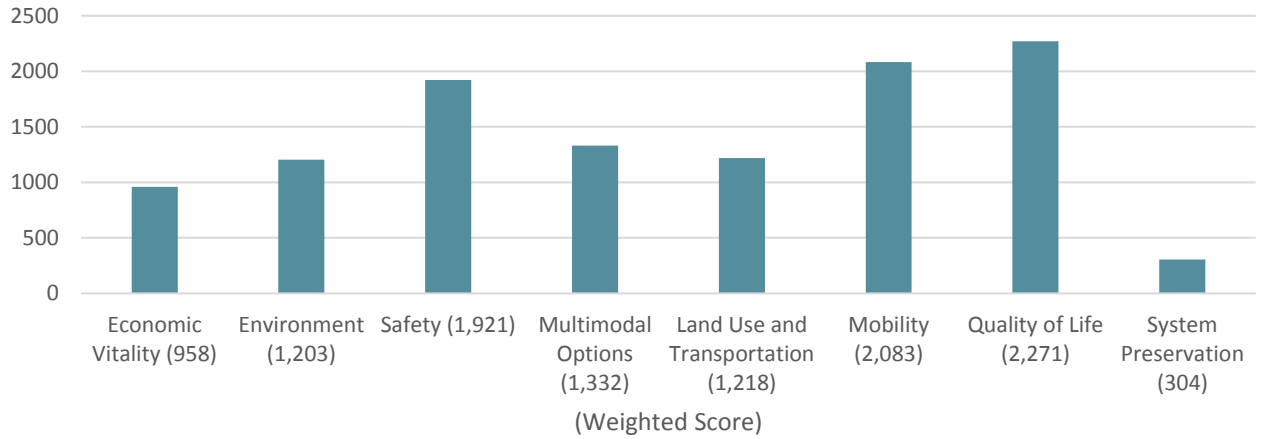
Between September 15 and December 18, 2016, more than 1,500 people participated in an online MetroQuest survey designed to gather feedback important to the North Fulton CTP process. Participants were asked to rank the plan's priorities to gauge which planning themes were most important to stakeholders, then were asked a series of questions relating how the plan should pursue those priorities. Finally, participants were able to place map markers on a North Fulton map indicating where they would like to see certain specific improvements take place. A summary of the survey results follow.

First, participants were asked to select their top four priorities from the eight options, numbering them 1 (highest priority) to 4 (lowest). A weighted average score was then calculated for each priority to understand the relative rankings of each choice. A summary of the results are below.

If you could choose four priorities, what would they be (1 being the most important, 4 being the least)?

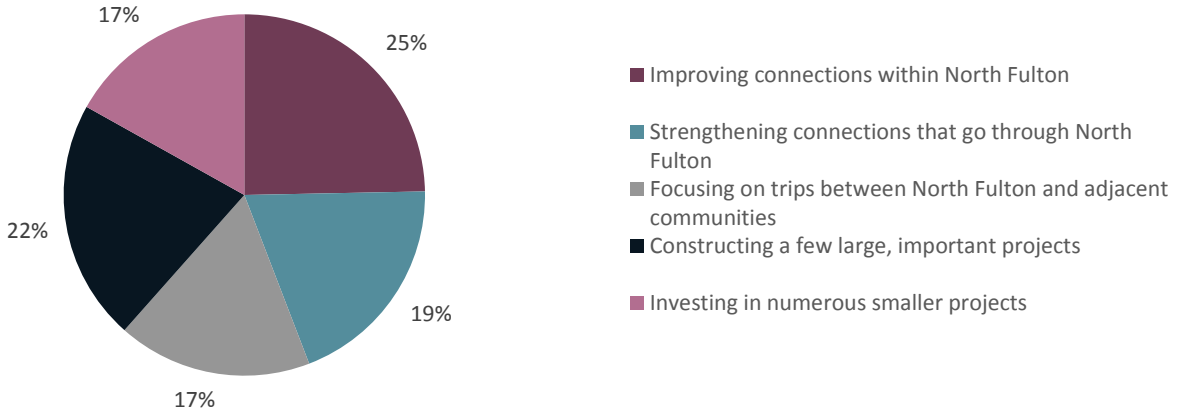


Weighted Score

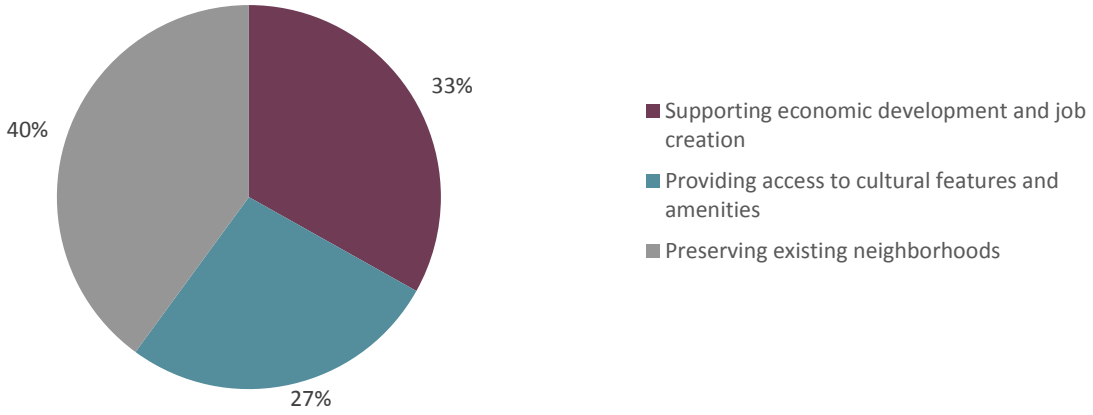


Next, participants were asked more specifically about their priorities within each option. Up to two selections were available per question. The charts below summarize participants' responses on what the North Fulton CTP should focus on within each priority area.

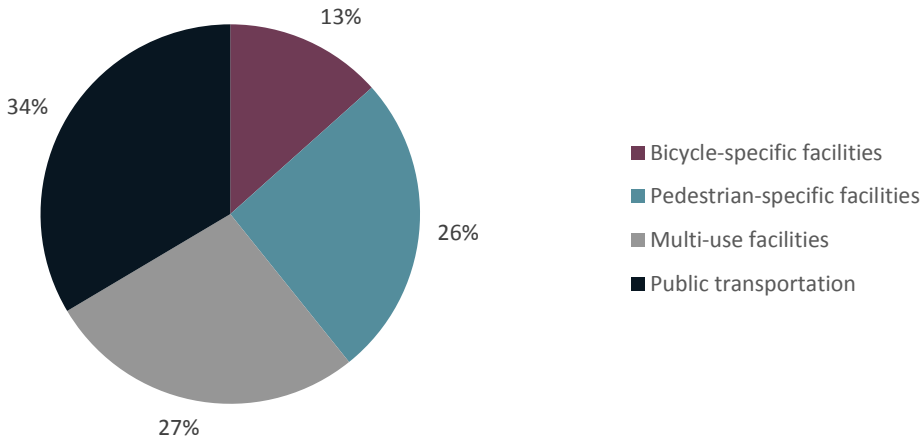
Considering Mobility, we should focus on...



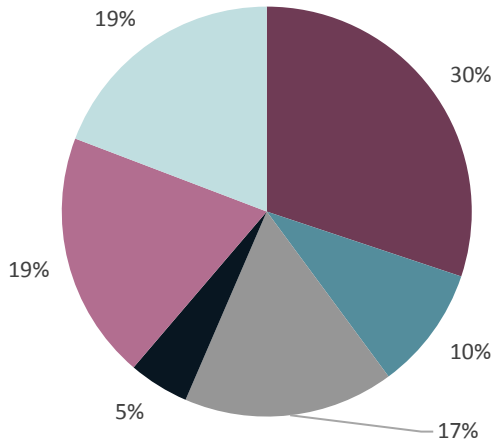
Considering Quality of Life, we should focus on...



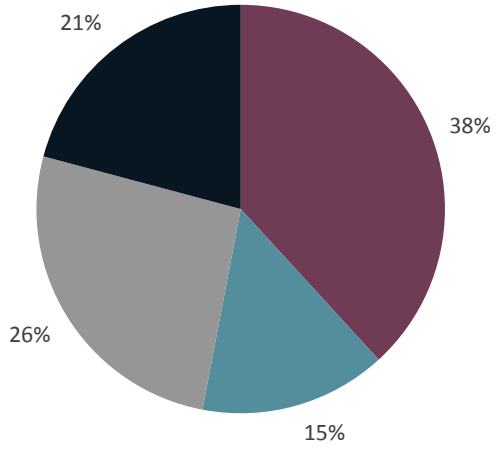
Considering Multiple Modes, we should invest in...



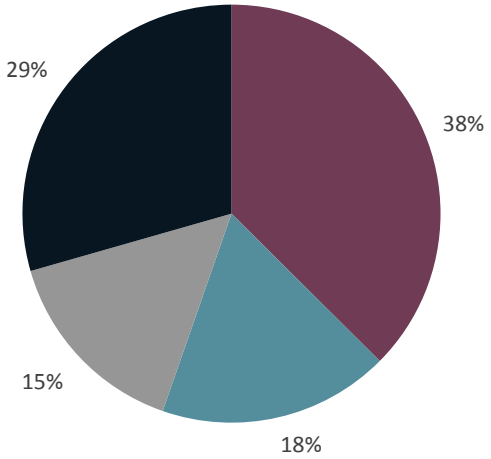
Considering Safety, we should focus on...



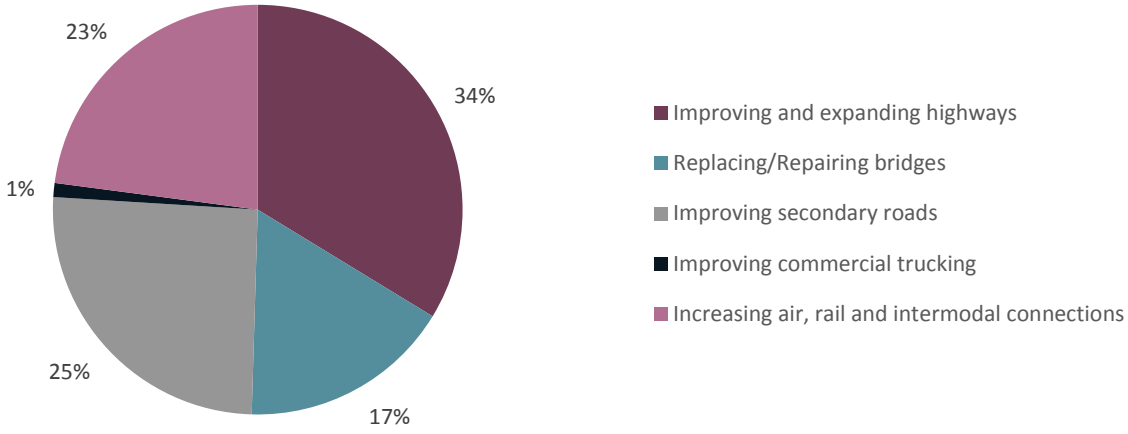
Considering Environment, we should focus on...



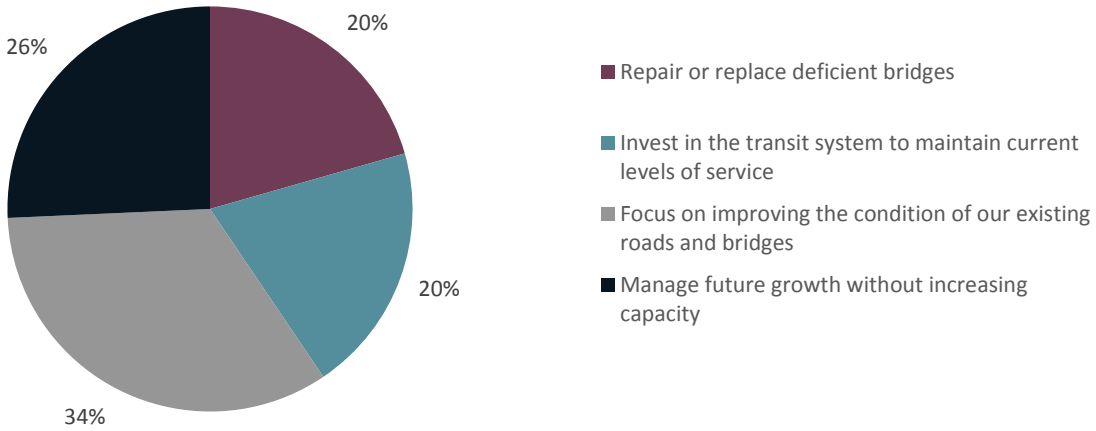
Considering Land Use, we should focus on...



Considering Economic Vitality, we should focus on...

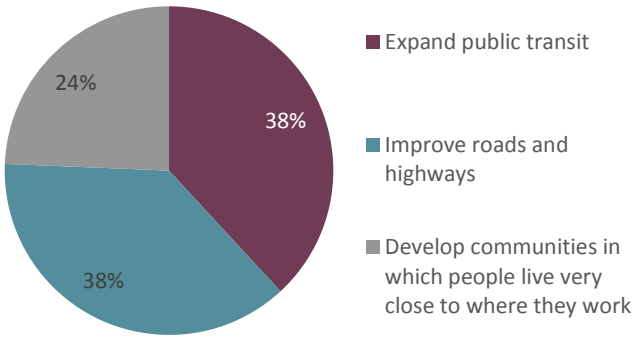


Considering System Preservation, we should...

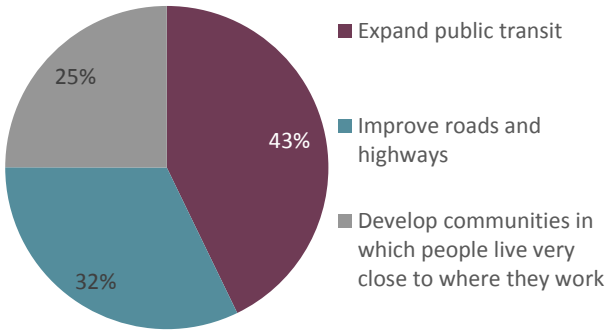


Finally, participants were asked two general questions about what they believed to be the best way to alleviate traffic congestion both in North Fulton and in Metro Atlanta. The results are shown below:

The best solution to traffic in North Fulton is...

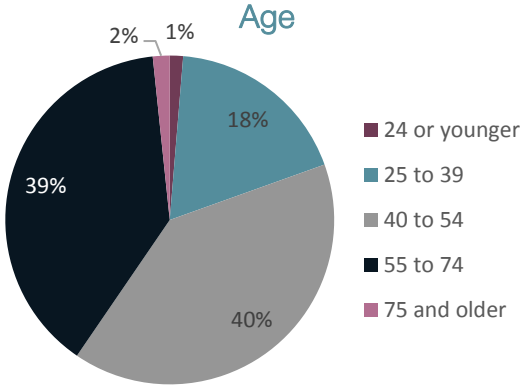


The best solution to traffic in Metro Atlanta is...

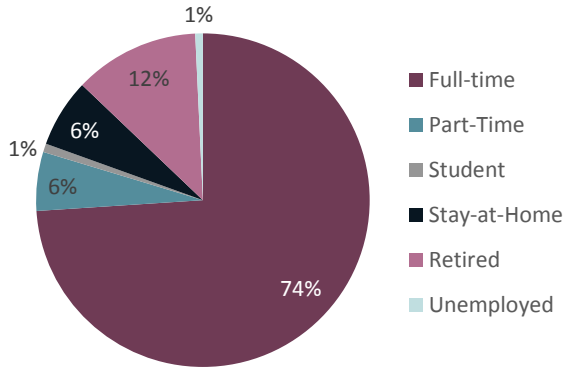


Respondents to the survey represented a wide range of lifestyles and social groups found in North Fulton. Shown below is a summary of the survey's demographics to show the range of views represented.

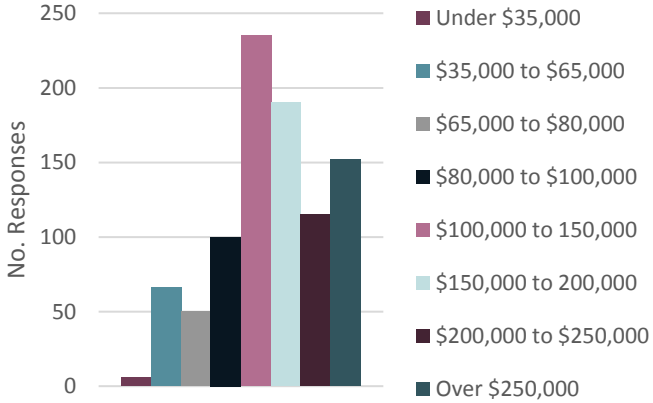
Age



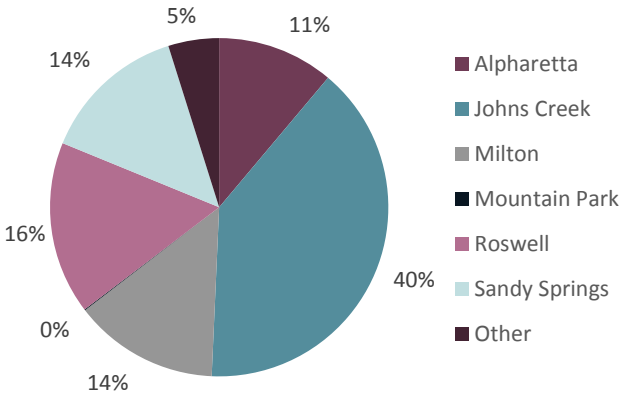
Employment Status



Household Income



Home City



NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

Phone Survey Results

May 2017

DEBRA SEMANS
CONTENT MARKETING ● MARKETING RESEARCH

Project Overview

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- Phone survey to provide scientific data for about community attitudes
  - 1,000 completed surveys
  - 200 each in Alpharetta, Johns Creek, Milton, Roswell, and Sandy Springs
- Length of interview: 15 minutes
- 50/50 cell and landline split
- Data collection completed February 17, 2017

Data Weighting

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- Data weighted to ensure representation:
  - Total results weighted by city population to adjust for quota sample.
  - City results weighted by age to adjust for oversampling of older respondents.
- Detailed description of weighting available.
- Slides showing data that is NOT weighted will be noted on slide.

NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

Phone Survey Results

Executive Summary

DEBRA SEMANS
CONTENT MARKETING ● MARKETING RESEARCH

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- **The primary mode of transportation in North Fulton County is driving, and most of that driving is work related**.
  - Of phone survey respondents, during weekdays: 60% travel during the morning rush hours, 61% travel during the day, 72% travel during the evening rush hours, and 41% travel in the evening.
  - The only difference between cities is more evening travel for Milton, Roswell (significantly more), and Sandy Springs.
  - 84% of AM rush travel is work-related and only Johns Creek residents are more likely to be commuting during the AM rush.
  - Travel during the day is 45% work related and 35% for errands.
  - PM rush travel is commuting for 71% of respondents, and significantly higher for Johns Creek.
  - Evening travel is 33% for entertainment and leisure.

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- The average length of commute is 33.8 minutes from home to work, and 36.7 minutes from work to home.
  - Sandy Springs respondents have the shortest commutes (26,3 minute to work, 29.9 minutes returning home).
  - Johns Creek respondents have significantly longer commutes than other cities (43.2 minutes to work, 46.4 minute returning home.)
- **Nearly everyone drives**: 94% of respondents travel at least once a week to destinations in North Fulton County.
- Travel patterns did vary by age, with Gen X and Boomers more likely to be commuting, and Older Generation travel during the weekday.
- Phone survey respondents said their **Top Three Priorities for transportation improvements are Quality of Life, Safety, and Mobility.**
  - The MetroQuest survey respondents identified the same Top Three Priorities.
  - MetroQuest respondents ranked Multimodal Opportunities as fourth most important, where phone survey respondents ranked Multimodal as seventh most important.

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- Environment, Land Use and Transportation, and Economic Vitality are mid-tier priorities for both phone survey and MetroQuest respondents.
- System Preservation was the bottom priority in both the phone survey and MetroQuest.
- Priorities ranked in the Top Three did not vary significantly by city.
  - Alpharetta, Johns Creek and Milton ranked Environment as a slightly higher priority than did Roswell or Sandy Springs.
  - Roswell finds Economic Vitality a higher priority and Sandy Springs finds Land Use and Transportation a higher priority than the other cities.
- Priorities ranked in the Top Three did not vary for Gen X and older generations.
  - Gen Z/Millennials rated Safety, Mobility, and Environment priorities as Top Three, moving Quality of Life to the fourth priority.
  - Gen Z/Millennials also rate Multimodal Options higher than any other generation.

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- For **Quality of Life**, phone survey respondents want focus on supporting economic development and job creation, as well as preserving existing neighborhoods.
  - MetroQuest respondents were significantly more likely to want focus on preserving existing neighborhoods and providing access to cultural features and amenities.
  - Boomers are significantly more likely to want focus on providing access to cultural features and amenities.
- Phone survey respondents believe that improving **Safety** should be accomplished by focusing on the region's most dangerous intersections.
  - MetroQuest respondents are significantly more likely to favor improving safety at the most dangerous intersections, making it safer to bike and walk, investing in smart transportation technologies, making travel times more predictable.
  - Older generations are significantly less interested and Gen Z/Millennials are most interested in making it easier to bike and walk.

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- To improve **Mobility**, phone survey respondents favor improving connections, focus on trips between North Fulton and adjacent communities, and constructing a few large, important projects.
  - MetroQuest respondents are more likely to favor all initiatives to improve mobility than are phone survey respondents.
  - There are differences by age: Gen Z/Millennials are significantly more interested in improving connections within North Fulton County, Gen Z/Millennials and Gen X are most interested in constructing a few large, important projects, and Gen X and Boomers are significantly more interested in investing in a numerous smaller projects.
- **Environmental** concerns for phone survey respondents means preserving water and air quality and protecting existing greenspace.
  - MetroQuest respondents are significantly more likely to favor preserving water and air quality, protecting existing greenspace, increasing access to parks and promoting active recreation.
  - Older respondents are concerned about air/water quality; younger respondents favor increasing access to parks/natural resources and promoting active recreation.

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- To improve **Land Use and Transportation**, respondents favor making it easier to commute between home and work or school and balancing a mix of land uses that allow travel via walking, biking, or driving.
  - MetroQuest respondents are significantly likely to favor all of these initiatives more than phone survey respondents.
  - Gen Z/Millennials and Boomers are more interesting balancing a mix of land uses to permit walking, biking, or driving and are significantly less interested in strengthening connections between homes and non-work activities.
- To improve **Economic Vitality**, respondents favor improving and expanding highways to improve regional travel, and improving secondary roads.
  - MetroQuest respondents are significantly more likely to favor all initiatives.
  - There are significant differences between generations on how to improve Economic Vitality:
    - Gen Z/Millennials are most interested in improving/expanding highways.
    - Gen Z/Millennials and Boomers are most interested in increasing air, rail, and intermodal connects.
    - Older generations are most concerned are replacing and repairing critical bridges

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- To improve **Multimodal Options**, phone survey respondents favor public transportation, multiuse facilities, and pedestrian-specific facilities.
  - MetroQuest respondents are significantly more likely to be in favor of all of the initiatives for improving transit.
  - There are differences between generation in how to improve Multimodal Transport:
    - Gen Z/Millennial respondents favor public transportation.
    - Gen Z/Millennials, Gen X and Boomers are more likely to favor multiuse facilities than Older Generations.
    - Gen X and Boomers are most likely to favor pedestrian-specific facilities.
- While **System Preservation** was the bottom priority for nearly all respondents, respondents favor improving the condition of existing roads and bridges.
- Respondents believe the best solution to improving traffic in Metro Atlanta is to expand public transit, improve roads/highways, and to develop live/work communities.

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- There are differences by cities:
  - Respondents in Roswell and Sandy Springs are significantly more likely to believe the best solution to improving traffic in Metro Atlanta is to expand public transit.
  - Respondents in Alpharetta are significantly more likely to say the best solution is to improve roads and highways.
  - Respondents in Milton are significantly more likely to say the best traffic solution is to develop live/work communities (35%).
- 77% of respondents in North Fulton County are very or somewhat willing to pay an additional sales tax for improved transportation.
  - There were no significant differences in willingness to vote FOR a sales tax by generations.
  - However, those NOT WILLING to vote for a sales tax were more likely to be Gen X, Boomers and Older Generations.
  - Overall, Gen Z/Millennials are most willing to vote FOR a sales tax.

Executive Summary

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- In general, MetroQuest respondents are more passionate about transportation than respondents in the statistically representative phone survey.
  - As a qualitative metric, respondents were asked to "select up to 2“ solutions to each of the 8 transit priorities. MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus around 125%-130% for the phone surveys).
  - This might be expected as MetroQuest respondents self-select to take the survey.

NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

Phone Survey Results

Detailed Findings

DEBRA SEMANS

CONTENT MARKETING ● MARKETING RESEARCH

NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

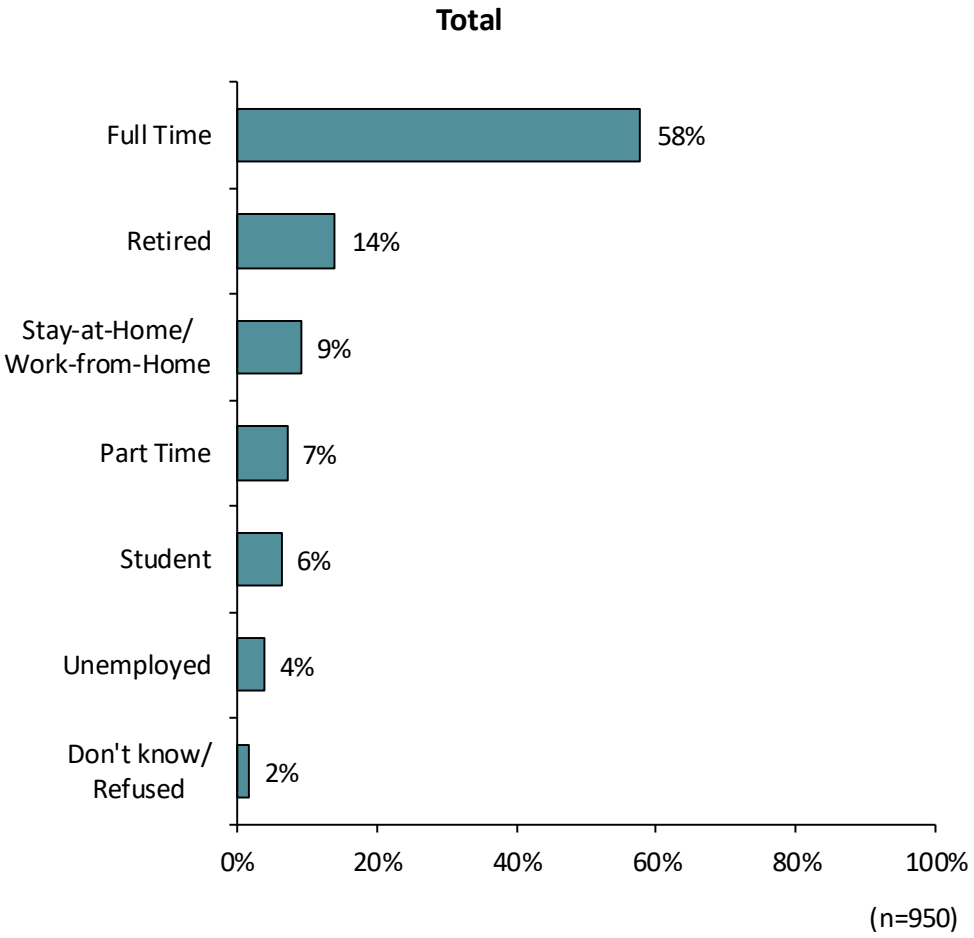
Phone Survey Results

Travel Patterns

DEBRA SEMANS

CONTENT MARKETING ● MARKETING RESEARCH

Employment Status



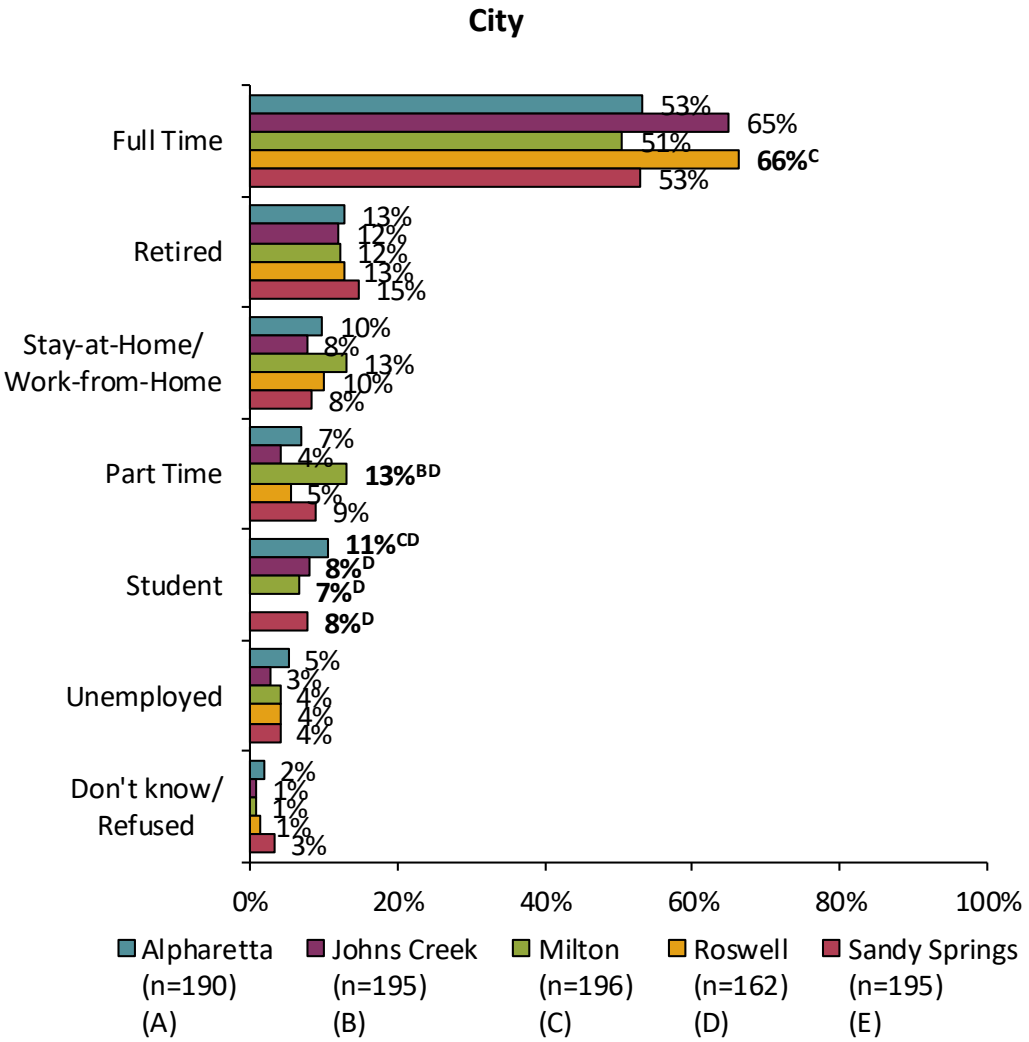
- Nearly 6 in 10 respondents are employed full-time, another 7% work part-time, and 6% are students.
- 14% of respondents are retired and 4% are unemployed.

Q3: What is your employment status?

Employment Status

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- Johns Creek and Roswell have higher numbers of employed respondents.
- Milton has more respondents employed part-time.
- All other employment categories are represented in similar proportions in all cities

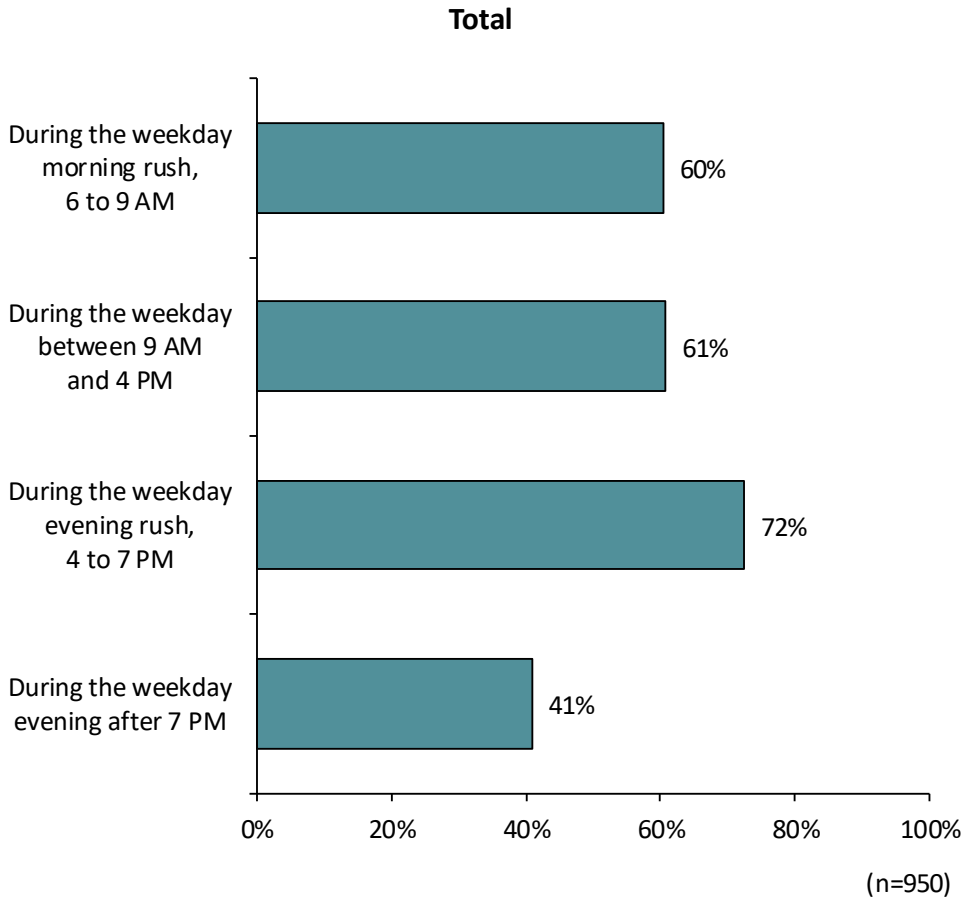


Q3: What is your employment status?

DEBRA SEMANS
CONTENT MARKETING ● MARKETING RESEARCH

North Fulton County Typical Travel Time

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN



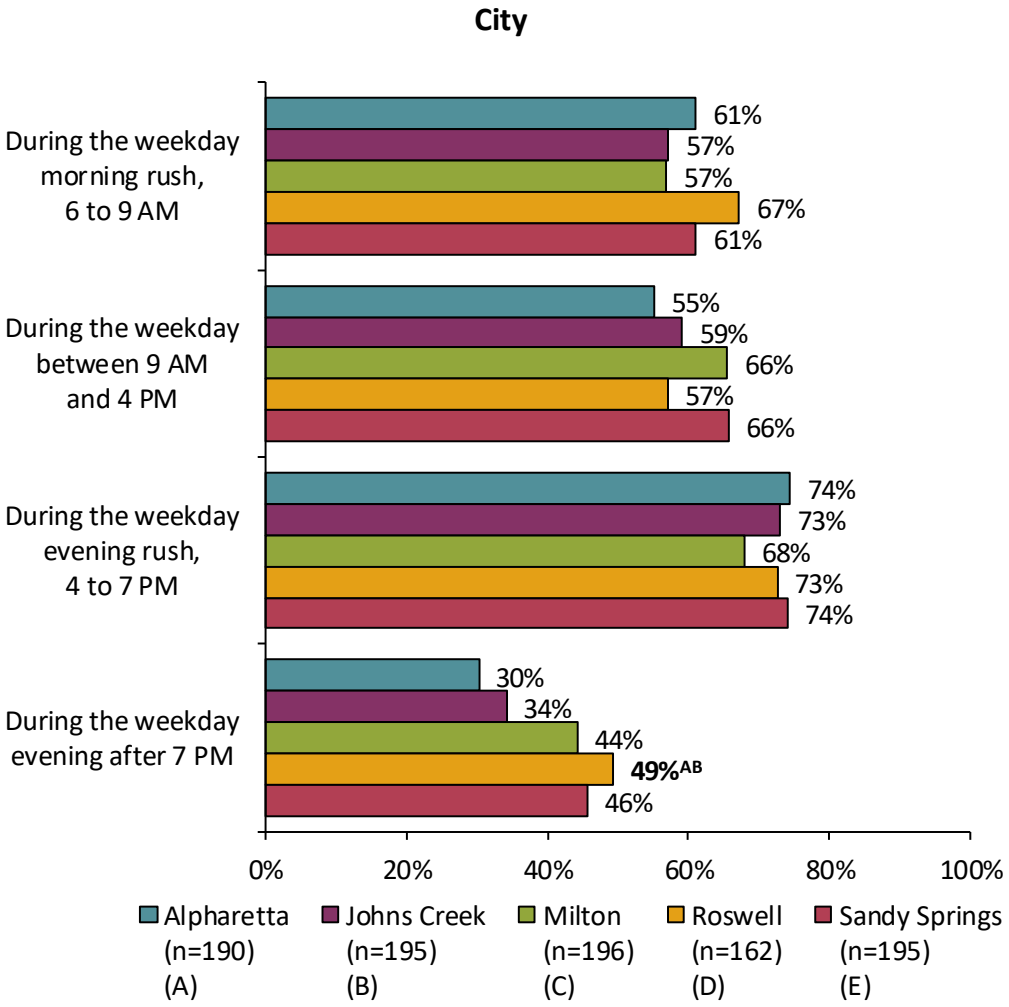
- Nearly 6 in 10 respondents travel in North Fulton County during the AM weekday rush and during the weekday.
- Slightly more than 7 in 10 respondents travel in North Fulton during the PM weekday rush.

Q6: Are you typically traveling in North Fulton County...
A: During the weekday morning rush, 6 to 9 AM, B: During the weekday between 9 AM and 4 PM, C: During the weekday evening rush, 4 to 7 PM, D: During the weekday evening after 7 PM

North Fulton County Typical Travel Time

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

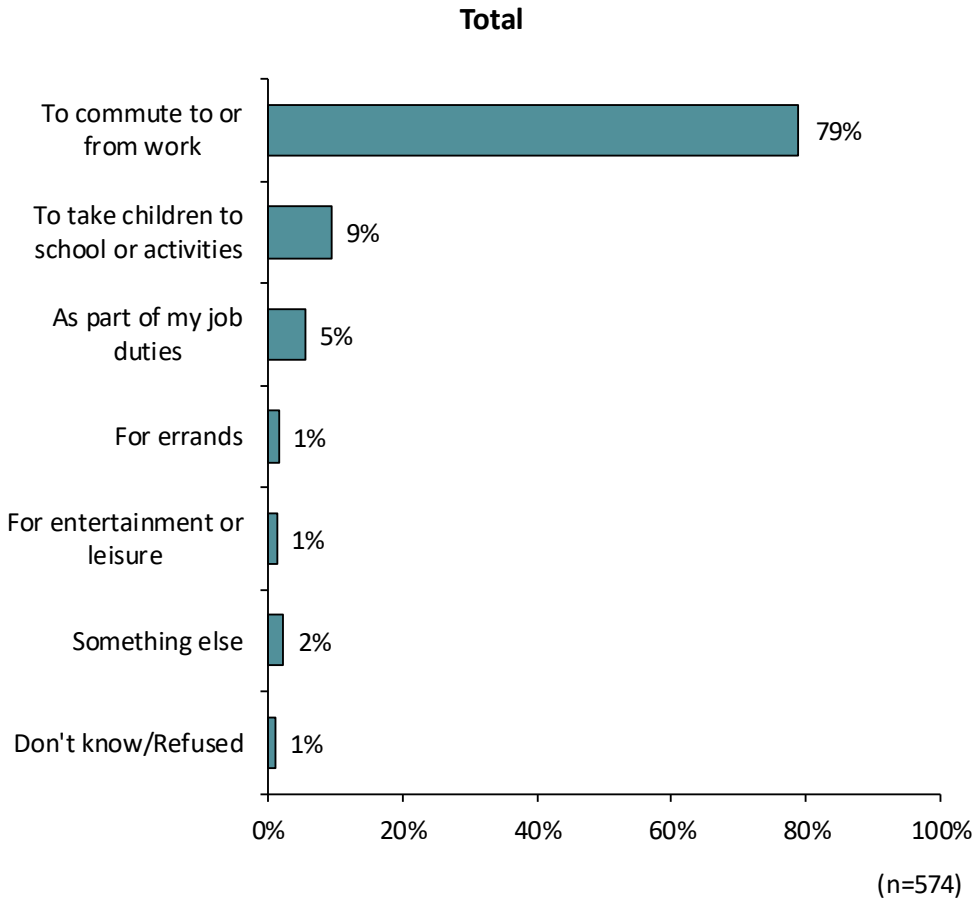
- There is no significant difference between the cities in terms of weekday travel during the AM or PM rushes, or during the day.
- However, respondents from Milton, Roswell (significantly), and Sandy Springs are more likely to travel during the weekday evening than are those from Alpharetta and Johns Creek.



Q6: Are you typically traveling in North Fulton County...
A: During the weekday morning rush, 6 to 9 AM, B: During the weekday between 9 AM and 4 PM, C: During the weekday evening rush, 4 to 7 PM, D: During the weekday evening after 7 PM

Reasons for Traveling During Weekday Morning Rush

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN



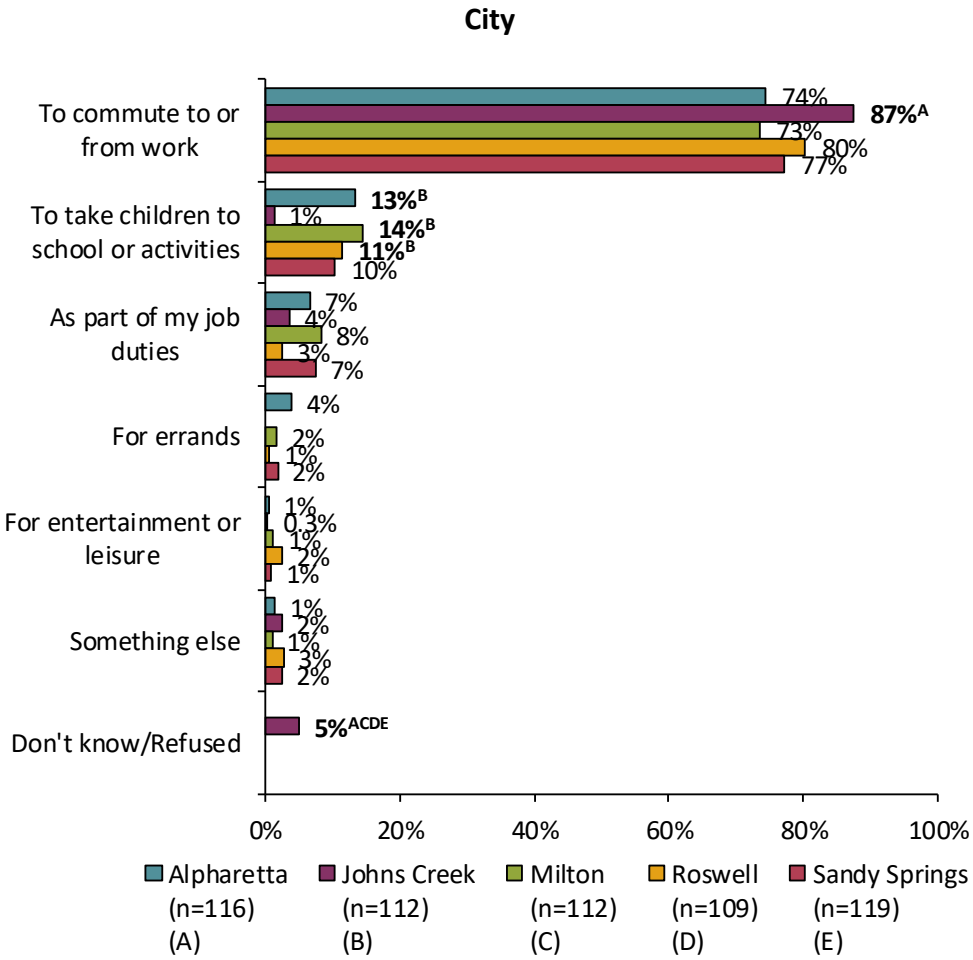
- 84% of respondents have work-related travel in North Fulton during the weekday AM rush (79% to commute to or from work, 5% travel as part of their job duties).
- 9% are taking children to school or activities.

Q7: Why are you typically traveling in North Fulton County during the weekday morning rush?

Reasons for Traveling During Weekday Morning Rush

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

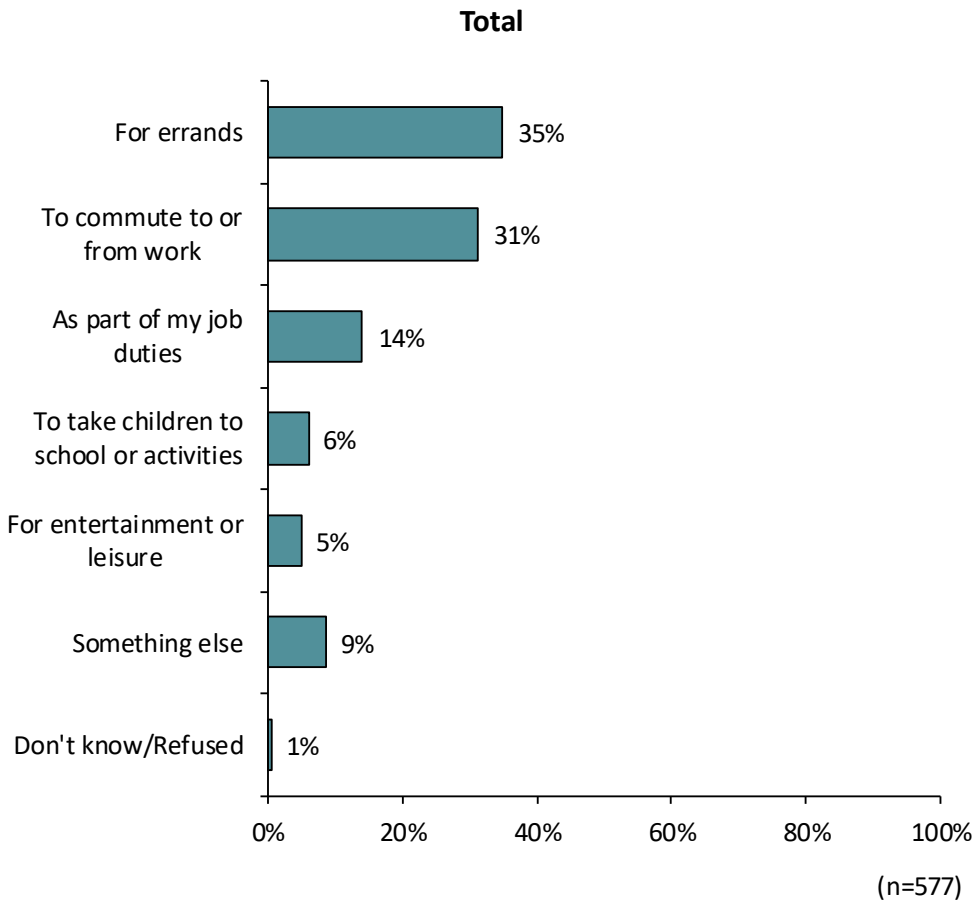
- Respondents from Johns Creek are significantly more likely to be commuting to or from work (87%) during the weekday AM rush than other cities.
- Similarly, Johns Creek respondents are much less likely to report transporting children (1%) during the weekday AM rush than other cities.



Q7: Why are you typically traveling in North Fulton County during the weekday morning rush?

Reasons for Traveling During Weekday Between 9 AM and 4 PM

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN



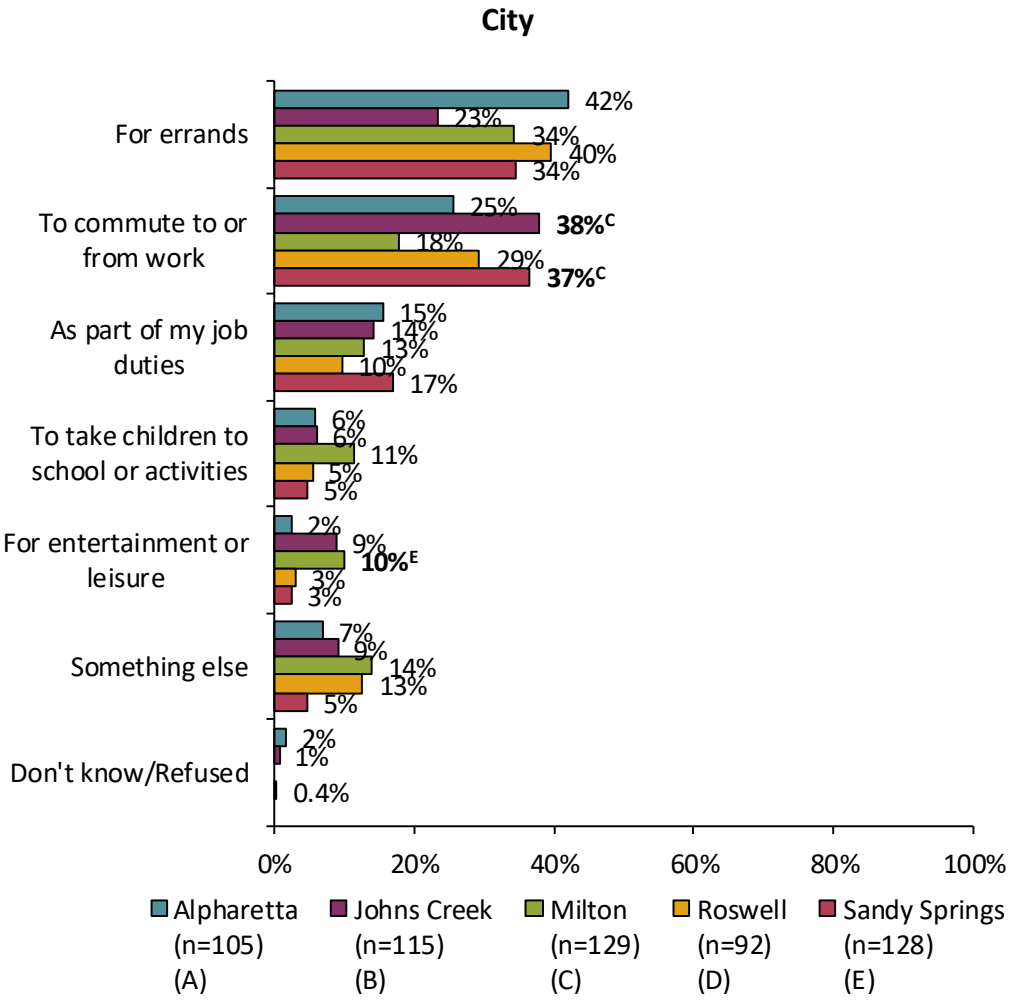
- Travel on weekdays between 9 AM and 4 PM is 45% job related (31% commuting to or from work, 14% as part of job duties).
- 35% of weekday travel between 9 AM and 4 PM is for errands.

Q8: Why are you typically traveling in North Fulton County during the weekday between 9 AM and 4 PM?

Reasons for Traveling During Weekday Between 9 AM and 4 PM

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

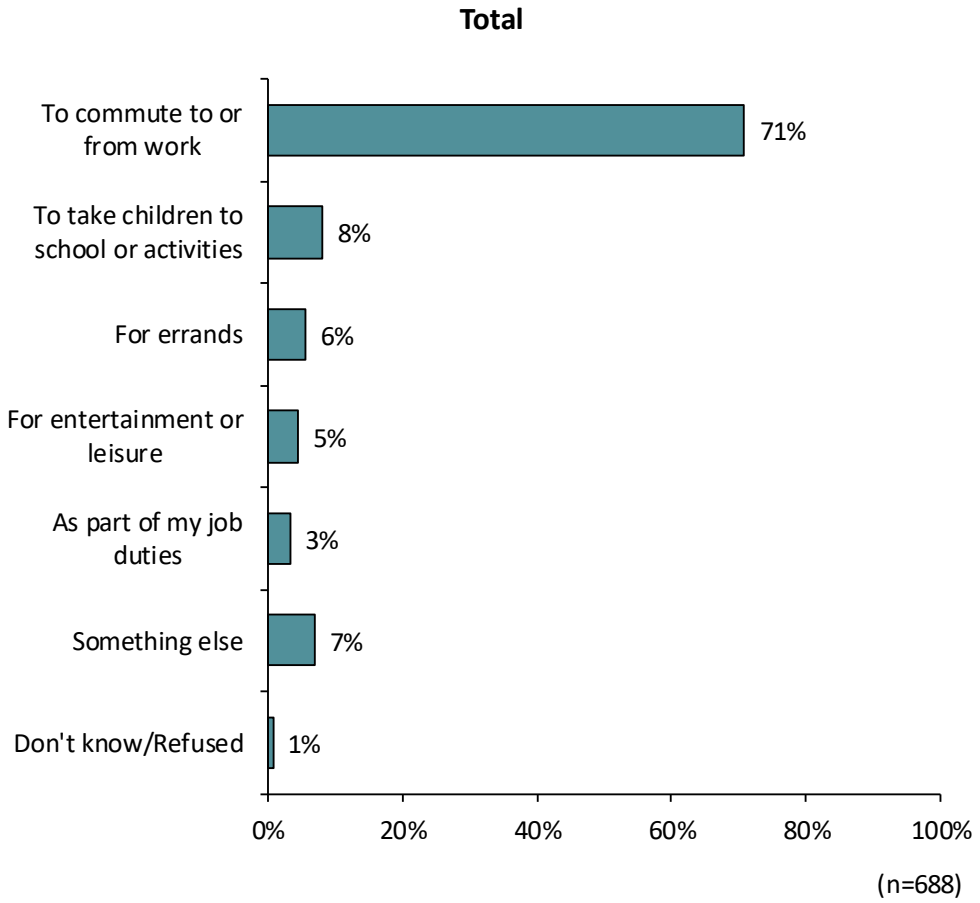
- Job-related travel on weekdays between 9 AM and 4 PM is significantly higher for Johns Creek and Sandy Springs respondents (38% and 37%, respectively).
- Weekday travel between 9 AM and 4 PM in Alpharetta and Roswell is more likely to be for errands (42% and 40%, respectively).



Q8: Why are you typically traveling in North Fulton County during the weekday between 9 AM and 4 PM?

Reasons for Traveling During Weekday Evening Rush

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN



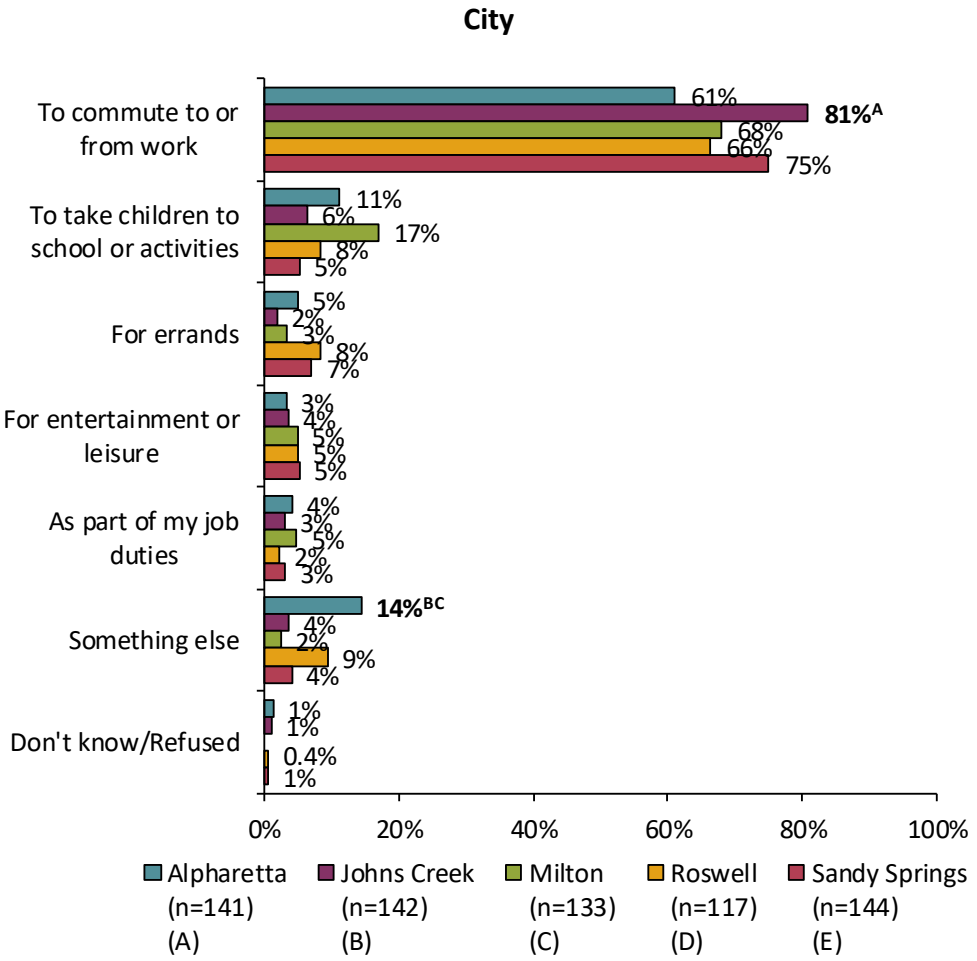
- Respondent travel on weekdays during the PM rush is commuting to or from work for 71% of respondents.

Q9: Why are you typically traveling in North Fulton County during the weekday evening rush?

Reasons for Traveling During Weekday Evening Rush

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

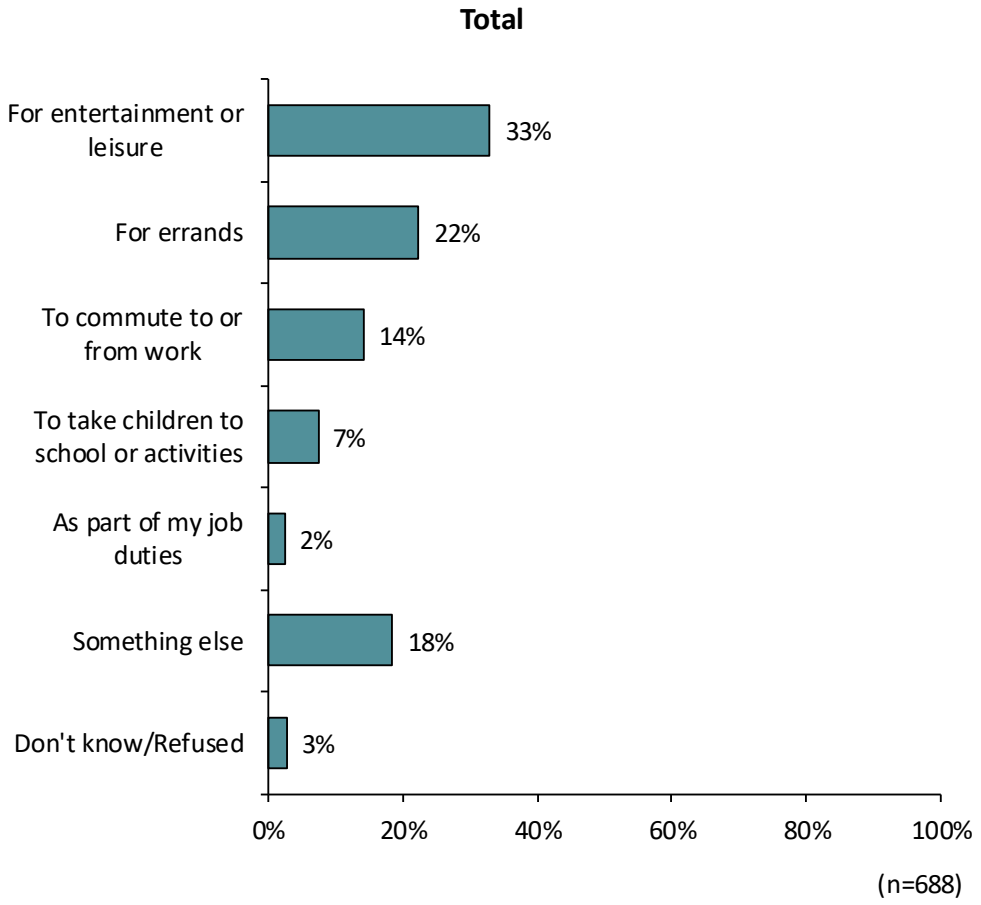
- Johns Creek again has a significantly higher percentage of respondents commuting to or from work during the weekday PM rush (81%).



Q9: Why are you typically traveling in North Fulton County during the weekday evening rush?

Reasons for Traveling in the Evening After 7 PM

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN



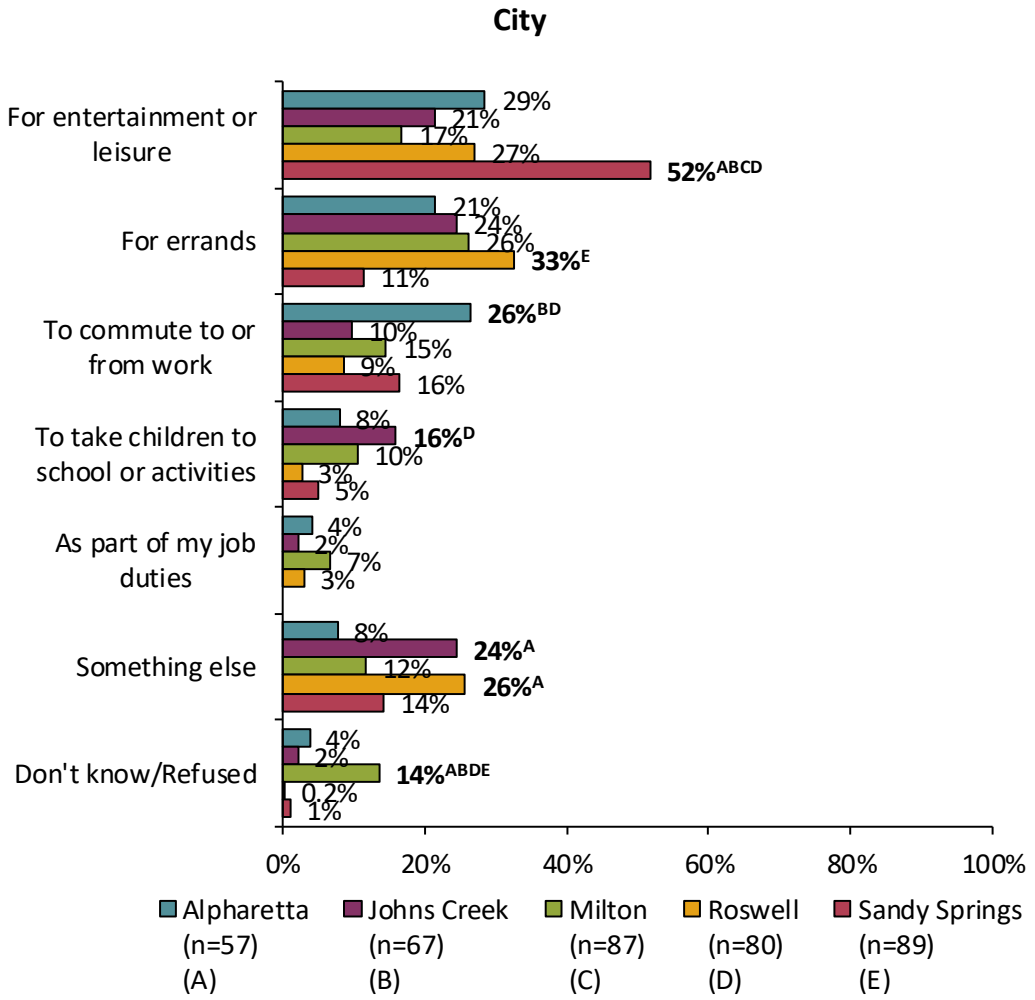
- Respondent travel on weekdays during the evening after 7 PM is more varied: 33% is for entertainment or leisure, 22% for errands, and 18% for something else.
- 14% of respondents' travel after 7 pm on weekdays is still for commuting to/from work.

Q10: Why are you typically traveling in North Fulton County in the evening after 7 PM?

Reasons for Traveling in the Evening After 7 PM

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- During the weekday evening after 7 PM:
  - Sandy Springs has significantly more travel for entertainment or leisure than other cities (52%).
  - Roswell has significantly more travel for errands (33%) and traveling for something else (26%).
  - Alpharetta has significantly more travel from commuting to/from work (26%).
  - Johns Creek respondents are significantly more likely to be transporting children (16%) and traveling for something else (24%).



Q10: Why are you typically traveling in North Fulton County in the evening after 7 PM?

Commute Time

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

Means (Minutes)	Total (n=675)	Alpharetta (n=134) (A)	Johns Creek (n=150) (B)	Milton (n=138) (C)	Roswell (n=116) (D)	Sandy Springs (n=136) (E)
Commute from Home to Work/School	33.8	32.5	**43.2**^{ACE}	31.4	**34.5**^{E}	26.3
Commute from Work/School Back Home	36.7	34.2	**46.4**^{ACE}	33.4	37.5	29.9

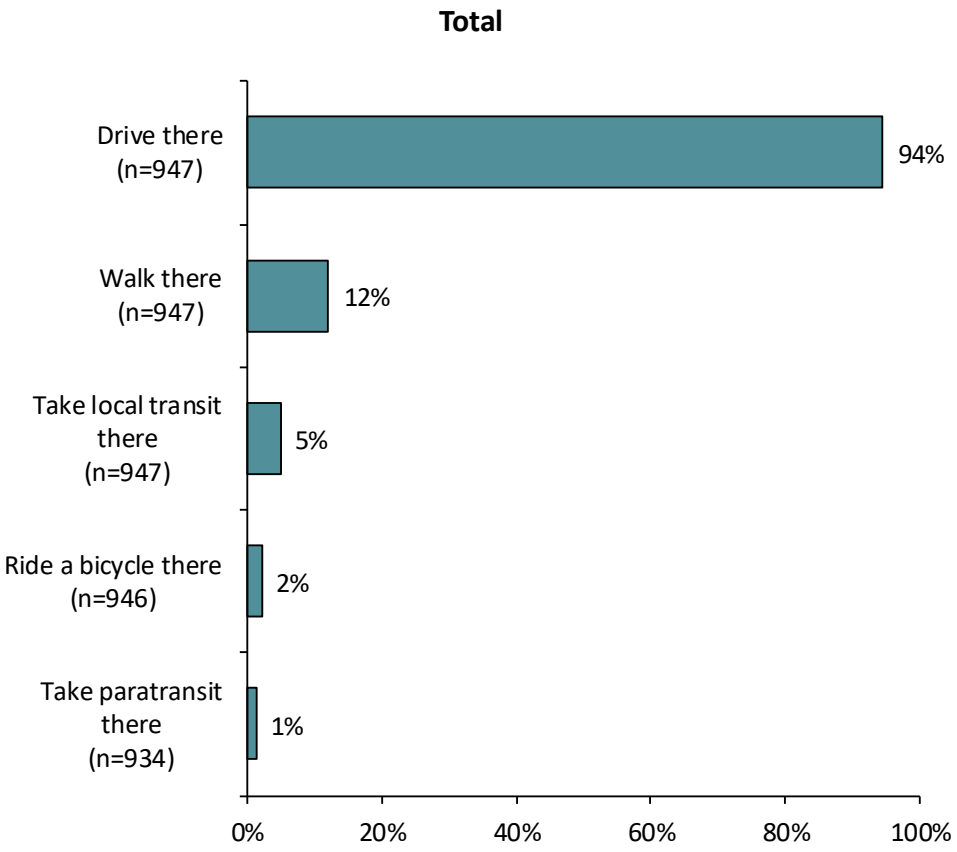
- Overall, the average AM and PM commutes reported by respondents in North Fulton County are 33.8 minutes and 36.7 minutes.
- Sandy Spring respondents have the shortest average AM and PM commutes (26.3 minutes and 29.9 minutes).
- Johns Creek respondents have significantly longer AM and PM commutes (43.2 minutes and 46.4 minutes) than other cities.

Q11: On average, about how long does it typically take you to commute from home to work or school?
Q12: On average, about how long does it typically take you to commute from work or school back home?

Transportation Method

Top 2 (Several Times/Once a Week)

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN



- Respondents in North Fulton County prefer driving over all other modes of transport.
- 94% drive at least once a week to destinations in North Fulton.

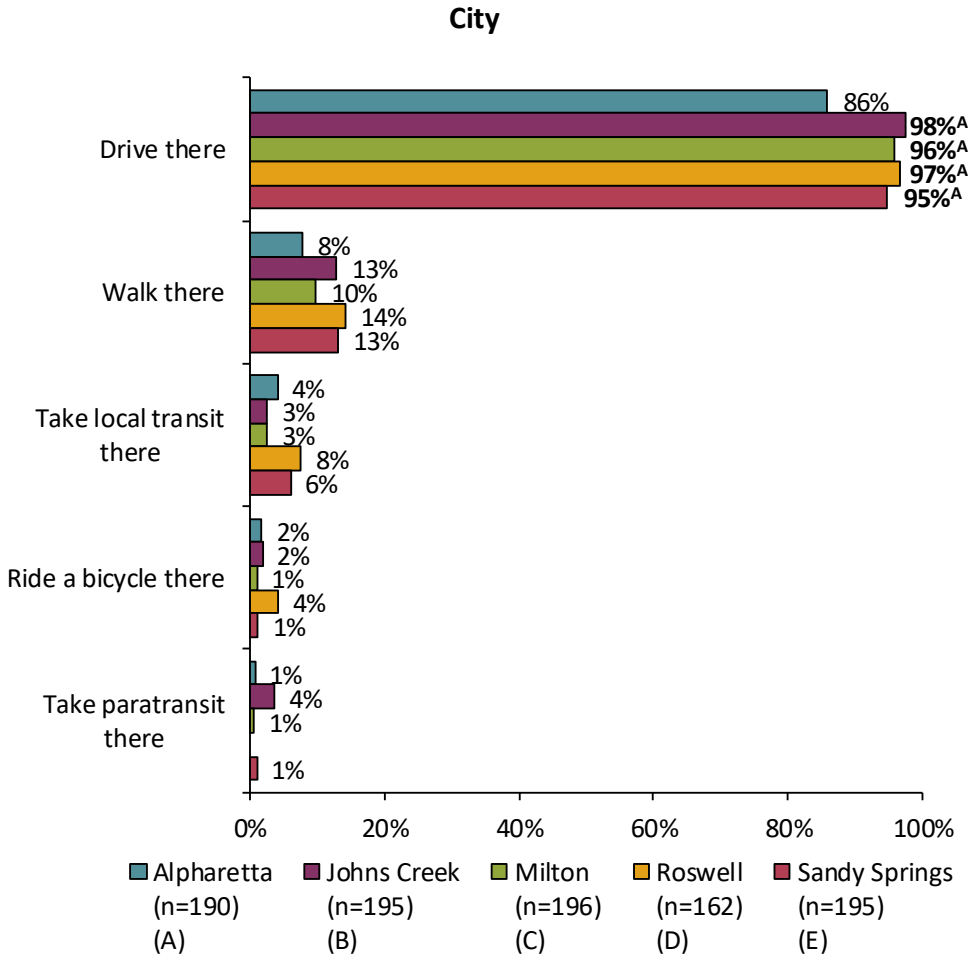
Q13: How often do you walk to get to destinations in North Fulton? Q14: How often do you drive to get to destinations in North Fulton? Q15: How often to you ride a bicycle to get to destinations in North Fulton? Q16: How often do you take transit to get to destinations in North Fulton? Q17: How often do you take paratransit to get to destinations in North Fulton?

Transportation Method

Top 2 (Several Times/Once a Week)

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- Alpharetta responds drive significantly less (86%) than respondents in other cities in North Fulton County.



Q13: How often do you walk to get to destinations in North Fulton? Q14: How often do you drive to get to destinations in North Fulton? Q15: How often to you ride a bicycle to get to destinations in North Fulton? Q16: How often do you take transit to get to destinations in North Fulton? Q17: How often do you take paratransit to get to destinations in North Fulton?

NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

Phone Survey Results
Compared to
MetroQuest Results

DEBRA SEMANS

CONTENT MARKETING ● MARKETING RESEARCH

Phone Survey Results Compared to MetroQuest

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- In order to understand North Fulton County residents' transportation priorities, the phone survey results were compared to an online survey called MetroQuest.
- MetroQuest respondents self-selected into the survey after hearing about it in a public meeting or news forum.
- MetroQuest data have been weighted back to the Phone Survey data so the rankings are comparable.
- MetroQuest data cannot be analyzed by city. All city-level results reported in this section are from the phone survey only.
- Slide comparing MetroQuest and phone survey data (specifically, slides 25 – 37, 39, 41, 43, 47, 49, 51) are not weighted by city or age.

Q11: On average, about how long does it typically take you to commute from home to work or school?
Q12: On average, about how long does it typically take you to commute from work or school back home?

Weighted Score Ranking

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

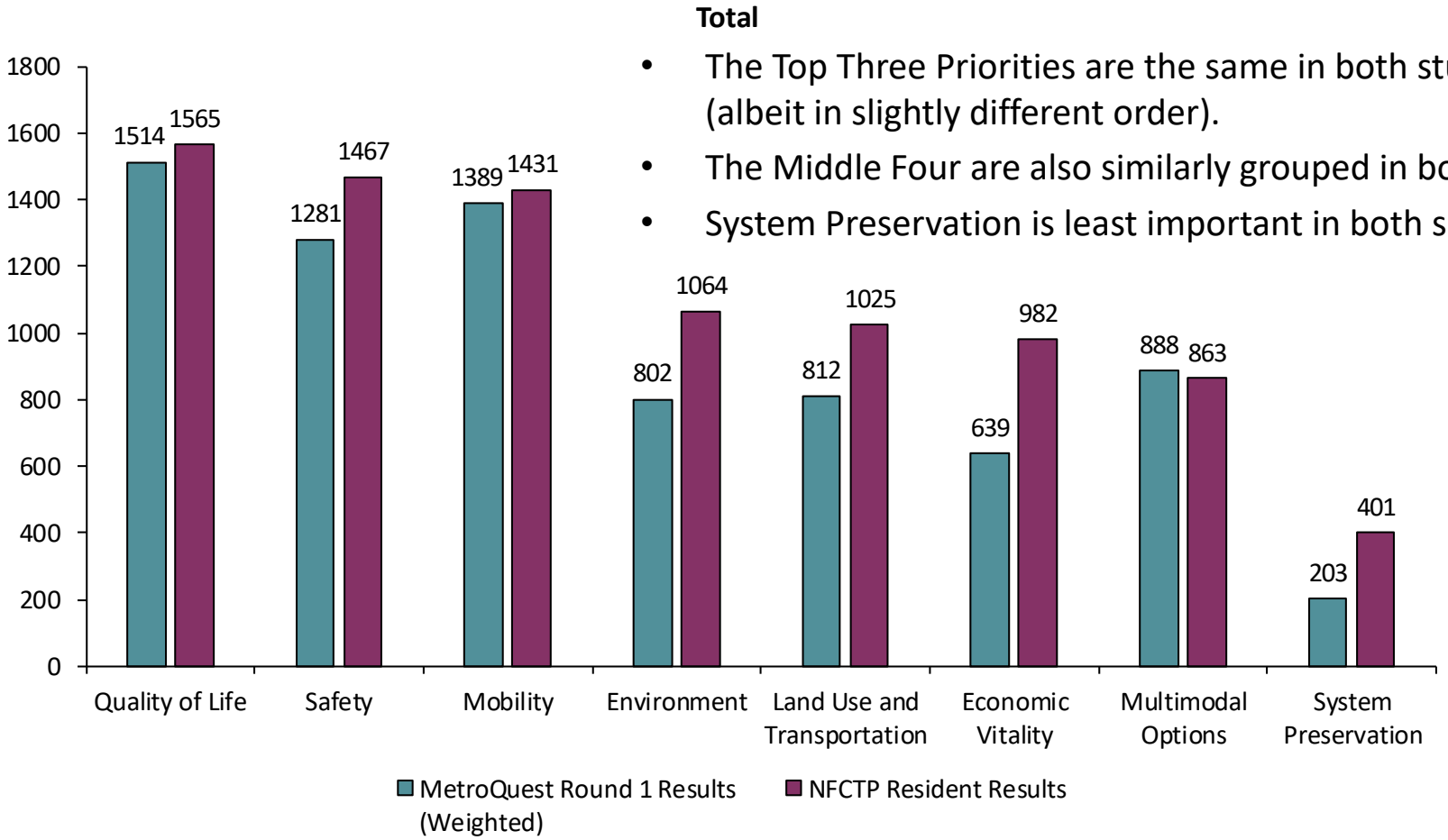
Priority	Rank in Phone Survey	Rank in MetroQuest Survey
Quality of Life	1	1
Safety	2	3
Mobility	3	2
Environment	4	5
Land Use and Transportation	5	6
Economic Vitality	6	7
Multimodal Options	7	4
System Preservation	8	8

- The Top Three Priorities are the same in both studies (albeit in slightly different order).
- Multimodal Options is much more important to MetroQuest respondents than to phone survey respondents.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

Weighted Score
(In order of phone survey)

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN



- The Top Three Priorities are the same in both studies (albeit in slightly different order).
- The Middle Four are also similarly grouped in both.
- System Preservation is least important in both surveys.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Score not weighted by City or Age

DEBRA SEMANS
CONTENT MARKETING ● MARKETING RESEARCH

Weighted Priority
(Phone Survey Only)

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

Priority	Alpharetta	Johns Creek	Milton	Roswell	Sandy Springs
Quality of Life	1	2	1	3	3
Safety	3	1	2	1	1
Mobility	2	3	3	2	1
Environment	4	4	4	6	7
Land Use and Transportation	5	7	5	5	4
Economic Vitality	6	5	6	4	5
Multimodal Options	7	6	7	7	6
System Preservation	8	8	8	8	8

- Priorities ranked in the Top Three did not vary by city.
- Alpharetta, Johns Creek and Milton ranked Environment as a slightly higher priority than did Roswell or Sandy Springs.
- Roswell finds Economic Vitality a higher priority and Sandy Springs finds Land Use and Transportation a higher priority than the other cities.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

Weighted Priority
(Phone Survey Only)

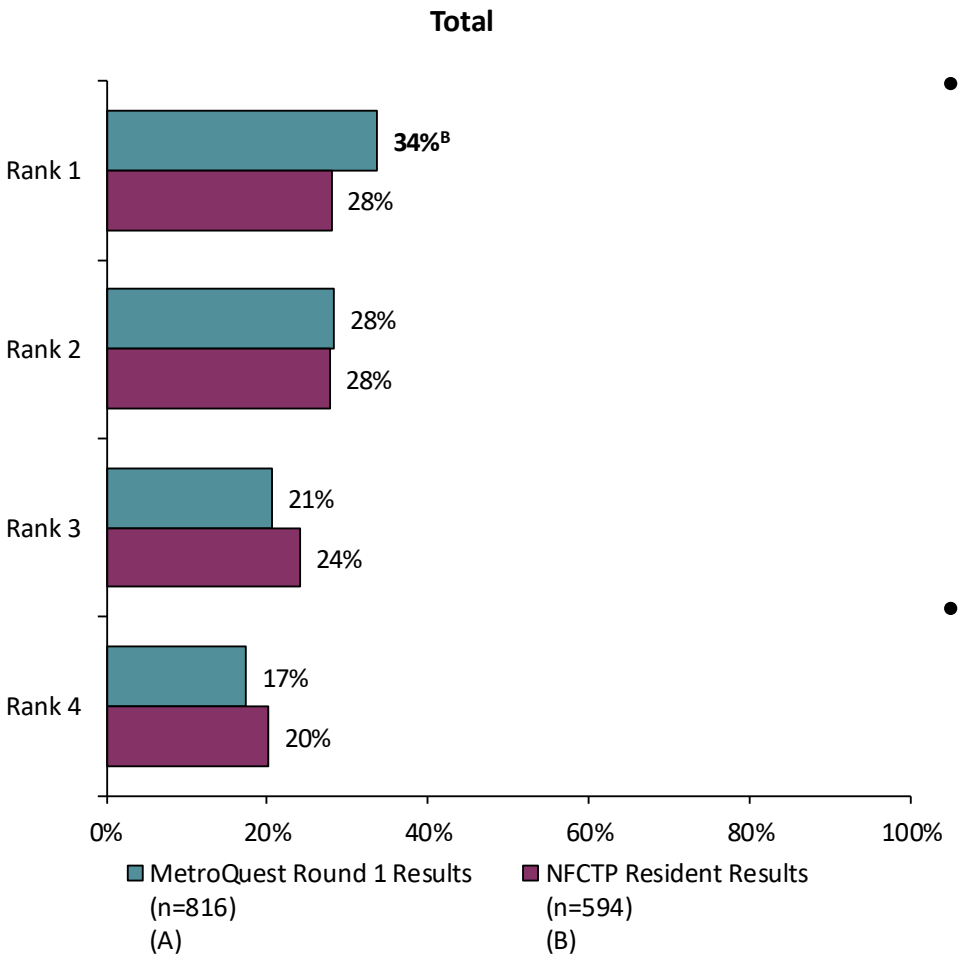
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

Priority	Total	Gen Z/Millenials (18 to 37)	Gen X (38 to 50)	Boomers (51 to 70)	Older Generations (71 and older)
Quality of Life	1	4	1	1	3
Safety	2	2	2	3	1
Mobility	3	1	3	2	2
Environment	4	3	6	6	4
Land Use and Transportation	5	7	5	4	6
Economic Vitality	6	6	4	5	5
Multimodal Options	7	5	7	7	7
System Preservation	8	8	8	8	8

- Priorities ranked in the Top Three did not vary for Gen X and older generations.
- Gen Z/Millennials rated Safety, Mobility, and Environment priorities as Top Three, moving Quality of Life to the fourth priority.
- Gen Z/Millennials also rate Multimodal Options higher than any other generation.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age, and Generations only include those that gave their exact age

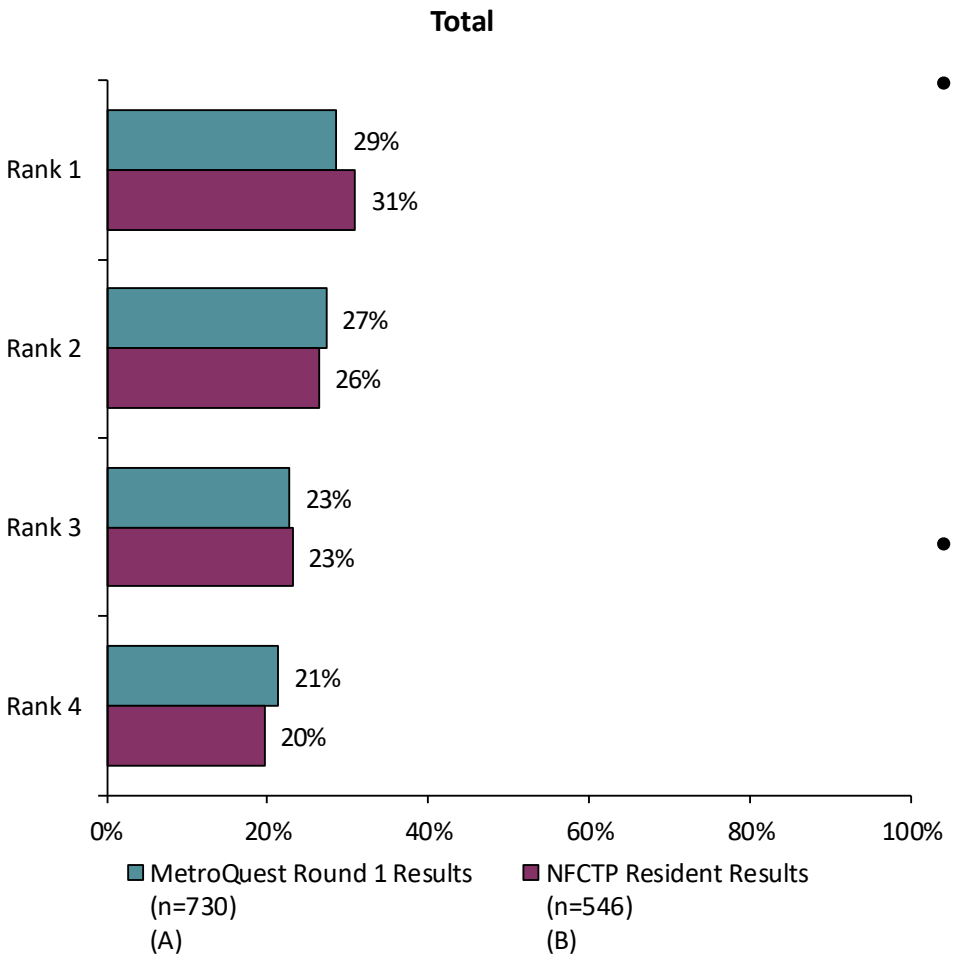
Quality of Life



- Among those phone survey respondents including Quality of Life in their top four priorities, 56% of respondents ranked Quality of Life the most important or next most important transportation priority.
- Significantly more MetroQuest respondents rated Quality of Life their top priority than did phone survey respondents.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

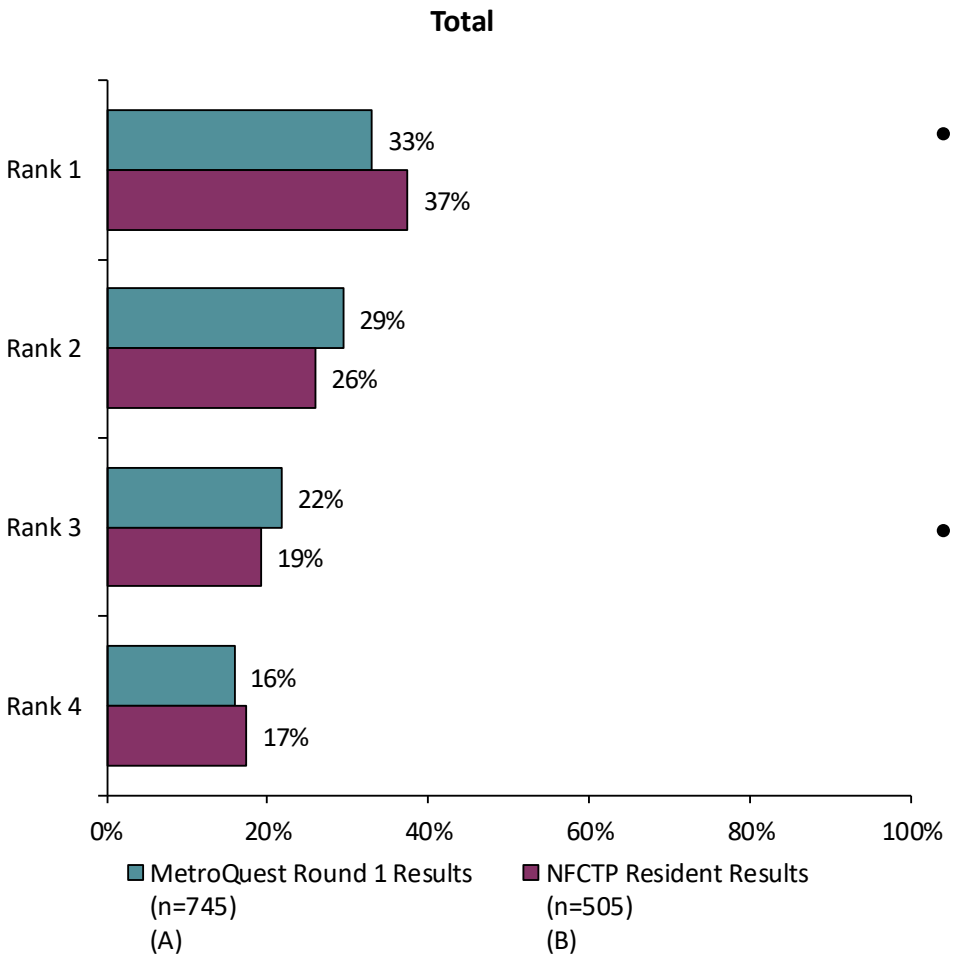
Safety



- Among those respondents including Safety in their top four priorities, 57% of respondents ranked Safety the most important or next most important transportation priority.
- There were no significant differences between MetroQuest and phone survey respondents on the priority of Safety.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

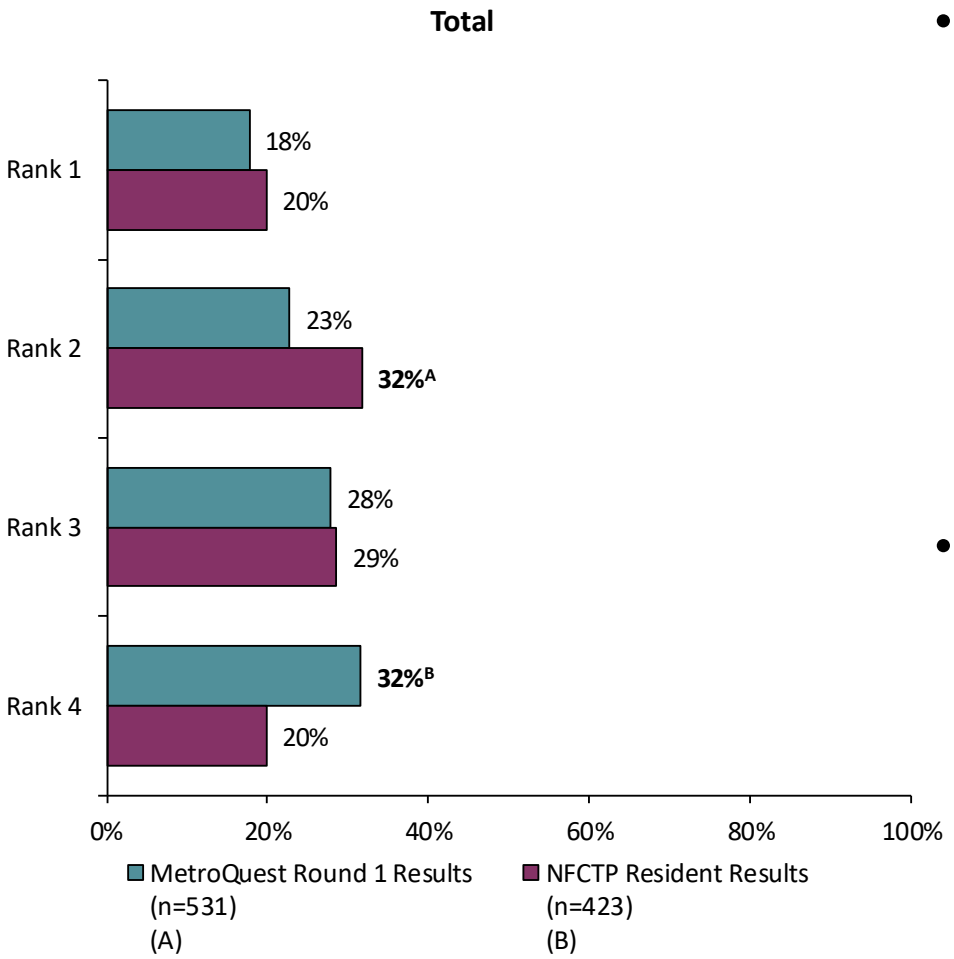
Mobility



- Among those respondents including Mobility in their top four priorities, 37% of respondents ranked Mobility the most important transportation priority.
- There were no significant differences between MetroQuest and phone survey respondents on the priority of Mobility.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

Environment

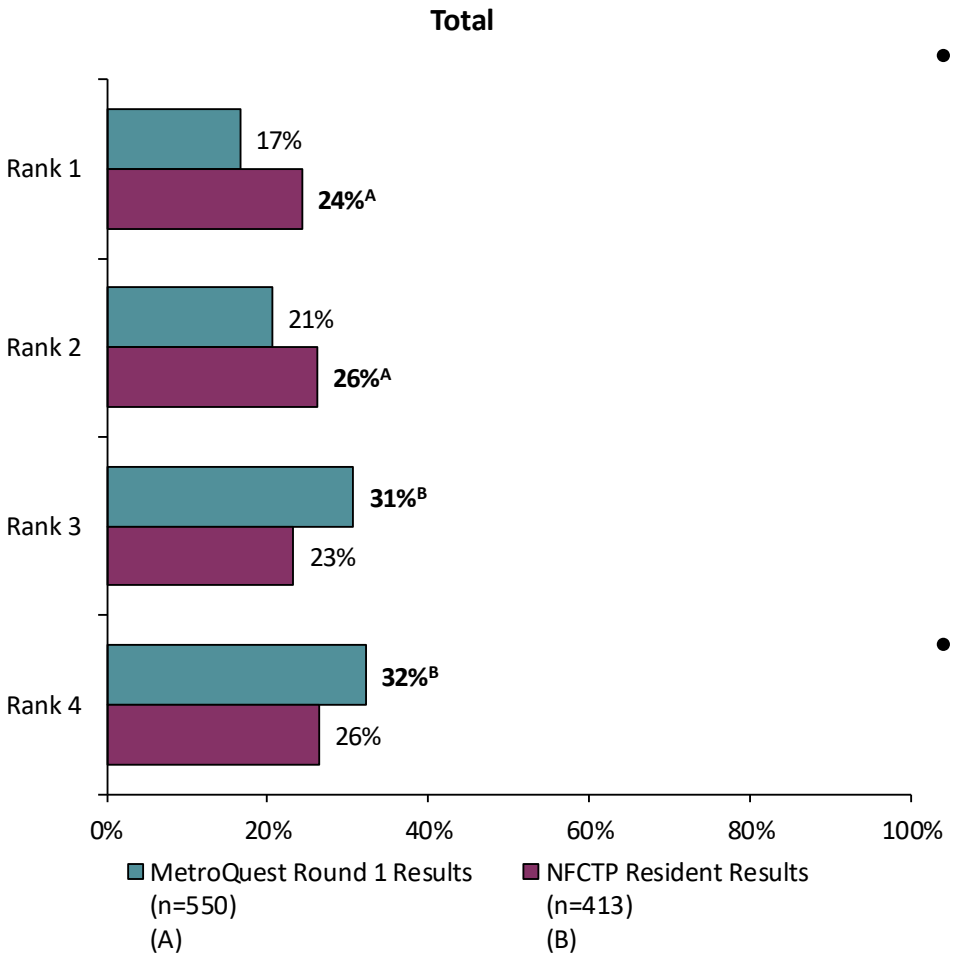


- Among those respondents including Environment in their top four priorities, 42% of respondents ranked Environment the most important or next most important transportation priority.
- Phone survey respondents were significantly more likely to rate Environment their second priority, while MetroQuest respondents were more likely to rate it their fourth priority.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

Land Use and Transportation

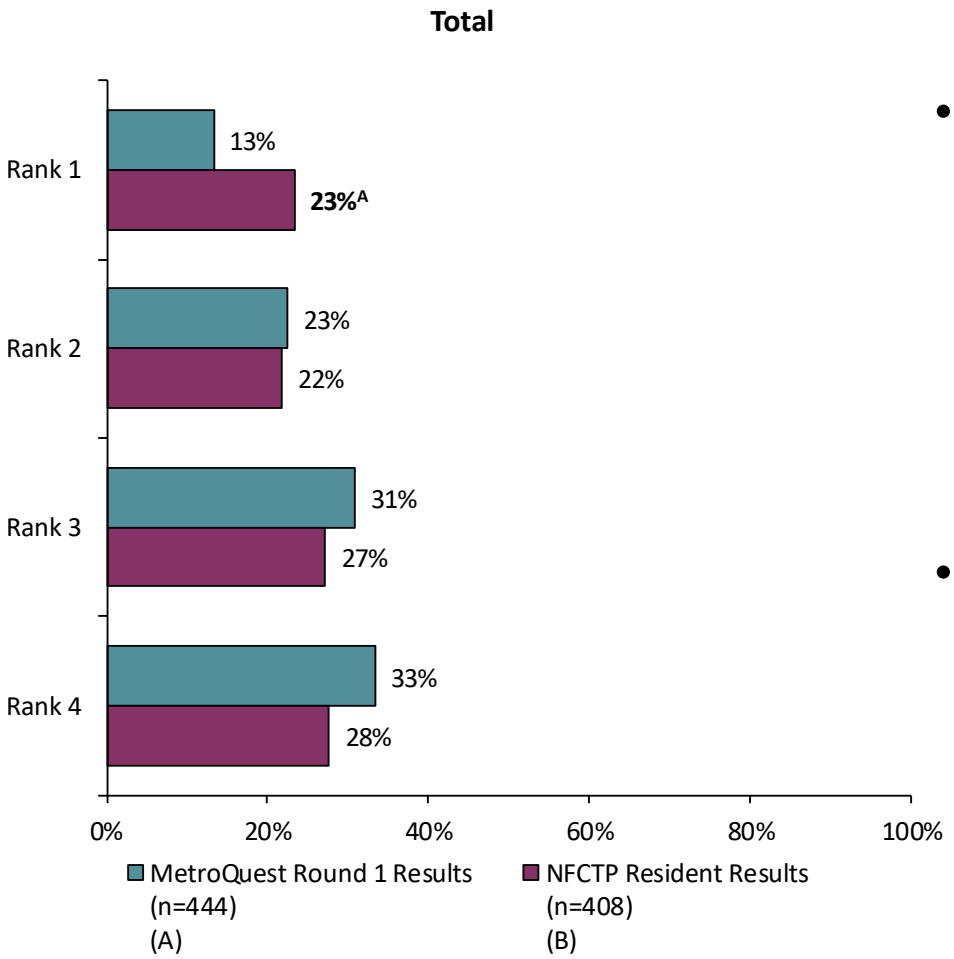
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN



- Among those respondents including Land Use and Transportation in their top four priorities, 50% of respondents ranked Land Use and Transportation the most important or next most important transportation priority.
- Phone survey respondents were significantly more likely to rate Land Use and Transportation higher than were MetroQuest respondents.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

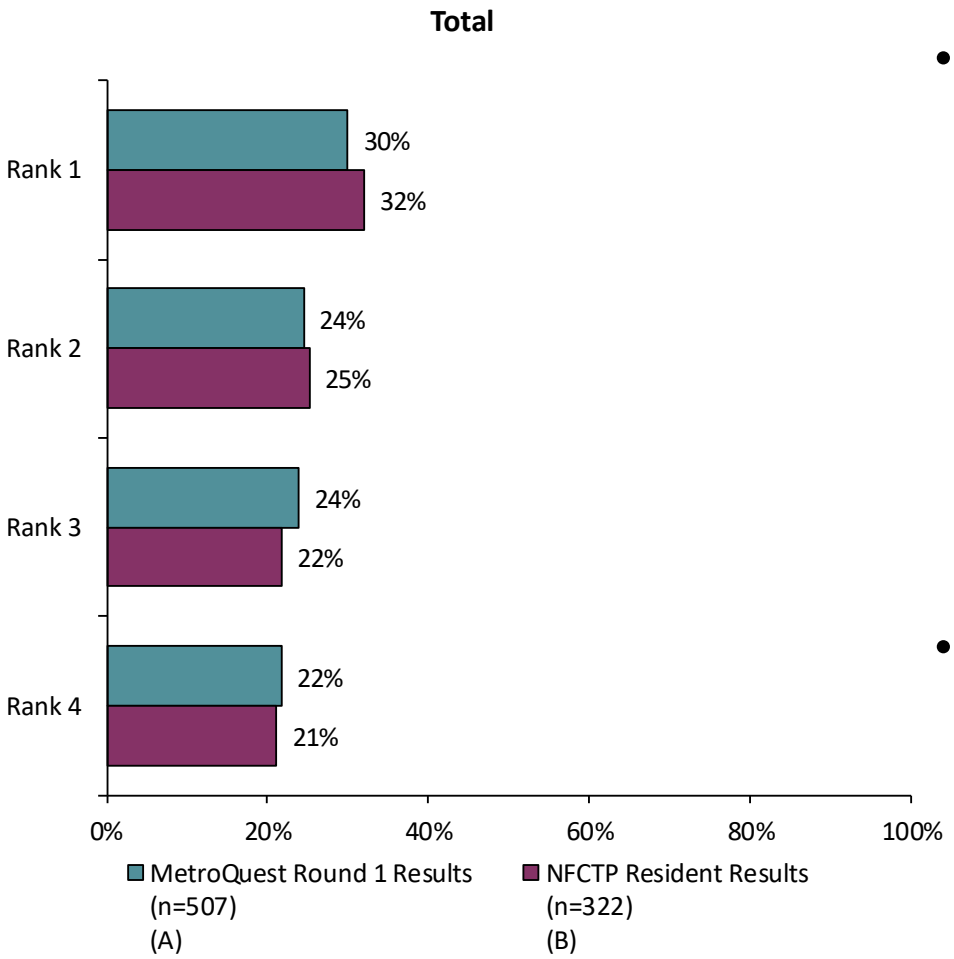
Economic Vitality



- Among those respondents including Economic Vitality in their top four priorities, 45% of respondents ranked Economic Vitality the most important or next most important transportation priority.
- Phone survey respondents were significantly more likely than MetroQuest respondents to rate Economic Vitality their top priority.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

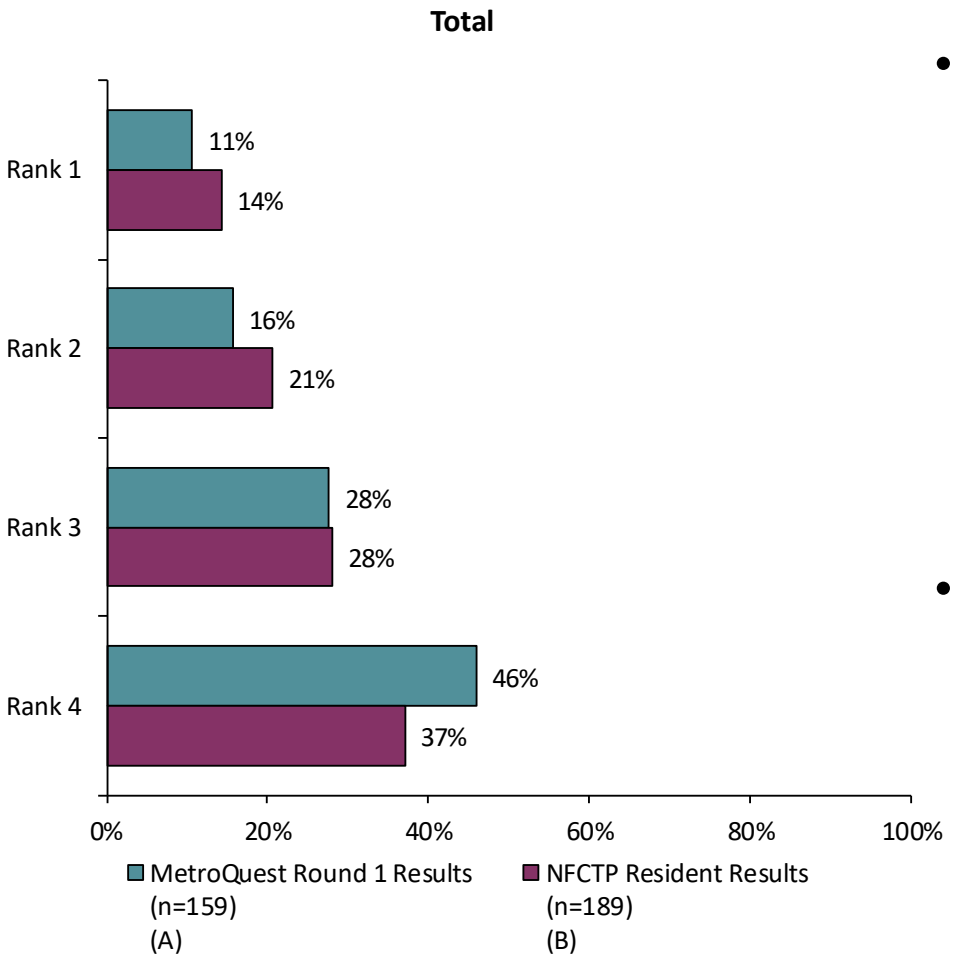
Multimodal Options



- Among those respondents including Multimodal Transportation in their top four priorities, 57% of respondents ranked Multimodal Transportation the most important or next most important transportation priority.
- There were no significant differences between MetroQuest and phone survey respondents on the priority of Multimodal Transportation.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

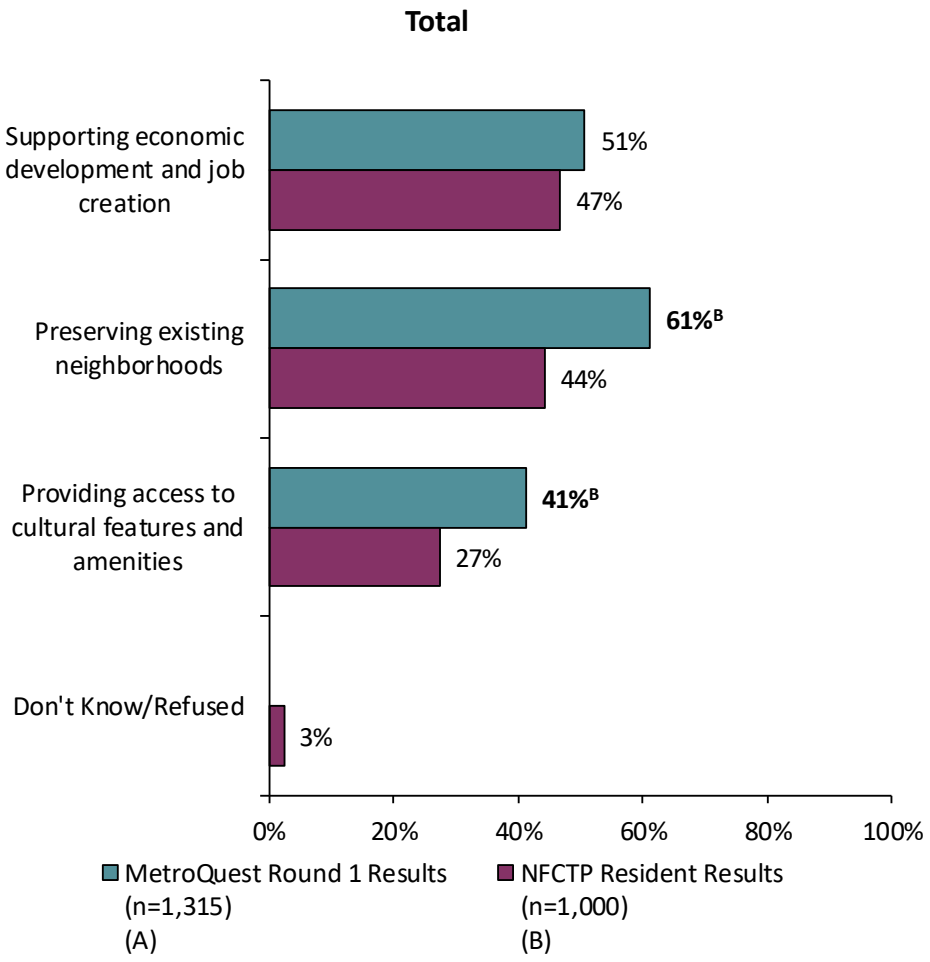
System Preservation



- Among those respondents including System Preservation in their top four priorities, 35% of respondents ranked System Preservation the most important or next most important transportation priority.
- There were no significant differences between MetroQuest and phone survey respondents on the priority of Safety.

Q18: Keeping in mind that the North Fulton Cities have limited funding, please tell me which one is most important to you? Q19: next most important to you?
Q20: third most important to you? Q21: fourth most important to you?
Note: Rankings not weighted by City or Age

Quality of Life Focus

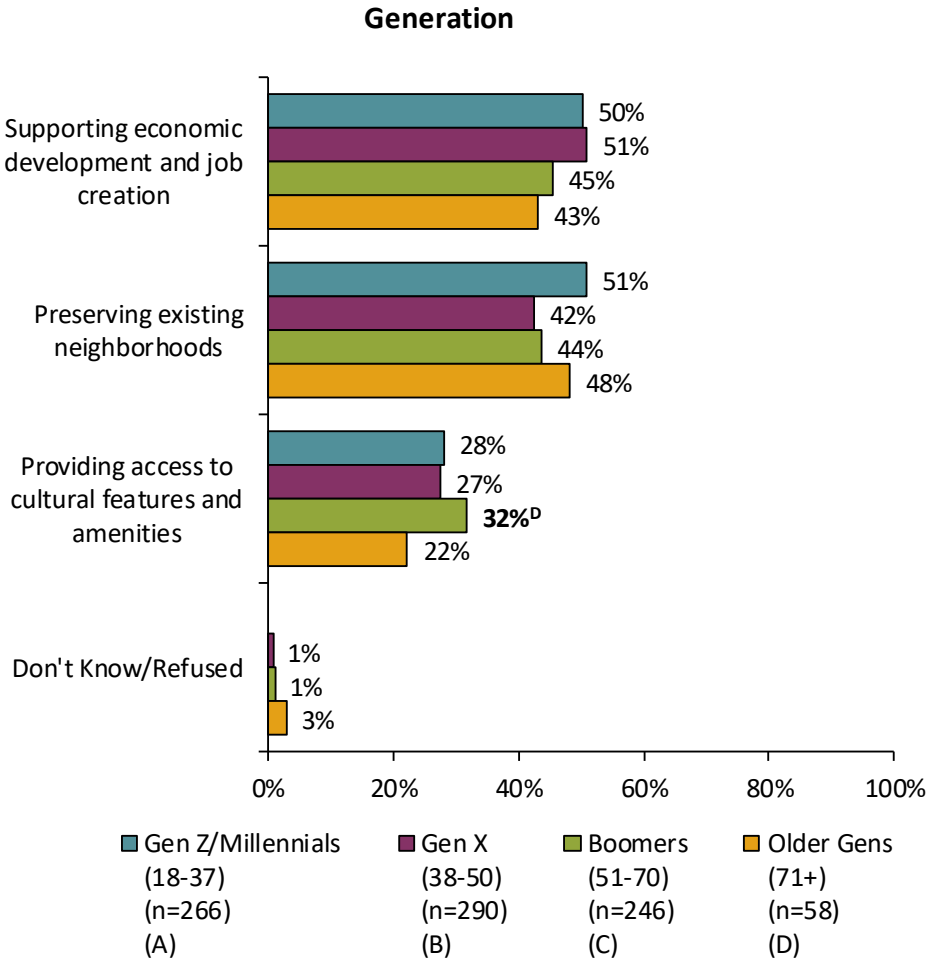


Q28: Considering Quality of Life, we should focus on:
Note: Not weighted by City or Age

- To improve Quality of Life, phone survey respondents favor supporting economic development and job creation (48%) and preserving existing neighborhoods (45%).
- MetroQuest respondents are significantly more likely to favor preserving existing neighborhoods and providing access to culture features and amenities.

Respondents were asked to "select up to 2." MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus Phone around 125%-130%).

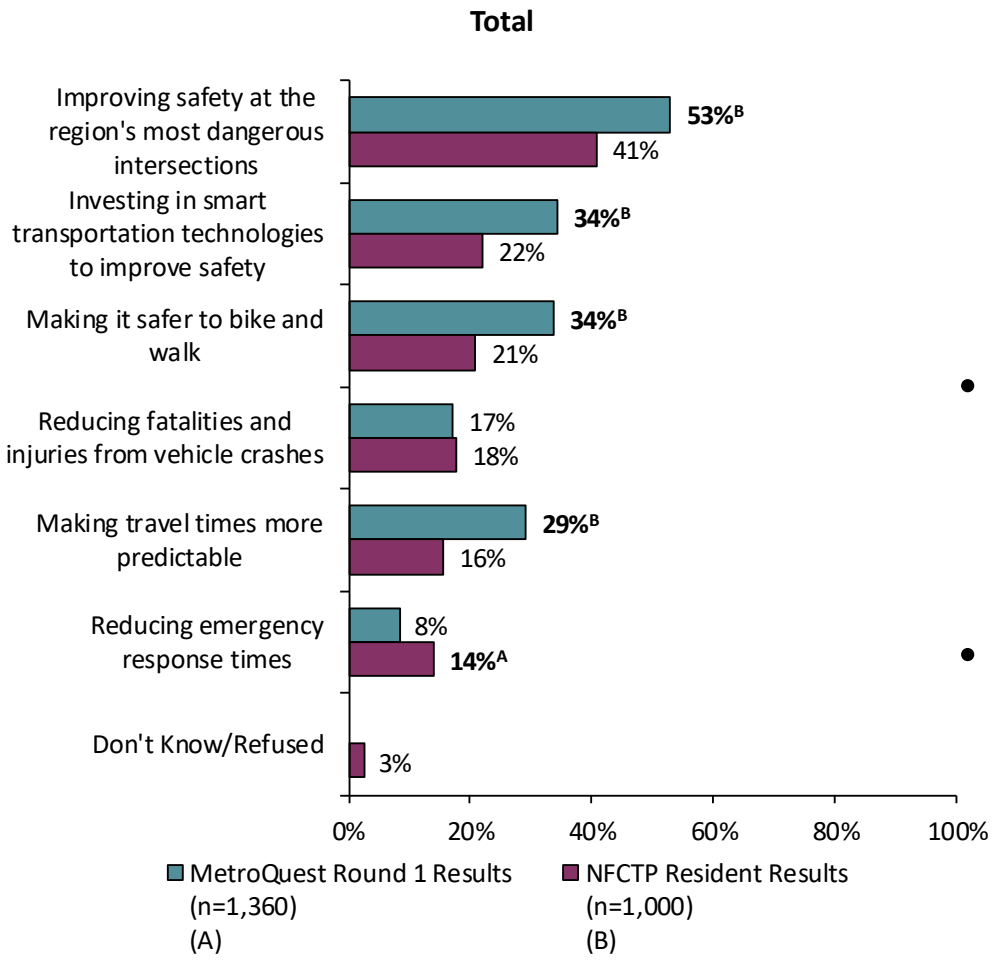
Quality of Life Focus



- Boomers are significantly more likely to select "providing access to cultural features and amenities" than other generations to improve Quality of Life.

Q28: Considering Quality of Life, we should focus on:
Note: Generations only include those that gave their exact age

Safety Focus

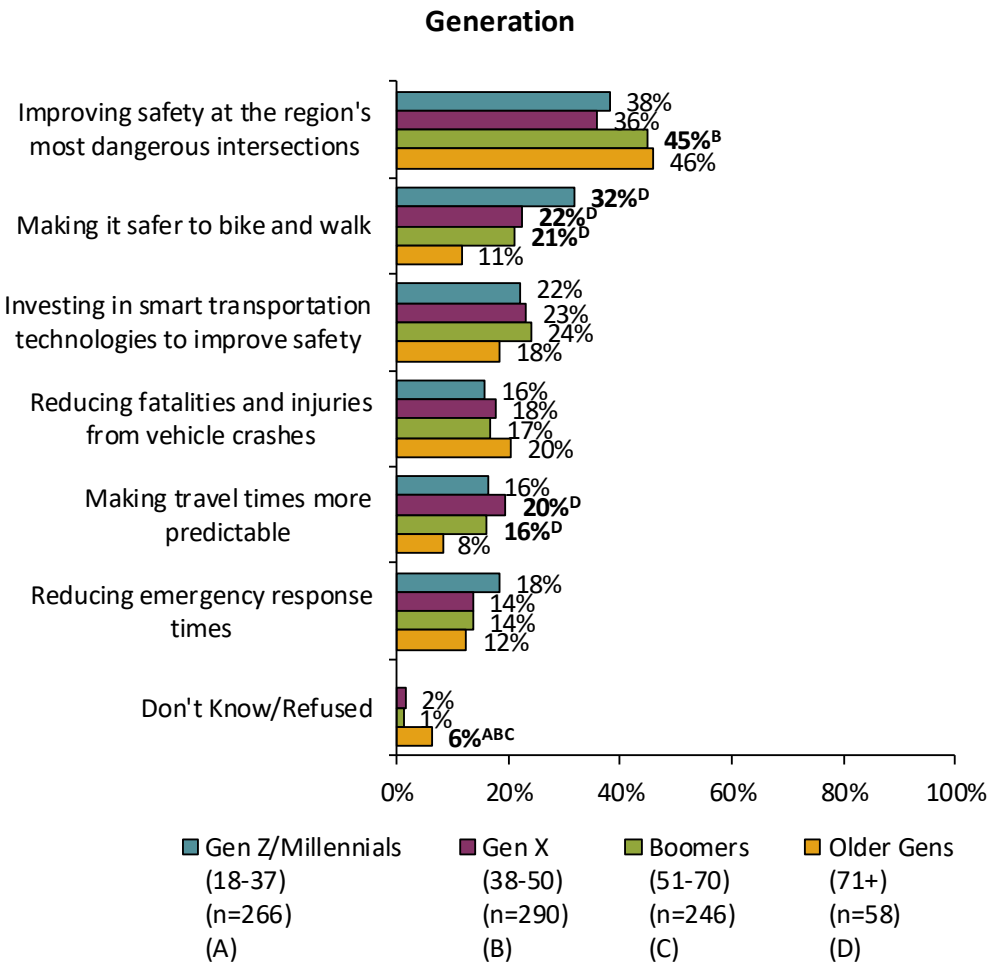


Q24: Considering the Safety, we should focus on:
Note: Not weighted by City or Age

- To improve Safety, phone survey respondents favor improving safety at the most dangerous intersections (39%), making it safer to bike and walk (25%), and investing in smart transportation technologies (24%).
- MetroQuest respondents are significantly more likely to favor these three initiatives than are phone survey respondents.
- Additionally, MetroQuest respondents are significantly more likely to support making travel times more predictable.

Respondents were asked to "select up to 2." MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus Phone around 125%-130%).

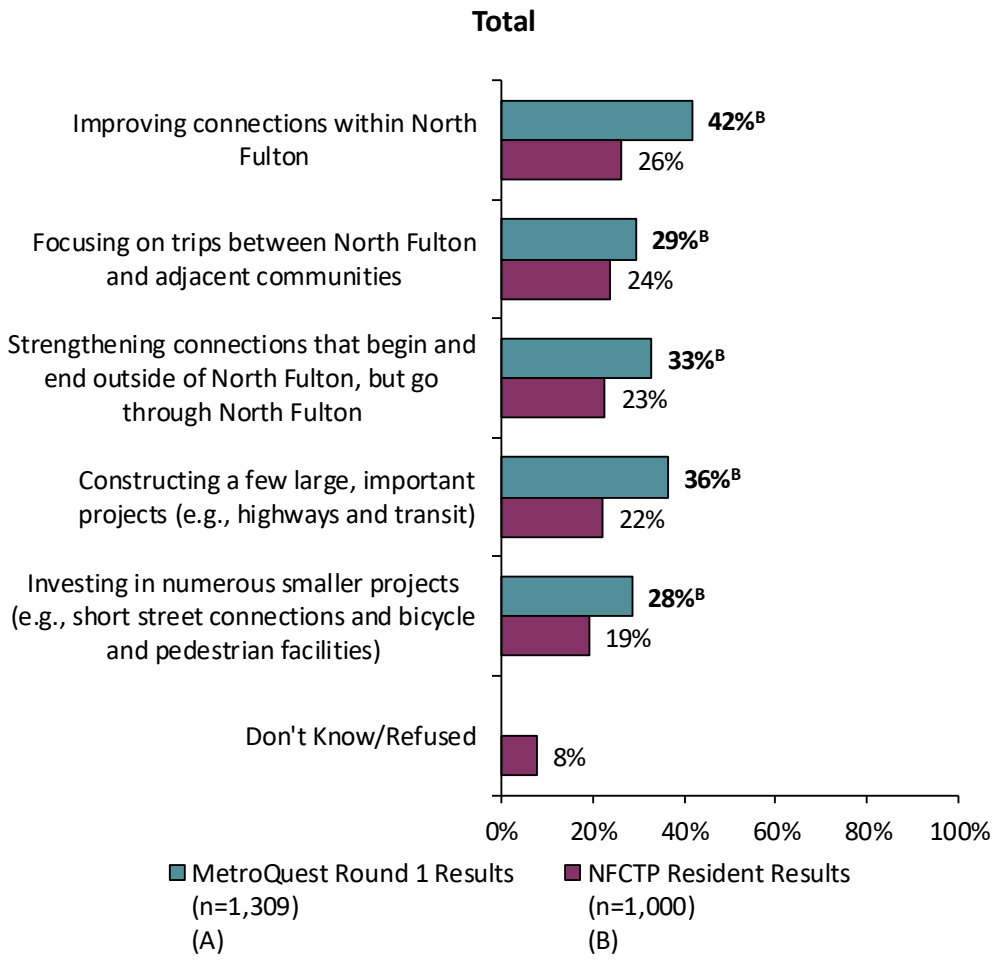
Safety Focus



Q24: Considering the Safety, we should focus on:
Note: Generations only include those that gave their exact age

- There are significant difference between Generations in terms of how to improve Safety:
  - Boomers prefer focusing on improving dangerous intersections.
  - Older generations are significantly less interested than other generations in making it easier to bike and walk.
  - Gen Z/Millennials are most interested in making it easier to bike and walk.
  - Gen X and Boomers are significantly more interested in making travel times predictable than are Older Generations.

Mobility Focus

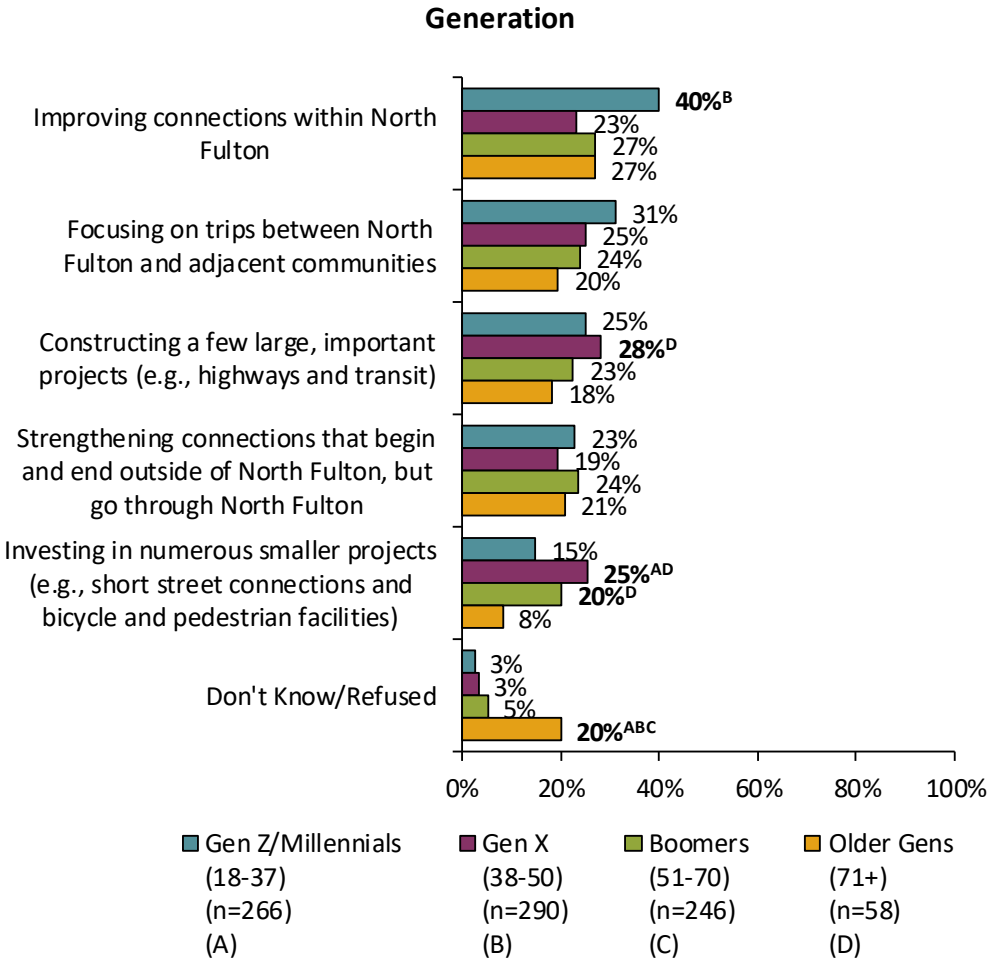


Q27: Considering Mobility, we should focus on:
Note: Not weighted by City or Age

- To improve Mobility, phone survey respondents favor improving connections (30%), focus on trips between North Fulton and adjacent communities (28%), and constructing a few large, important projects (24%).
- MetroQuest respondents are more likely to favor all initiatives to improve mobility than are phone survey respondents.

Respondents were asked to "select up to 2." MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus Phone around 125%-130%).

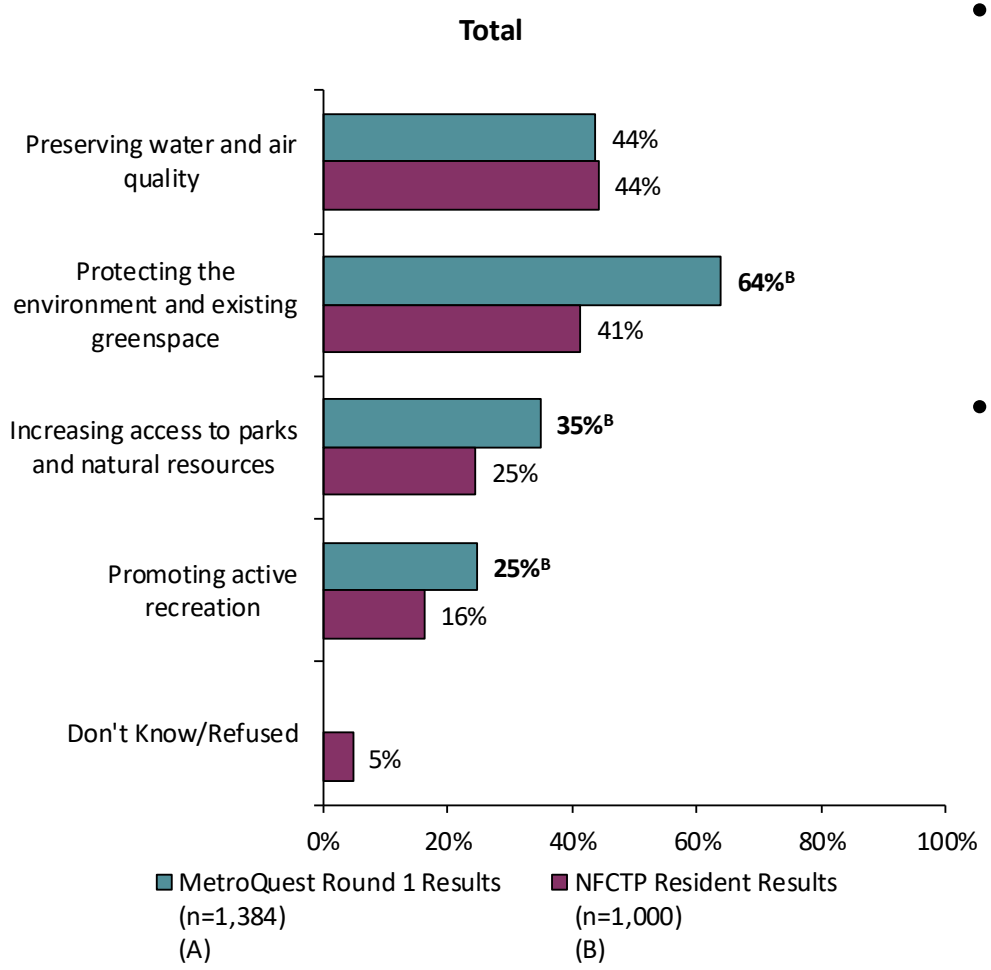
Mobility Focus



- Gen Z/Millennials are significantly more interested in improving connections within North Fulton than are Gen X.
- Gen Z/Millennials and Gen X are most interested in constructing a few large, important projects.
- Gen X and Boomers are significantly more interested in investing in a numerous smaller projects.

Q27: Considering Mobility, we should focus on:
Note: Generations only include those that gave their exact age

Environment Focus

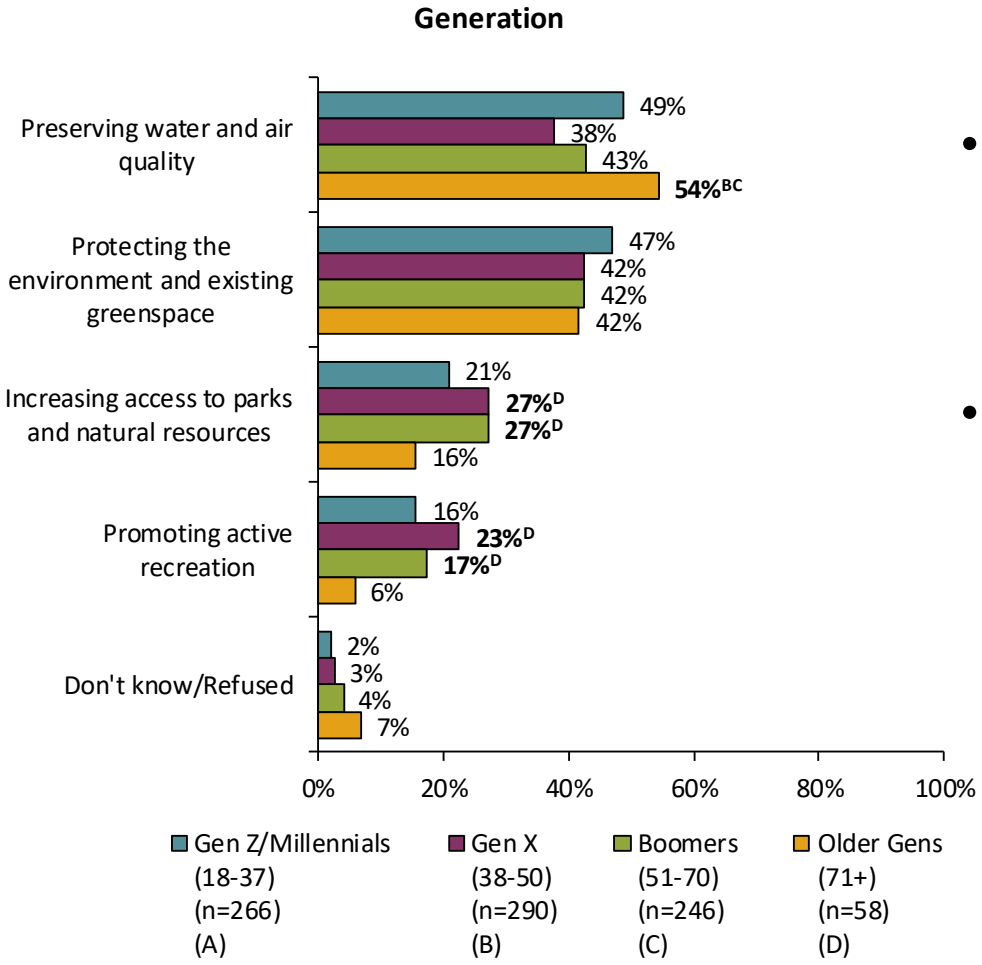


- To focus on Environment, phone survey respondents favor preserving water and air quality (46%) and protecting the environment and existing greenspace (42%).
- MetroQuest respondents are significantly more likely than phone survey respondents to favor preserving water and air quality, protecting the environment and existing greenspace, increasing access to parks and promoting active recreation.

Respondents were asked to "select up to 2." MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus Phone around 125%-130%).

Q23: Considering the Environment, we should focus on:
Note: Not weighted by City or Age

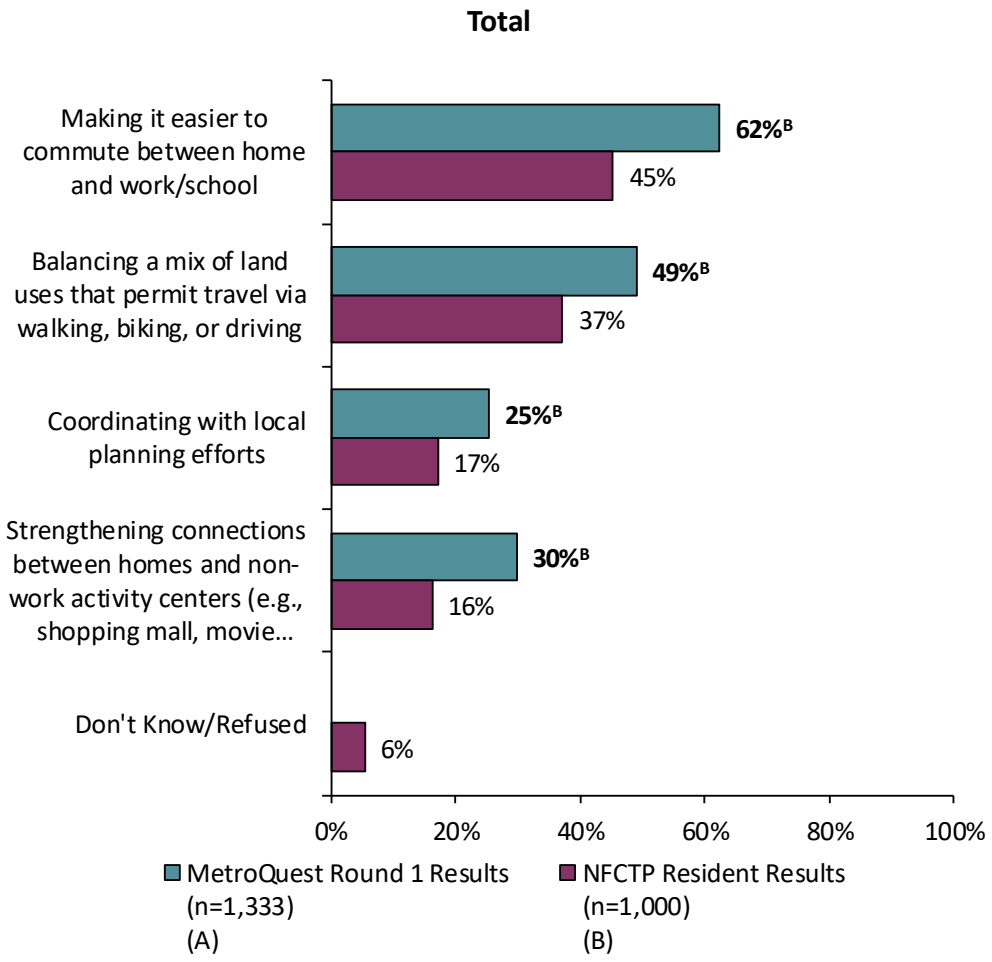
Environment Focus



- Older Generations are more likely to favor preserving water and air quality than other generations.
- However, GenX and Boomers are significantly more likely than Older Generation respondents to favor increasing access to parks/natural resources and to promote active recreation.

Q23: Considering the Environment, we should focus on:
Note: Generations only include those that gave their exact age

Land Use and Transportation Focus

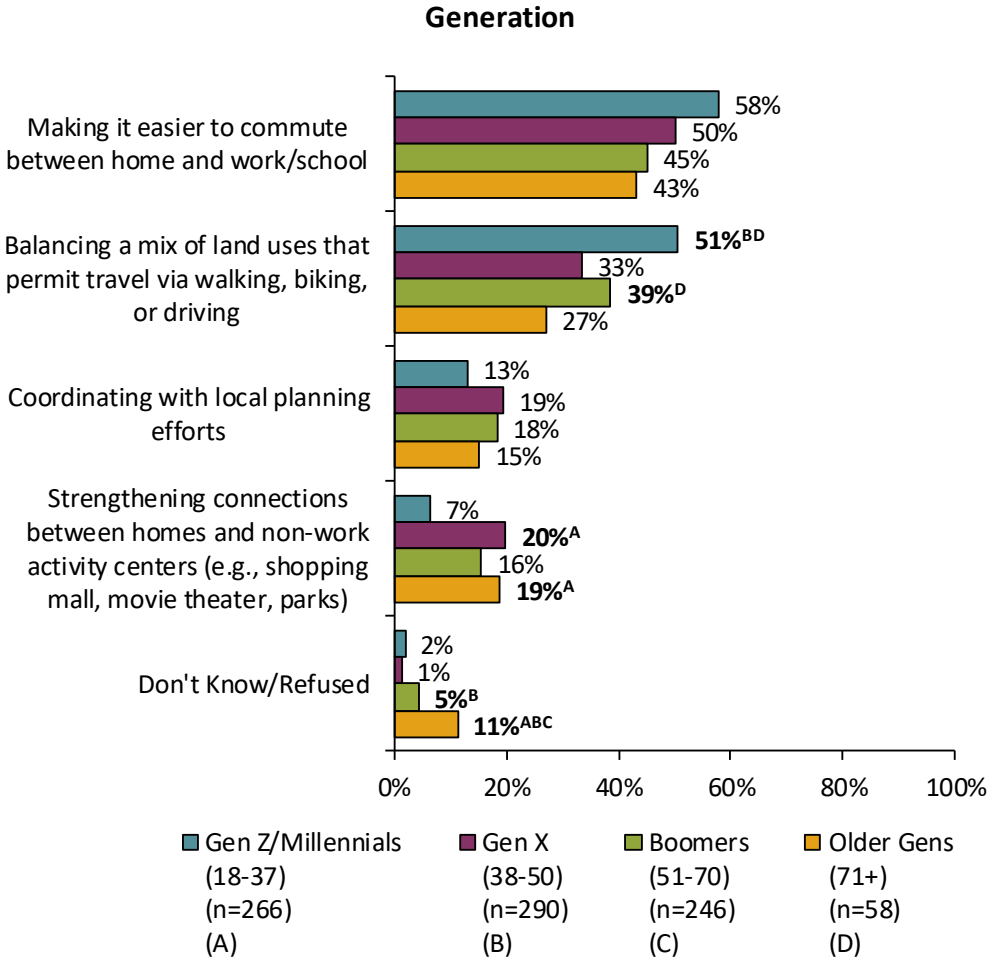


Q26: Considering Land Use, we should focus on:
Note: Not weighted by City or Age

- To improve Land Use and Transportation, respondents favor making it easier to commute between home and work or school (50%) and balancing a mix of land uses that allow travel via walking, biking, or driving (41%).
- MetroQuest respondents are significantly likely to favor all of these initiatives more than phone survey respondents.

Respondents were asked to "select up to 2." MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus Phone around 125%-130%).

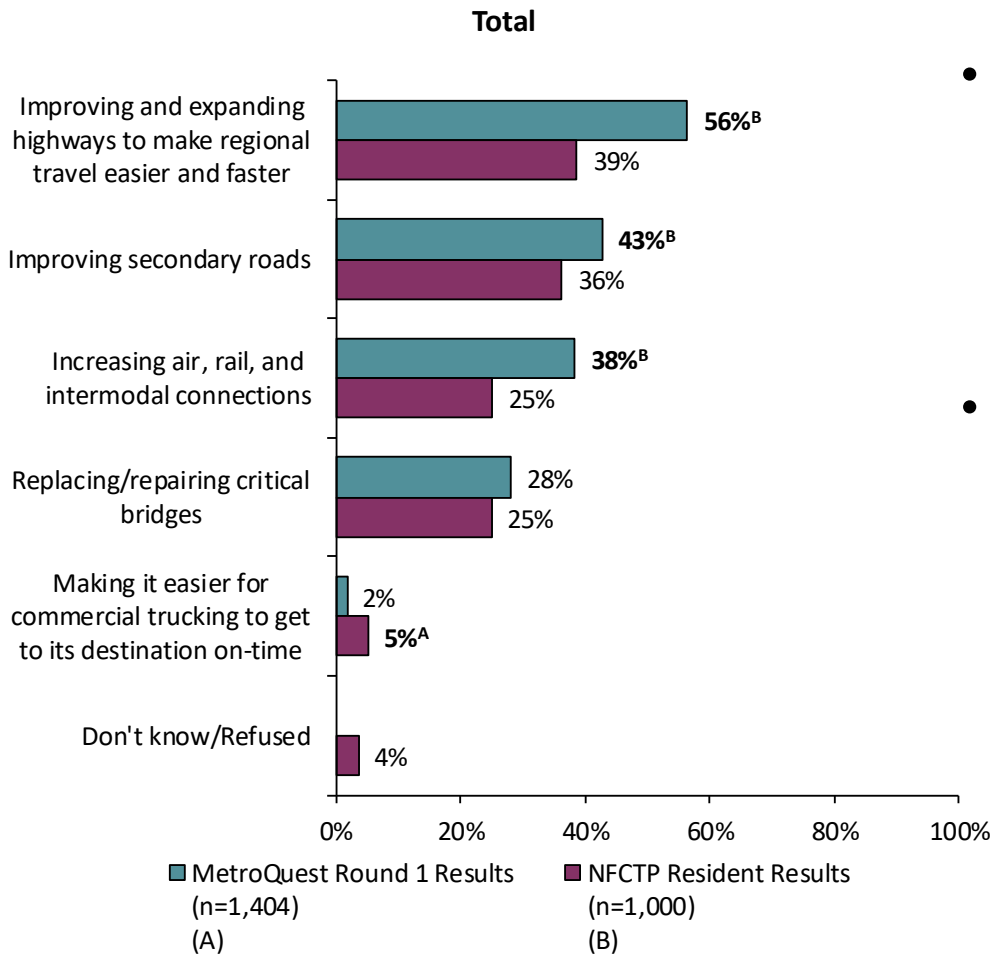
Land Use and Transportation Focus



- Gen Z/Millennials and Boomers are more interesting balancing a mix of land uses to permit walking, biking, or driving.
- Gen Z/Millennials are significantly less interested in strengthening connections between homes and non-work activities.

Q26: Considering Land Use, we should focus on:
Note: Generations only include those that gave their exact age

Economic Vitality Focus

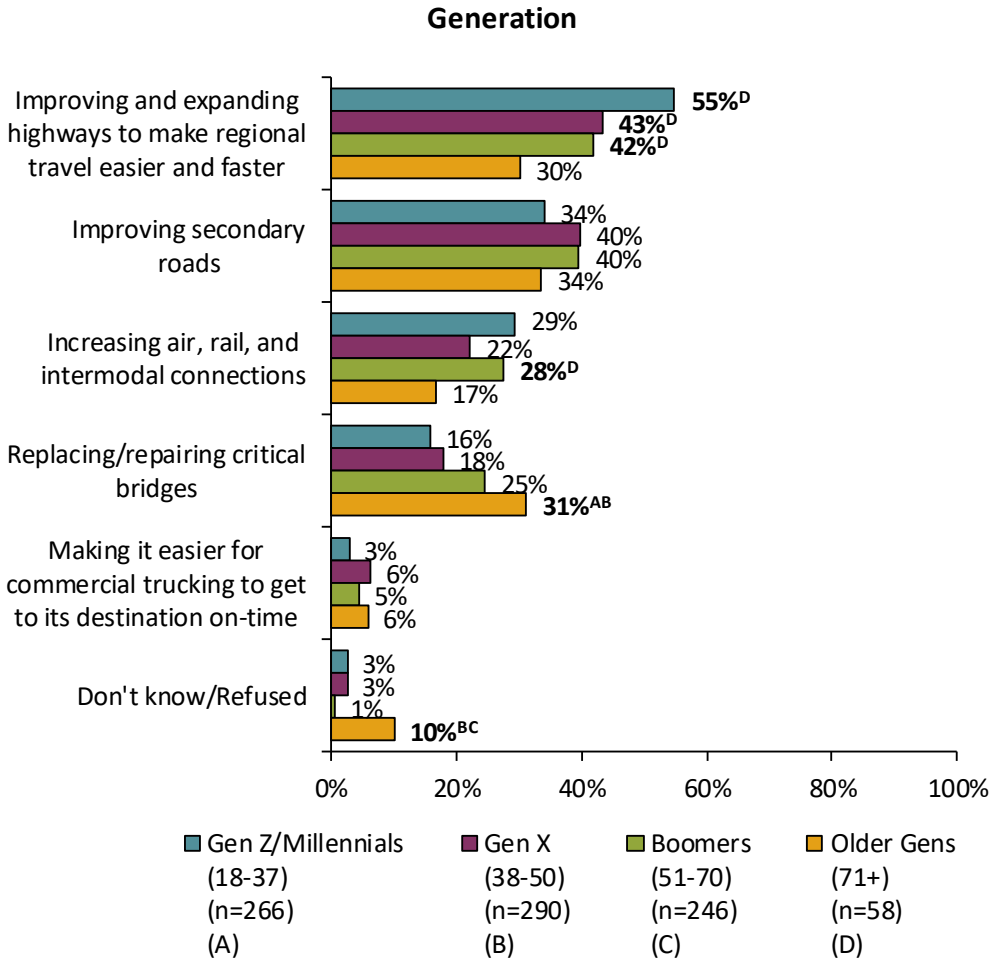


- To improve Economic Vitality, respondents favor improving and expanding highways to improve regional travel (44%), and improving secondary roads (34%).
- Again, MetroQuest respondents are significantly more likely to favor all initiatives EXCEPT making it easier for commercial trucking to get to their destinations on-time (where their responses are similar to phone survey respondents).

Respondents were asked to "select up to 2." MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus Phone around 125%-130%).

Q22: Considering Economic Vitality, we should focus on:
Note: Not weighted by City or Age

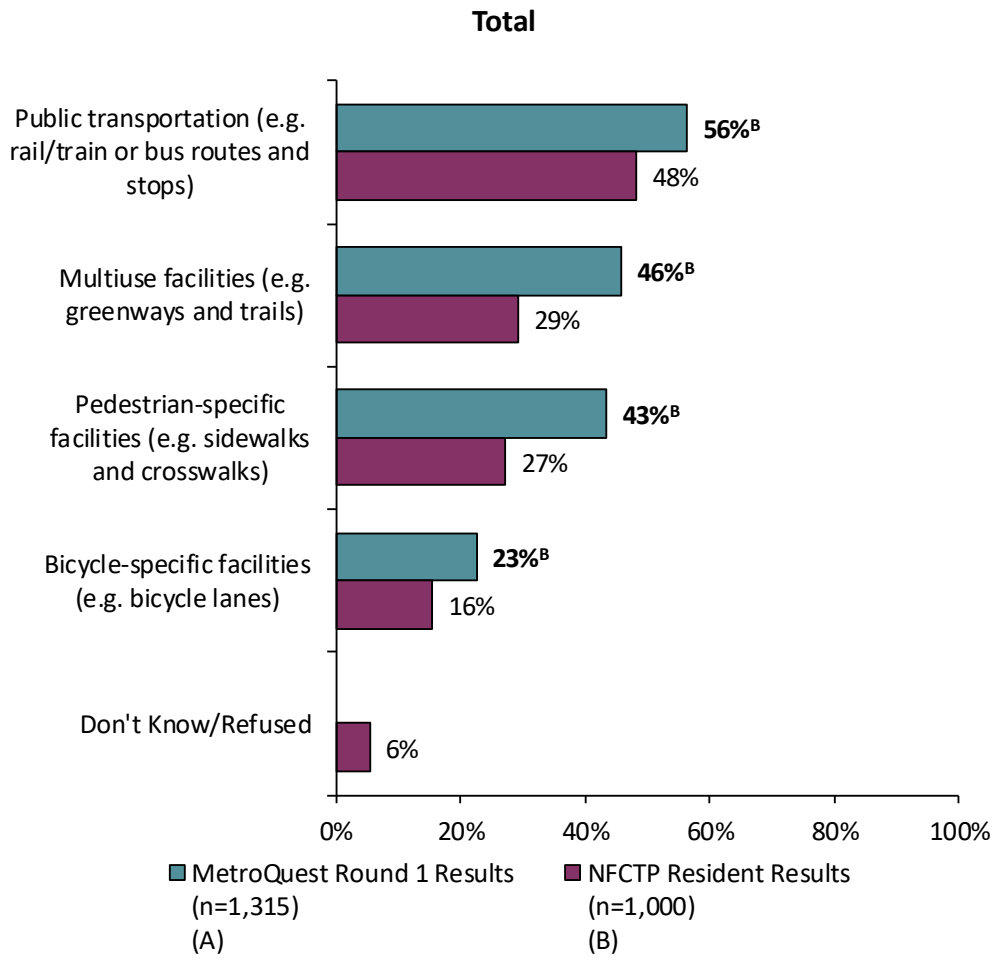
Economic Vitality Focus



Q22: Considering Economic Vitality, we should focus on:
Note: Generations only include those that gave their exact age

- There are significant differences between generations on how to improve Economic Vitality:
  - Gen Z/Millennials are most interested in improving and expanding highways for easier/faster regional transit.
  - Gen Z/Millennials and Boomers are most interested in increasing air, rail, and intermodal connects.
  - Older generations are most concerned are replacing and repairing critical bridges.

Multimodal Options Focus

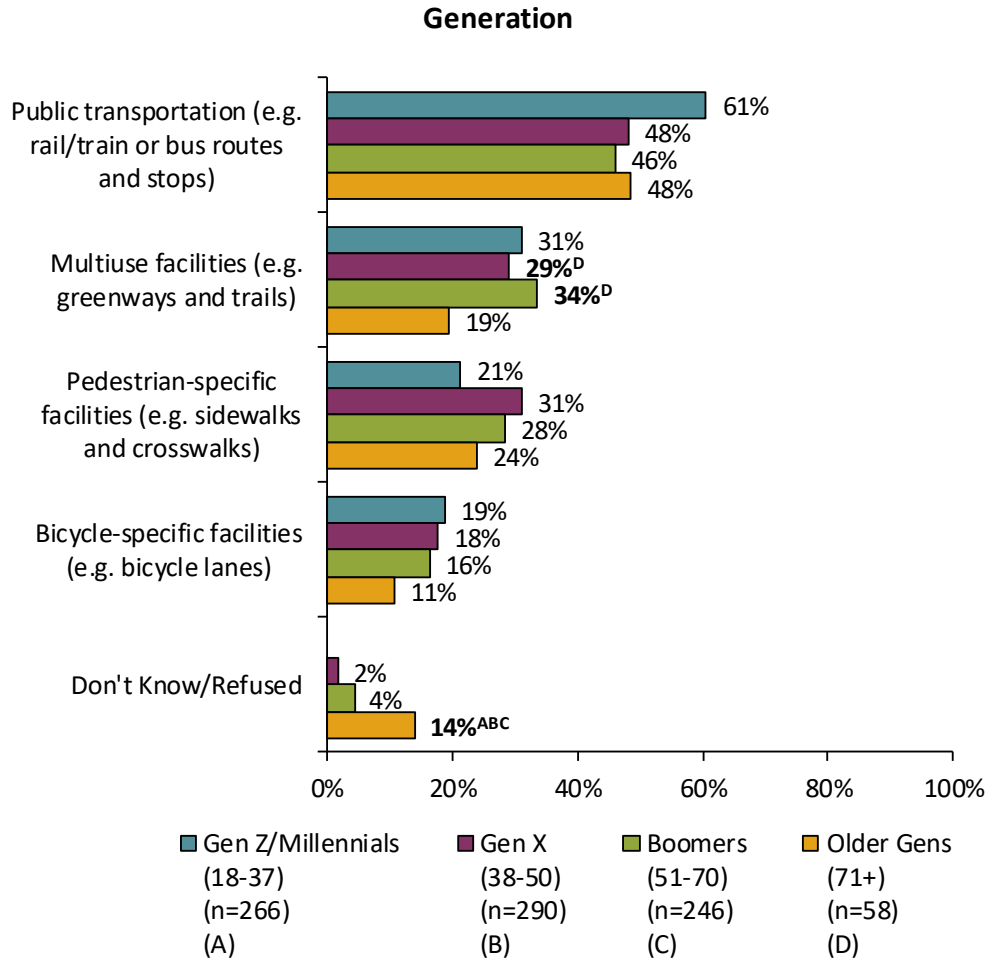


- To improve Multimodal Transport Options, phone survey respondents favor public transportation (54%), and multiuse facilities (30%), as well as pedestrian-specific facilities (26%).
- MutliQuest respondents are significantly more likely to be in favor of all of the initiatives for improving multimodal transit.

Respondents were asked to "select up to 2." MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus Phone around 125%-130%).

Q25: Considering Multimodal Options, we should focus on:
Note: Not weighted by City or Age

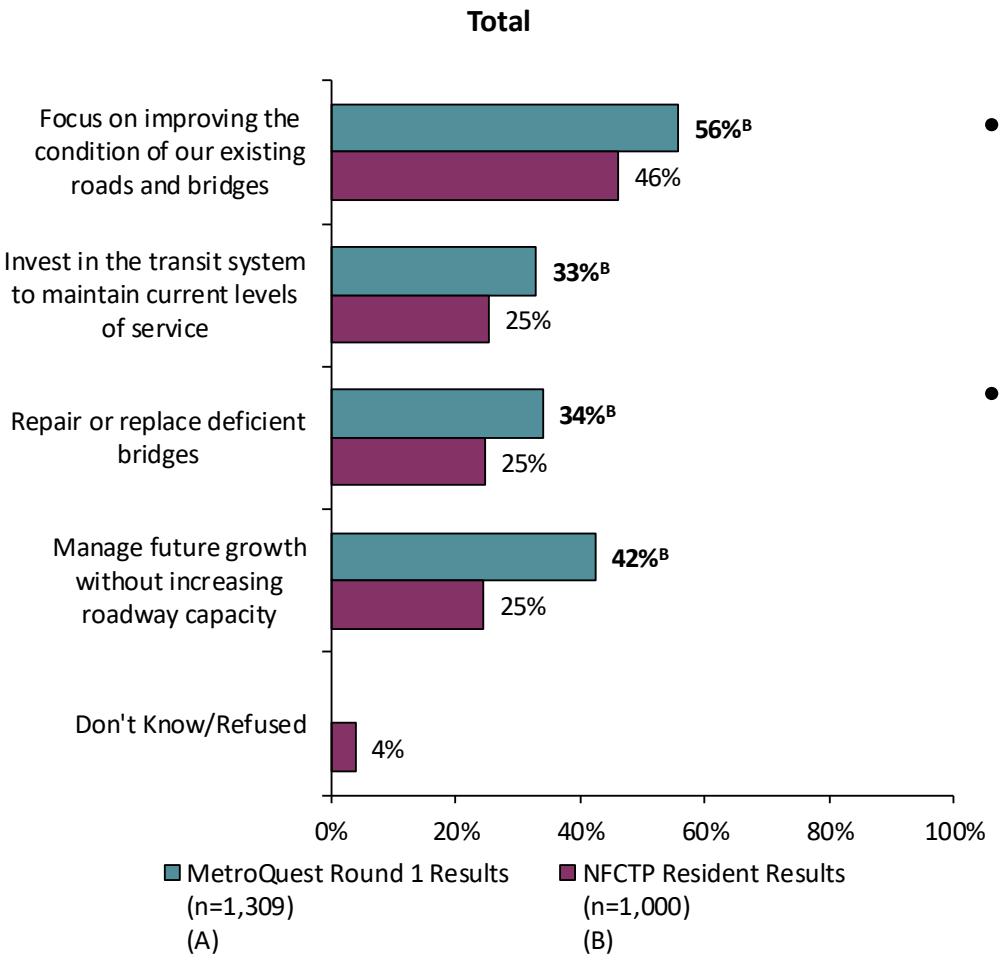
Multimodal Options Focus



Q25: Considering Multimodal Options, we should focus on:
Note: Generations only include those that gave their exact age

- There are differences between generation in how to improve Multimodal Transport:
  - Gen Z/Millennial respondents favor public transportation.
  - Gen Z/Millennials, Gen X and Boomers are more likely to favor multiuse facilities than Older Generations.
  - Gen X and Boomers are most likely to favor pedestrian-specific facilities.

System Preservation Focus

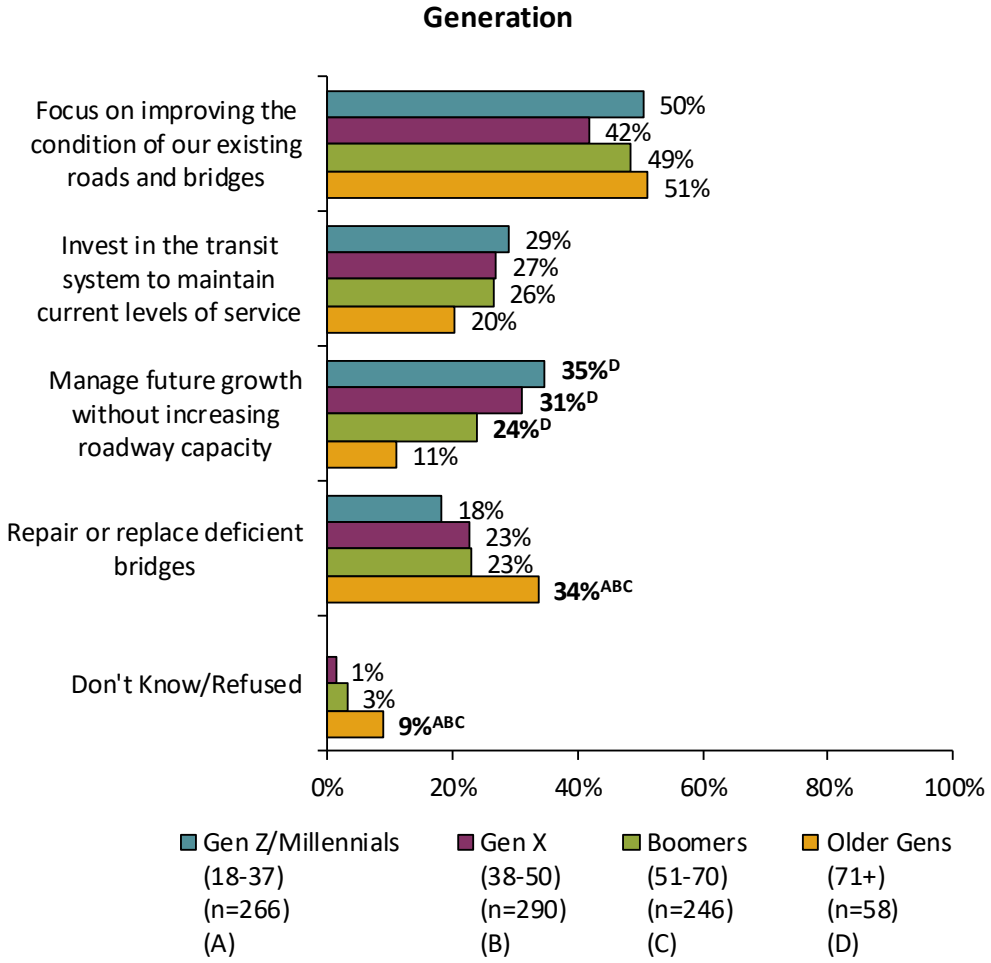


- To Preserve the System, respondents favor improving the condition of existing roads and bridges (47%).
- MetroQuest respondents are significantly more likely to favor all of the initiatives for System Preservation than are phone survey respondents.

Respondents were asked to "select up to 2." MetroQuest respondents gave 2 answers more often than the Phone survey respondents (sum of percentages for MetroQuest was 165%-180% versus Phone around 125%-130%).

Q29: Considering System Preservation, we should:
Note: Not weighted by City or Age

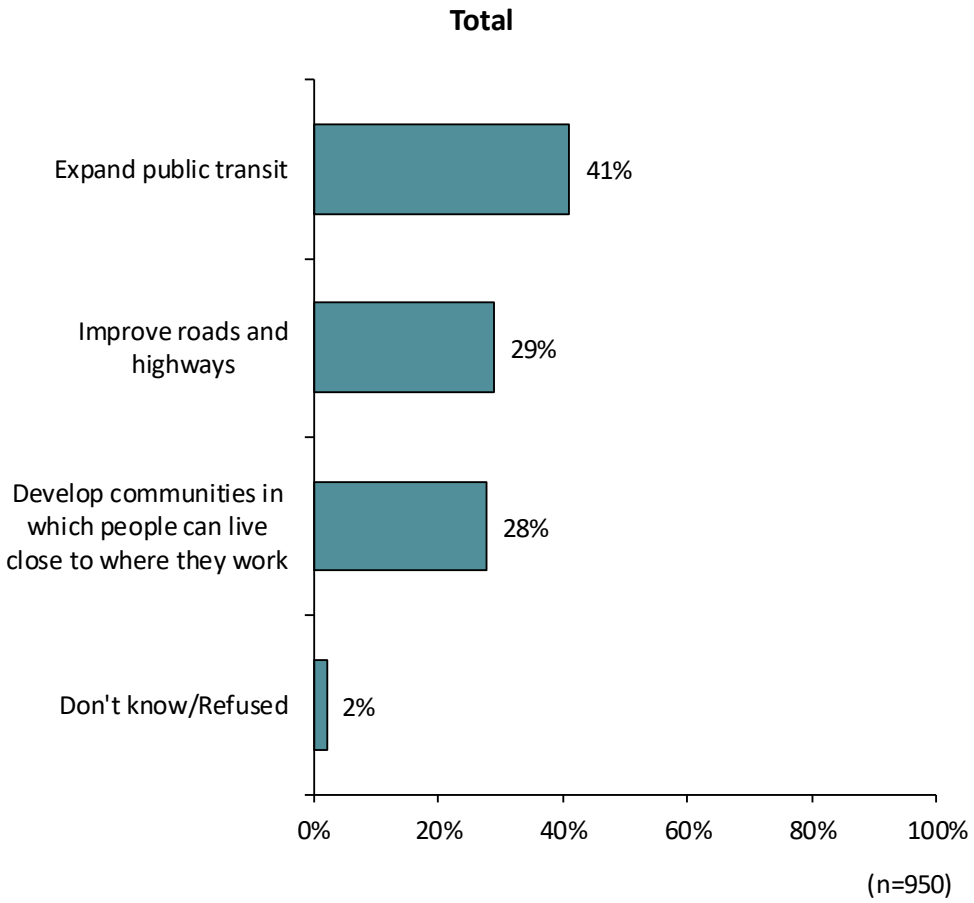
System Preservation Focus



- Older Generations are more likely to favor repairing or replacing deficient bridges, and less likely to be concerned about managing future growth without increasing roadway capacity.

Q29: Considering System Preservation, we should:
Note: Generations only include those that gave their exact age

Best Solution to Traffic in Metro Atlanta



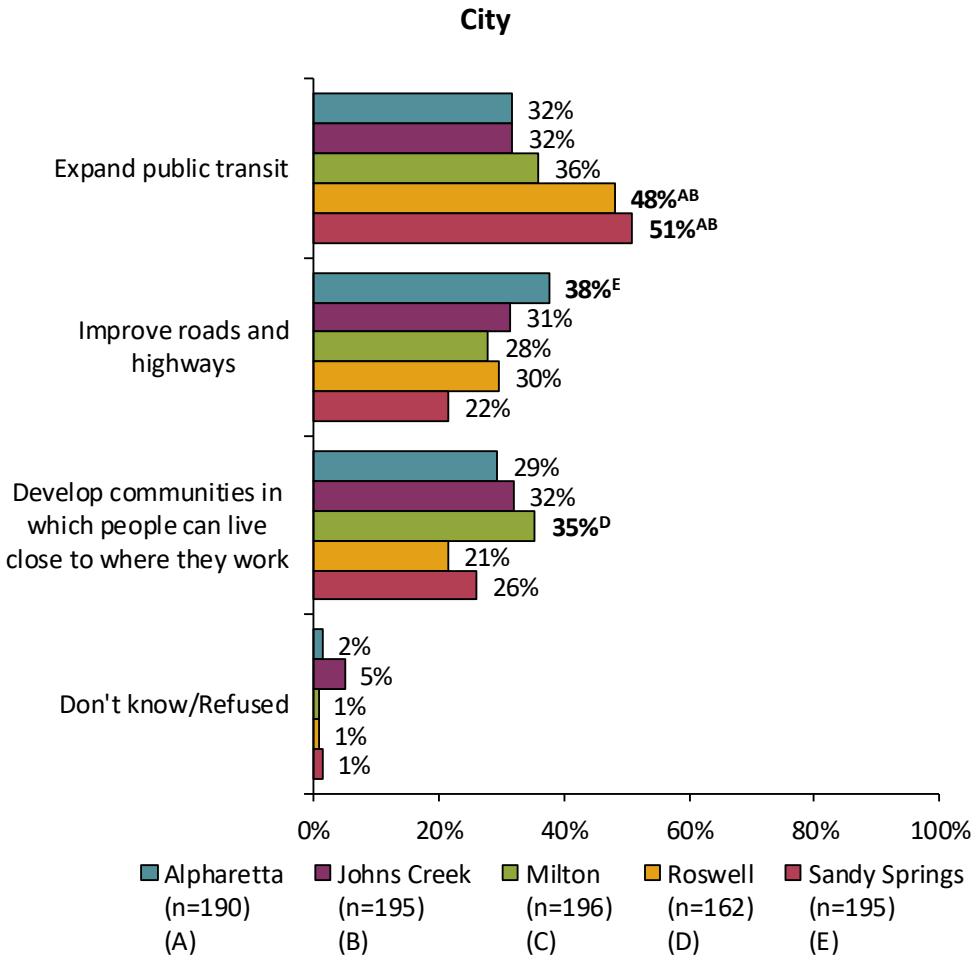
- Respondents believe the best solution to improving traffic in Metro Atlanta is to expand public transit.
- However, more than a quarter of respondents each indicated the best solution is to improve roads and highways (29%) and to develop live/work communities (28%).

Q30: The best solution to traffic in metro Atlanta is:

Best Solution to Traffic in Metro Atlanta

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- Respondents in Roswell and Sandy Springs are significantly more likely to believe the best solution to improving traffic in Metro Atlanta is to expand public transit (48% and 51%, respectively).
- Respondents in Alpharetta are significantly more likely to say the best solution is to improve roads and highways (38%).
- Respondents in Milton are significantly more likely to say the best traffic solution is to develop live/work communities (35%).



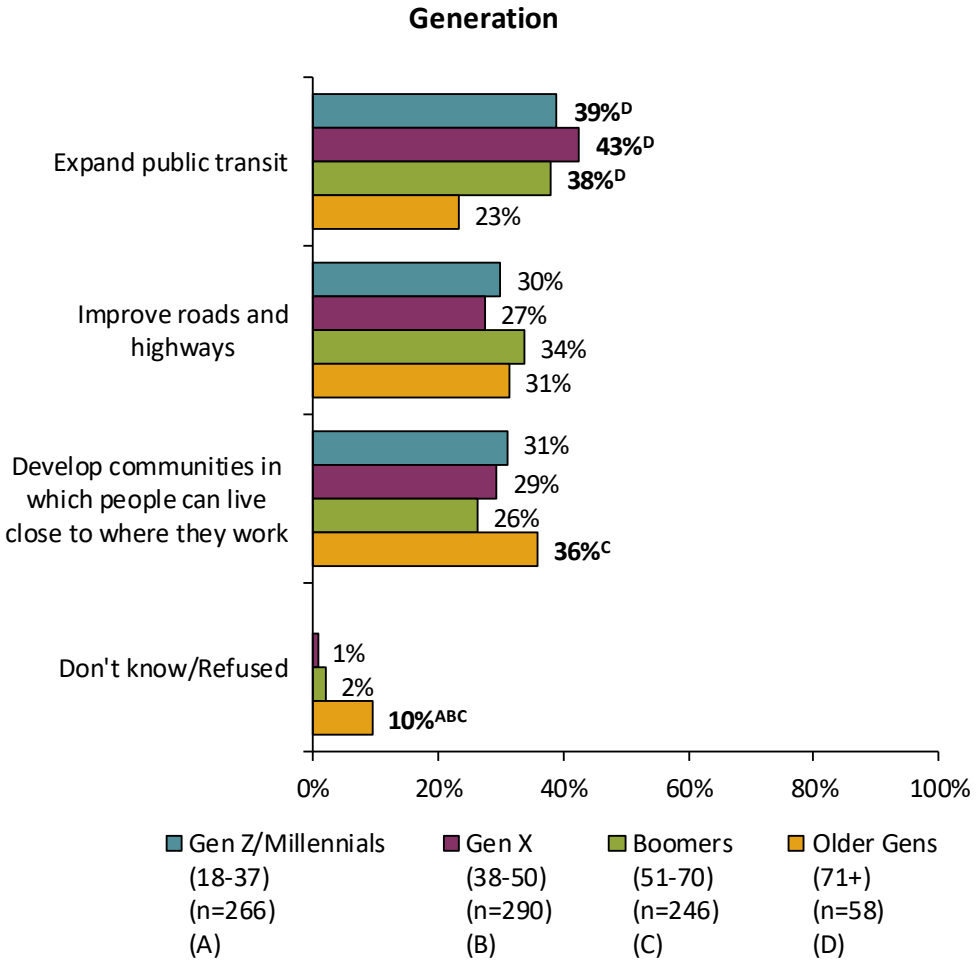
Q30: The best solution to traffic in metro Atlanta is:

DEBRA SEMANS
CONTENT MARKETING ● MARKETING RESEARCH

Best Solution to Traffic in Metro Atlanta

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- Gen Z/Millennials, Gen X and Boomers are significantly more likely to want to focus on expanding public transit.
- Older generations, however, are significantly more likely to say the solution to traffic in Metro Atlanta is to develop live-work communities.



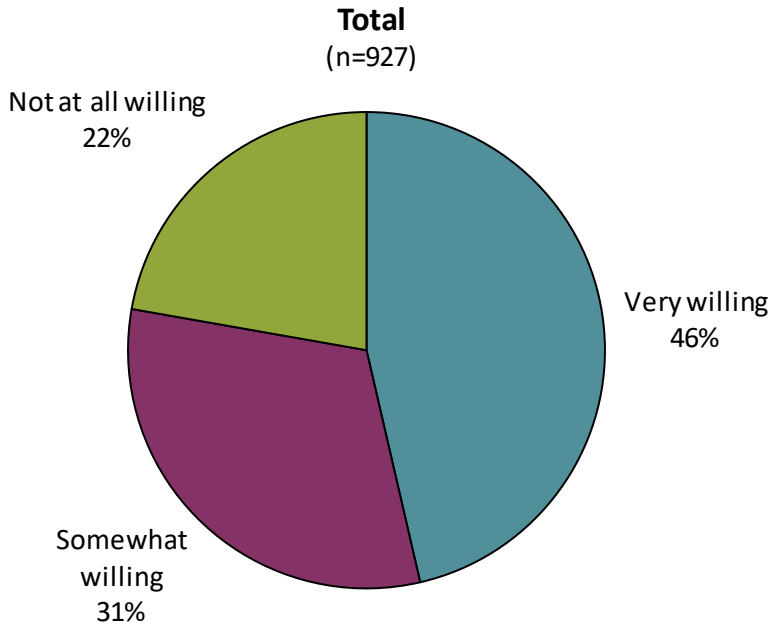
Q30: The best solution to traffic in metro Atlanta is:
Note: Generations only include those that gave their exact age

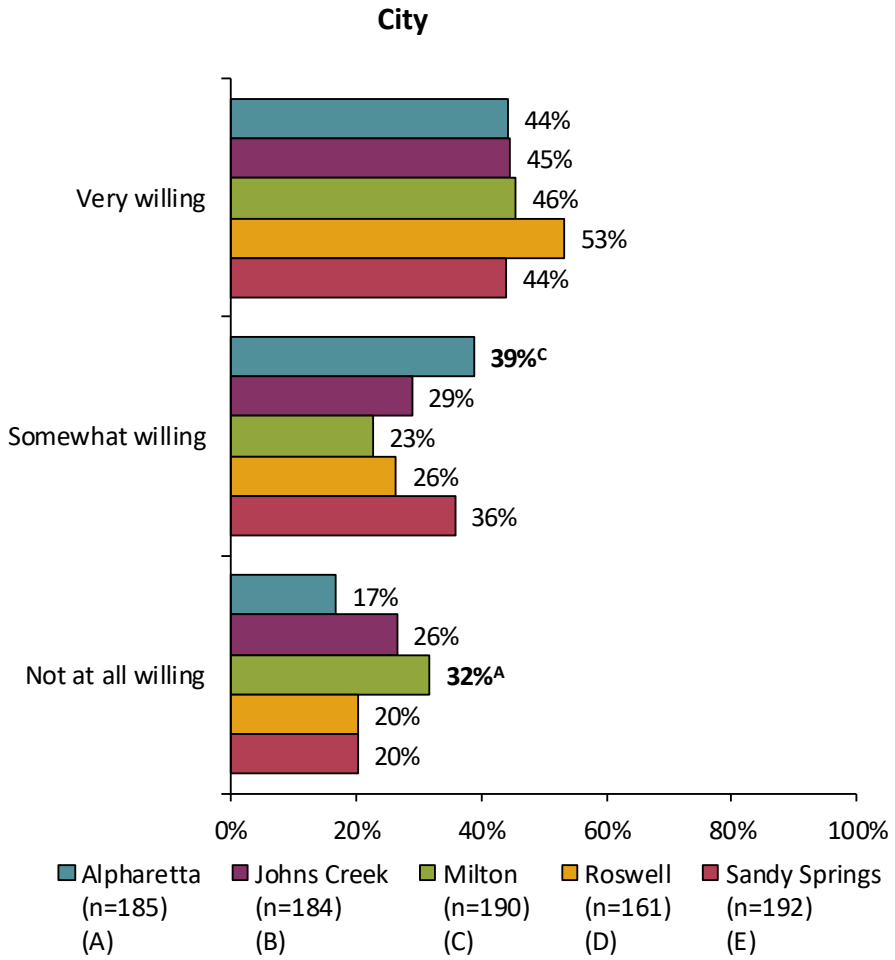
DEBRA SEMANS
CONTENT MARKETING ● MARKETING RESEARCH

Willingness to Vote for Sales Tax

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- 77% of respondents in North Fulton County are very or somewhat willing to pay an additional sales tax for improved transportation.



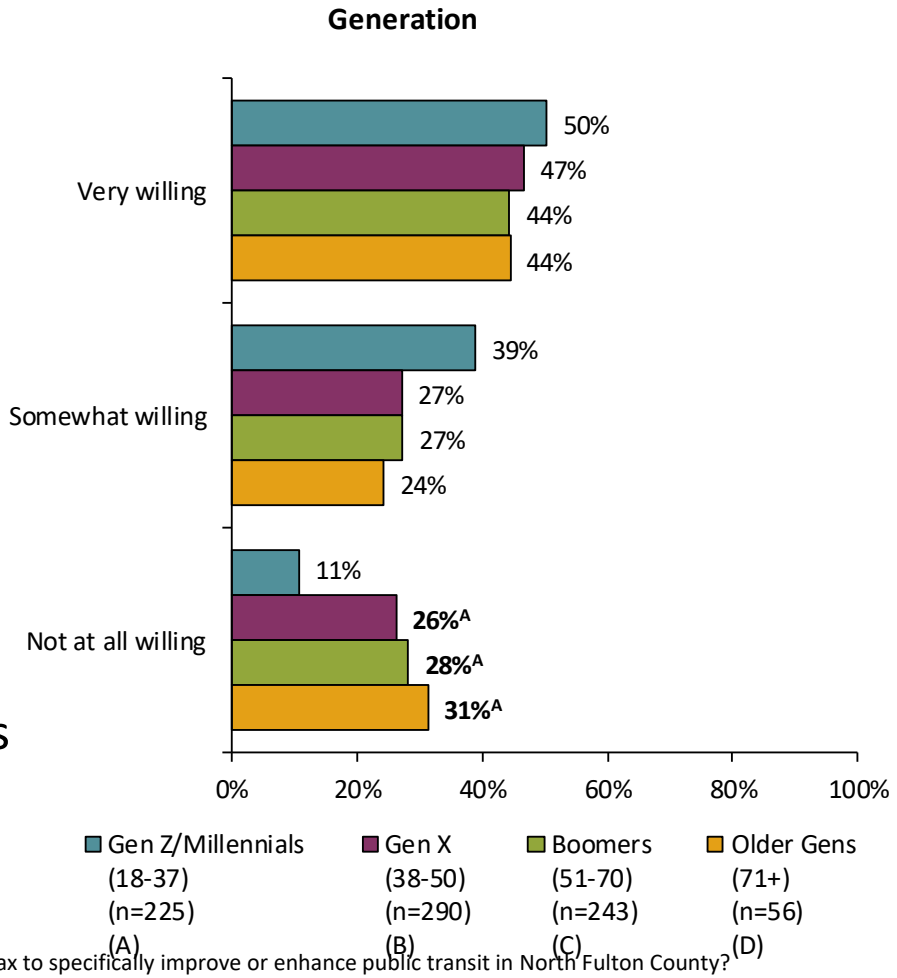


Q31: How likely would you be to vote for a one-quarter of a penny sales tax to specifically improve or enhance public transit in North Fulton County?

Willingness to Vote for Sales Tax

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

- There were no significant differences in willingness to vote FOR a sales tax.
- However, those NOT WILLING to vote for a sales tax were more likely to be Gen X, Boomers and Older Generations.
- Overall, Gen Z/Millennials are most willing to vote for a sales tax.



Q31: How likely would you be to vote for a one-quarter of a penny sales tax to specifically improve or enhance public transit in North Fulton County?
Note: Don't know/Refused excluded, and Generations only include those that gave their exact age

NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

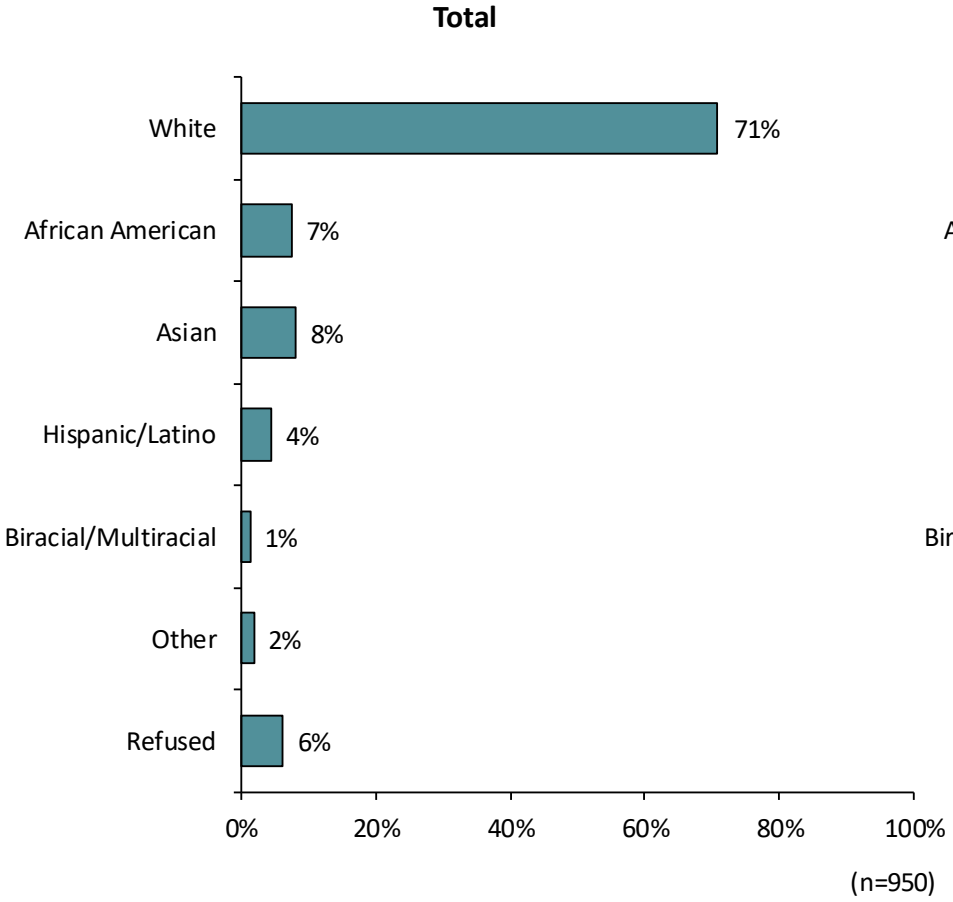
Phone Survey Results

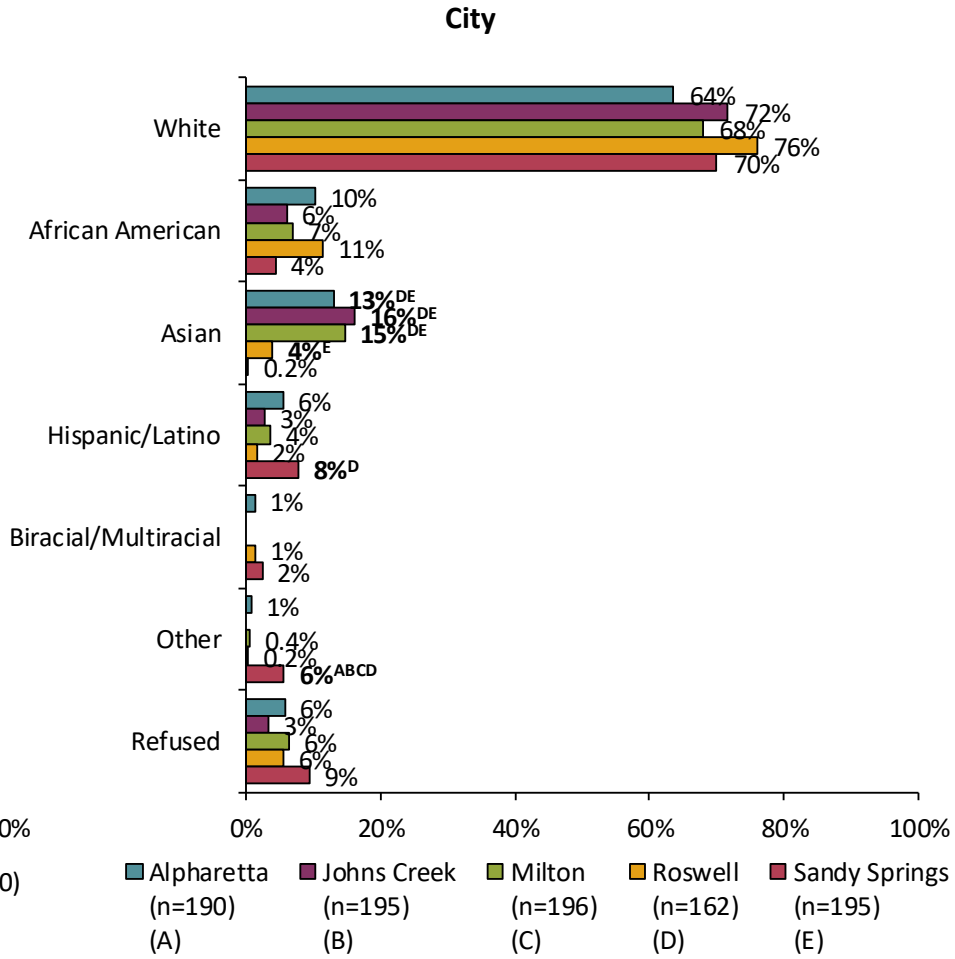
Appendix

DEBRA SEMANS

CONTENT MARKETING ● MARKETING RESEARCH

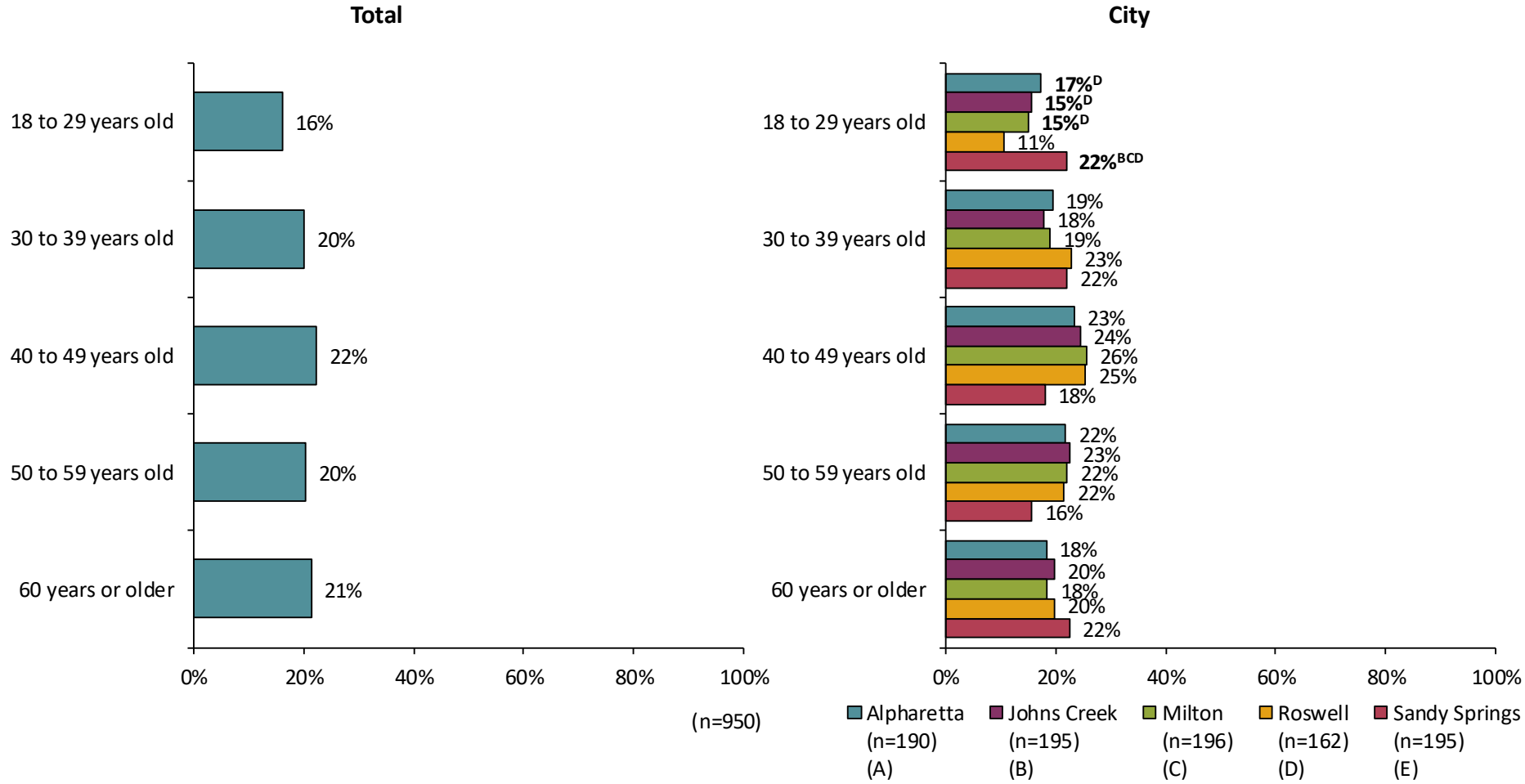
Ethnicity





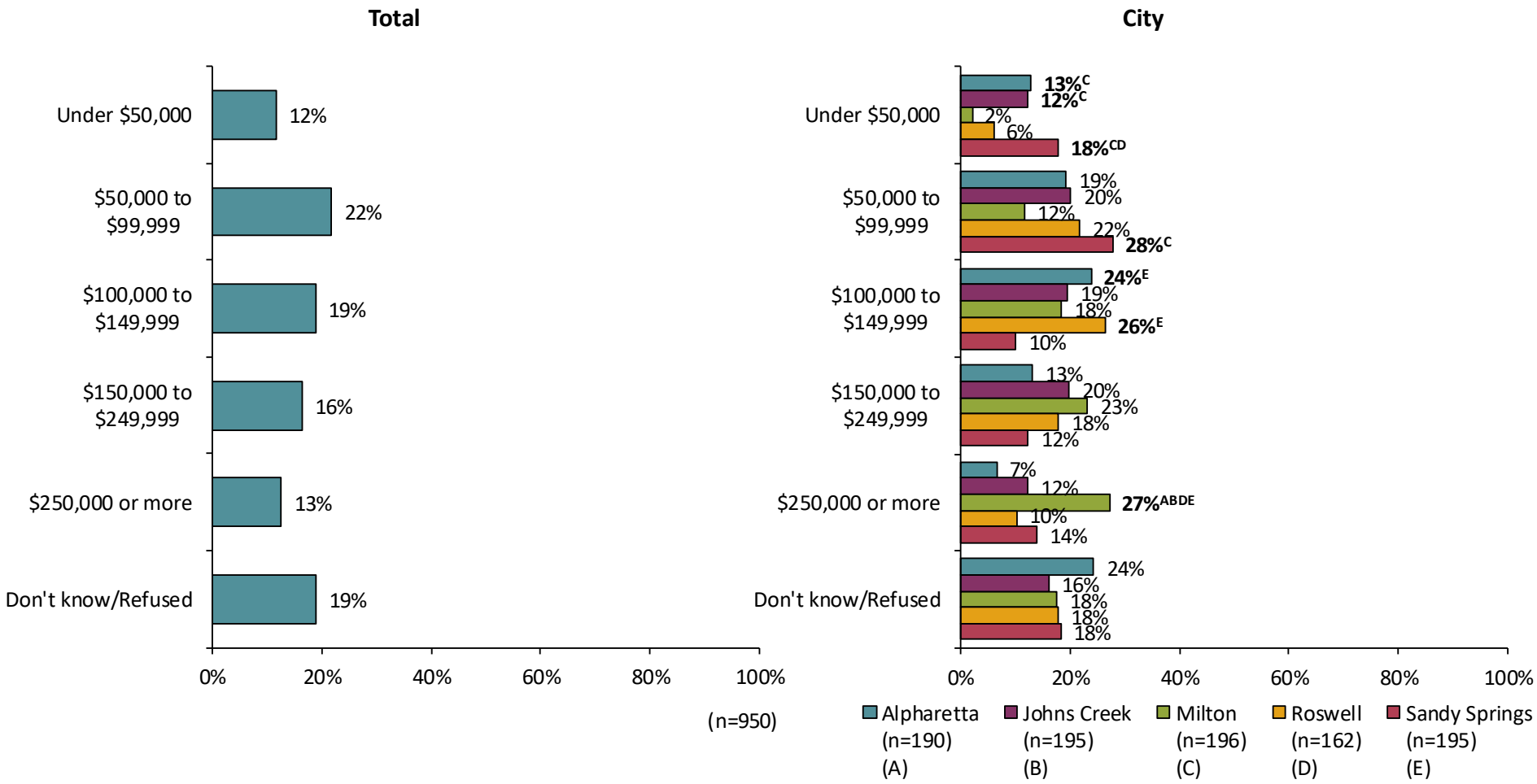
Q32: What race or ethnicity do you most closely identify with?

Age



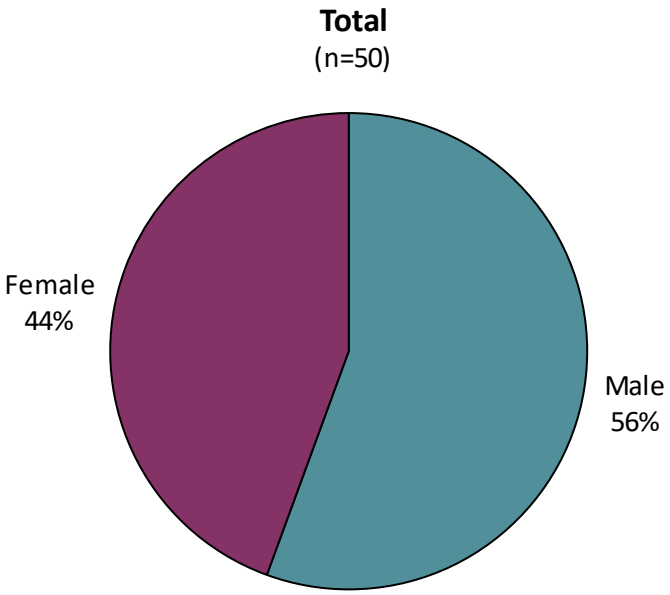
Q33: What is your age?

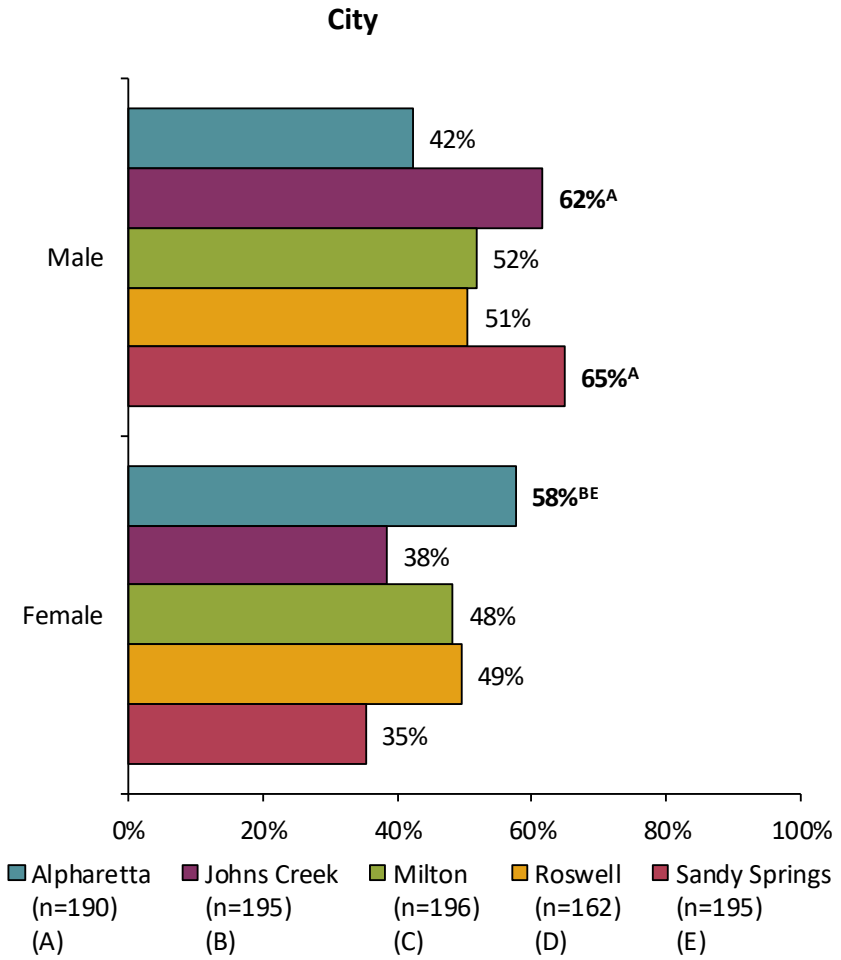
Income



Q34: Please stop me when I reach the category that includes your total annual household income before taxes.

Gender





Q36: Gender

Thank you!

NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN

Debra Semans
Marketing Research
770-295-9682
debra@debrasemans.com

DEBRA SEMANS
CONTENT MARKETING ● MARKETING RESEARCH

Resiliency Locations

1. GA 400 over the Chattahoochee River
2. SR 140 over the Chattahoochee River
3. SR 141 over the Chattahoochee River
4. I-285 over the Chattahoochee River

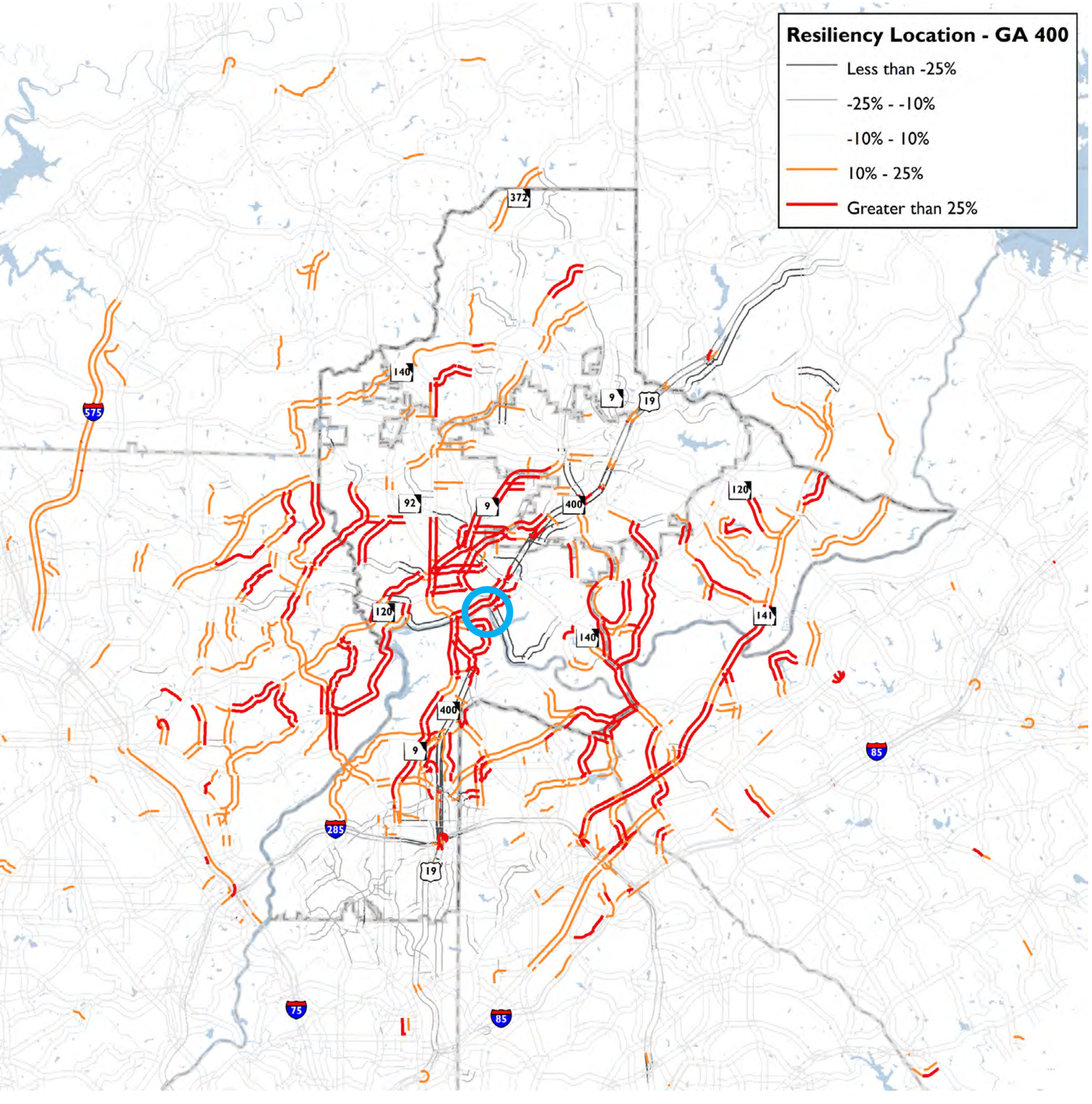
North Fulton contains many regionally significant roadways such as GA 400, SR 140, SR 141, and I-285. To analyze the resiliency of the roadway and transit network in and around North Fulton, four scenarios were developed including bridge locations over the Chattahoochee River along GA 400, SR 140, SR 141, and I-285. These specific locations were identified as major river crossings. An analysis was conducted to evaluate the dispersal of traffic resulting from a closure at the four resiliency locations (individually). Each of these locations was modeled using the Atlanta Regional Commission's Travel Demand Model network with closures at the critical bridge locations.

On the following pages, fact sheets were created for each of the locations including the following:

- a map showing the percent change in volume
- three tables summarizing data
    - the key corridors that were affected by the resiliency location
    - regional model network statistics
    - North Fulton network statistics

The model outputs include 2040 Existing plus Committed (E+C) projects as the baseline scenario and 2040 Existing plus Committed projects with the resiliency location as the tested scenario. The map shows the percent change in volume and was calculated by subtracting the 2040 Resiliency Network from the 2040 E+C Network baseline. The number was then divided by the 2040 E+C Network baseline. The key corridors in the fact sheets were determined to be roadways highlighted in red or orange with a percent volume increase greater than 15%, with some exceptions. In the Key Corridor table, the column next to the percent volume increase is the actual change in the number of vehicles along specific corridors. Finally, the outputs from each of the four resiliency models and the baseline were processed to show the vehicle miles traveled (VMT), vehicle hours traveled (VHT), and vehicle hours of delay (VHD) by facility type. The second and third tables show a comparison between the 2040 Resiliency Network scenario and the 2040 E+C Network baseline scenario for both the regional model network statistics and the North Fulton specific network statistics.

GA 400 OVER CHATTAHOOCHEE



KEY CORRIDOR SEGMENTS (VOLUME INCREASE > 15%)
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Corridor Segment	Volume Difference (> 10,000 veh)	Rate
SR 9 / Roswell Road	19,000	85%
Dunwoody Place	15,000	81%
Holcomb Bridge Road	13,000	31%
Peachtree Industrial Boulevard (Gwinnett)	12,000	32%
Riverside Road	11,000	74%

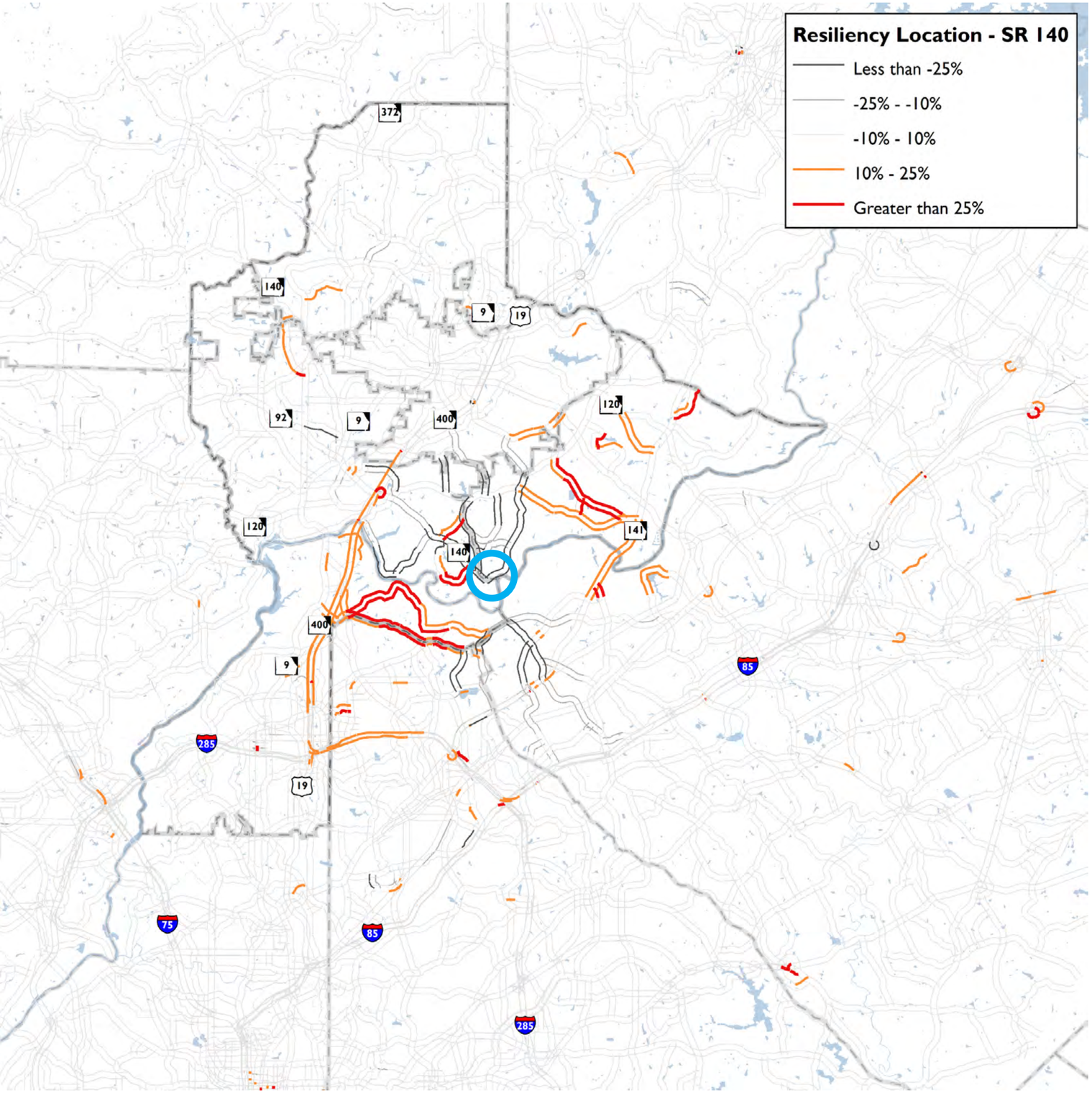
MODEL NETWORK STATISTICS
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Facility Type	VMT	VHT	VHD	Absolute Road Miles
Interstates	-2.96%	-4.04%	-6.48%	920
Expressways	-3.48%	-1.04%	6.53%	593
Principal Arterials	1.60%	4.75%	17.89%	1,837
Minor Arterials	0.54%	2.14%	9.78%	8,853
Collectors	0.41%	1.74%	10.81%	7,165
Ramps	-3.56%	1.04%	7.58%	568
Total	**-0.77%**	**0.96%**	**5.42%**	**19,936**

NORTH FULTON NETWORK STATISTICS
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Facility Type	VMT	VHT	VHD	Absolute Road Miles
Interstates	-38.72%	-50.27%	-71.66%	46
Expressways	-64.66%	-65.04%	-75.17%	44
Principal Arterials	11.11%	38.16%	109.15%	84
Minor Arterials	3.04%	21.72%	93.89%	305
Collectors	0.97%	9.59%	52.02%	373
Ramps	-34.01%	6.31%	64.34%	39
Total	**-15.37%**	**2.29%**	**32.85%**	**891**

SR 140 OVER CHATTAHOOCHEE



KEY CORRIDOR SEGMENTS (VOLUME INCREASE > 15%)
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Corridor Segment	Volume Difference (> 1,000 veh)	Rate
Buice Road	1,900	35%
Dunwoody Club Road	2,300	32%
Spalding Drive	1,000	33%
Old Scott Road	1,200	28%
GA 400	13,000	16%

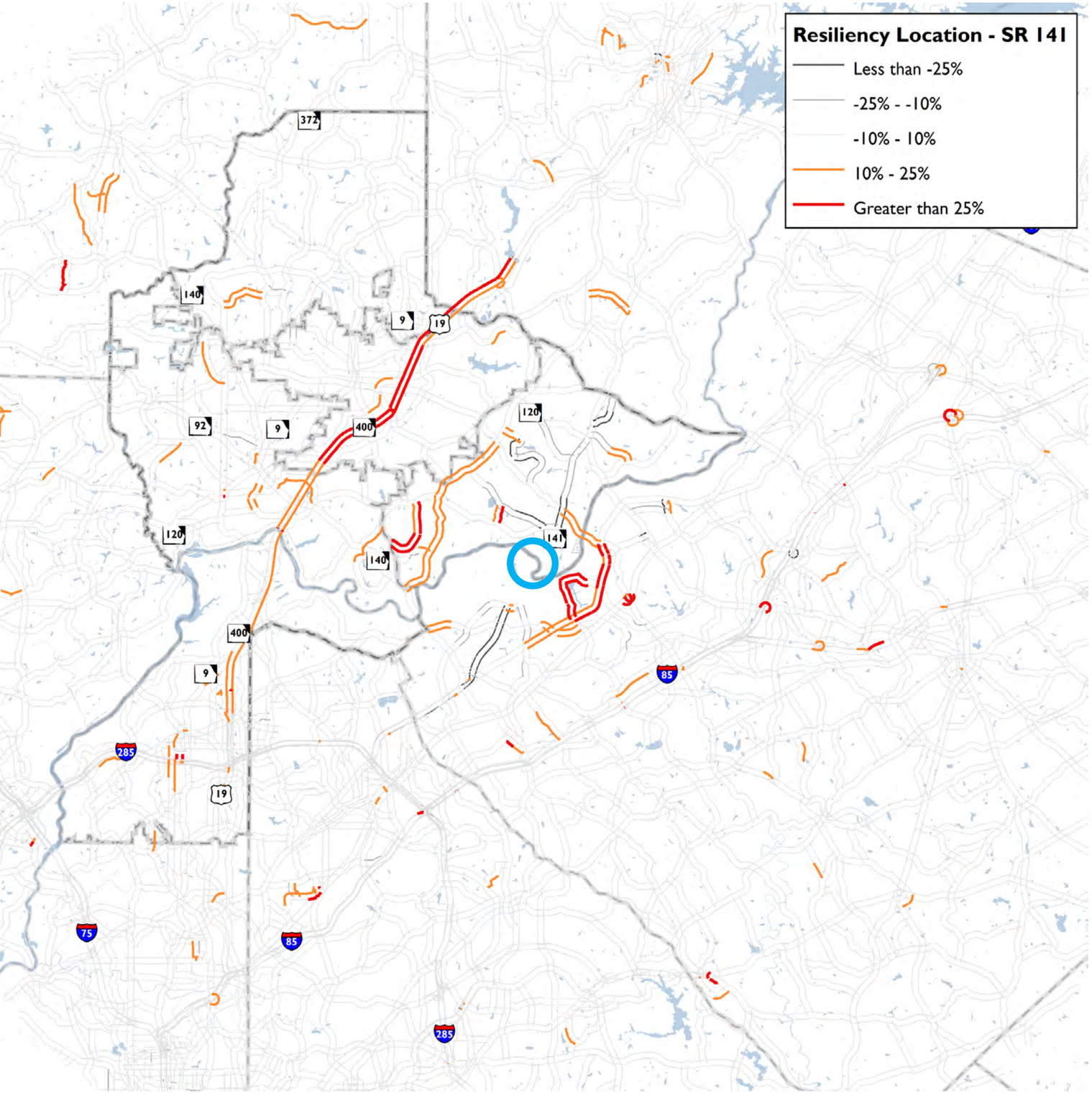
MODEL NETWORK STATISTICS
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Facility Type	VMT	VHT	VHD	Absolute Road Miles
Interstates	0.06%	0.27%	0.75%	924
Expressways	0.61%	0.16%	-1.25%	593
Principal Arterials	-0.90%	-0.78%	-0.42%	1,836
Minor Arterials	-0.23%	0.15%	2.21%	8,853
Collectors	-0.48%	-0.07%	2.85%	7,165
Ramps	0.27%	0.97%	1.92%	568
Total	**-0.22%**	**-0.01%**	**1.14%**	**19,939**

NORTH FULTON NETWORK STATISTICS
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Facility Type	VMT	VHT	VHD	Absolute Road Miles
Interstates	0.97%	2.97%	6.61%	49
Expressways	6.29%	6.67%	15.86%	44
Principal Arterials	-9.50%	-7.56%	-5.44%	83
Minor Arterials	-3.92%	2.05%	24.10%	305
Collectors	-3.27%	-0.85%	12.26%	373
Ramps	3.15%	8.00%	14.85%	39
Total	**-2.20%**	**0.22%**	**9.48%**	**893**

SR 141 OVER CHATTAHOOCHEE



KEY CORRIDOR SEGMENTS (VOLUME INCREASE > 15%)
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

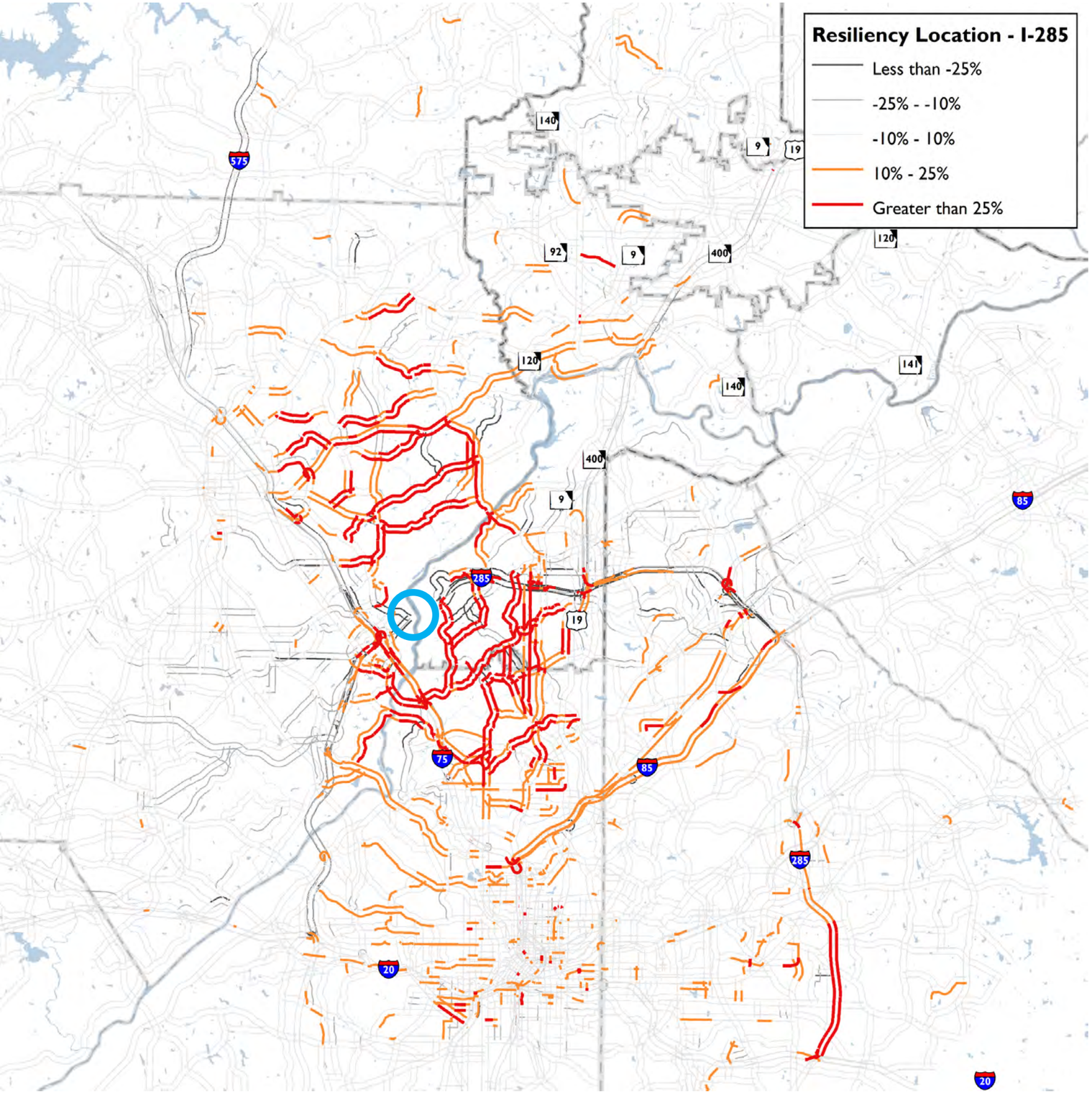
Corridor Segment	Volume Difference (> 1,000 veh)	Rate
Berkeley Lake Road (Gwinnett)	1,000	42%
Peachtree Industrial Boulevard (Gwinnett)	7,000	26%
State Bridge Road	7,500	16%
Barnwell Road / Jones Bridge Road	1,600	16%
GA 400*	10,000	14%*

MODEL NETWORK STATISTICS
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Facility Type	VMT	VHT	VHD	Absolute Road Miles
Interstates	0.41%	1.41%	3.67%	924
Expressways	1.19%	1.04%	0.80%	593
Principal Arterials	-0.39%	0.63%	5.37%	1,836
Minor Arterials	0.10%	0.80%	4.14%	8,853
Collectors	-0.25%	0.31%	4.09%	7,165
Ramps	0.23%	0.96%	1.96%	568
Total	**0.13%**	**0.85%**	**3.91%**	**19,939**

NORTH FULTON NETWORK STATISTICS
(CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Facility Type	VMT	VHT	VHD	Absolute Road Miles
Interstates	2.03%	6.72%	15.26%	49
Expressways	10.03%	10.40%	19.08%	44
Principal Arterials	-5.21%	1.42%	17.85%	84
Minor Arterials	-0.95%	5.82%	30.51%	305
Collectors	-3.96%	-2.04%	7.76%	373
Ramps	2.02%	5.57%	10.60%	39
Total	**-0.40%**	**3.66%**	**17.74%**	**894**



I-285 OVER CHATTAHOOCHEE

KEY CORRIDOR SEGMENTS (VOLUME INCREASE > 15%) (CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Corridor Segment	Volume Difference (> 1,000 veh)	% Increase
Northside Drive / Garmon Road / Mt. Paran Road	7,000	173%
Powers Ferry Road / Northside Drive	2,800	102%
SR 9 / US 19	1,600	82%
Mt. Paran Road	4,000	75%
Mt. Vernon Pkwy / Crest Valley Drive (South Fulton)	1,800	71%
Papermill Road (Cobb)	3,500	43%
Johnsons Ferry Road	9,000	30%

MODEL NETWORK STATISTICS (CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Facility Type	VMT	VHT	VHD	Absolute Road Miles
Interstates	-2.61%	-3.08%	-4.07%	924
Expressways	-5.96%	-4.48%	-0.78%	593
Principal Arterials	0.58%	1.51%	5.45%	1,837
Minor Arterials	0.27%	0.85%	3.92%	8,853
Collectors	0.52%	1.92%	11.66%	7,165
Ramps	-3.89%	-2.79%	-1.34%	568
Total	**-1.05%**	**-0.13%**	**1.58%**	**19,940**

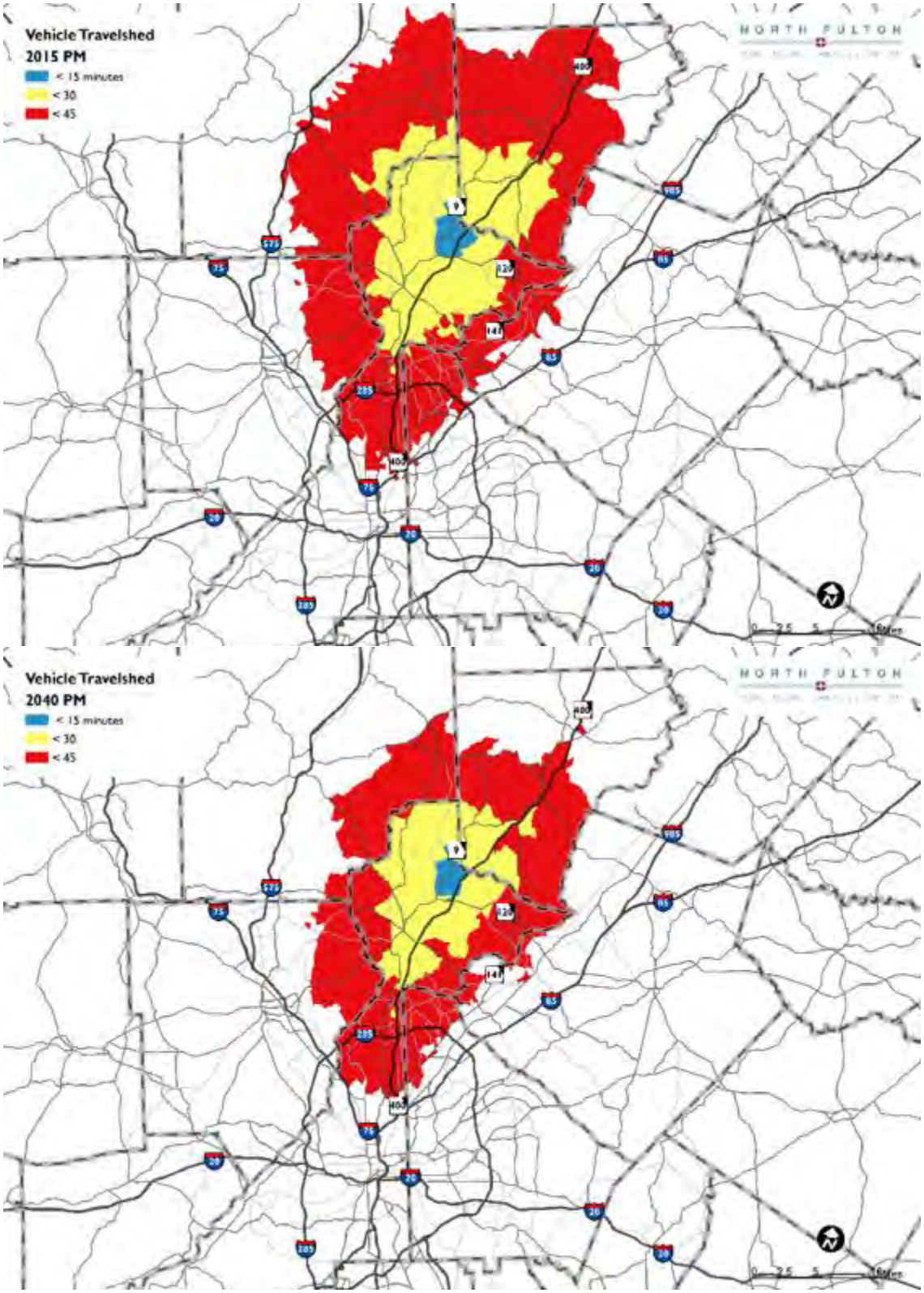
NORTH FULTON NETWORK STATISTICS (CHANGE FROM 2040 BUILD TO 2040 RESILIENCY + BUILD)

Facility Type	VMT	VHT	VHD	Absolute Road Miles
Interstates	-24.56%	-25.06%	-25.81%	49
Expressways	-40.43%	-40.88%	-53.10%	44
Principal Arterials	1.01%	7.70%	25.79%	84
Minor Arterials	-1.91%	3.79%	25.42%	305
Collectors	-2.21%	-0.68%	9.90%	373
Ramps	-15.22%	-10.85%	-4.57%	39
Total	**-11.71%**	**-5.17%**	**3.21%**	**894**

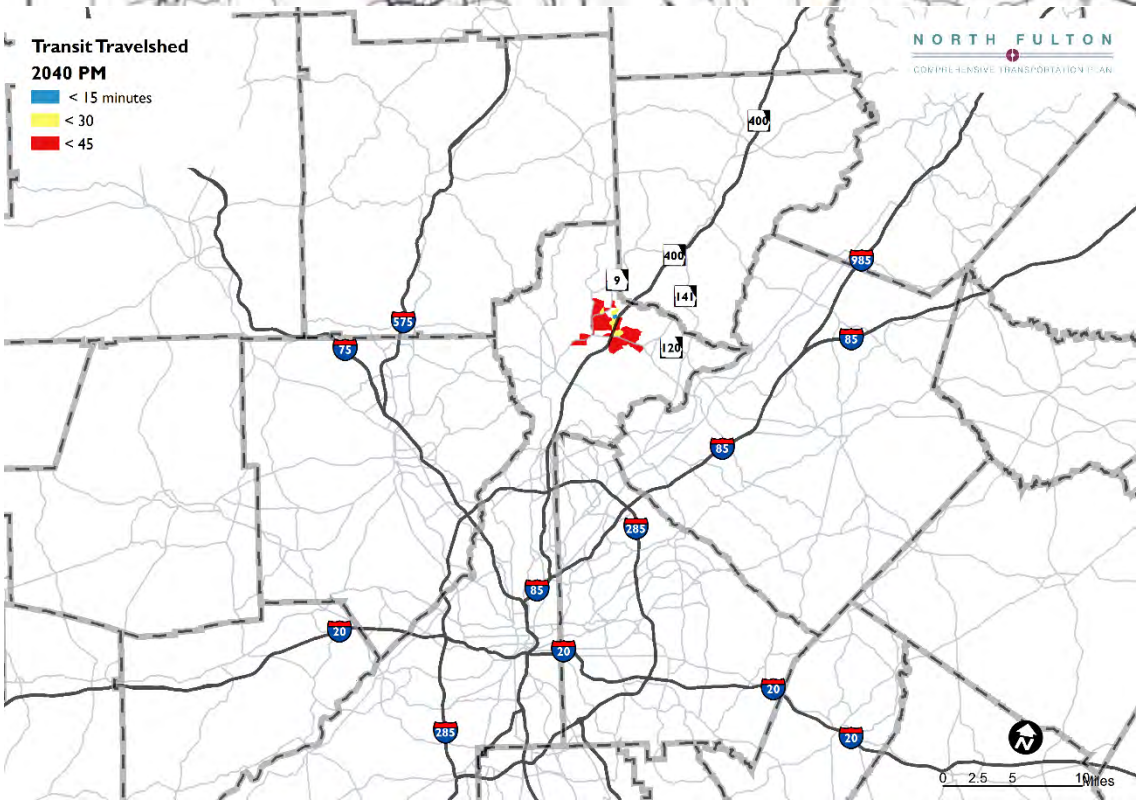
Vehicle and Transit Travel Sheds

The vehicle and transit travel sheds represent the distance a person could travel using either a car or transit sectioned in time segments of less than 15 minutes, 15 to 30 minutes, and 30 to 45 minutes of travel. The vehicle travel sheds were determined using the Travel Demand Model person trip travel times and distance. The transit travel sheds were determined using the Travel Demand Model person trip travel times and distance from the start of the trip to the end of the trip including last mile connectivity. Heat maps were created to visually present the data analyzed by the Travel Demand Model. The 2015 Existing + Committed (E+C) model results during PM peak hour was used as the base line and mapped. The 2040 Future Year volumes during the PM peak hour was used to compare with the 2015 E + C base line to visualize the increase of travel time from each activity node. Shown in the maps below, there is a change in travel times represented in the decrease of area that a person could drive in the time segments allotted. If the 2040 roadway network only includes the projects included in the 2015 E+C travel demand model, travel time across the board increases. The following includes maps from the North Fulton's twenty-six activity nodes vehicle and transit travel sheds from 2015 PM and 2040 PM.

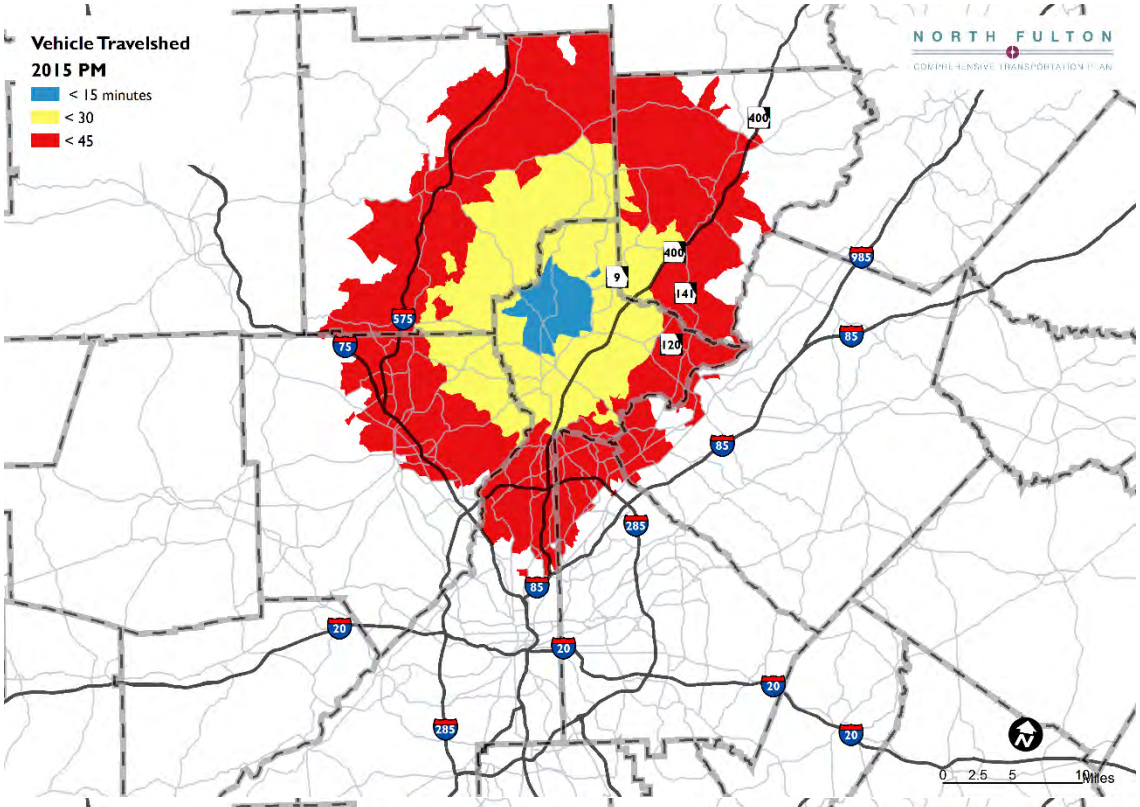
1. Deerfield

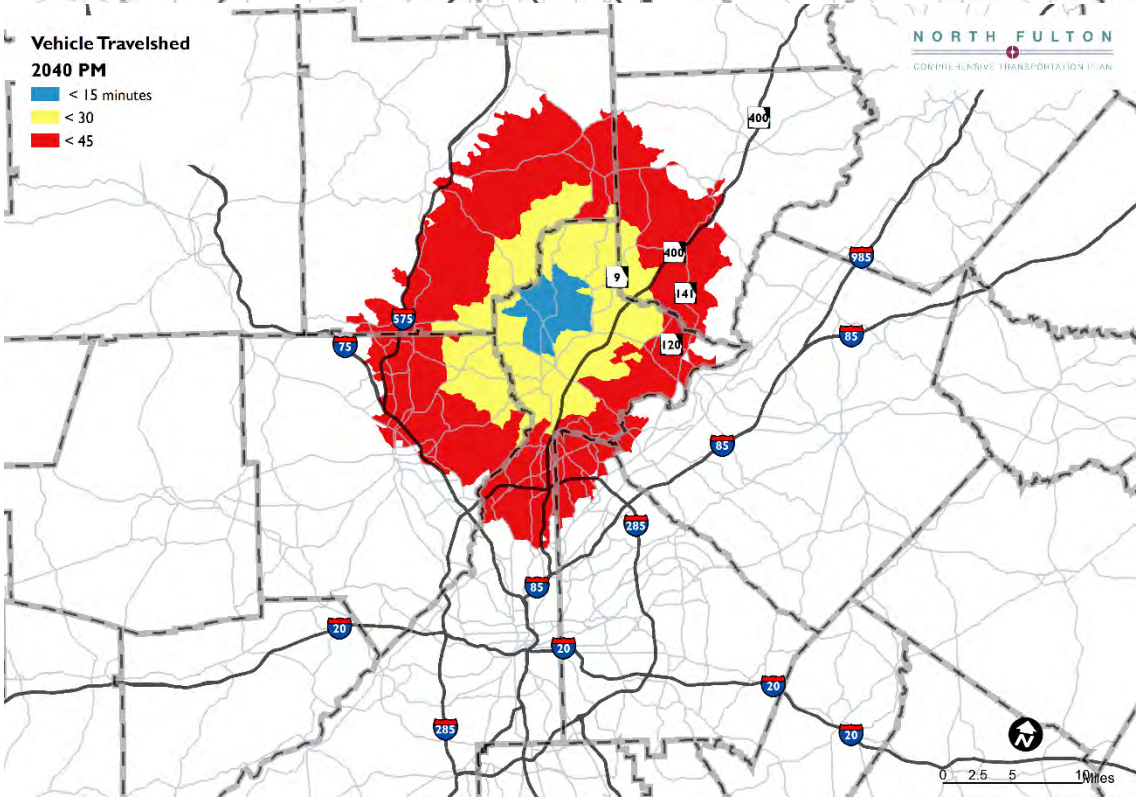

Vehicle Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
Vehicle Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON

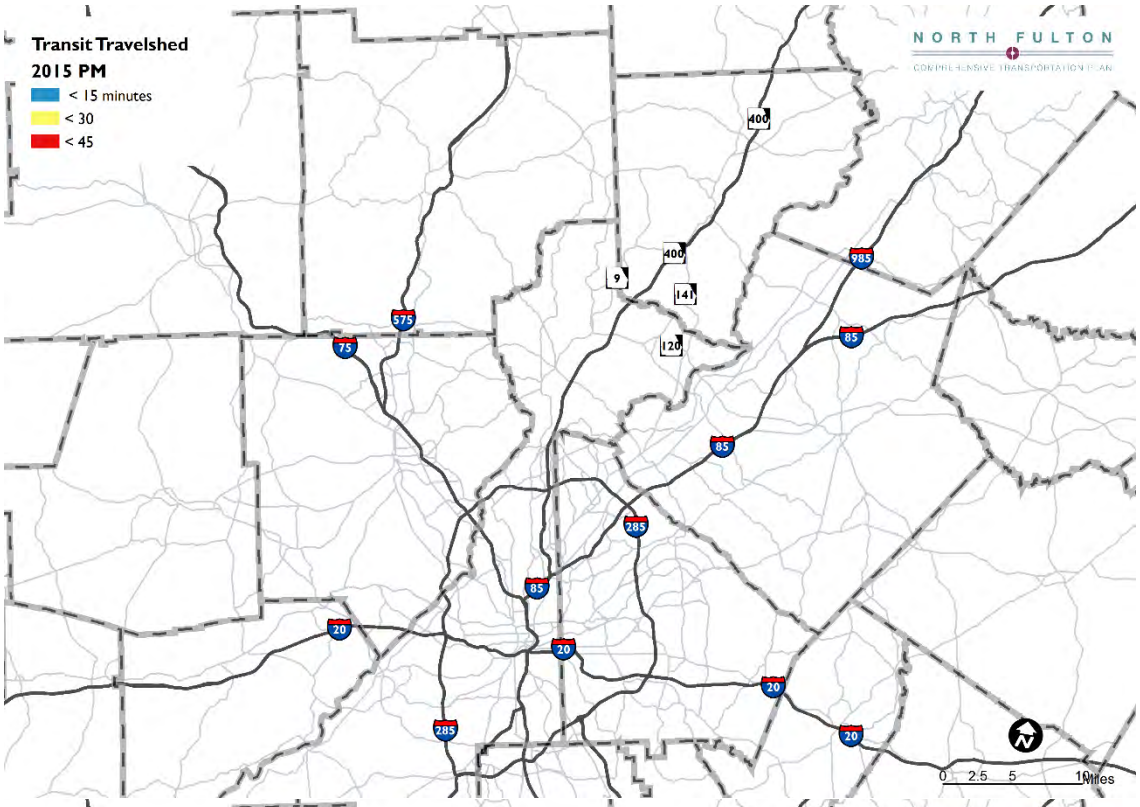

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON

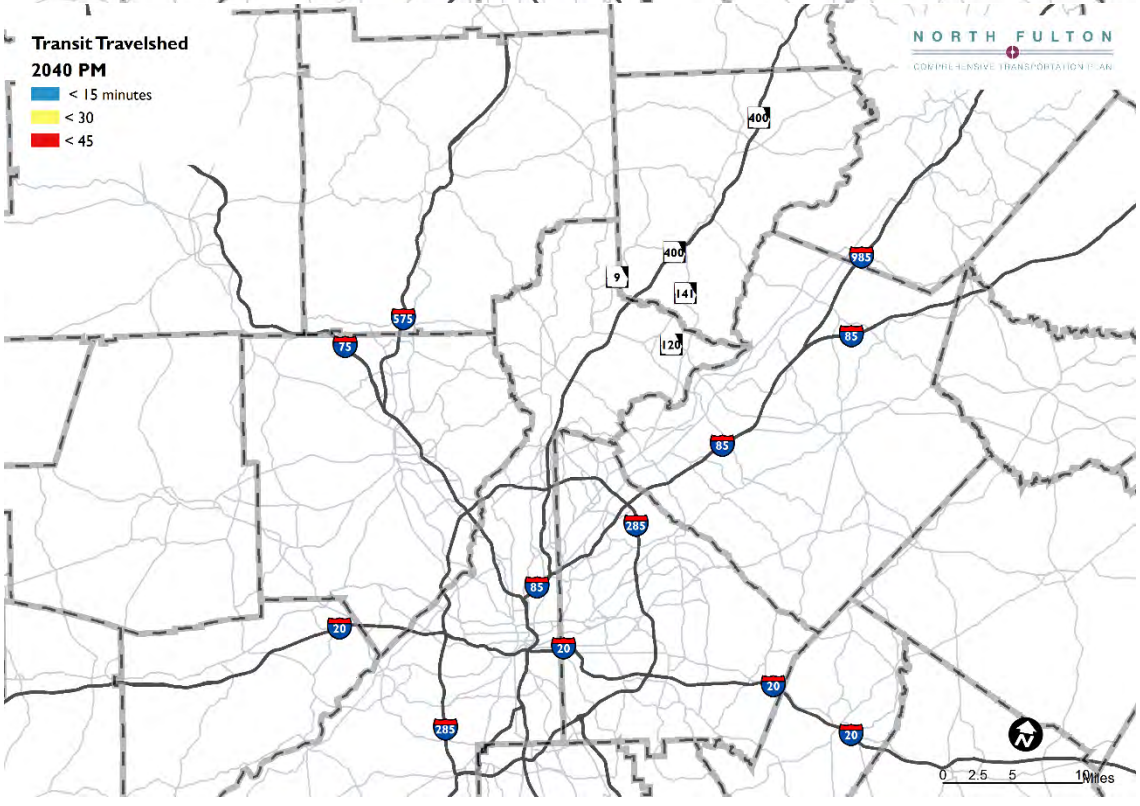

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

2. Crabapple

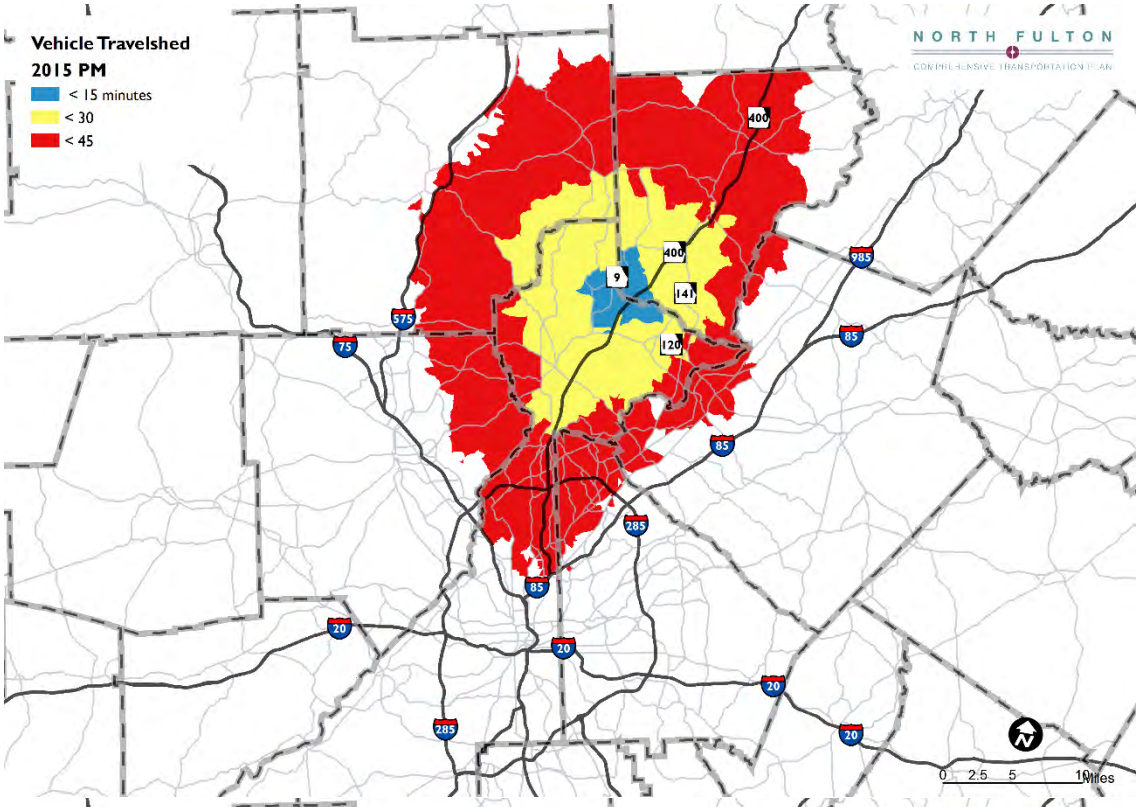

Vehicle Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles

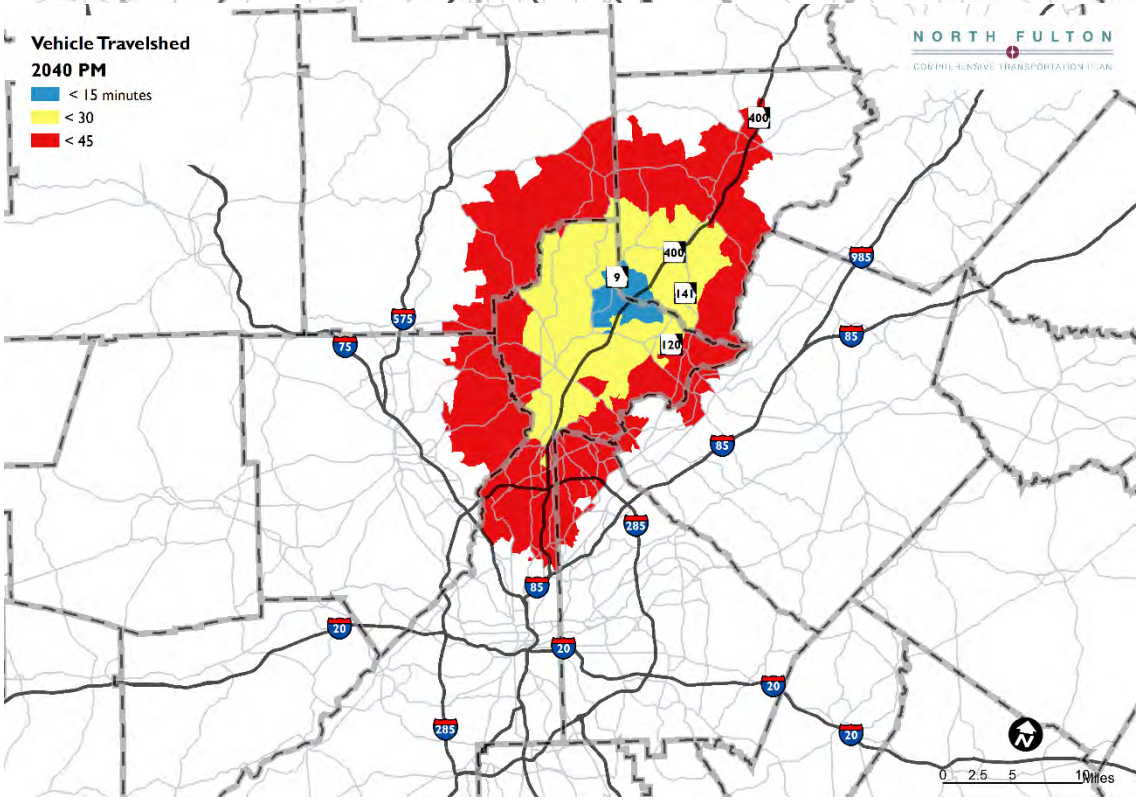

Vehicle Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles


Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

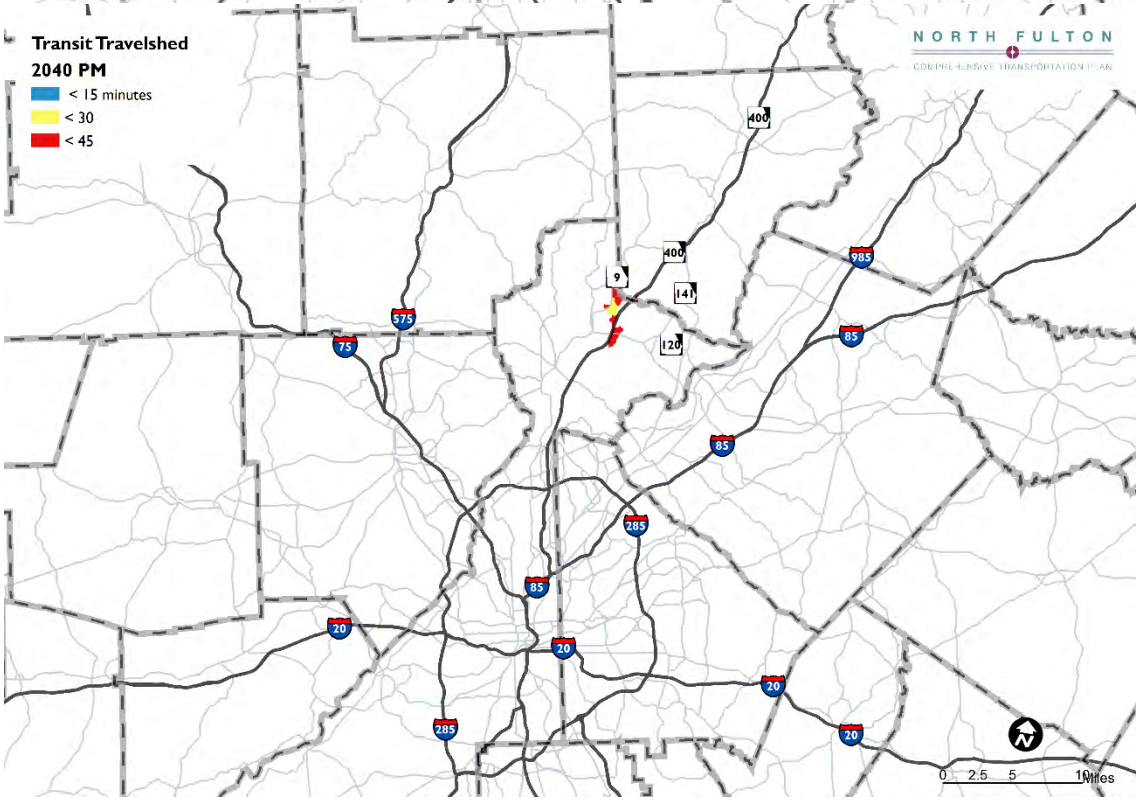

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

3. Windward Parkway

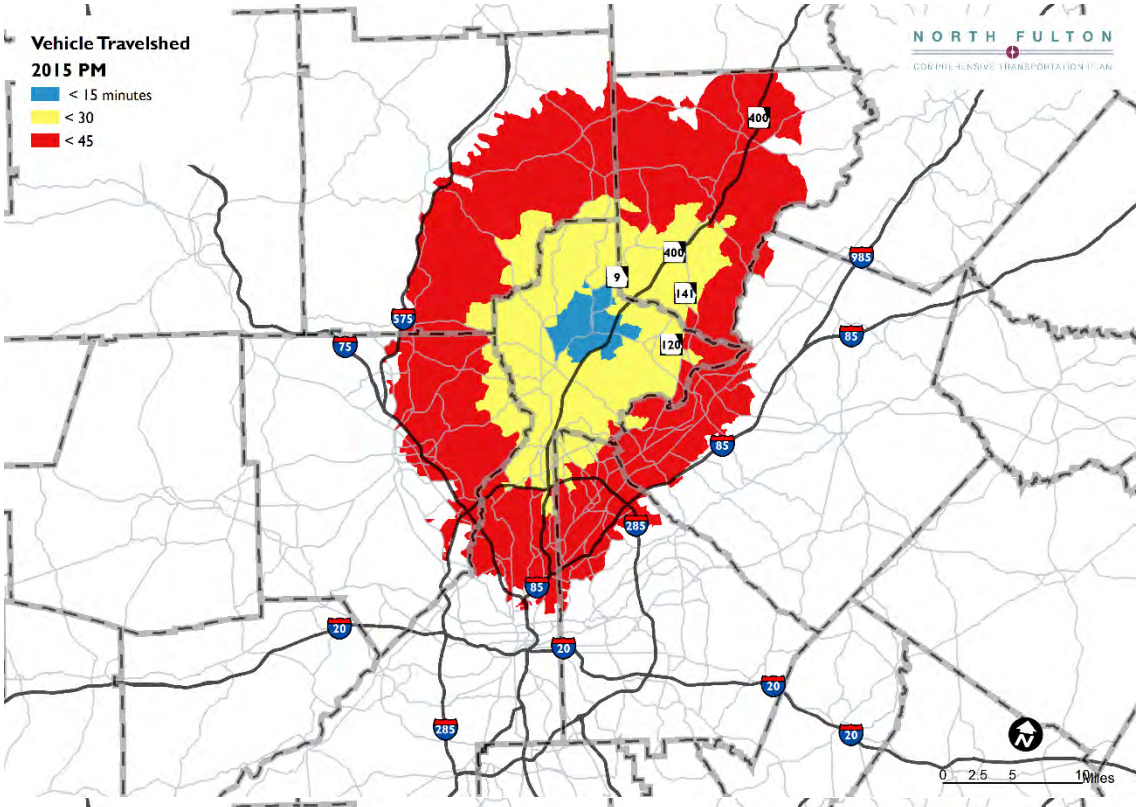


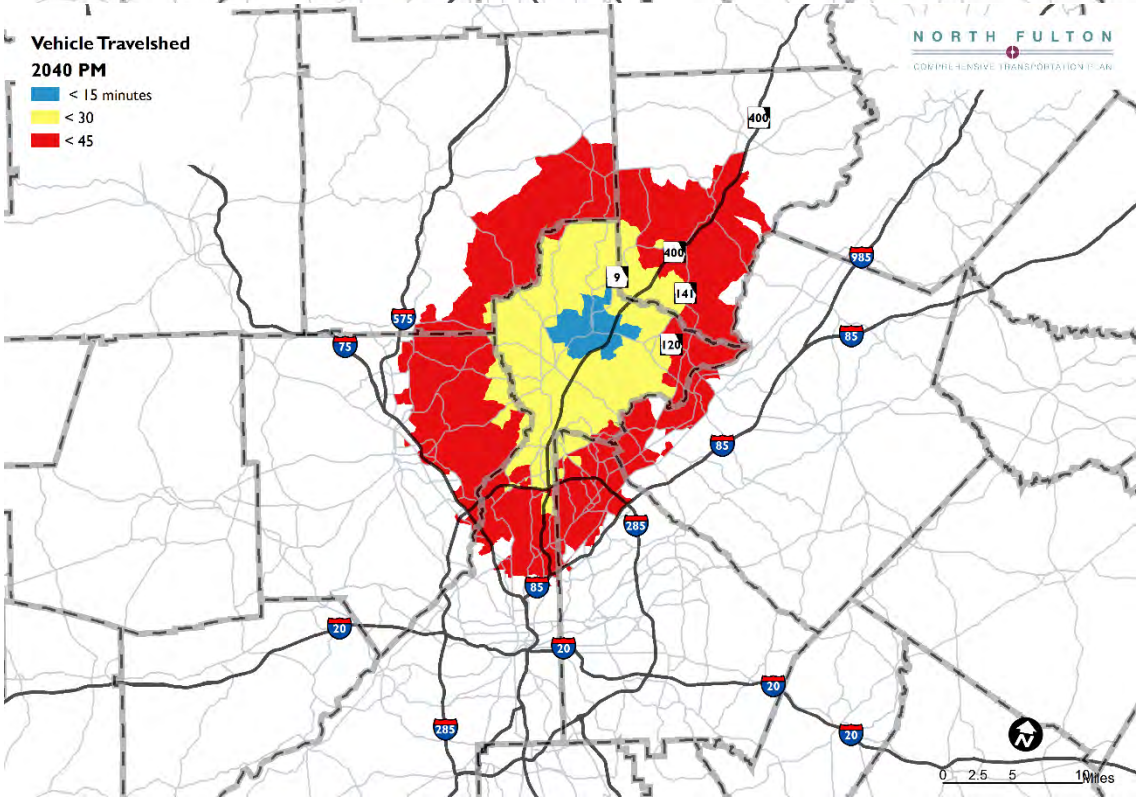


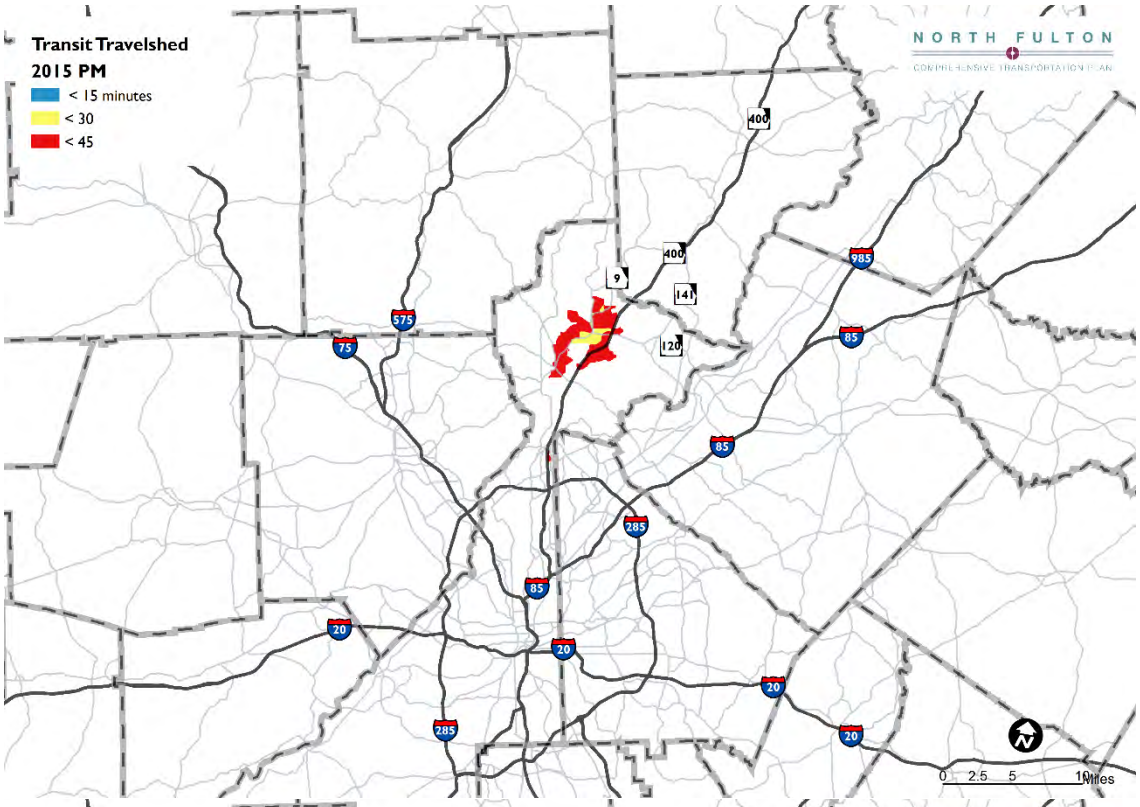

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

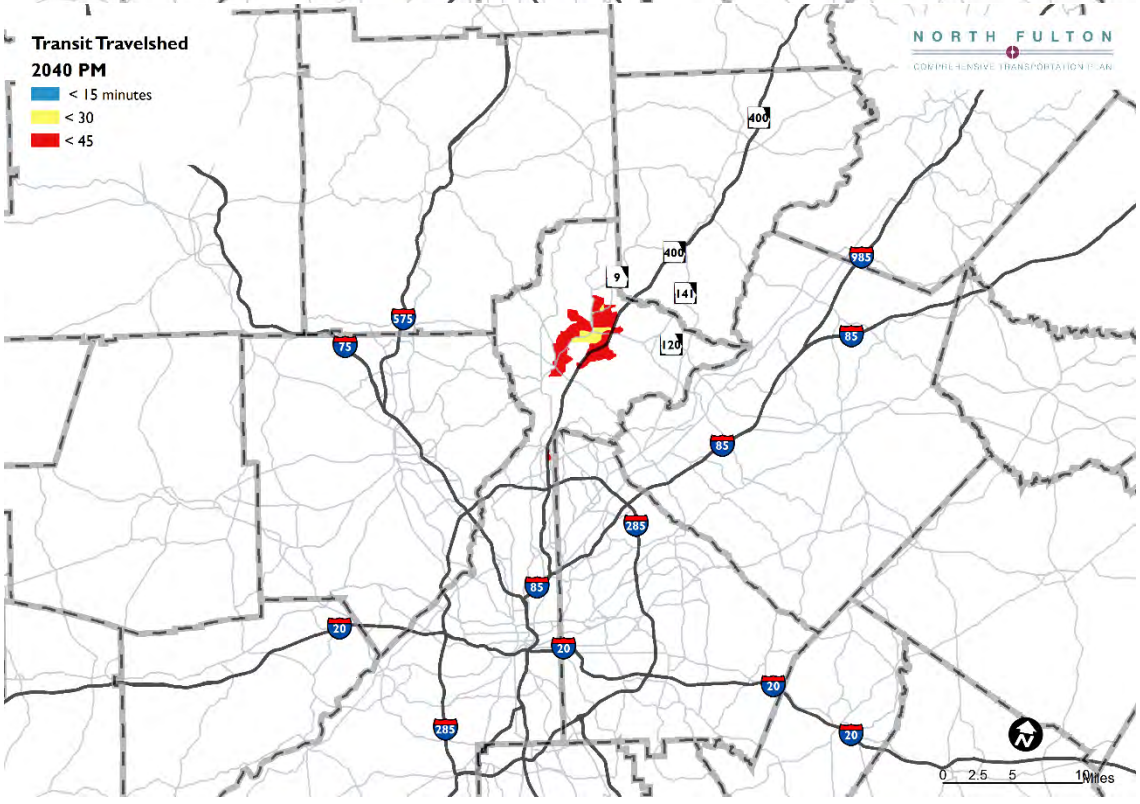

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

4. Downtown Alpharetta

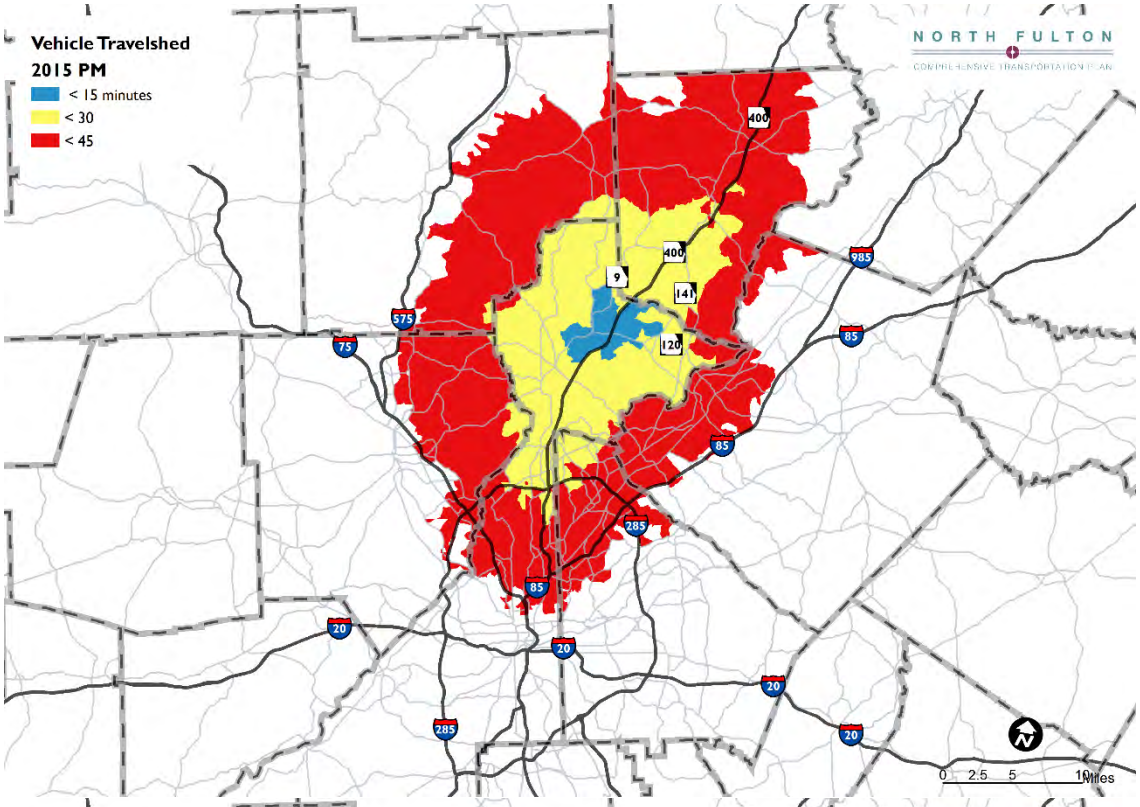


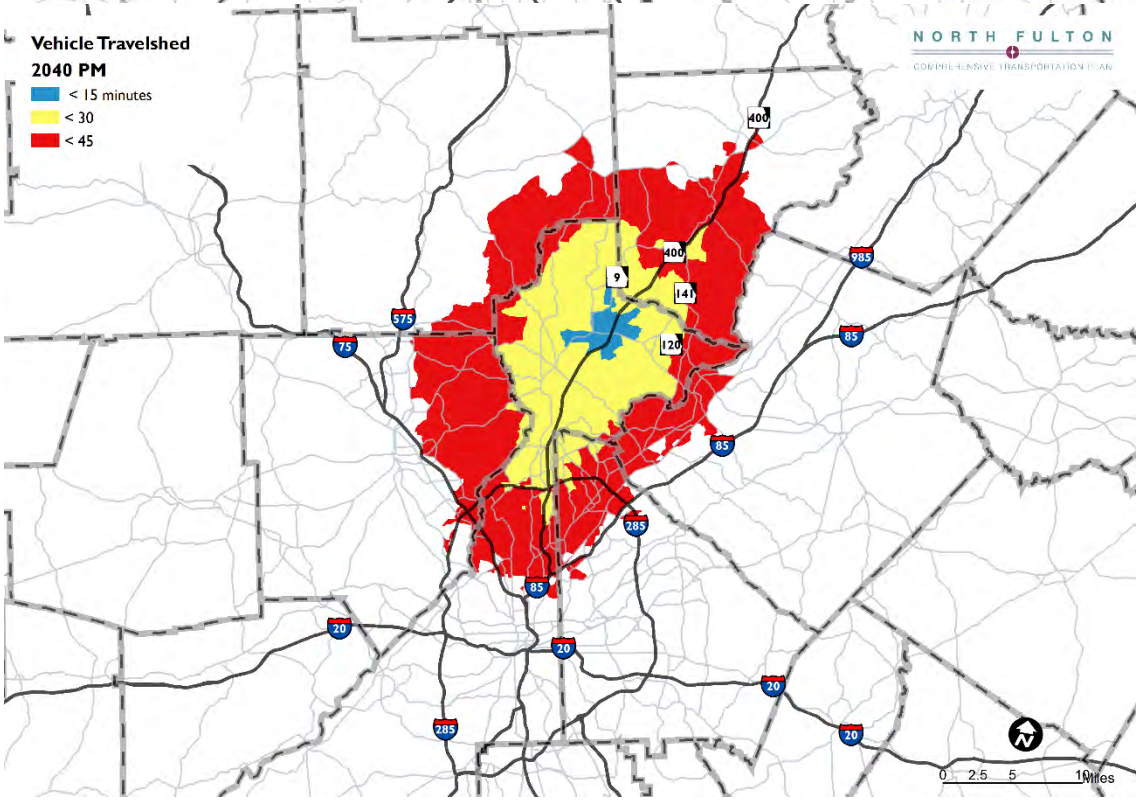


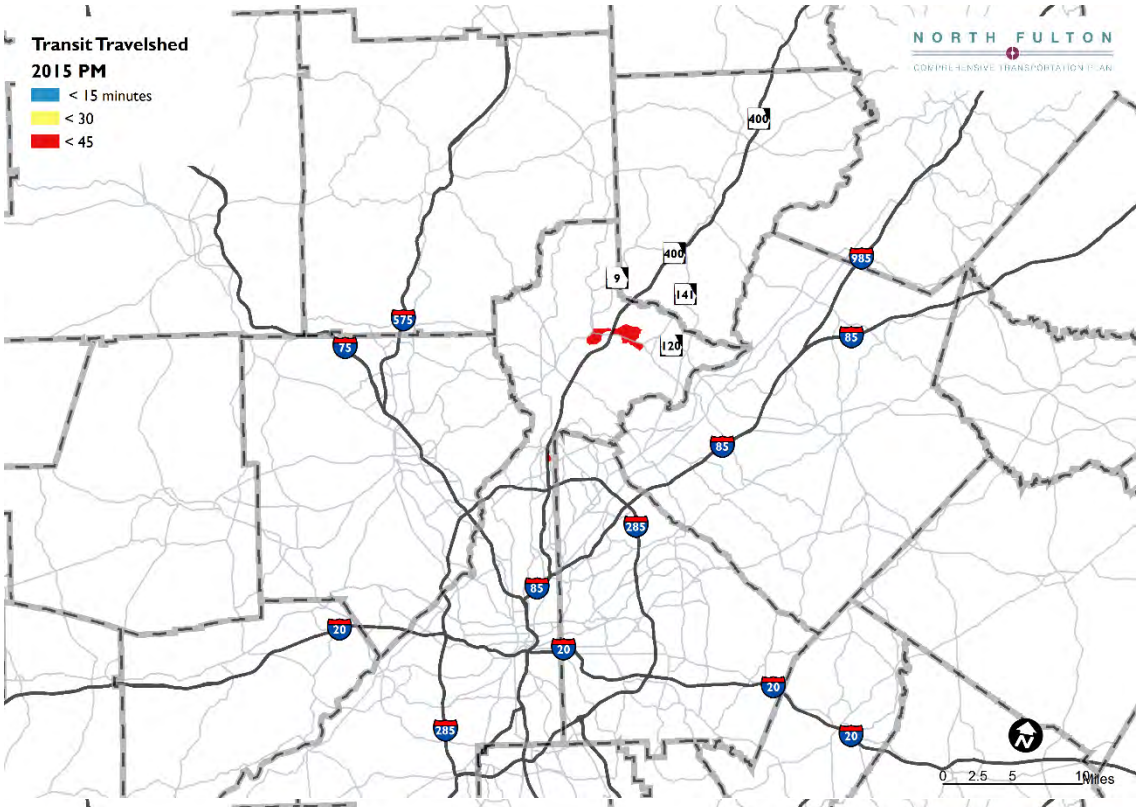

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

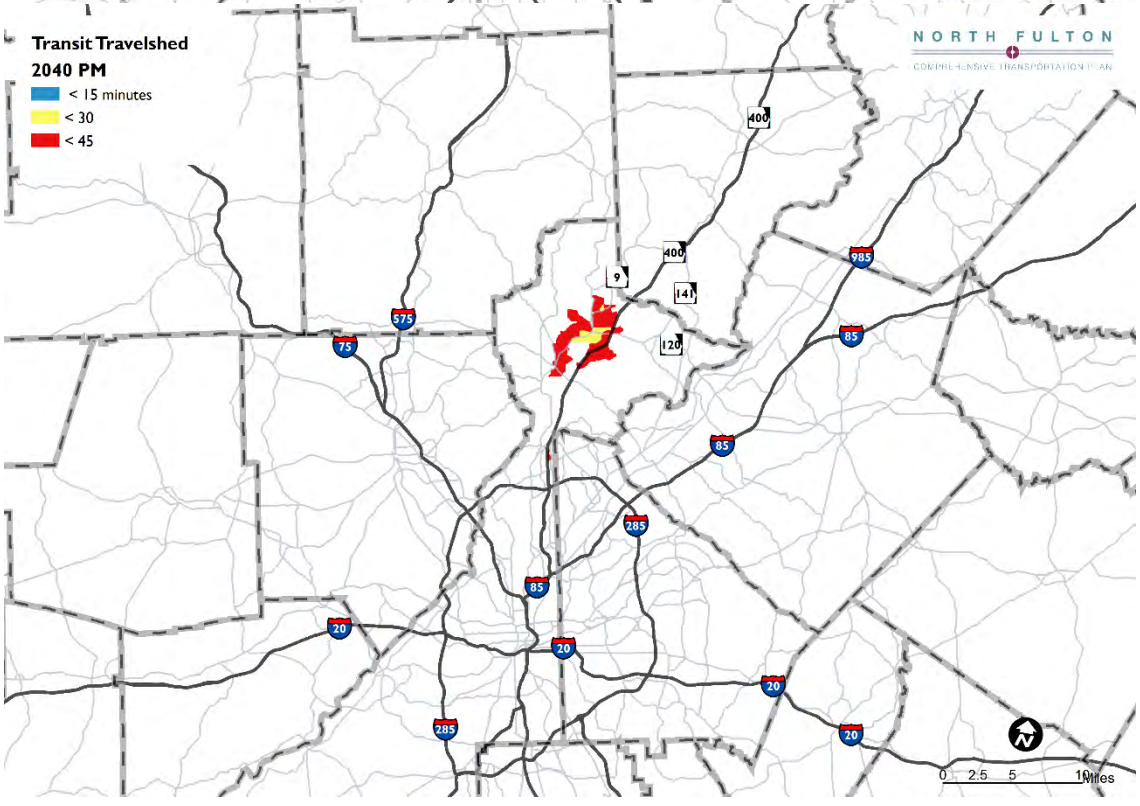

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

5. Old Milton

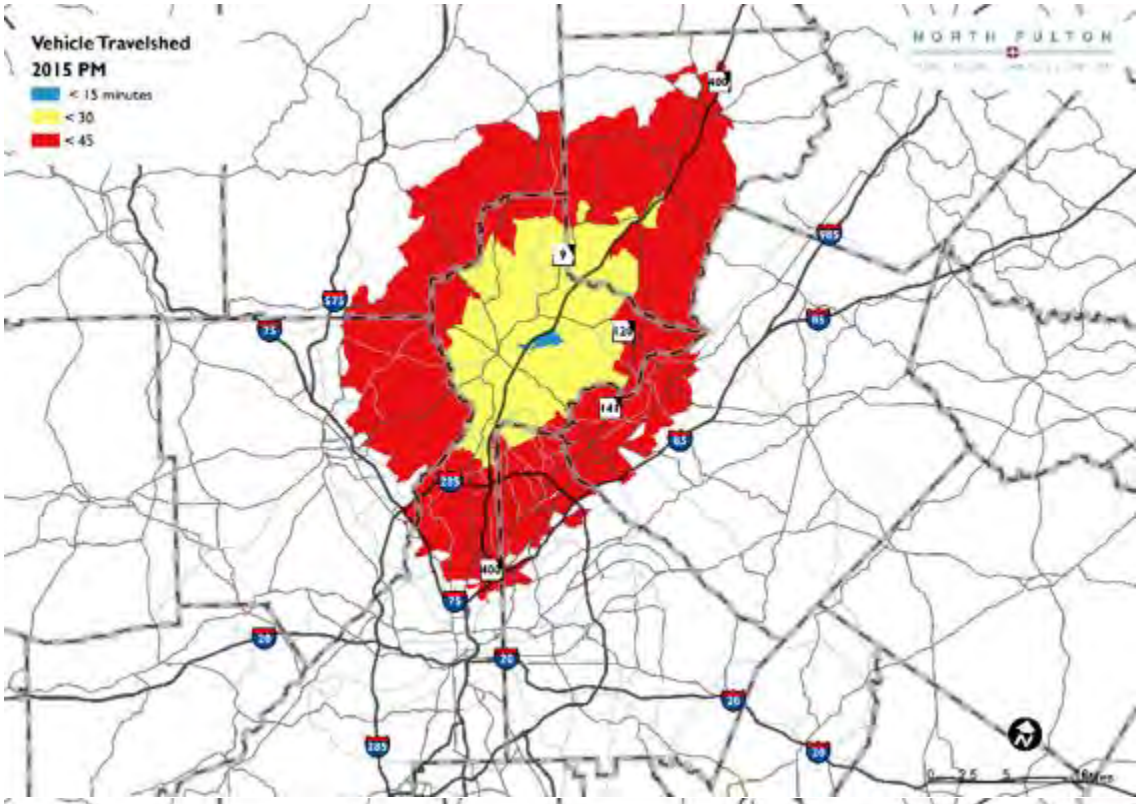

Vehicle Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles

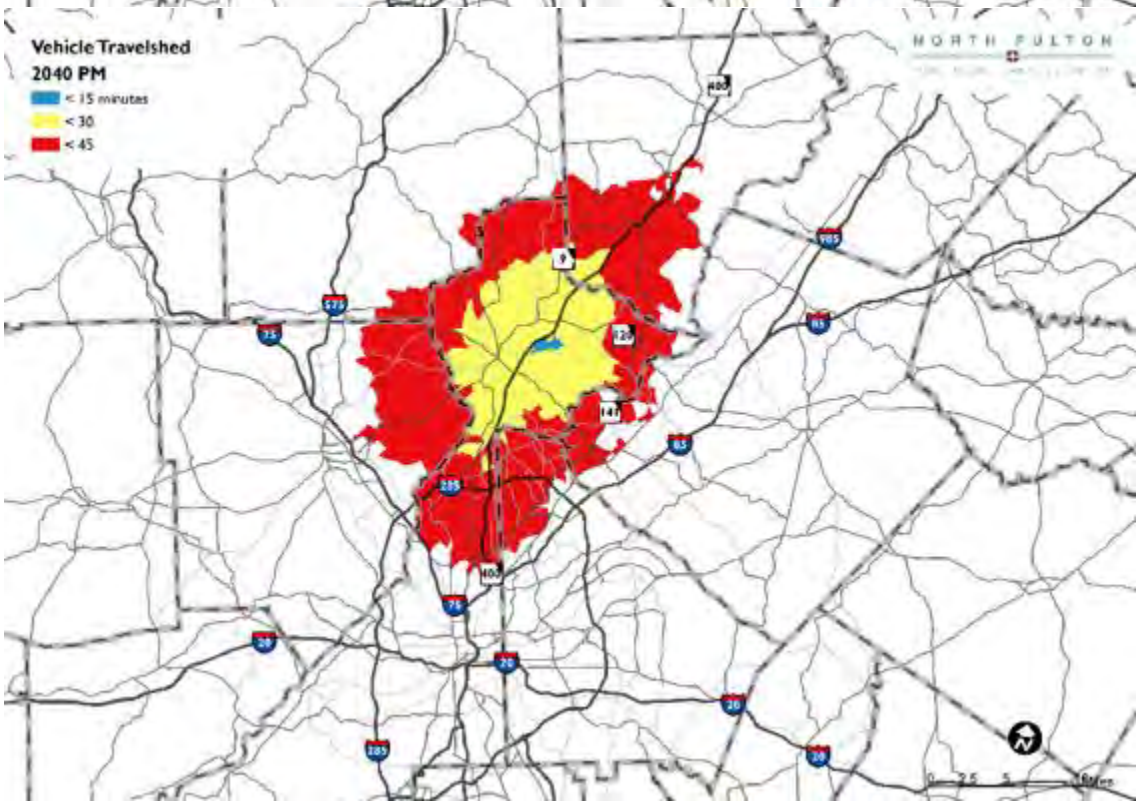

Vehicle Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles


Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

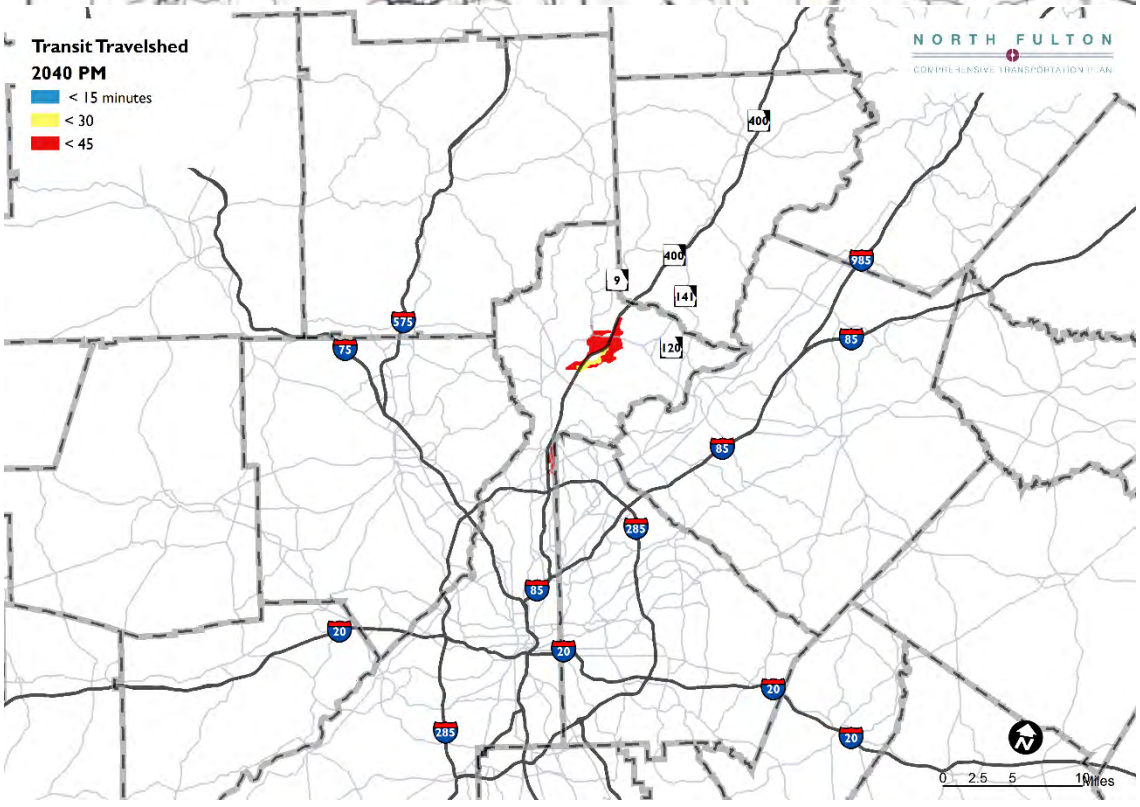

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

6. North Point

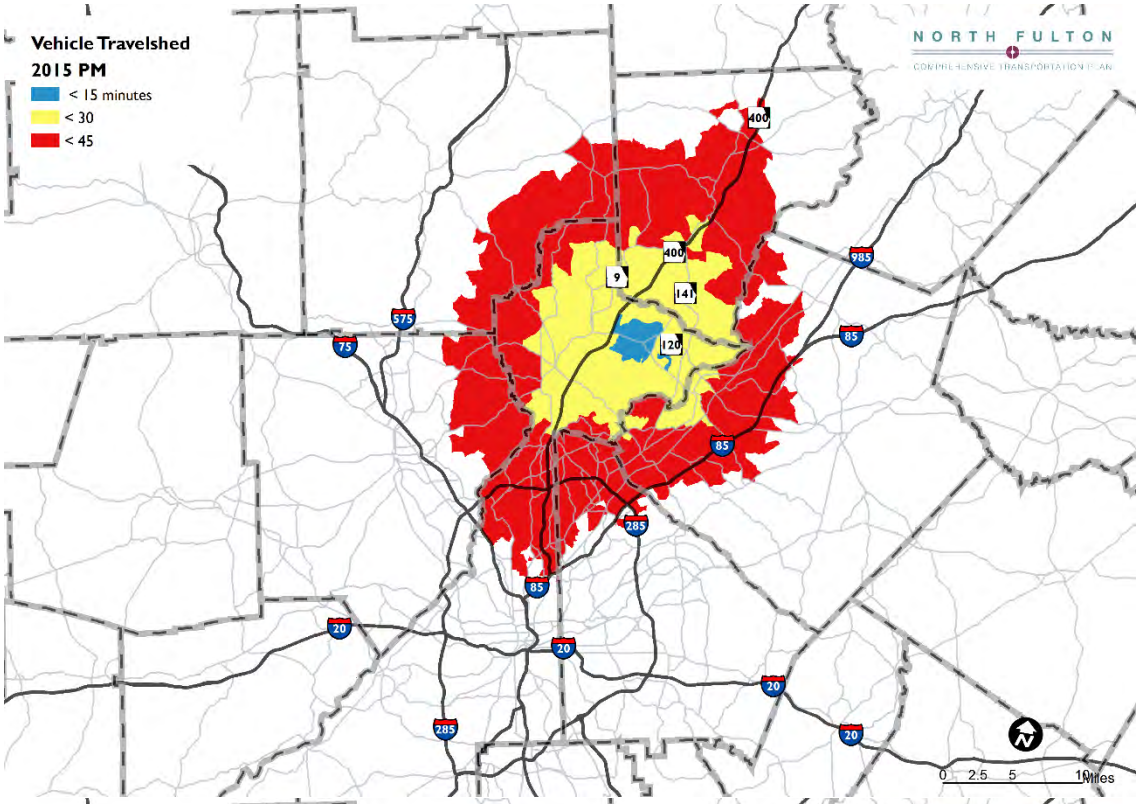


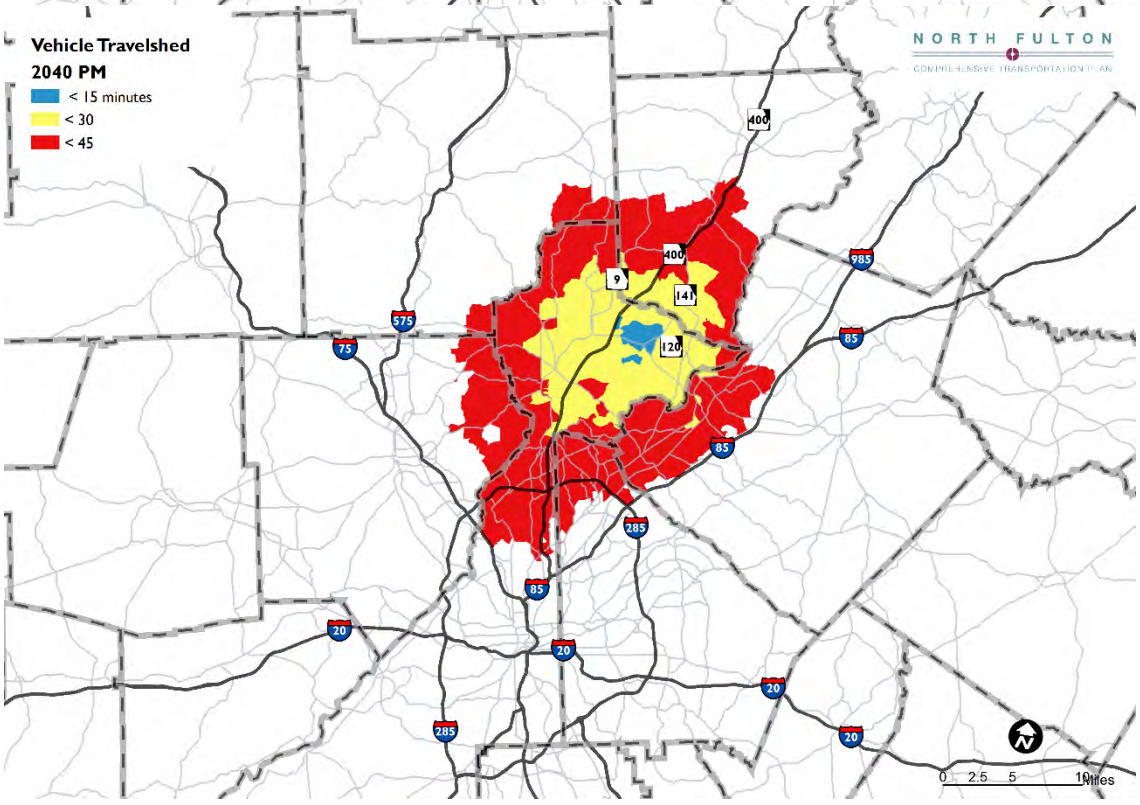


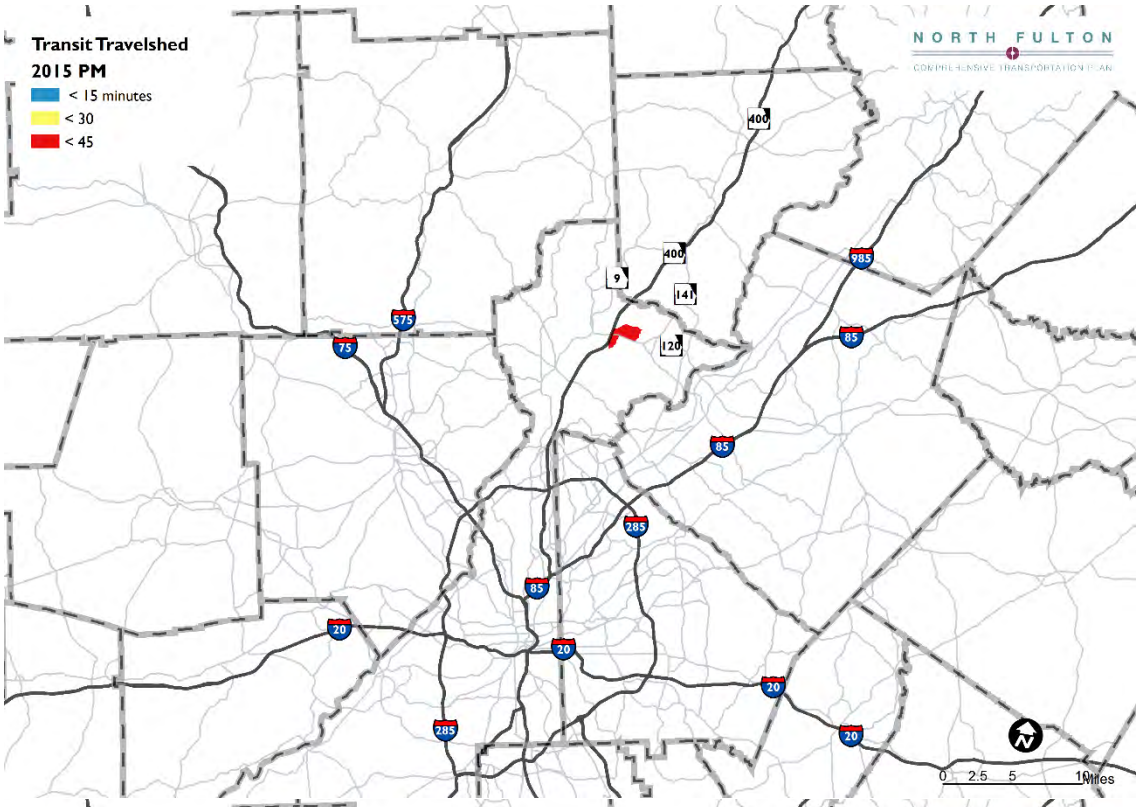

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON

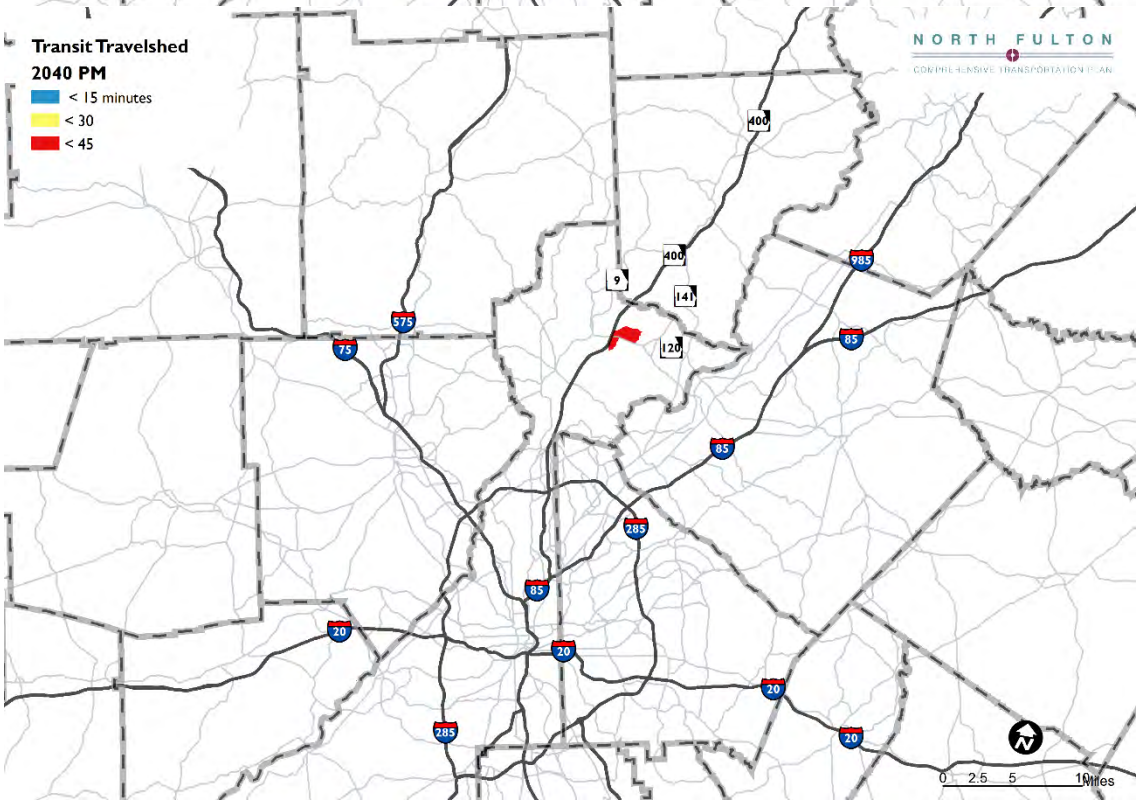

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles

7. State Bridge at Kimball Bridge

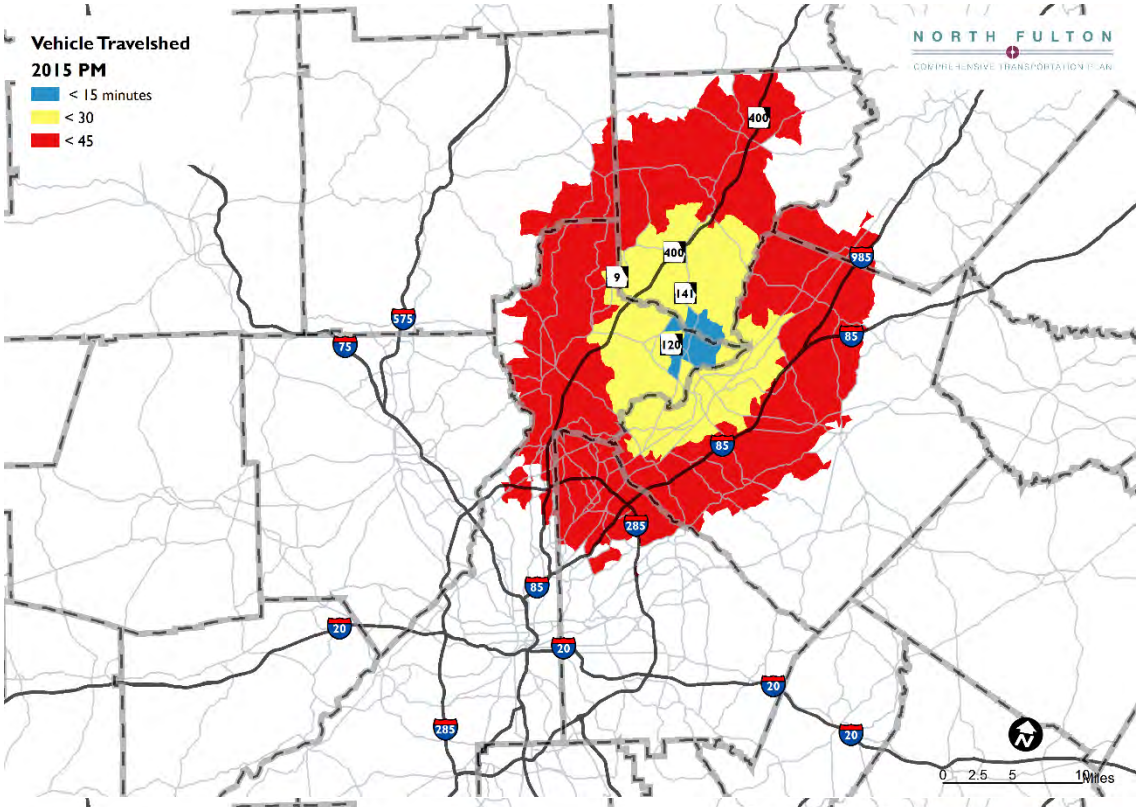


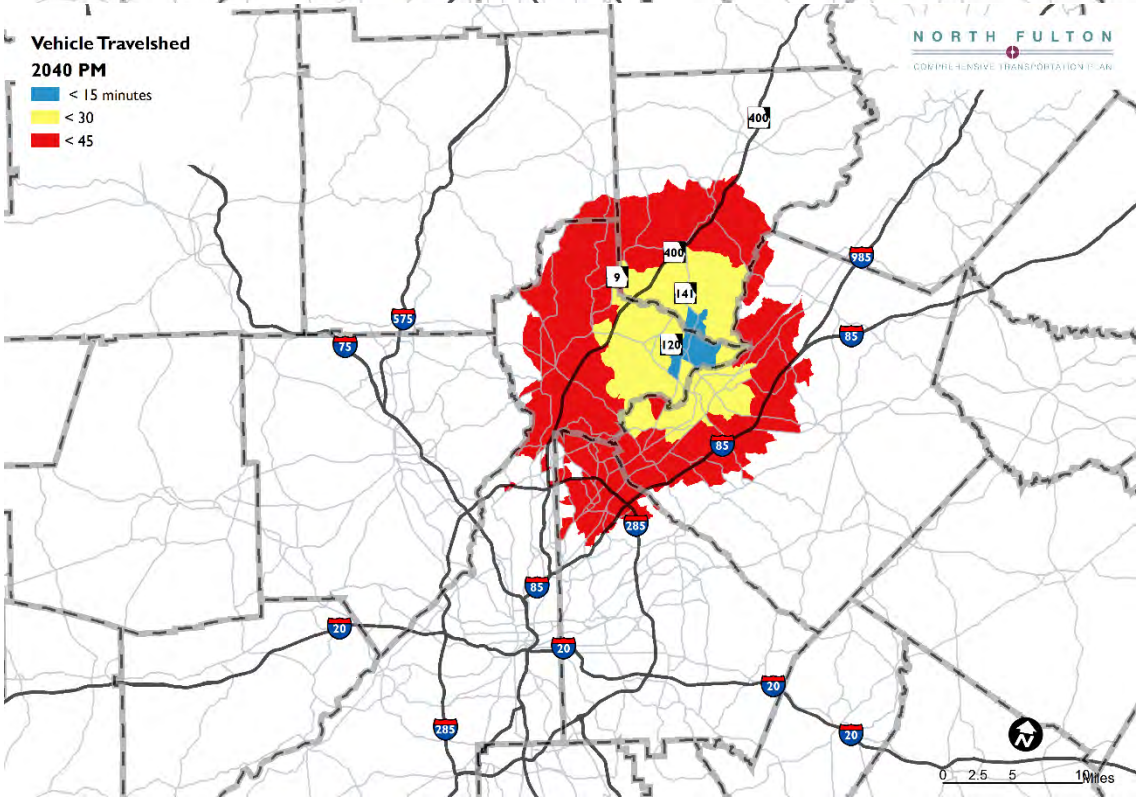


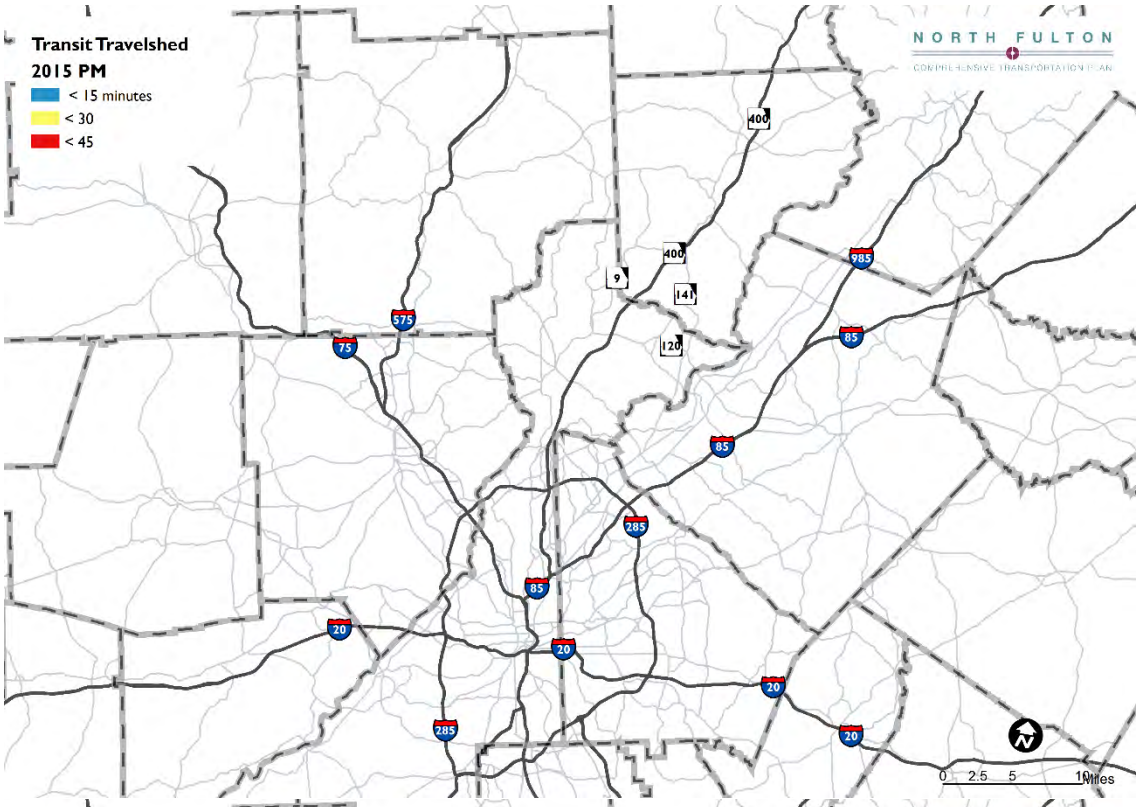

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

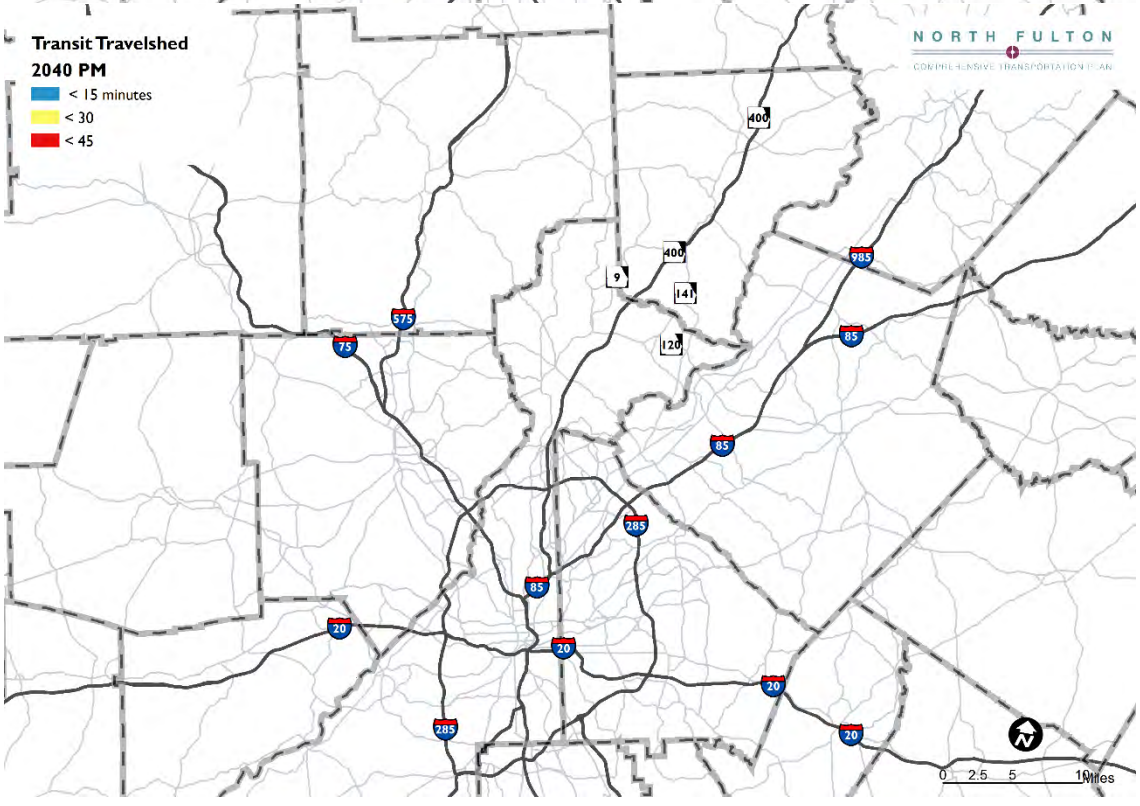

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

8. Tech Park

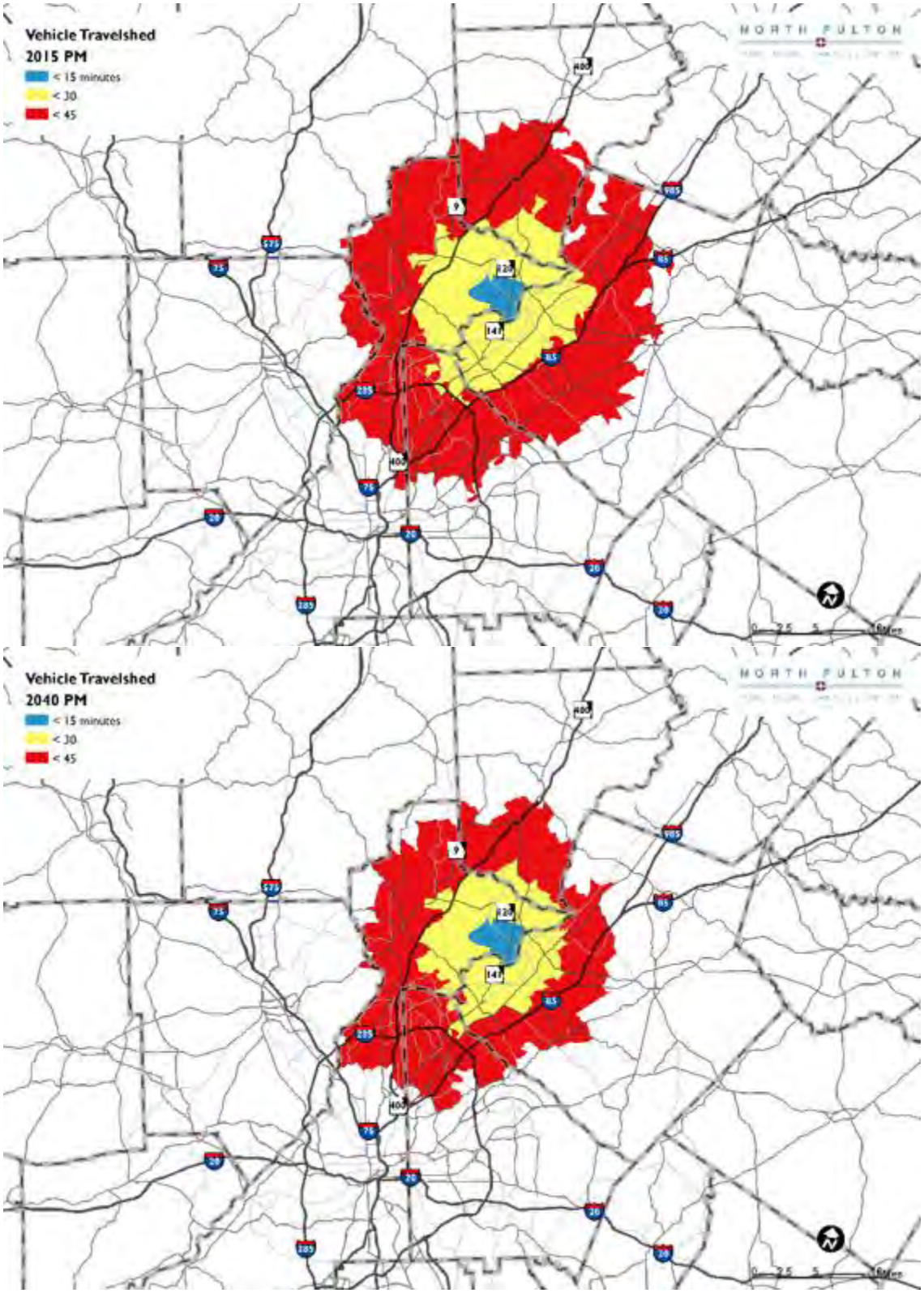

Vehicle Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles


Vehicle Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles


Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles


Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

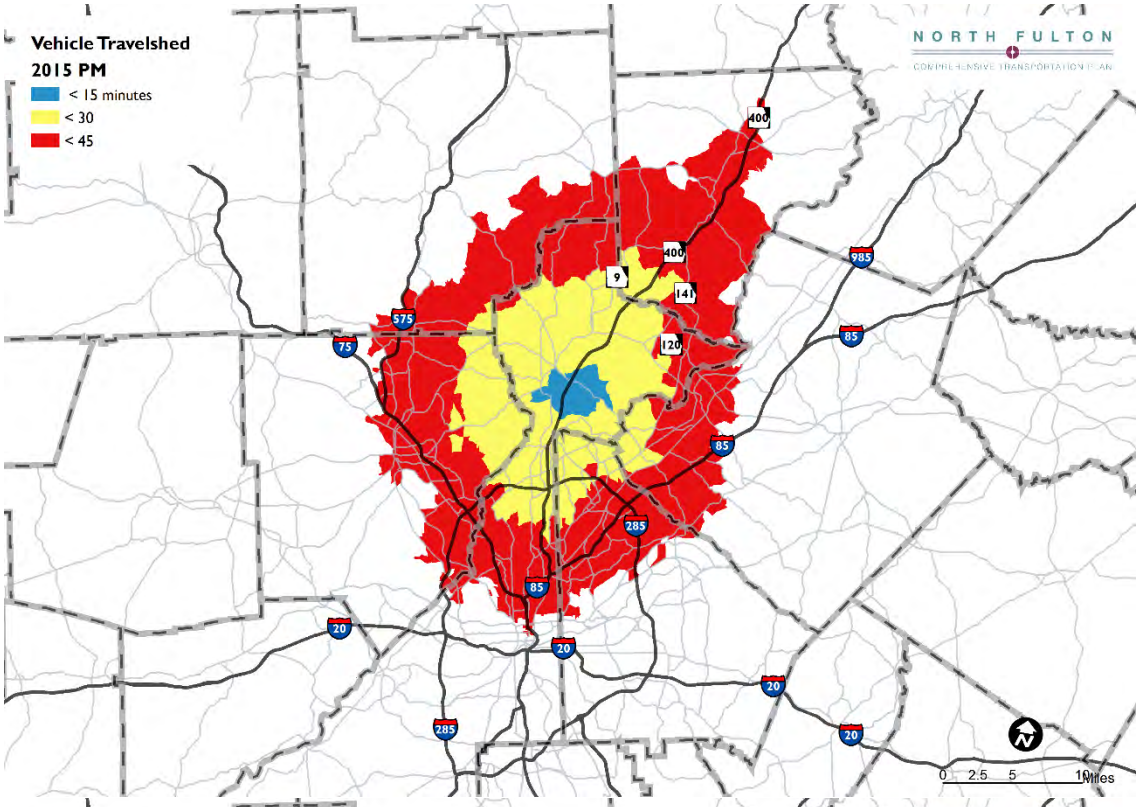
9. State Bridge at Medlock Bridge

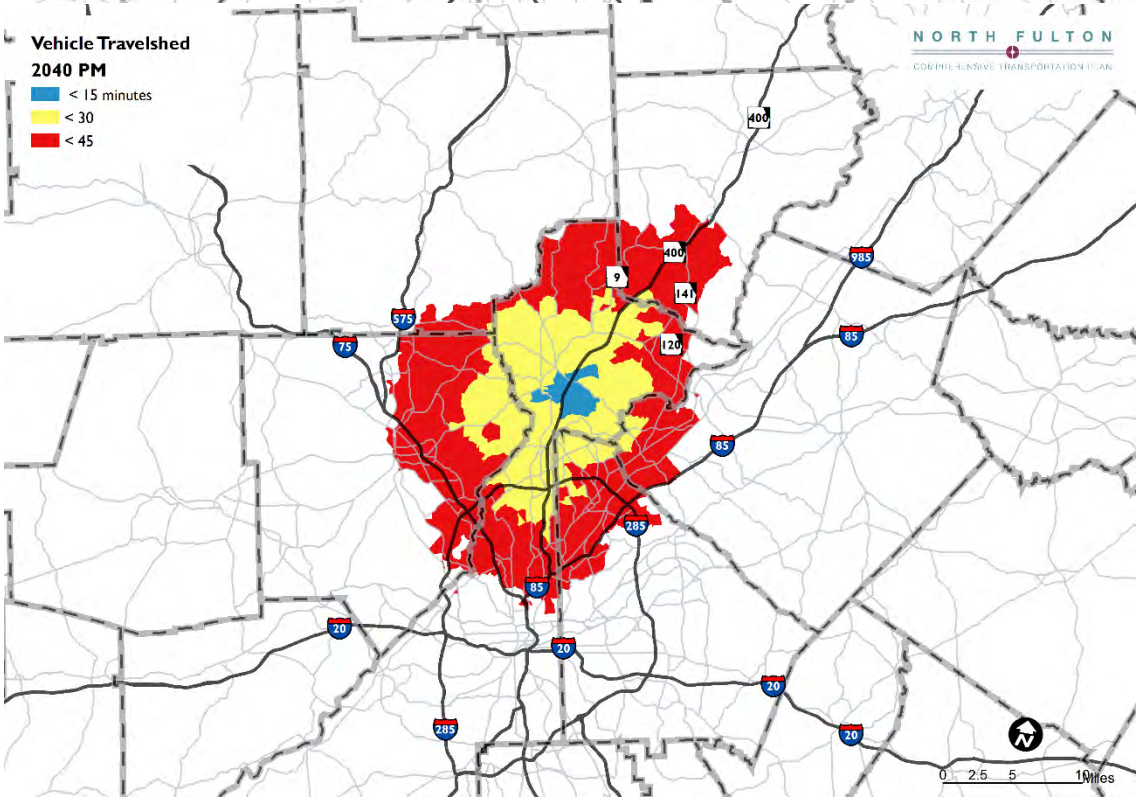


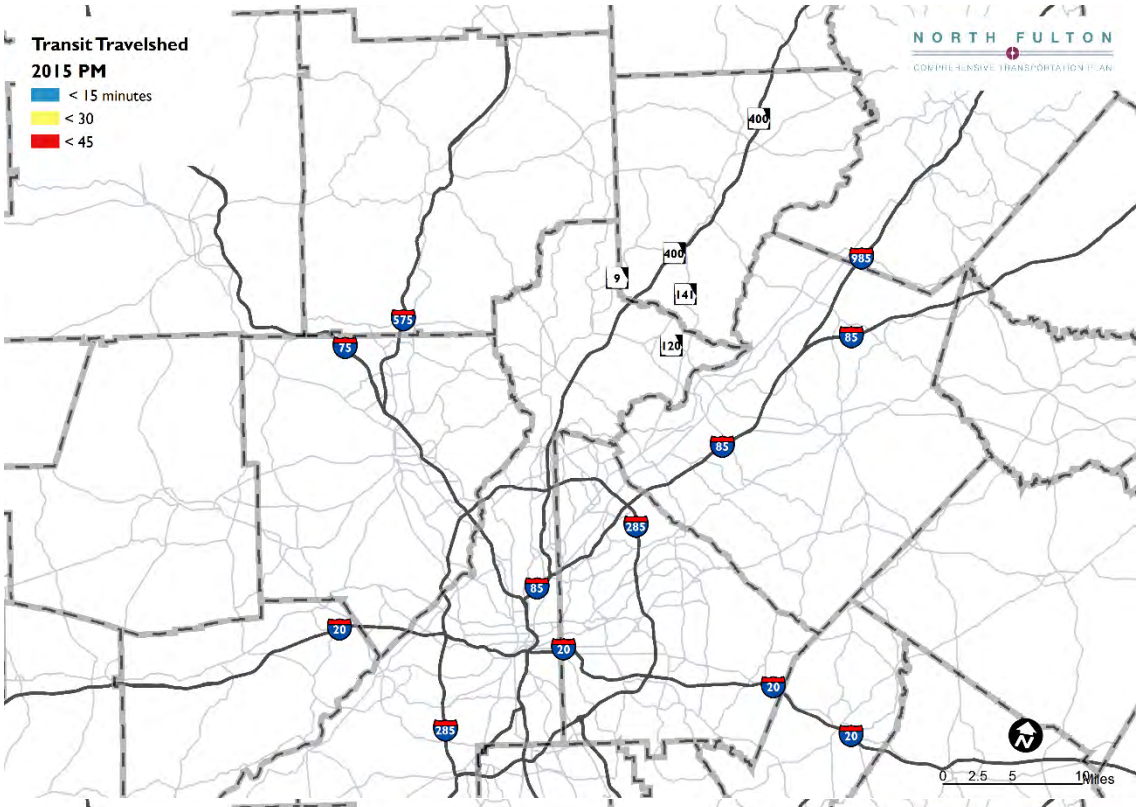

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON

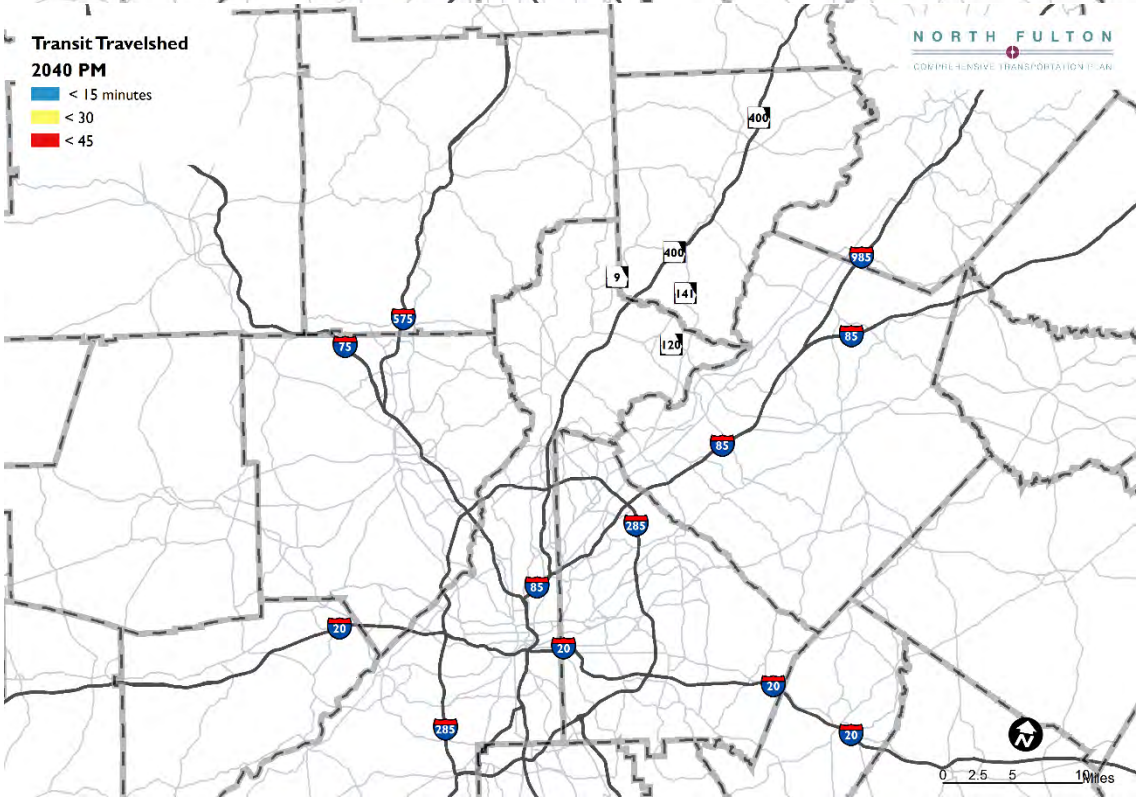

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON

10. Holcomb Bridge

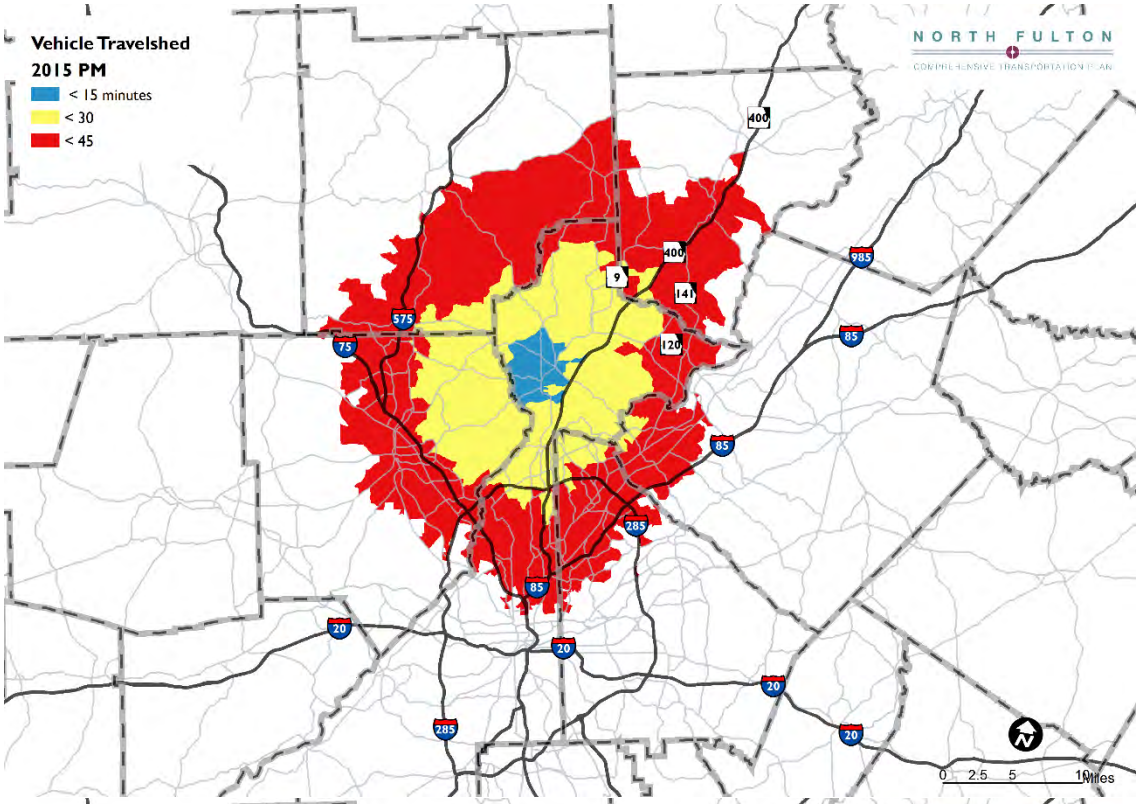


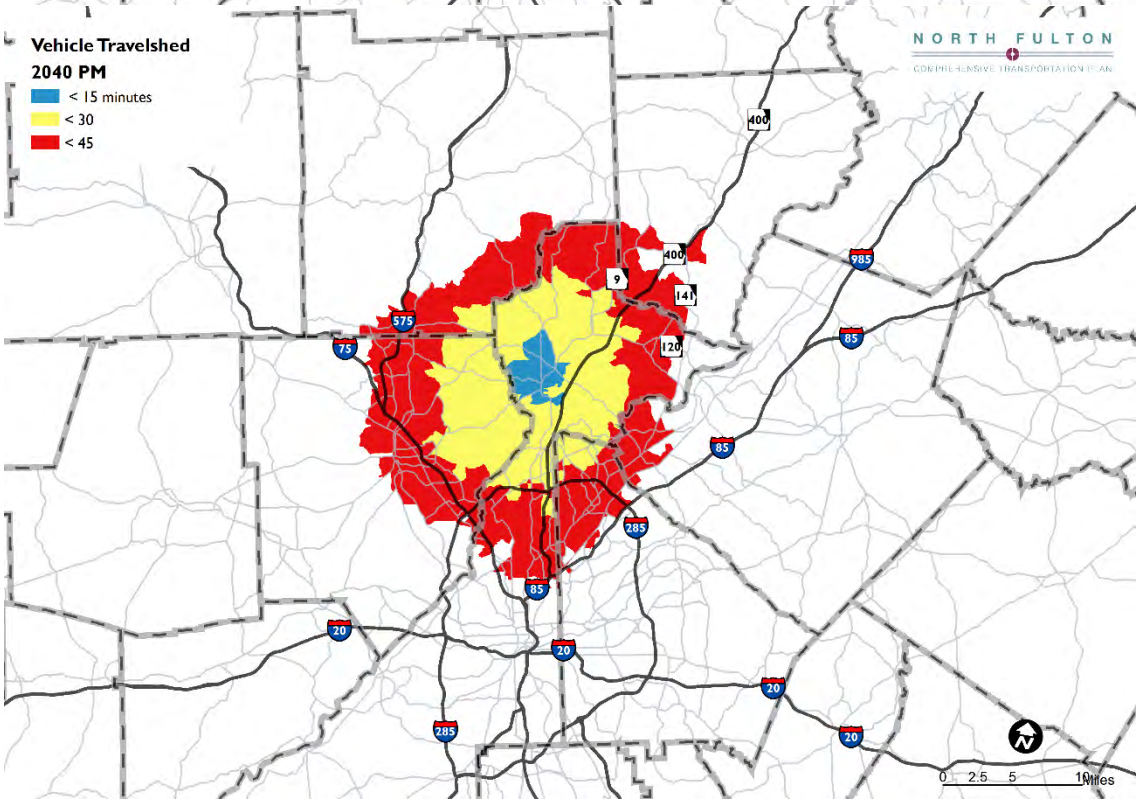


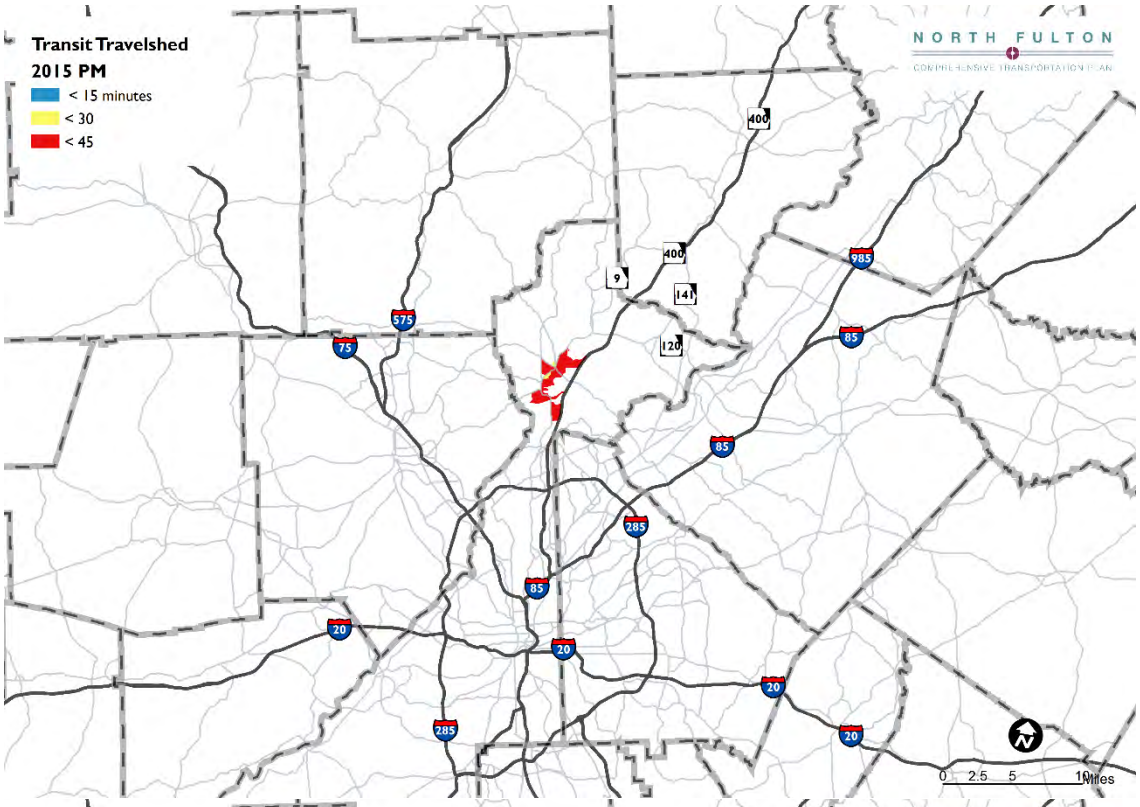

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

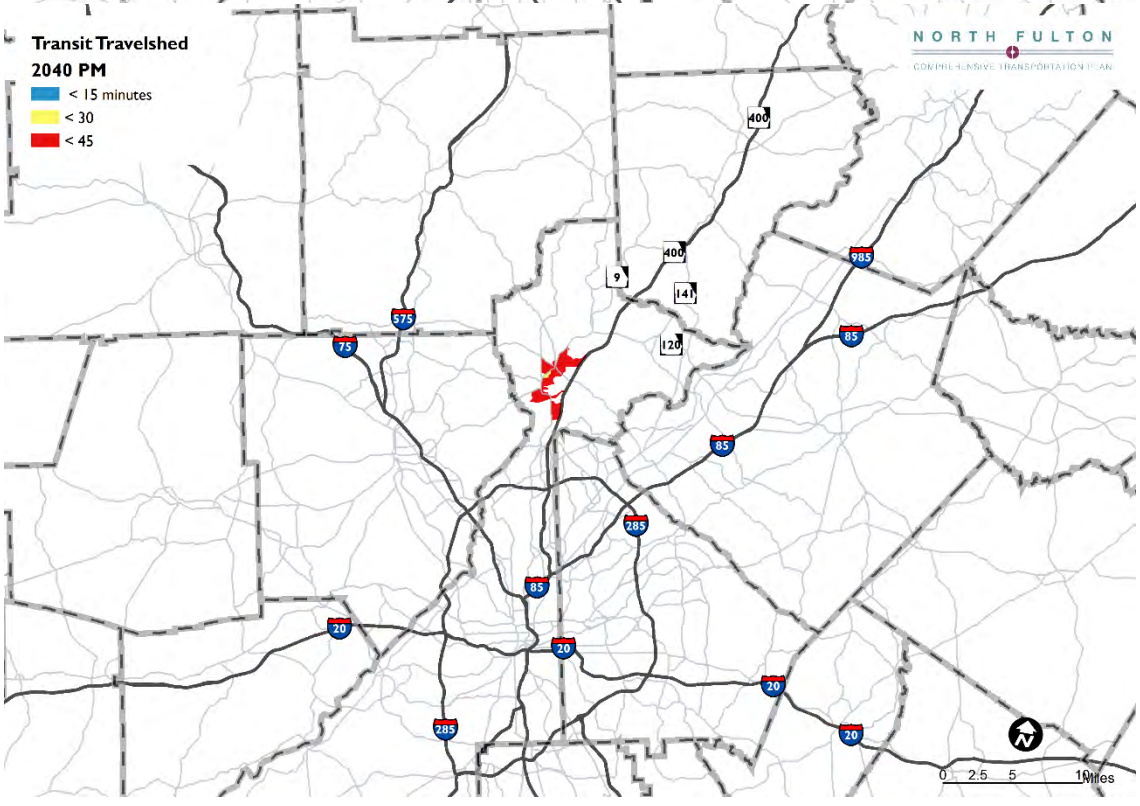

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

11. Historic Gateway Highway 9

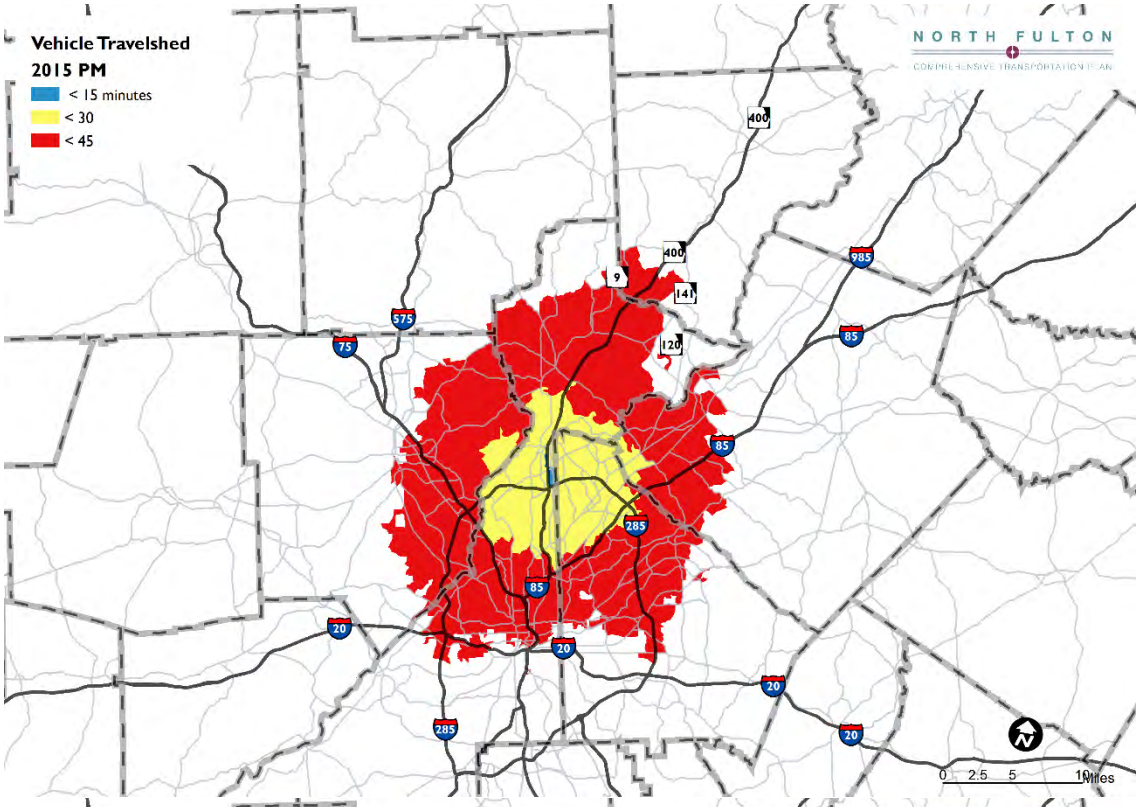


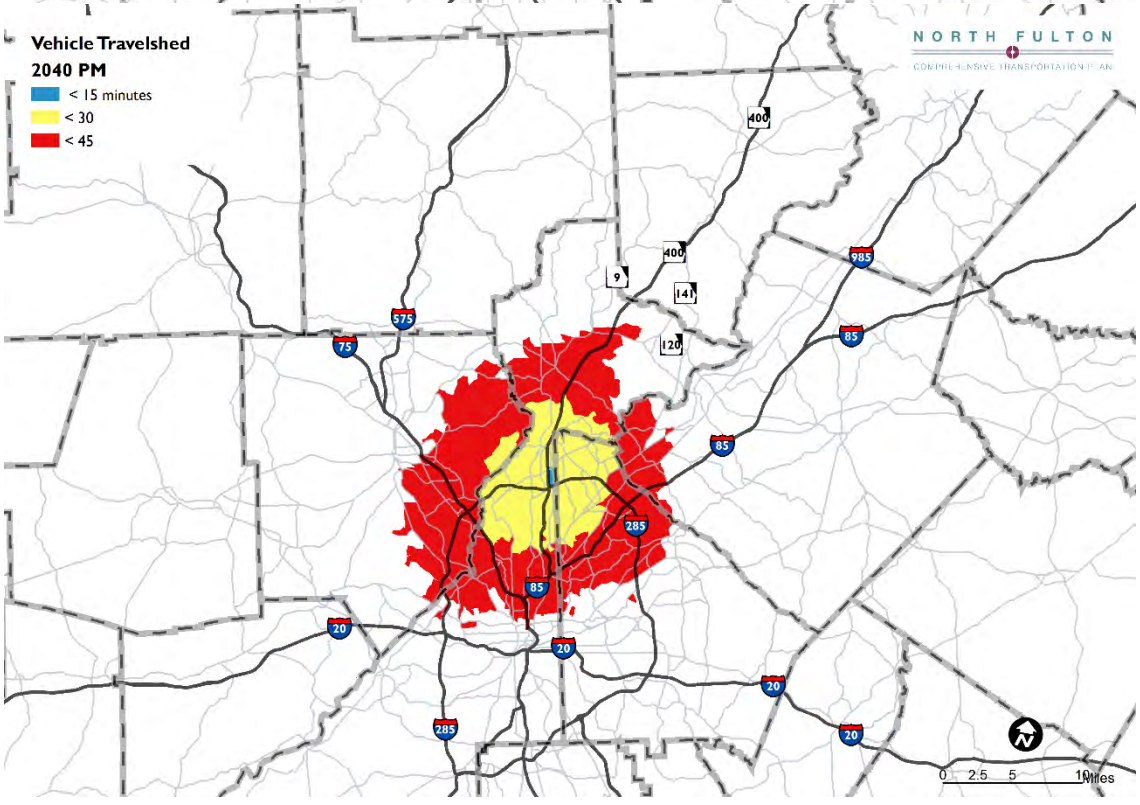


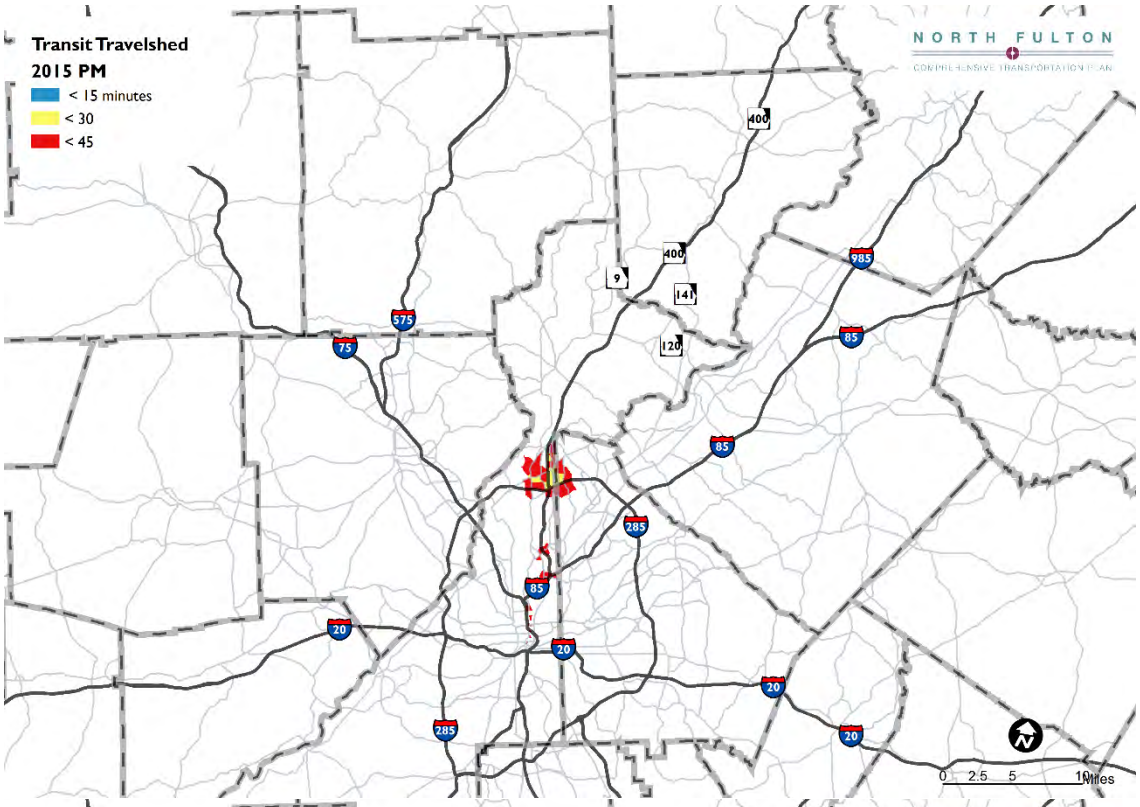

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

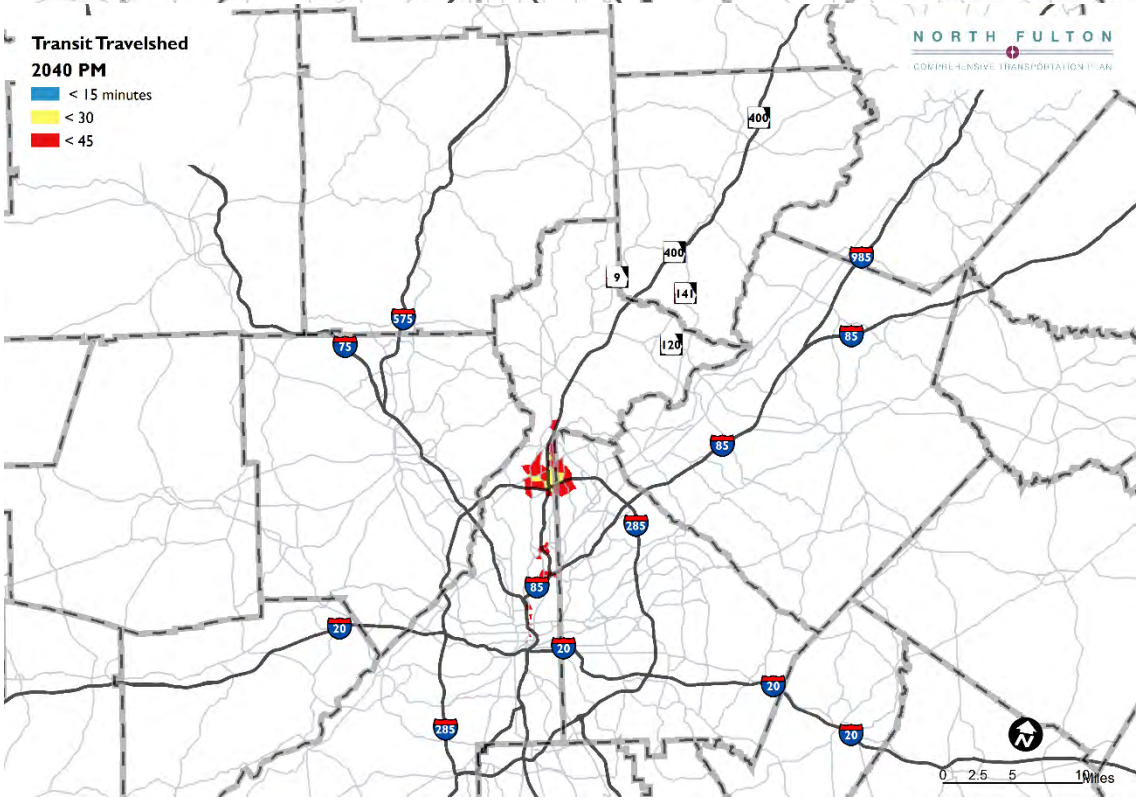

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

12. City Center

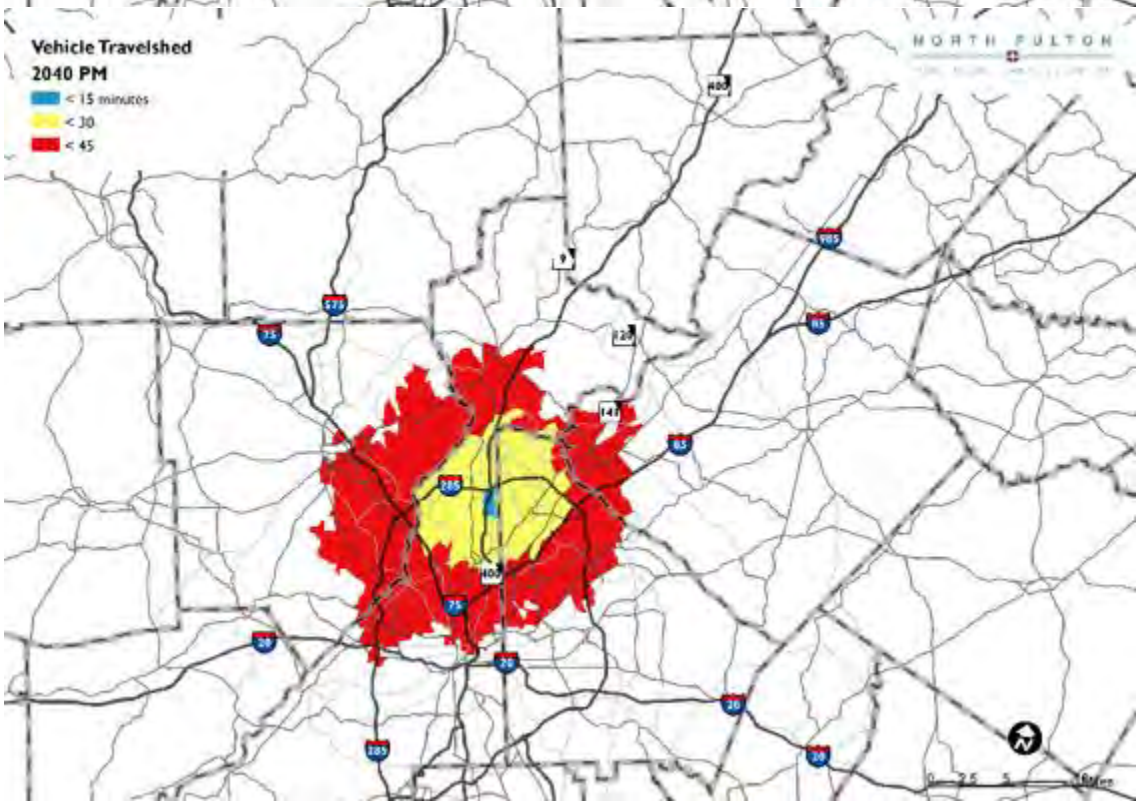




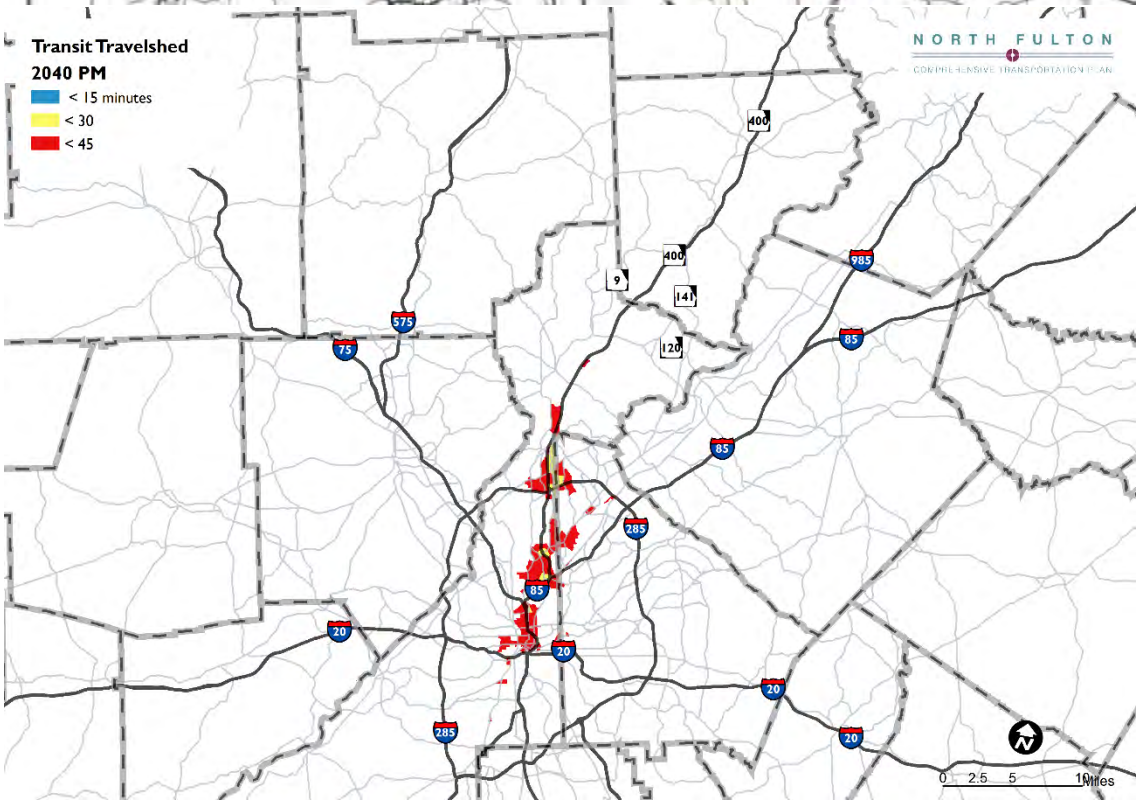

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles


Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

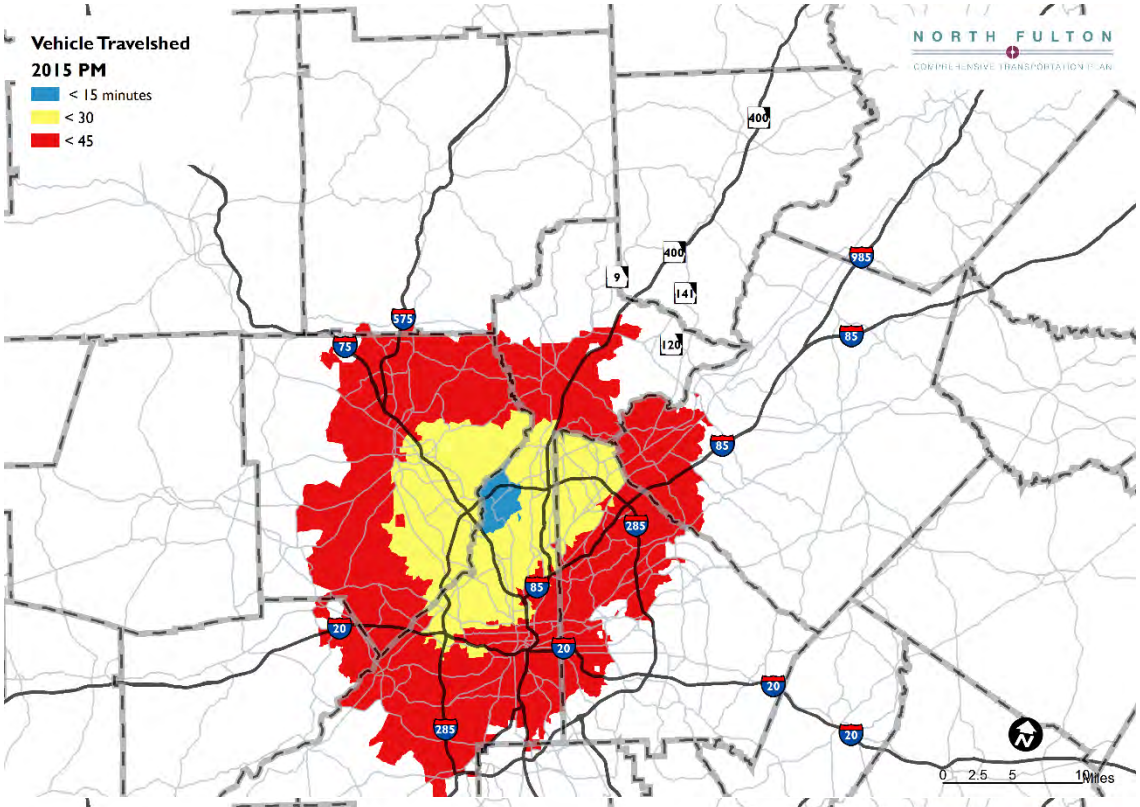
13. Medical Center District

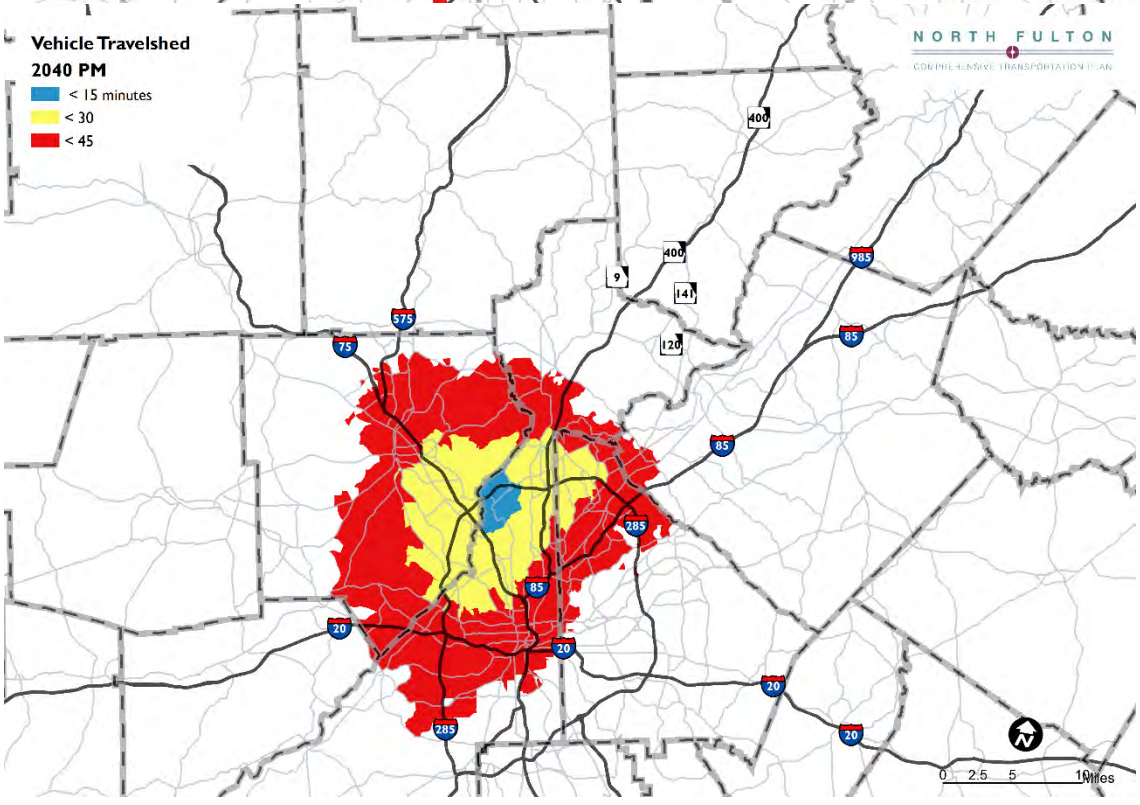



Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON

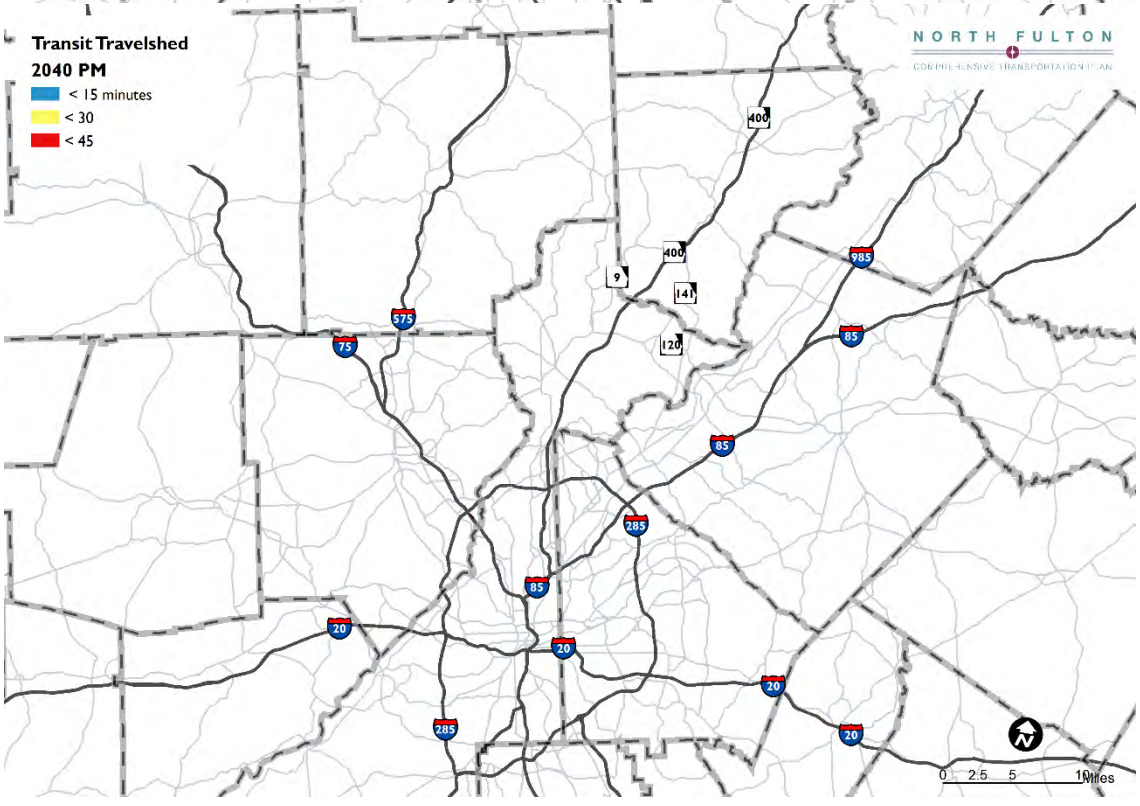

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles

14. New Northside at Northside

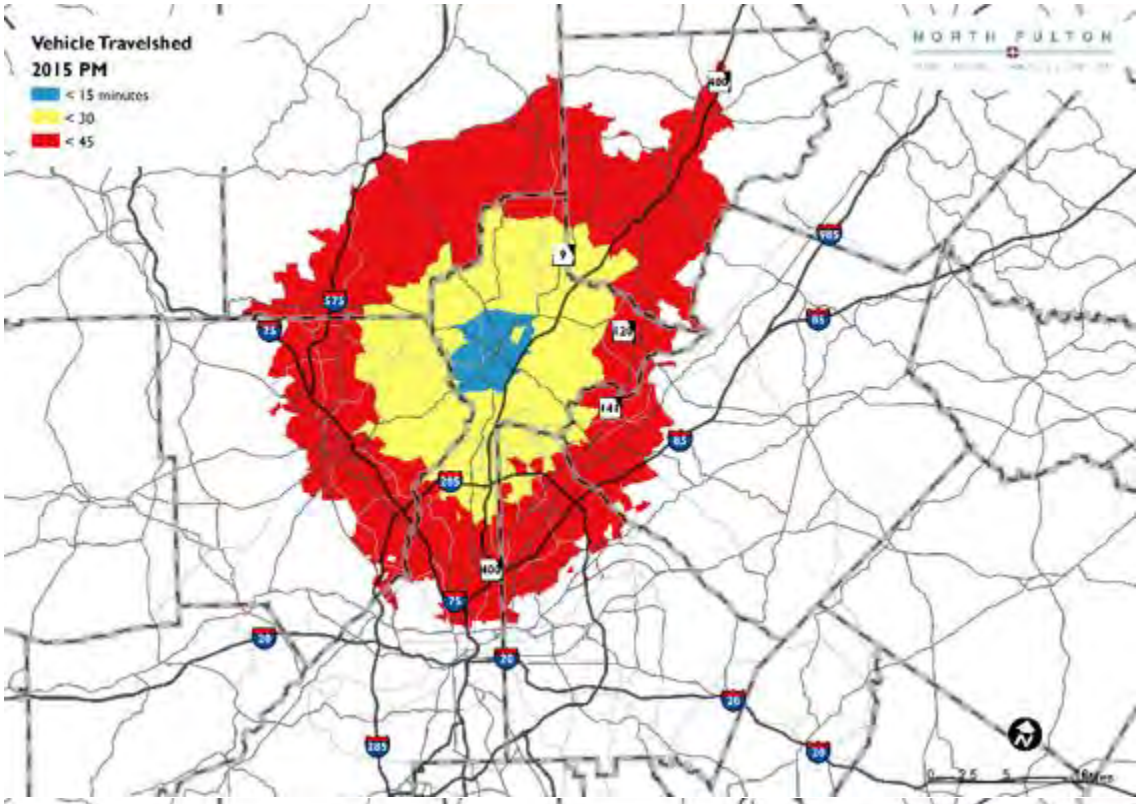


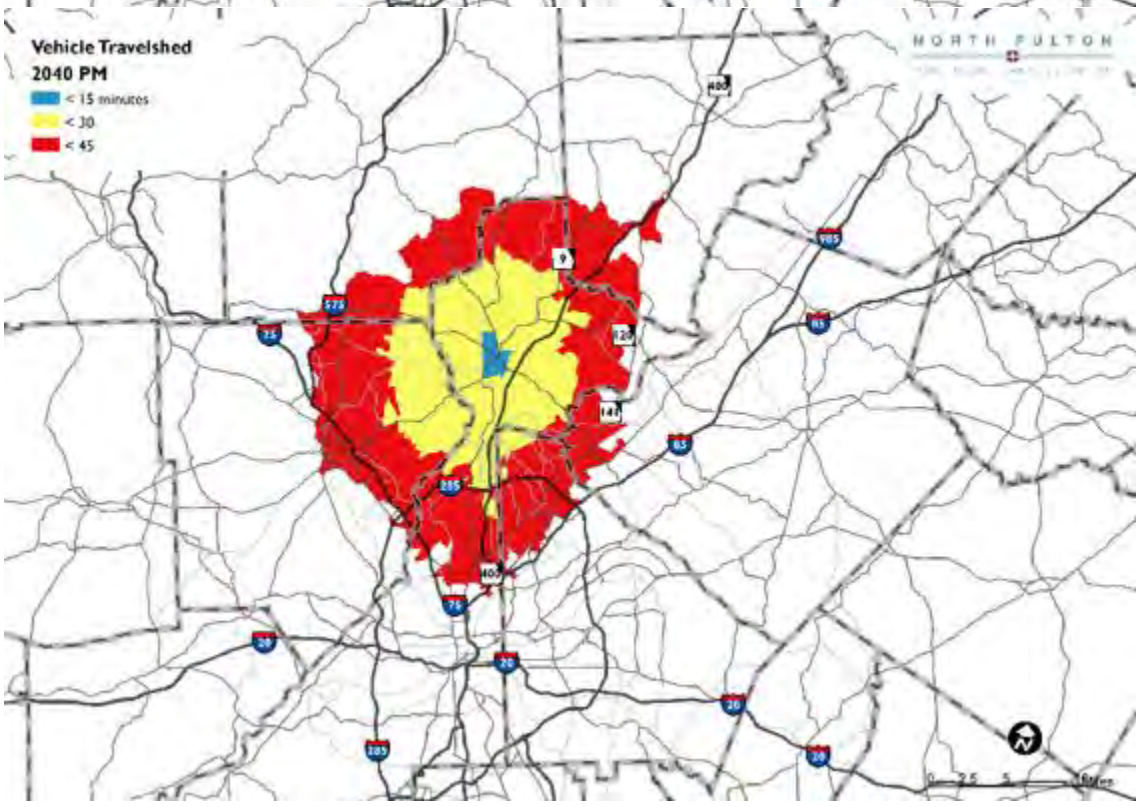



Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

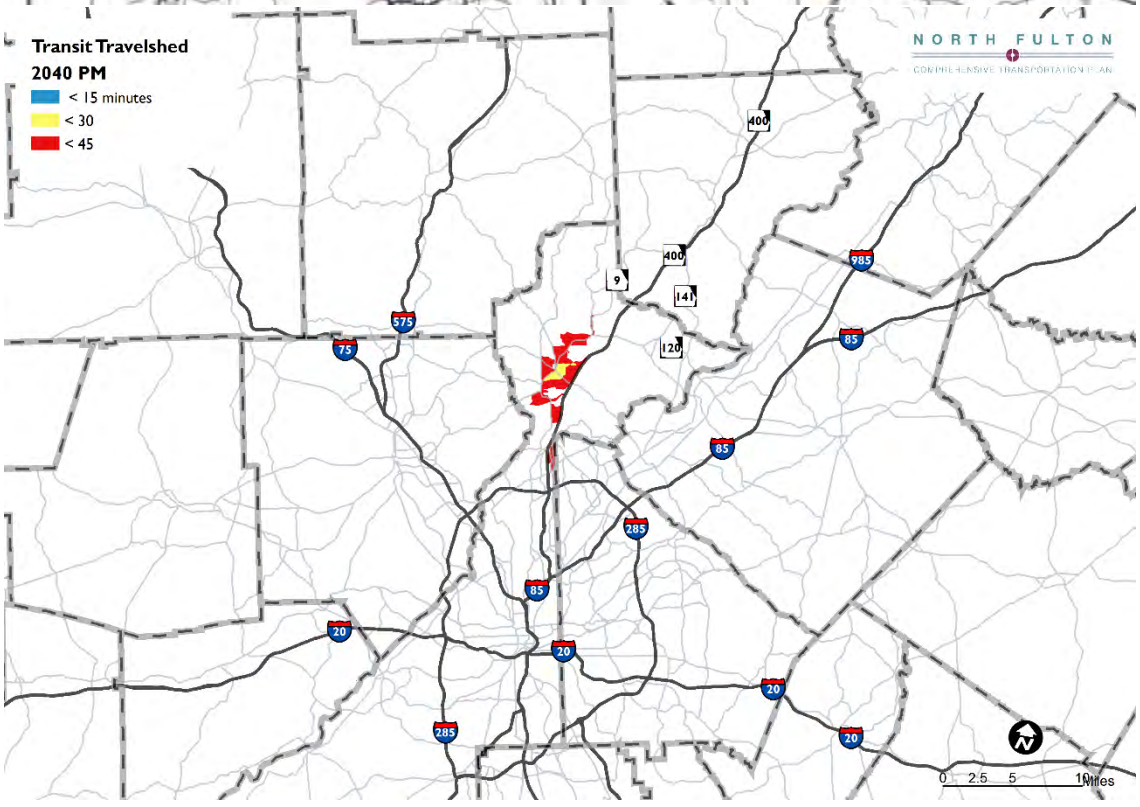

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

15. Holcomb Bridge at State Road 9

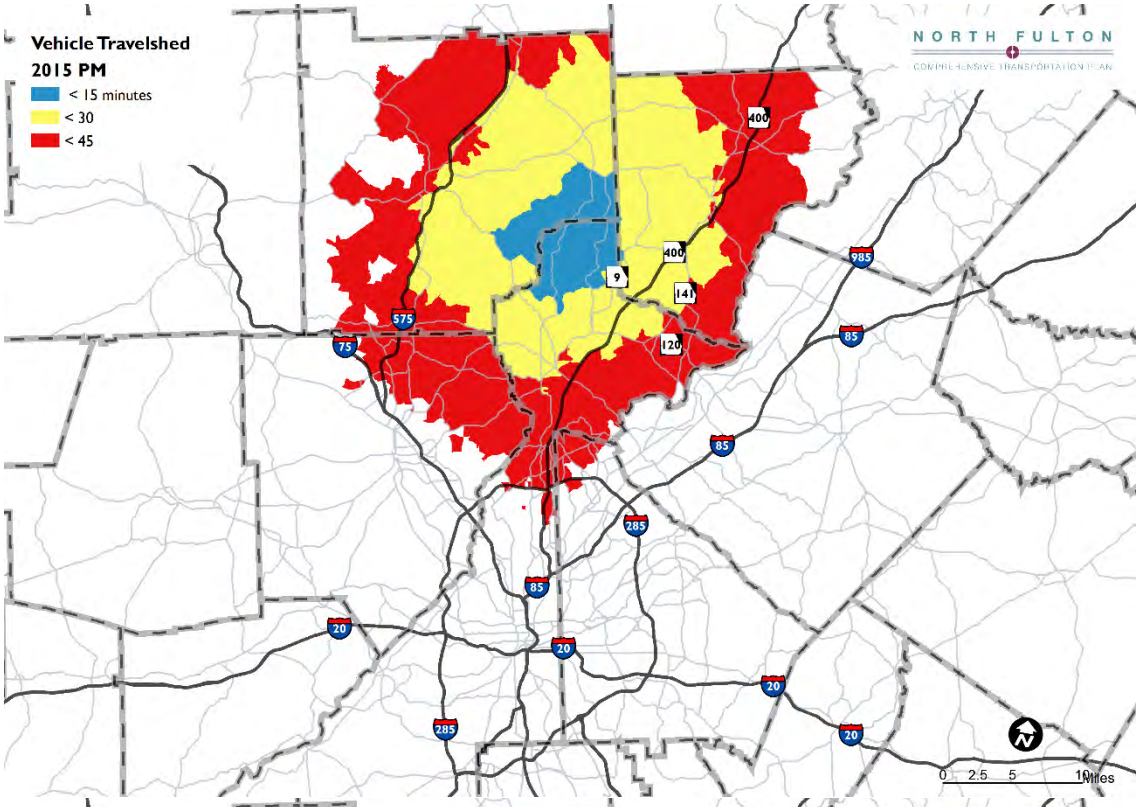


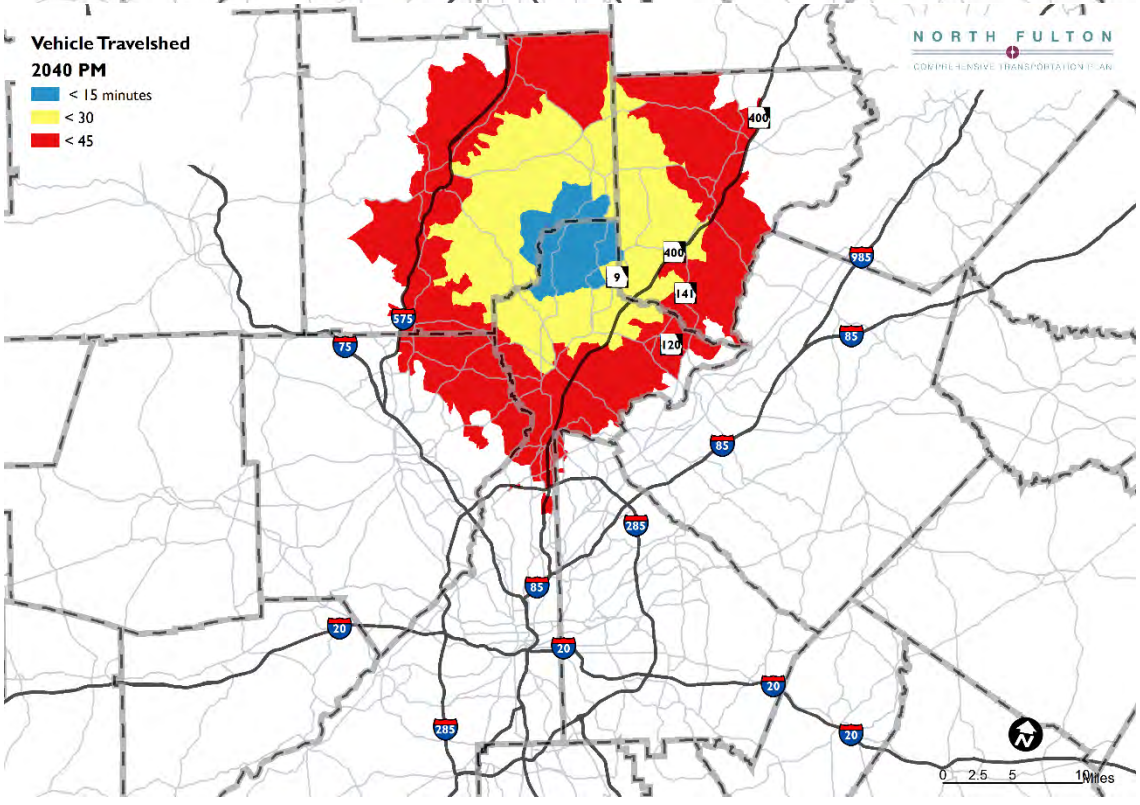


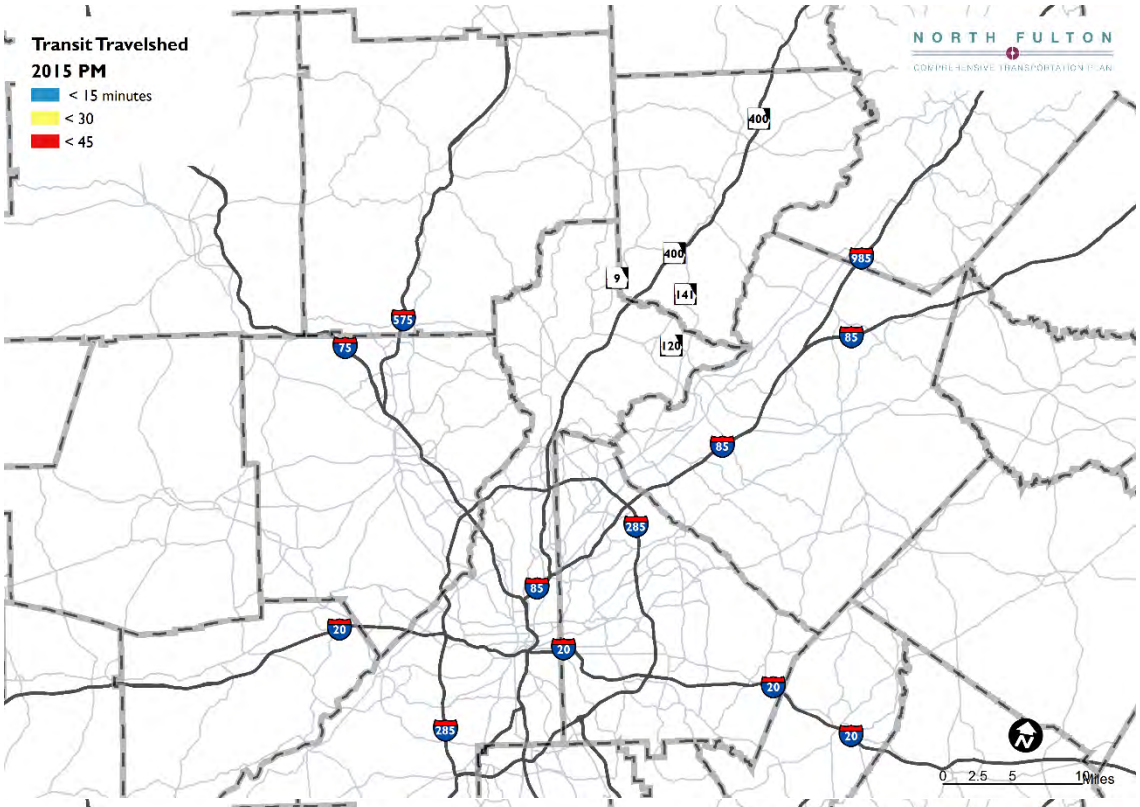

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON

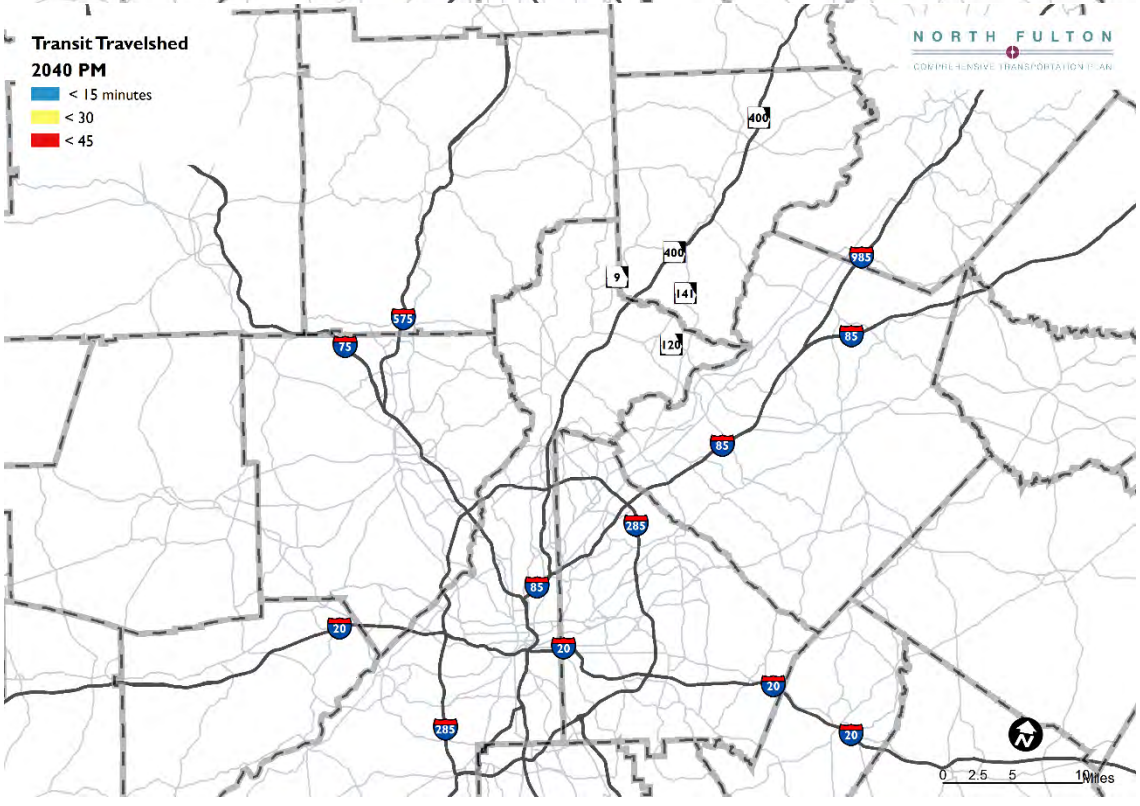

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
0 2.5 5 10 Miles

16. Birmingham Corners

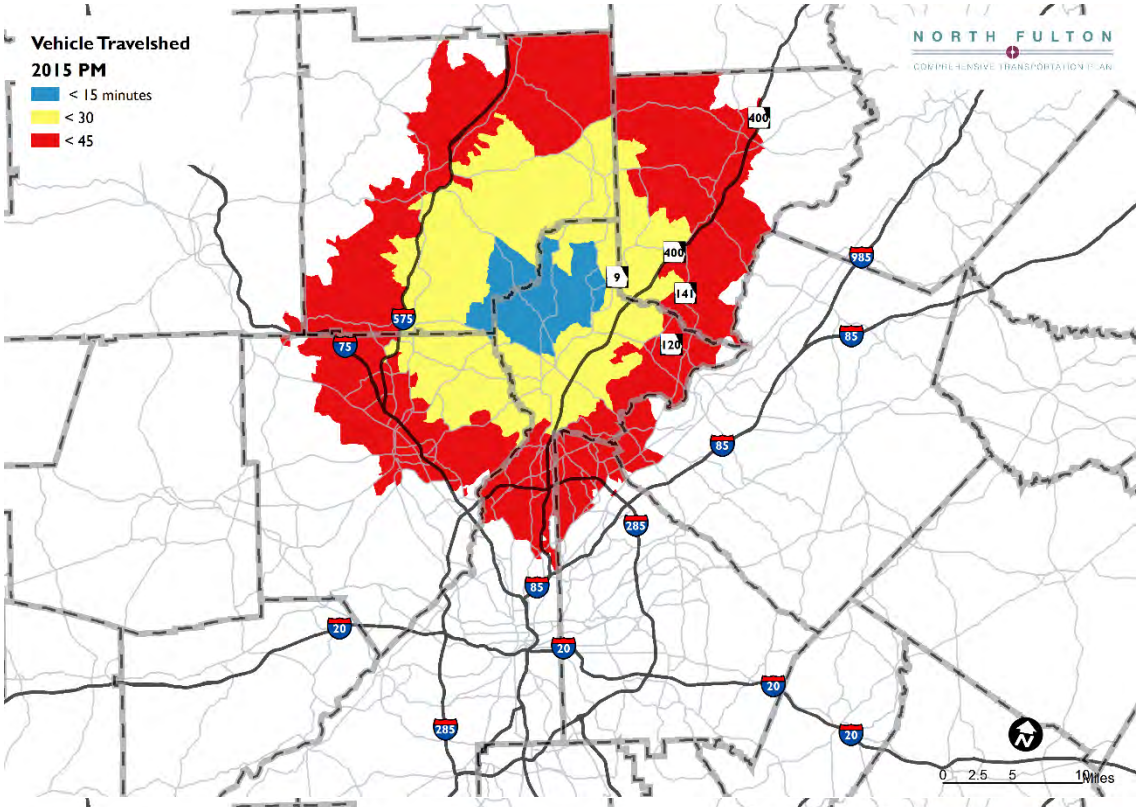


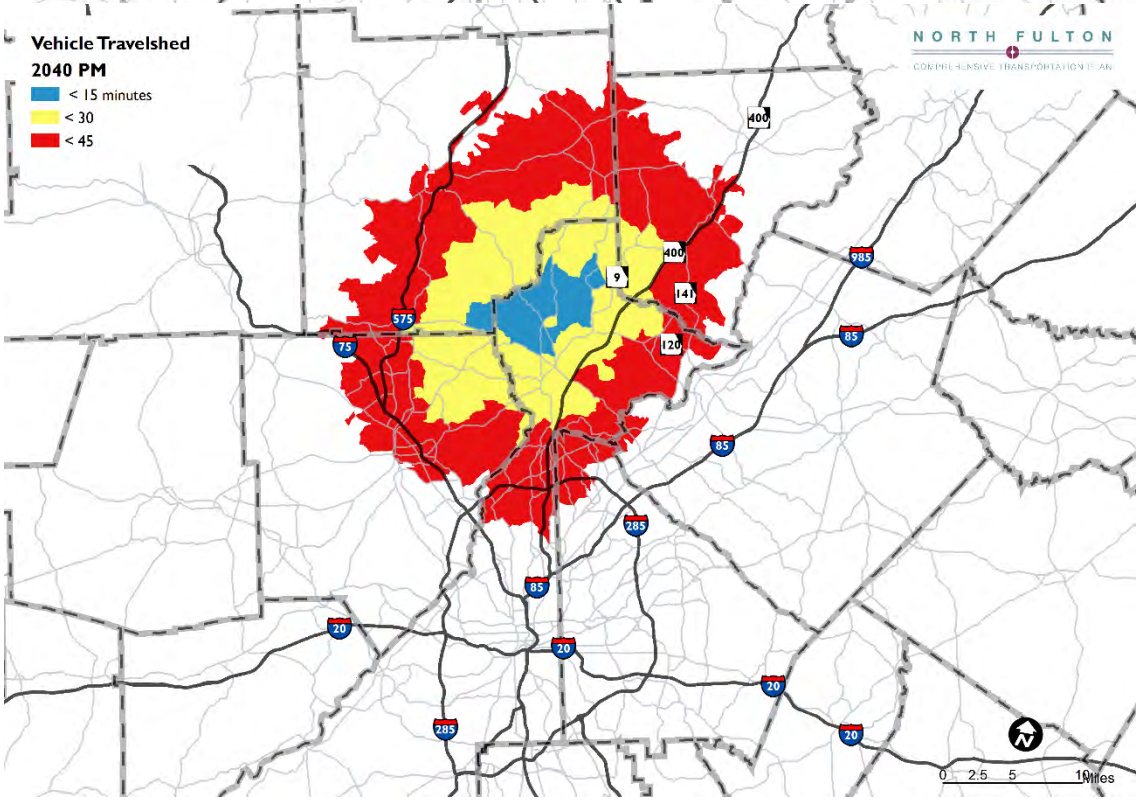


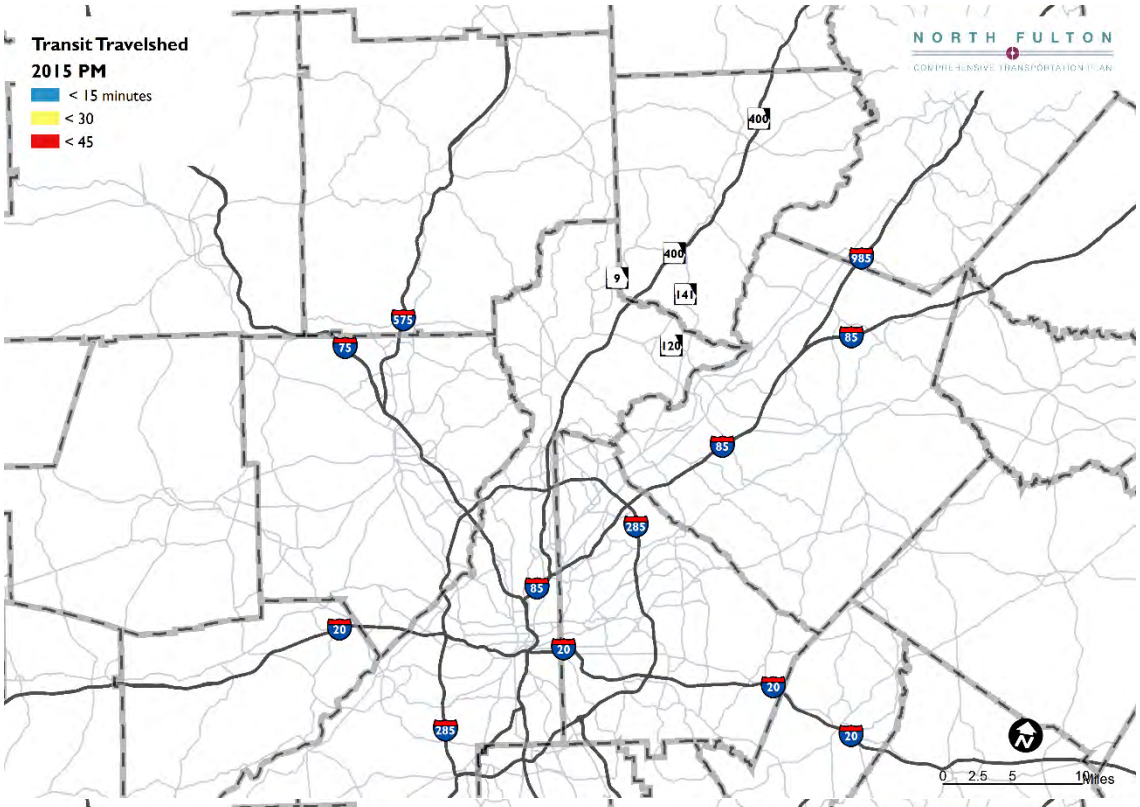

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

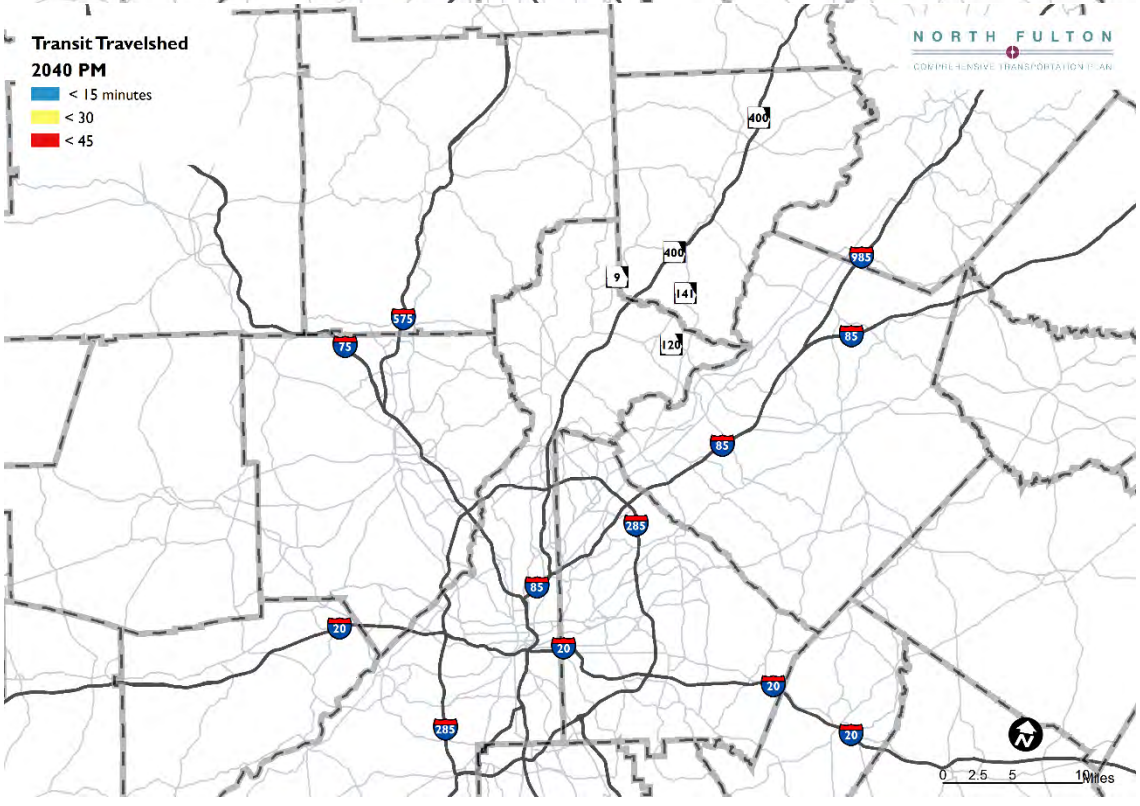

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

17. Arnold Mill

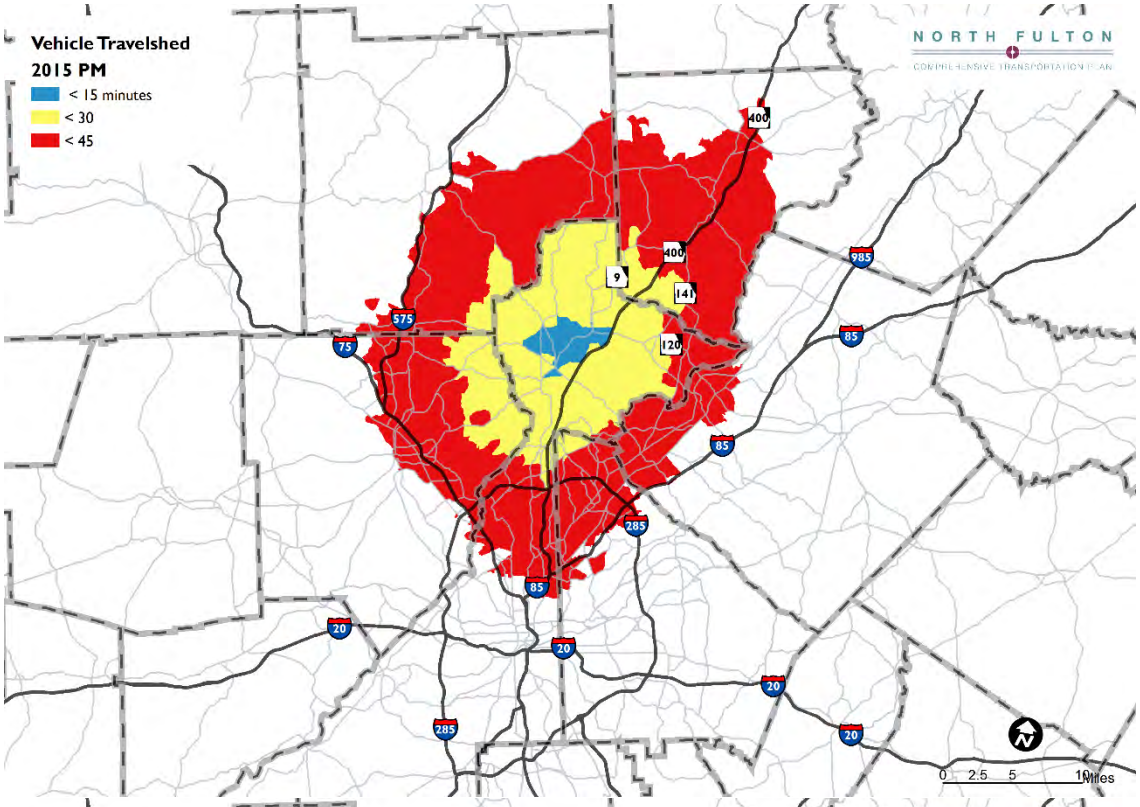


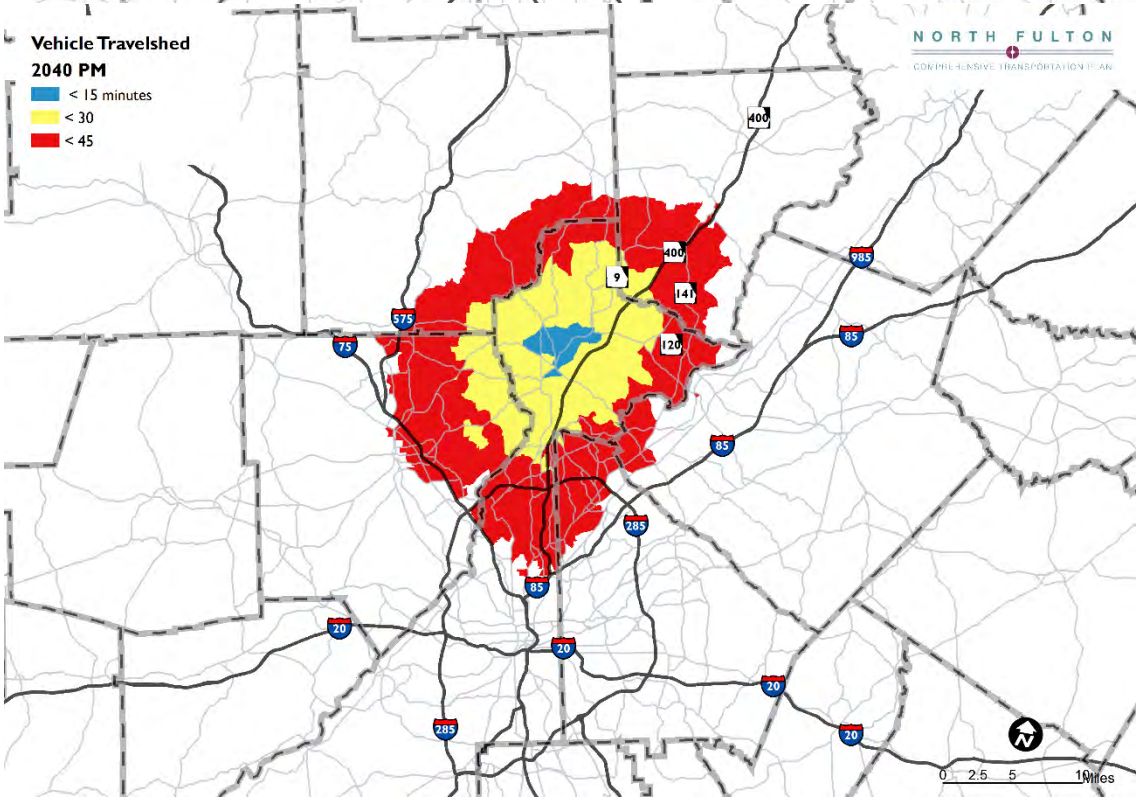


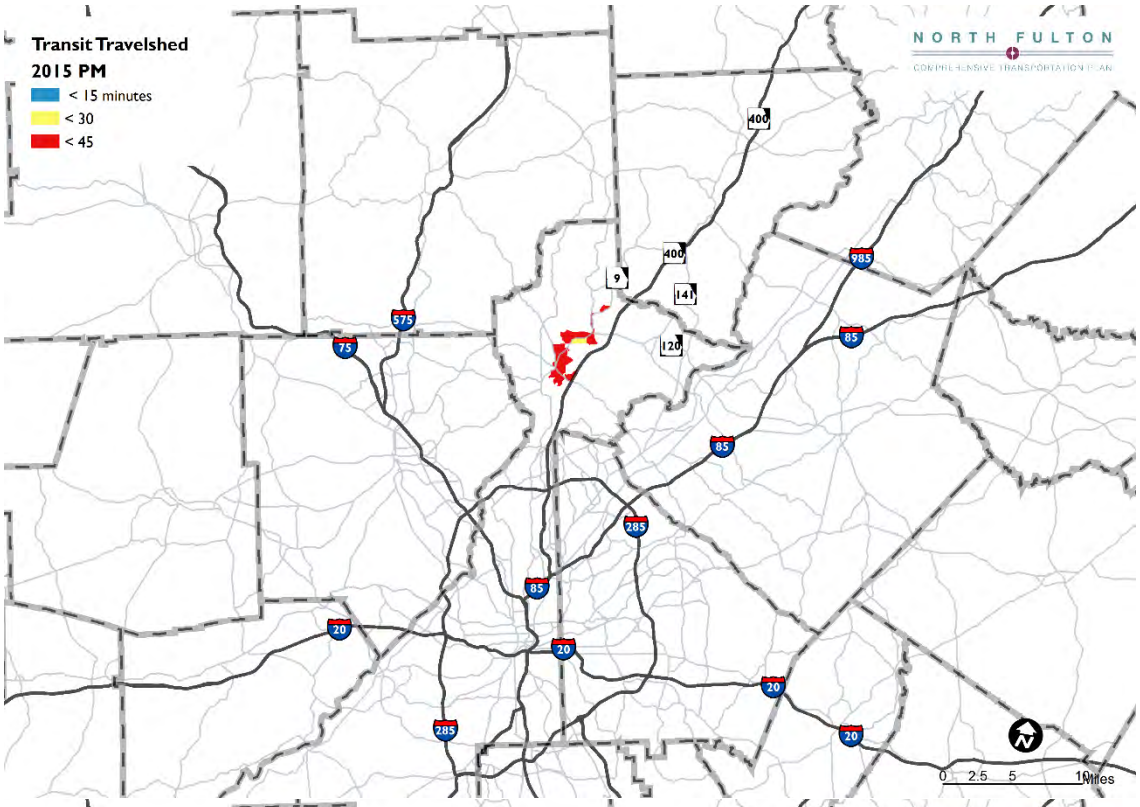

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

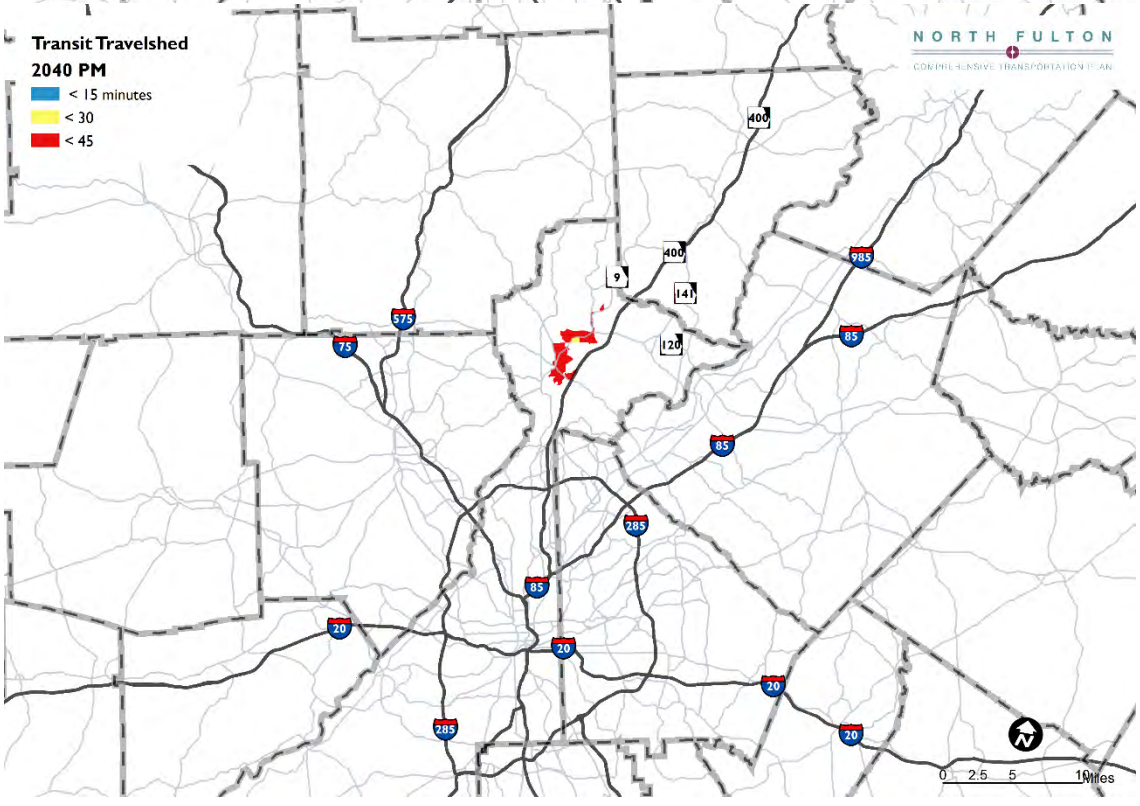

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

18. Alpharetta Highway Commercial Corridor

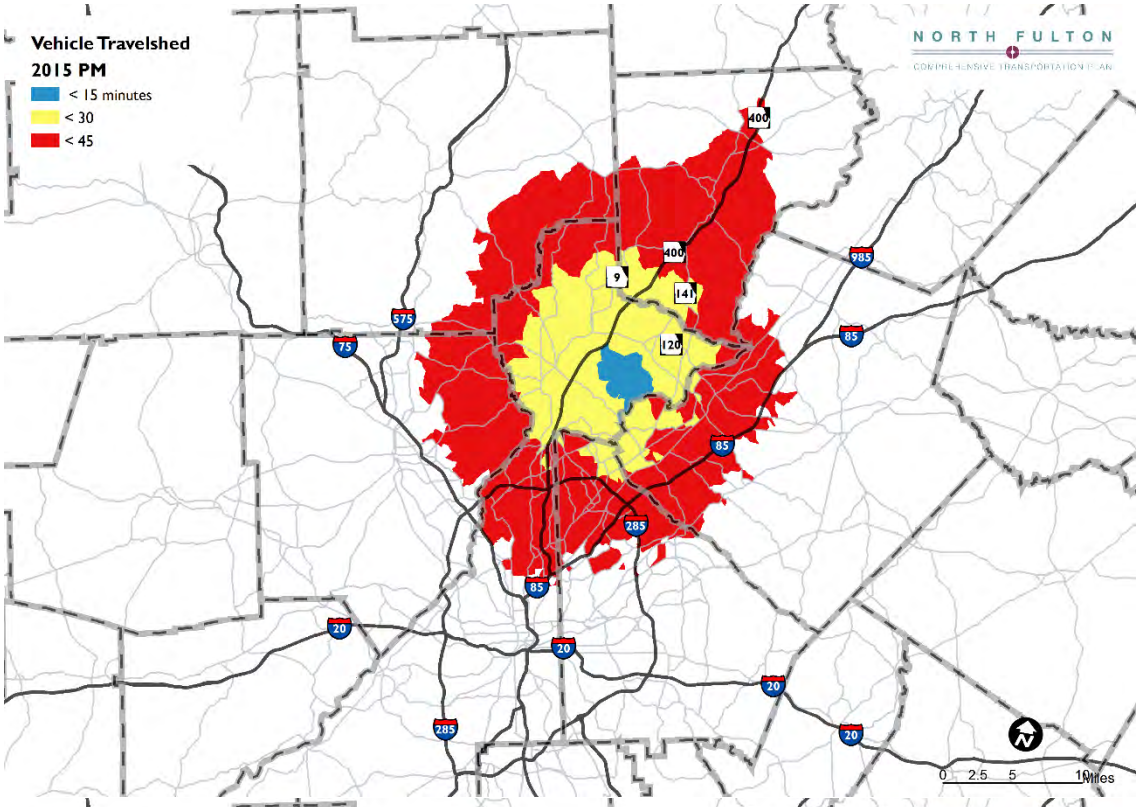


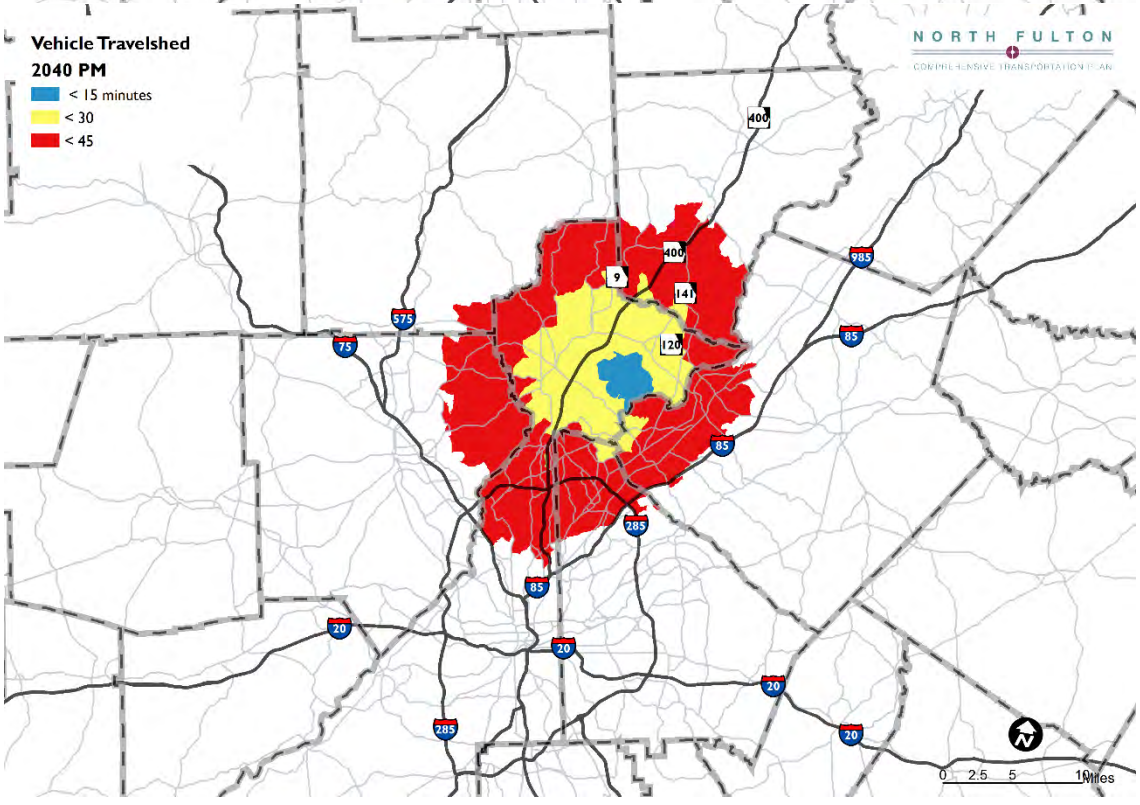


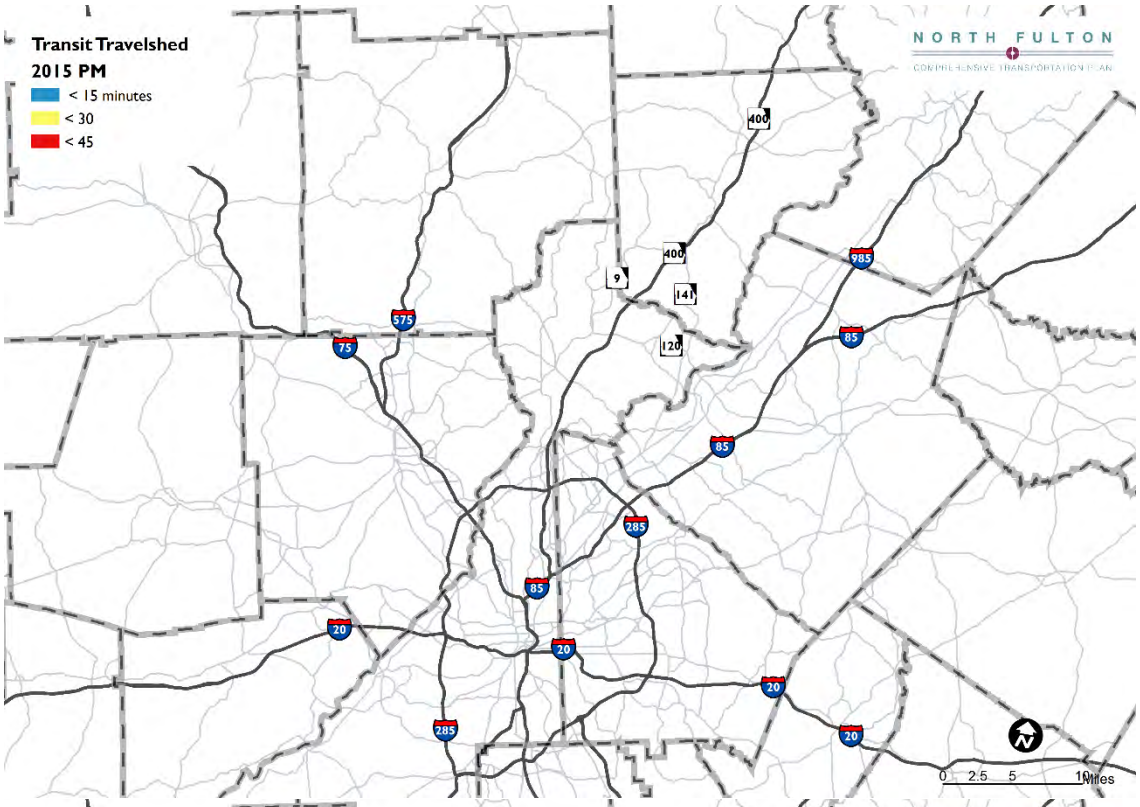

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

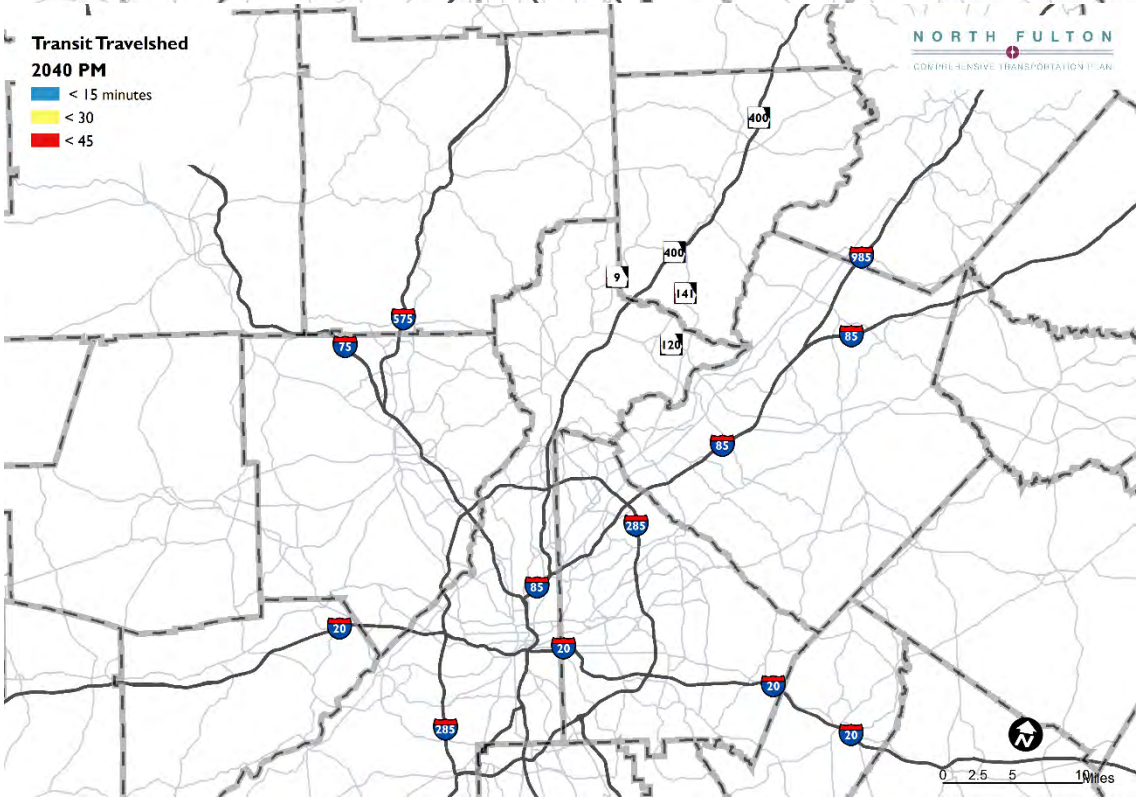

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

19. Old Alabama

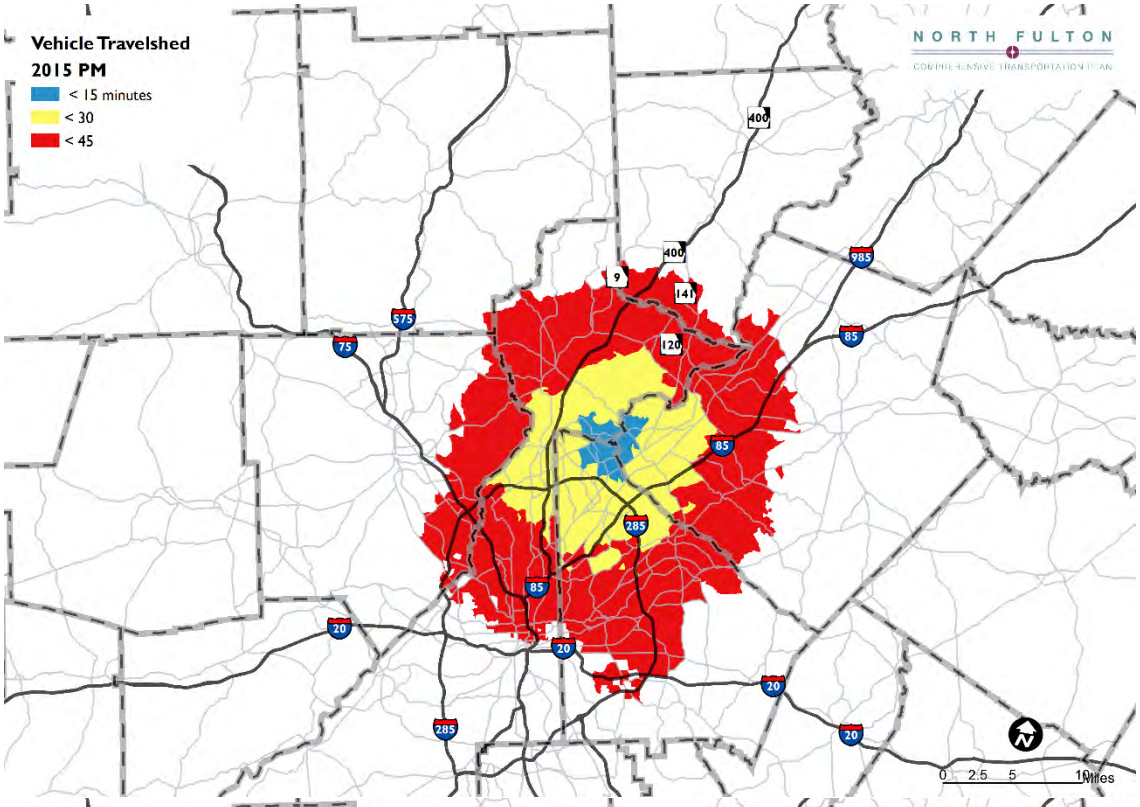


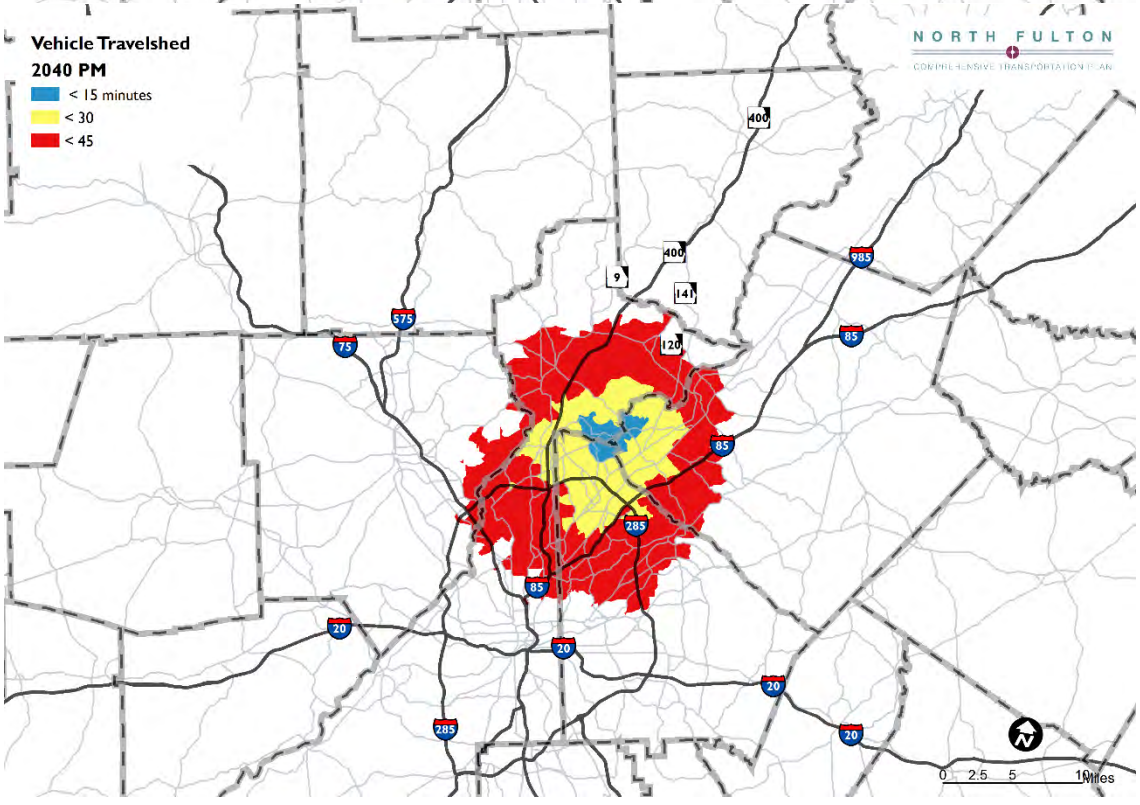


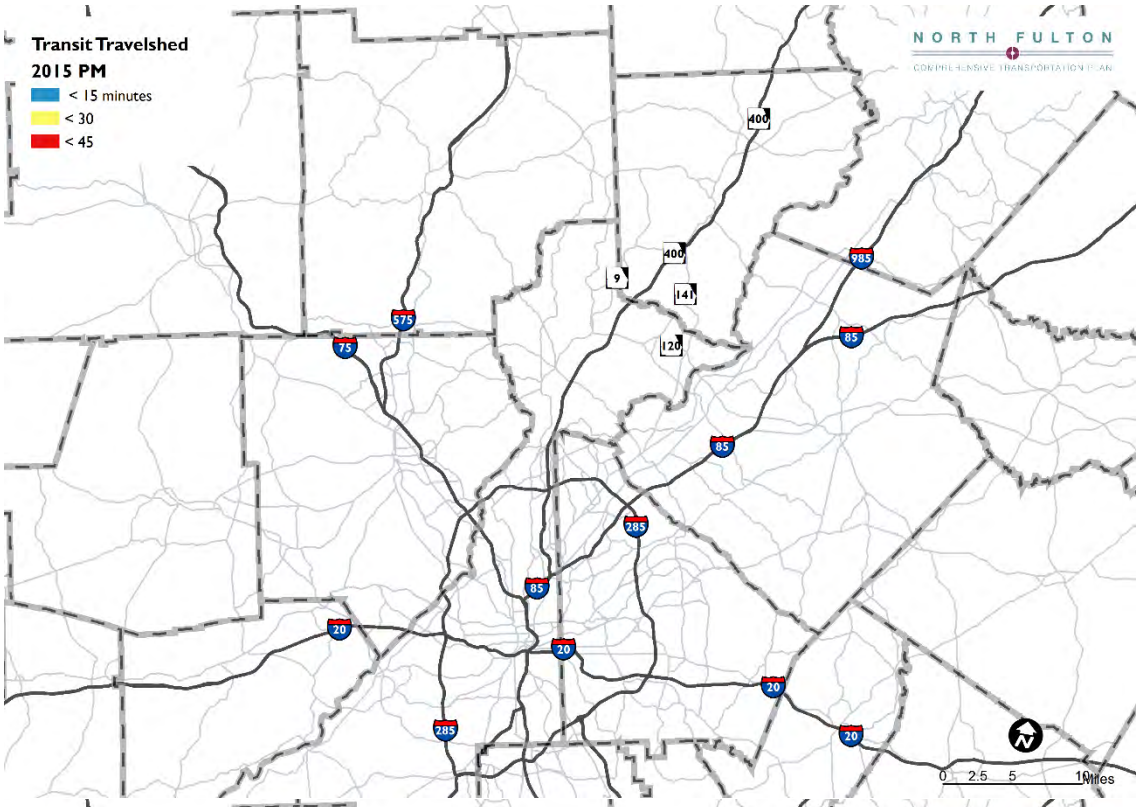

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

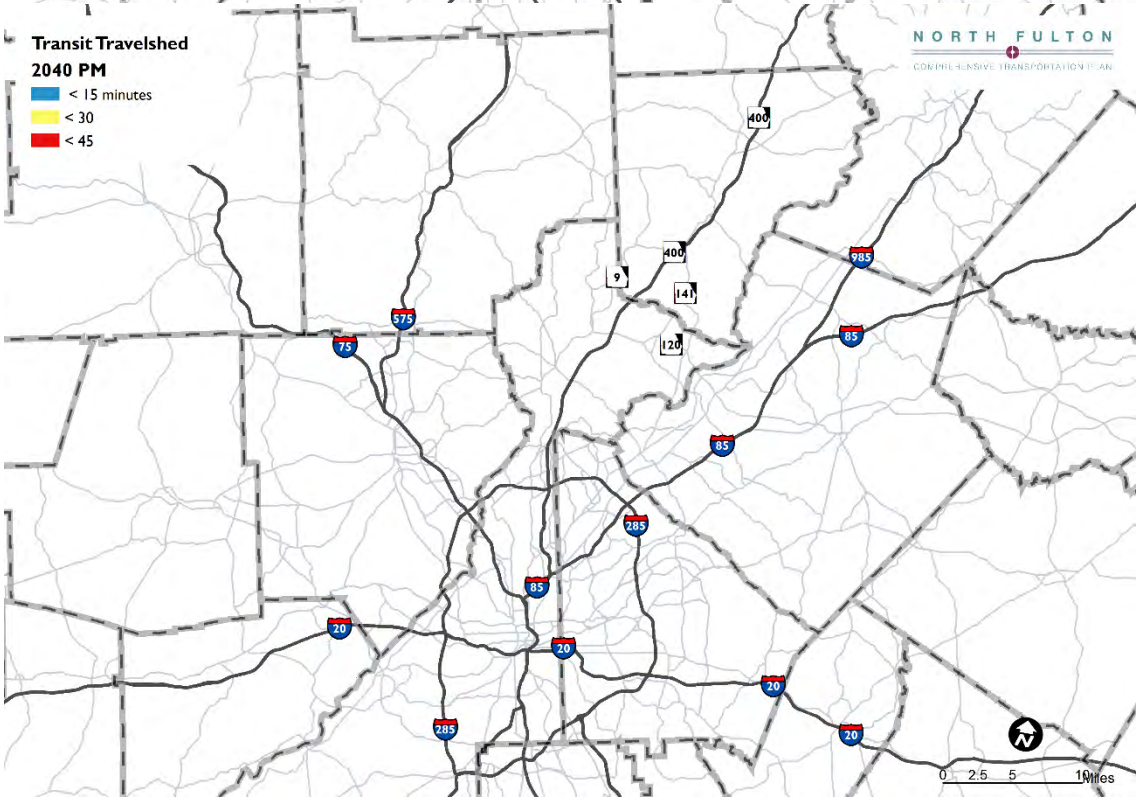

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

20. Holcomb Bridge and Spalding

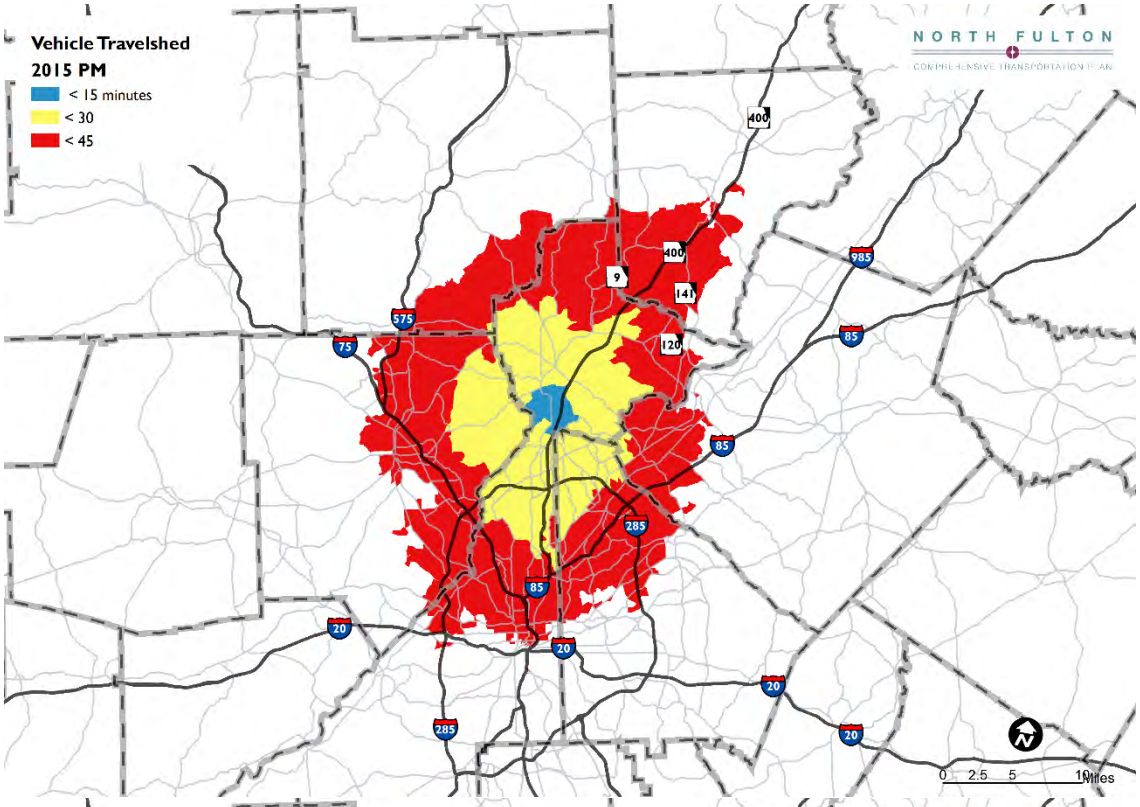


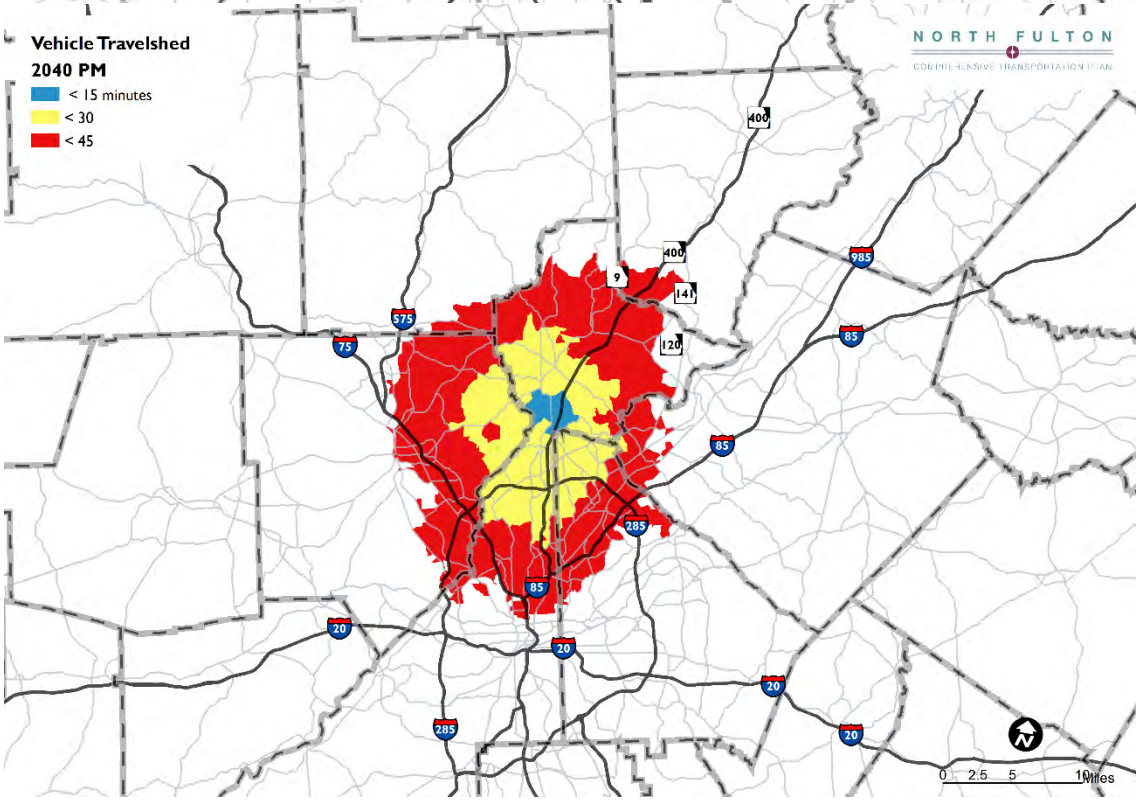


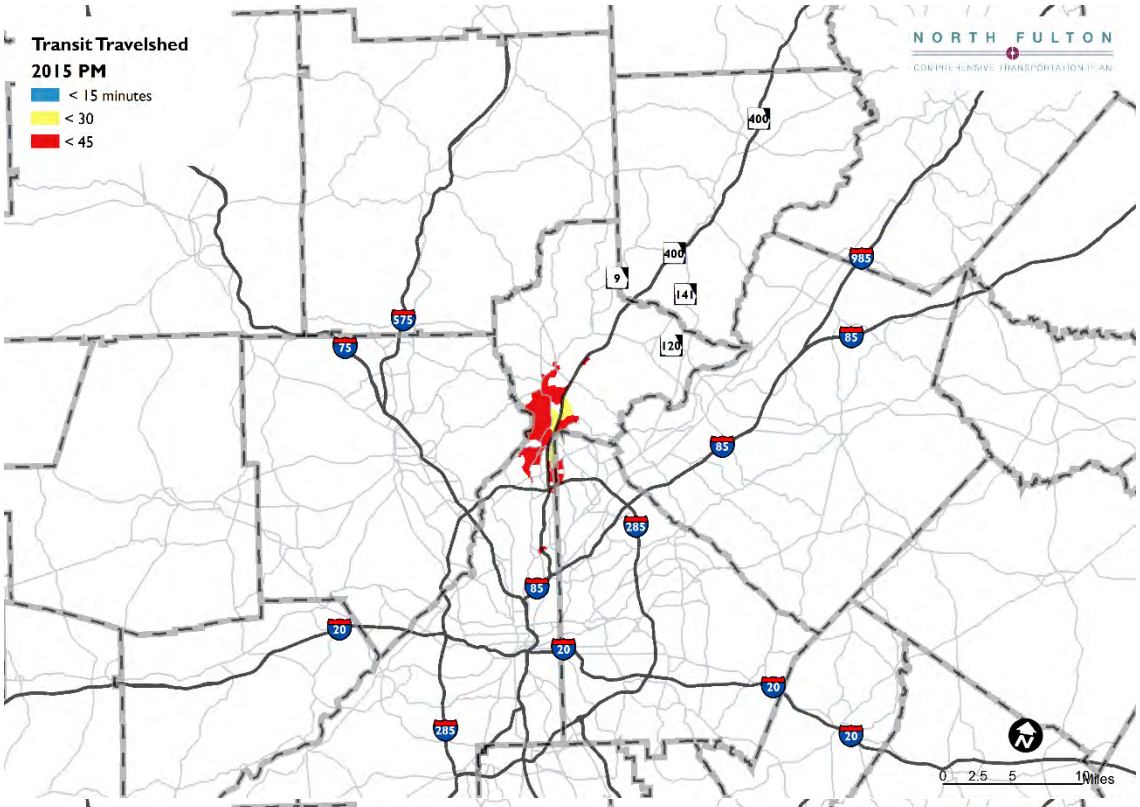

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

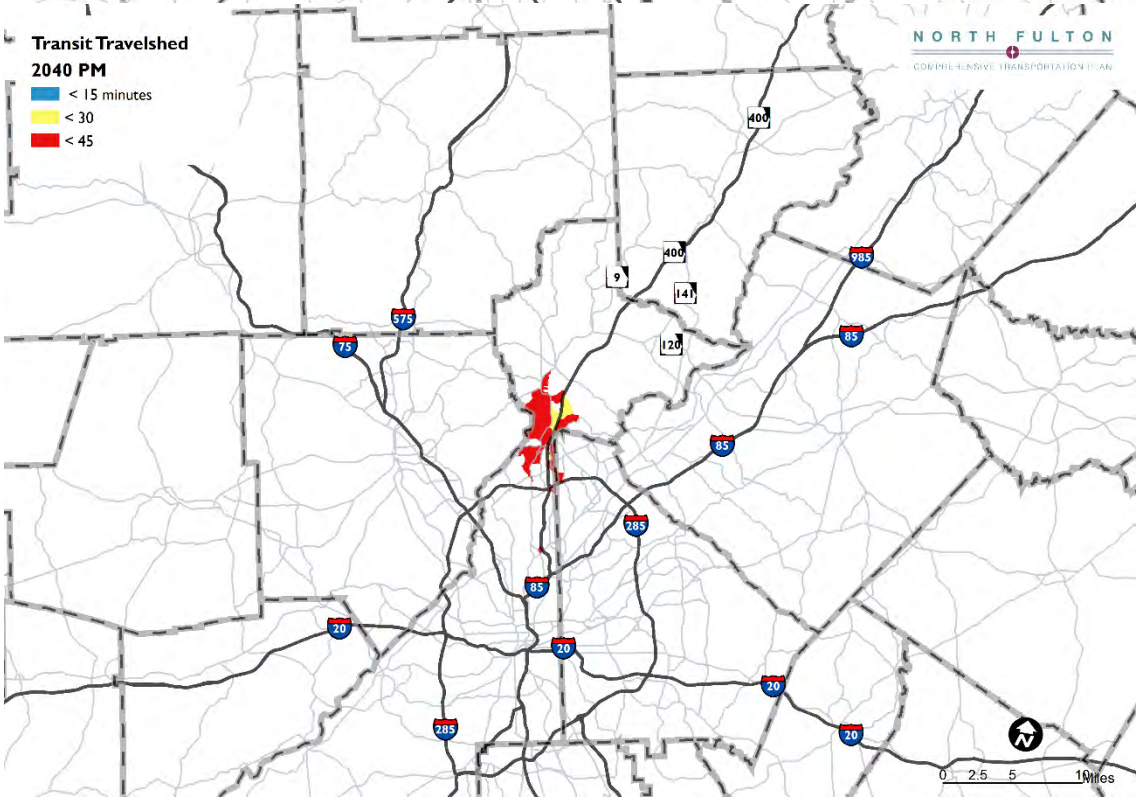

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

21. Roswell Road North

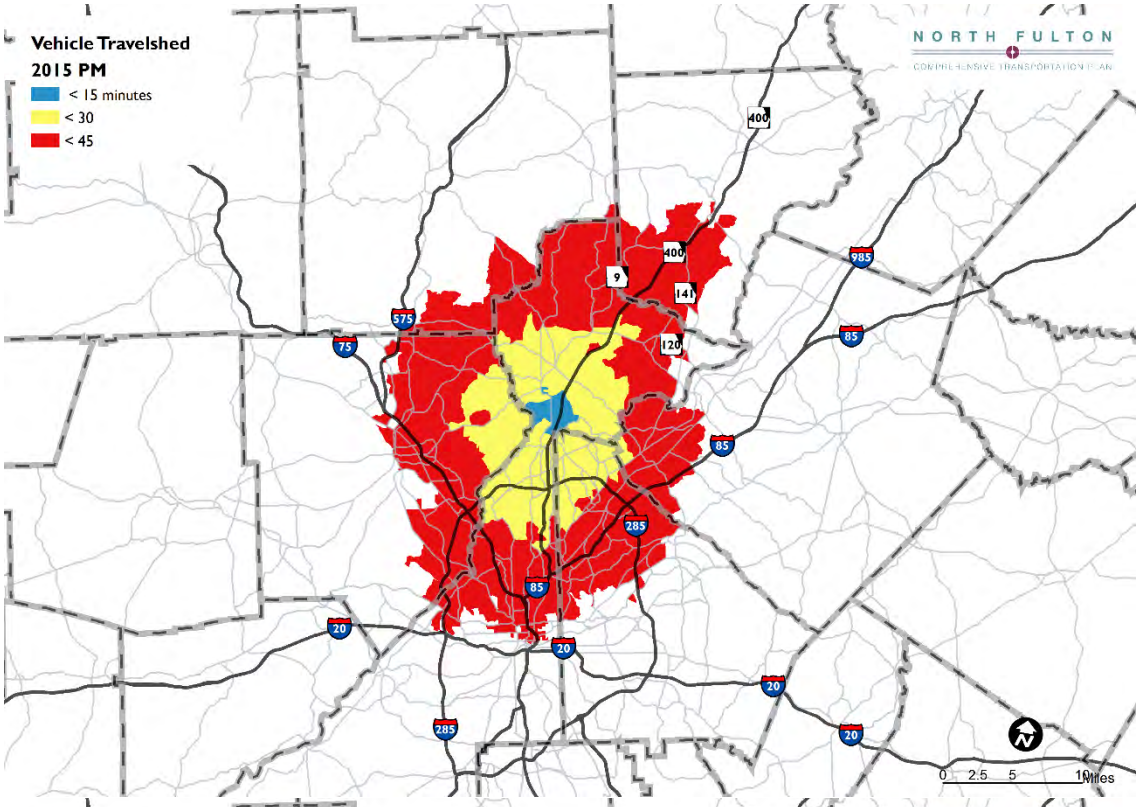


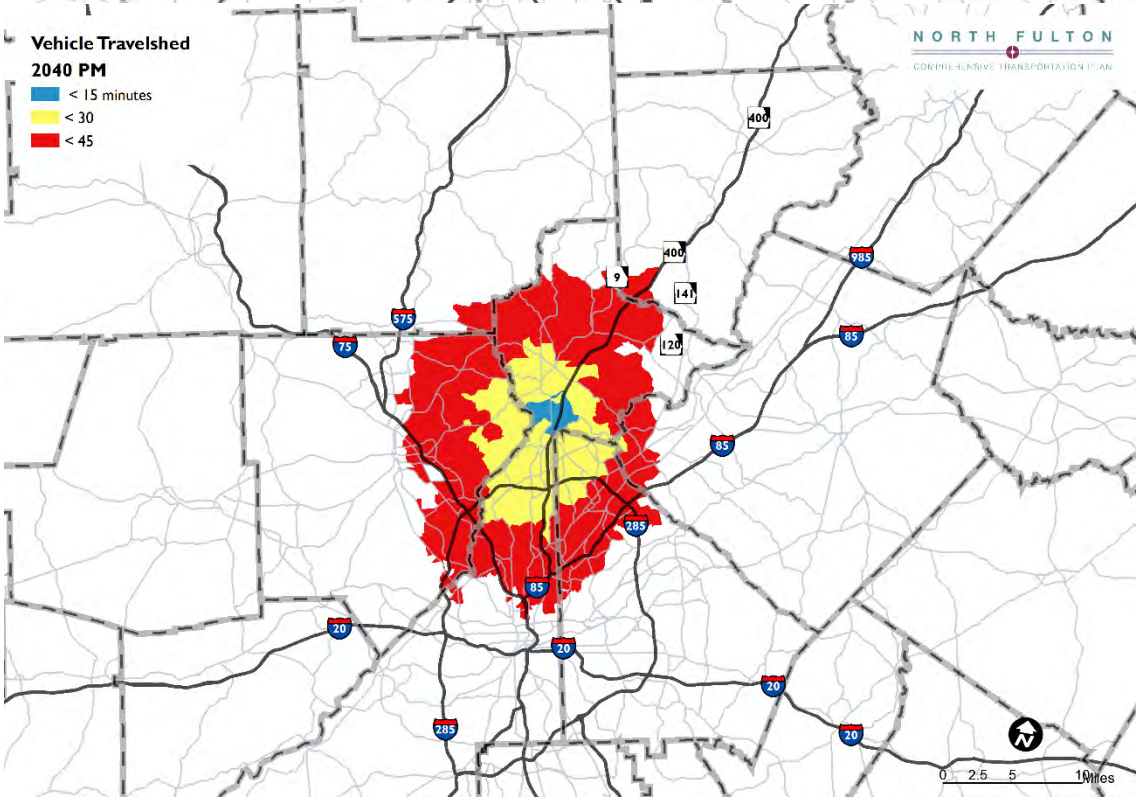


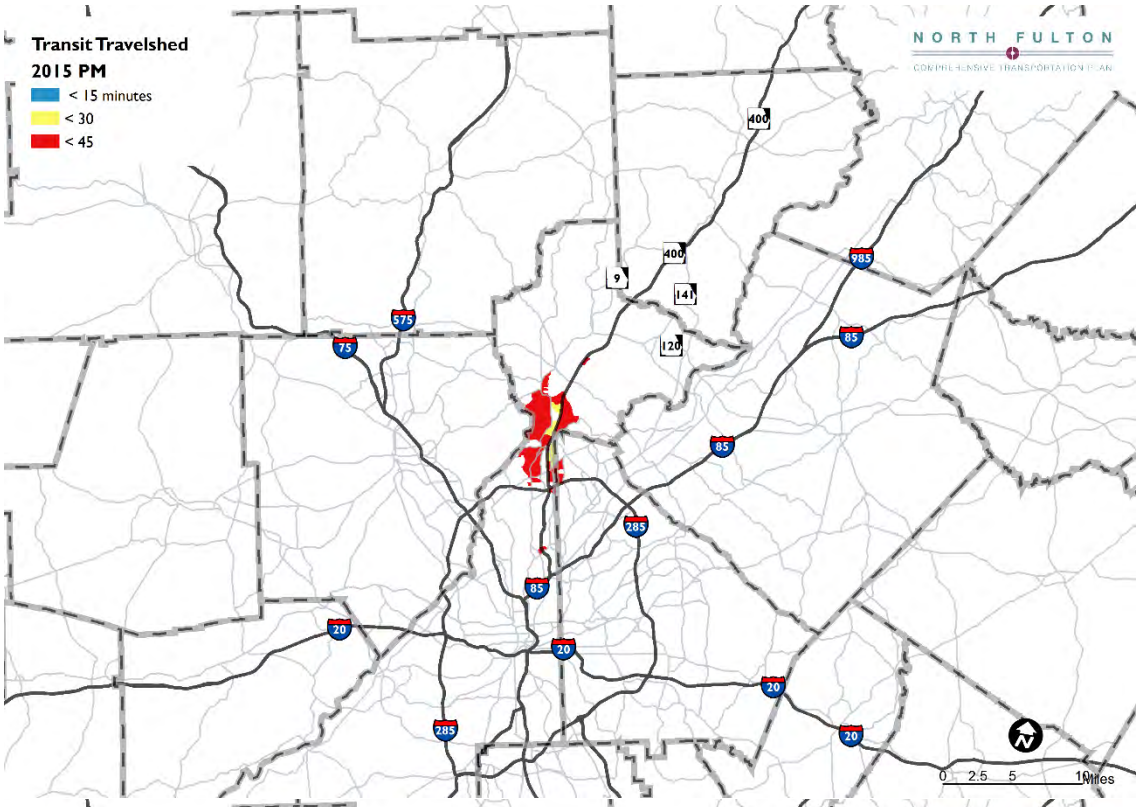

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

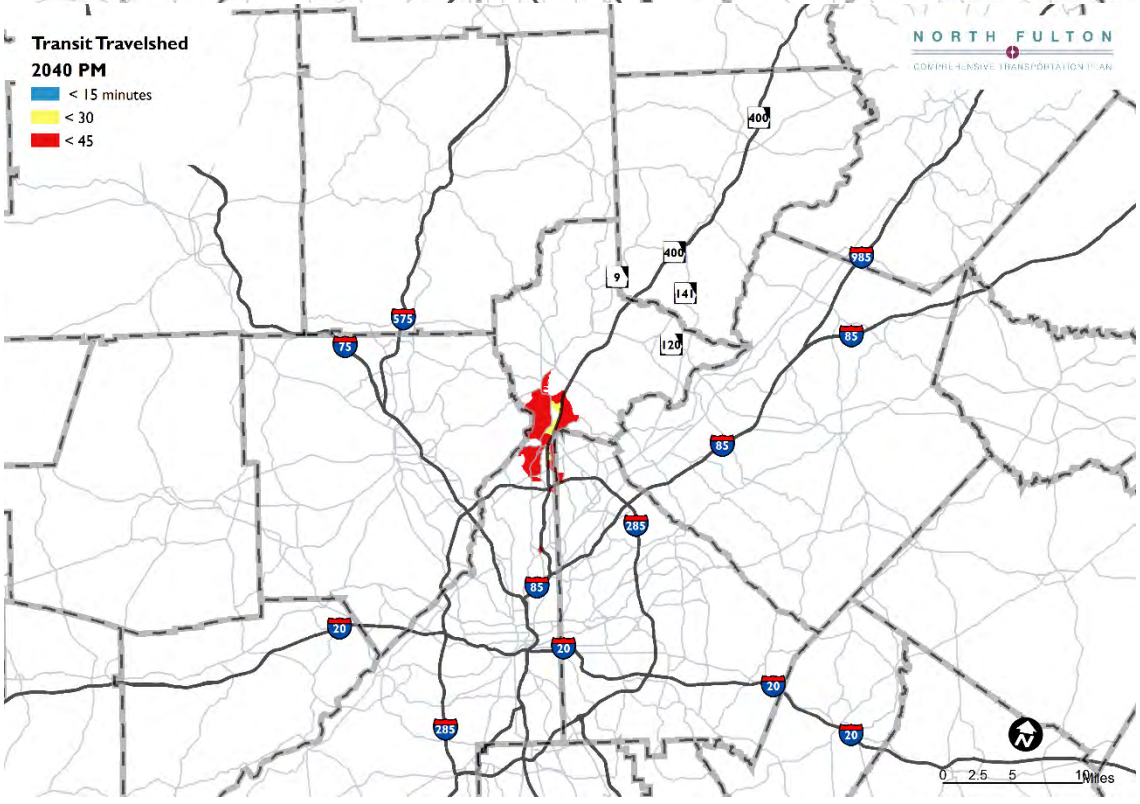

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

22. Northridge at Dunwoody

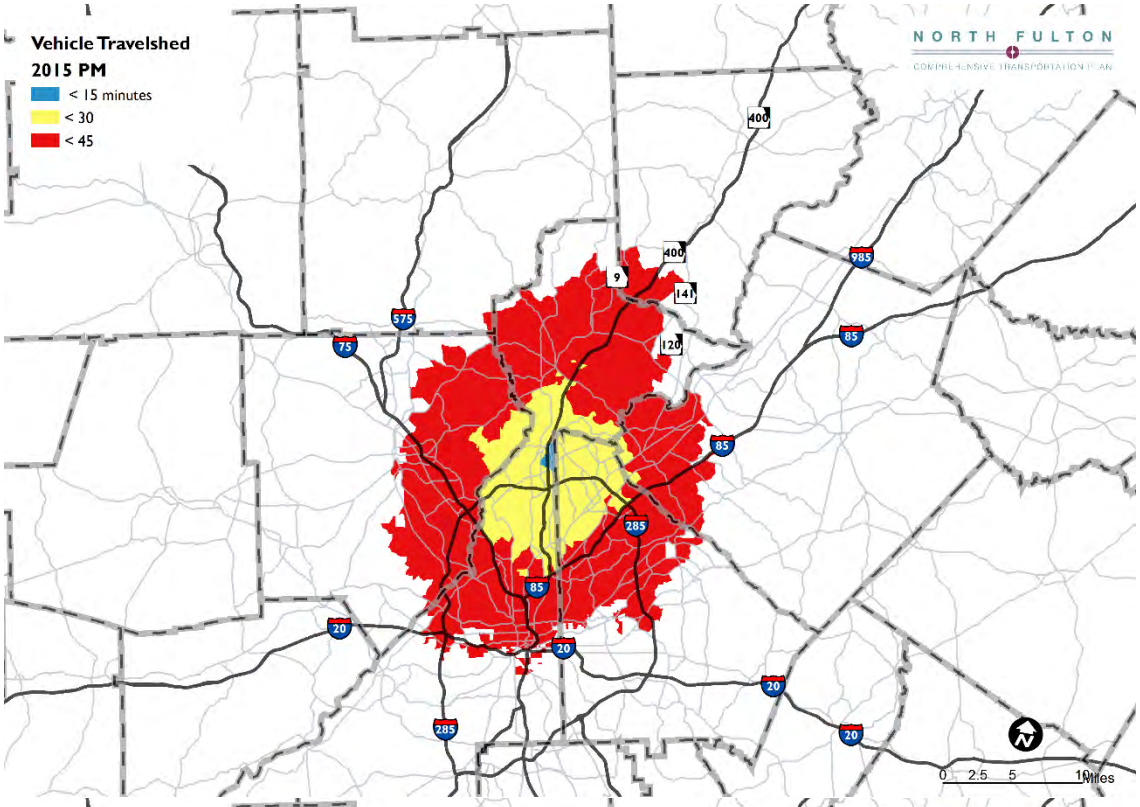


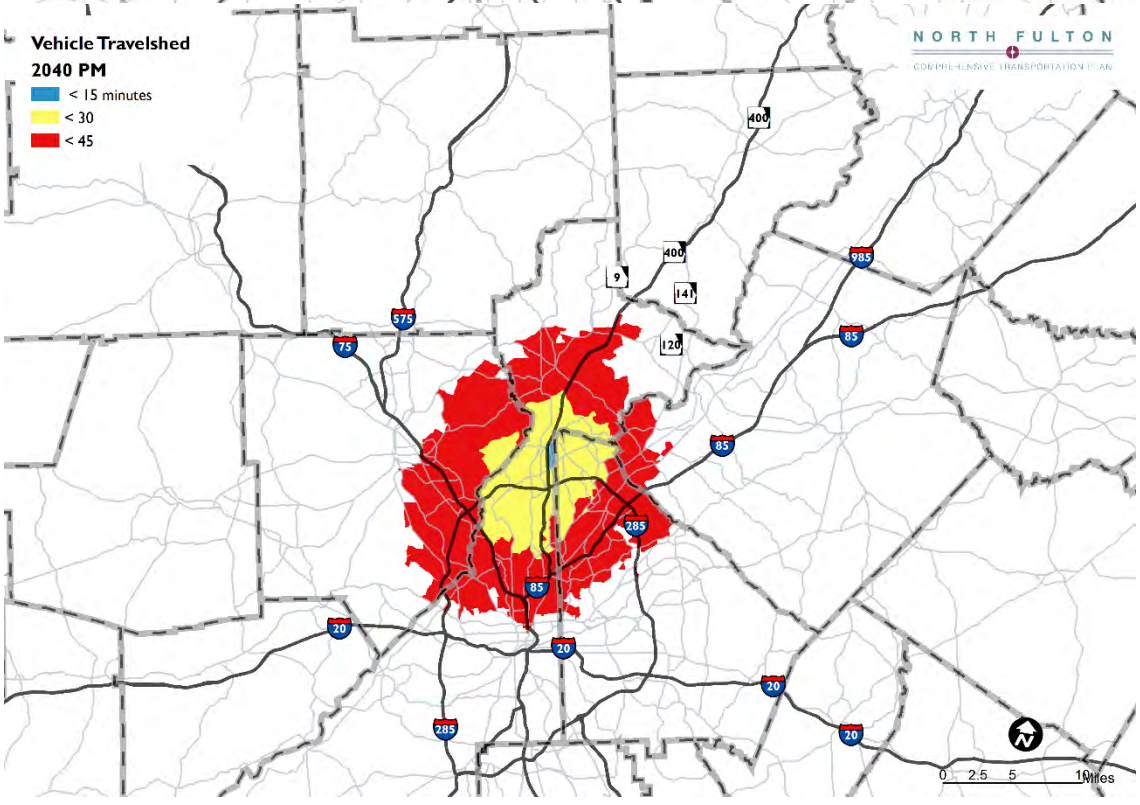


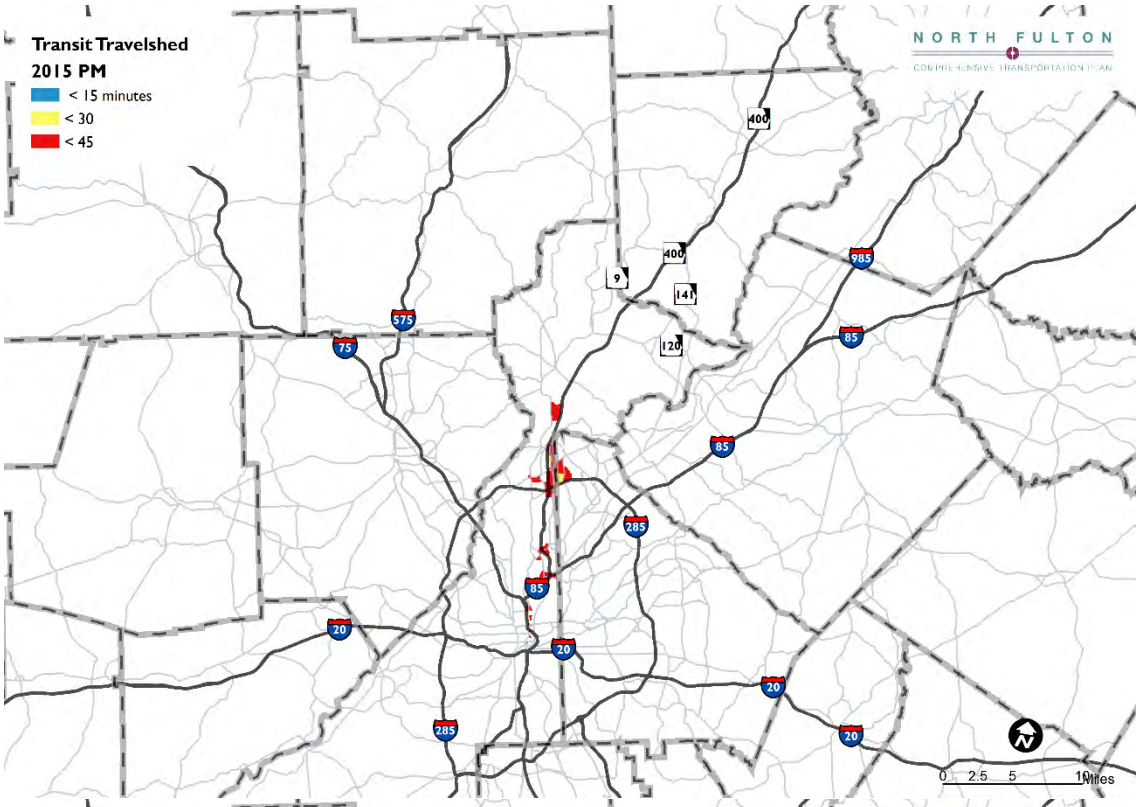

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

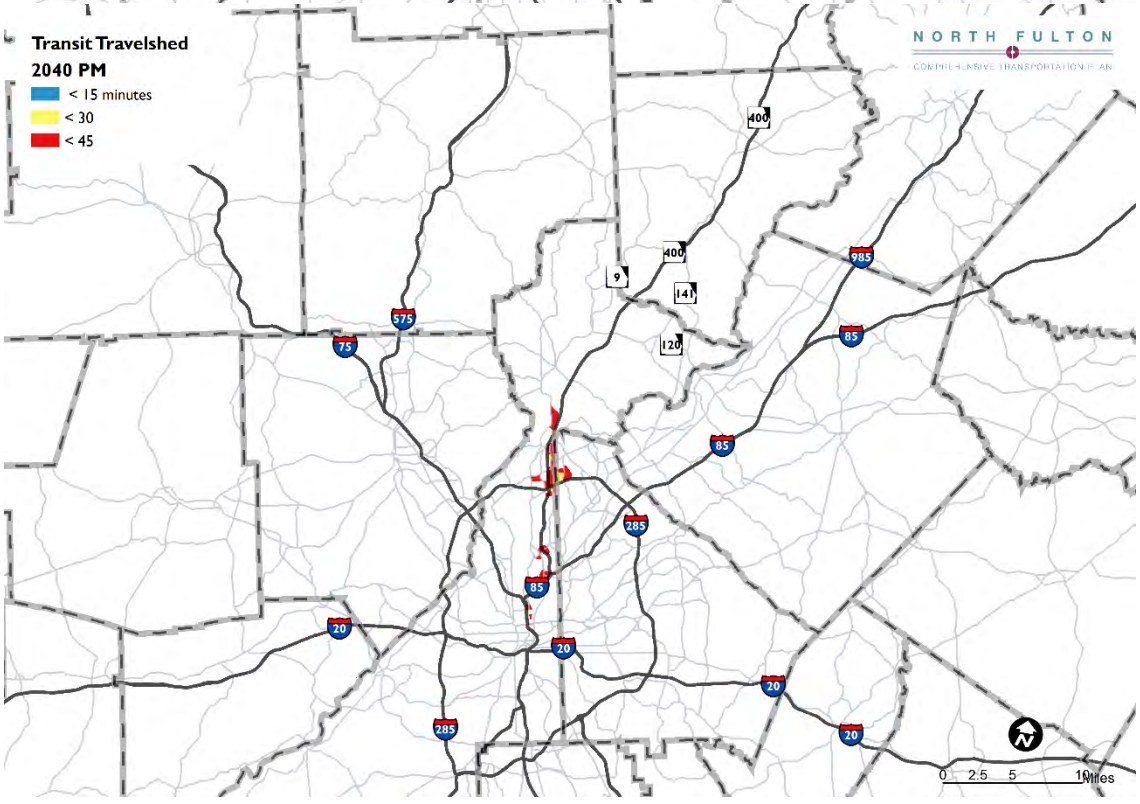

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

23. Mt. Vernon Hwy at Perimeter Center with Abernathy

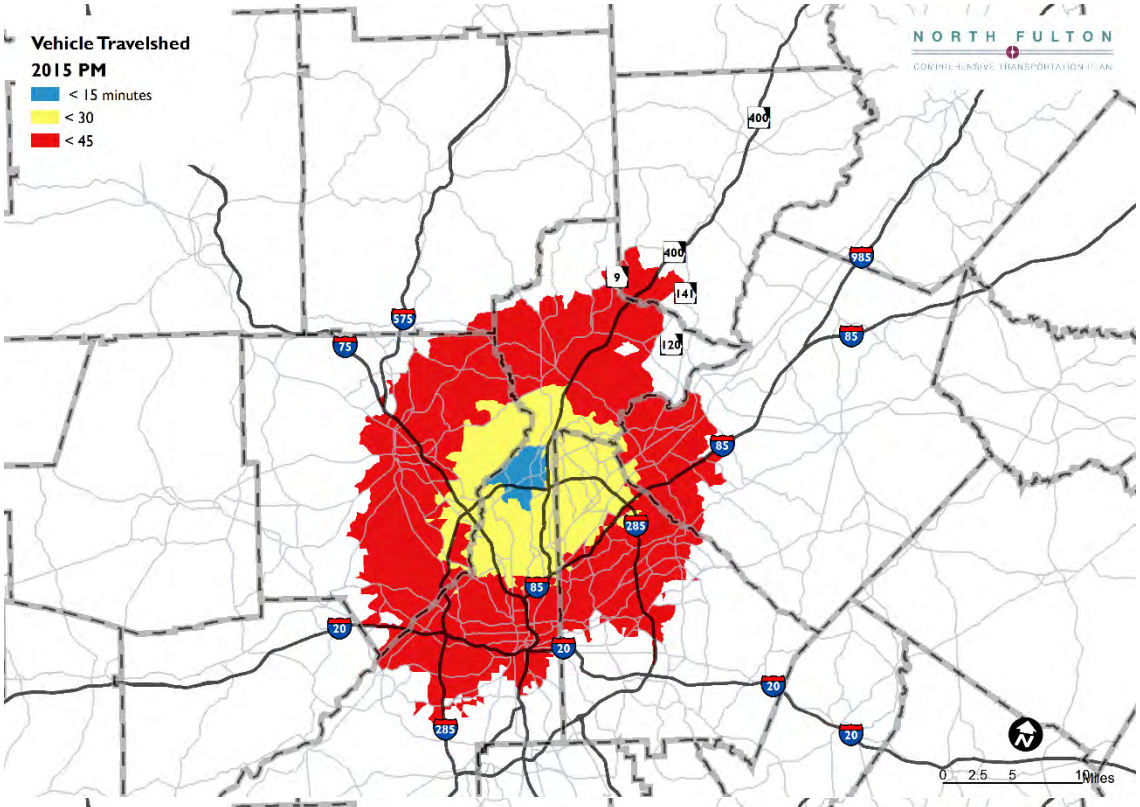


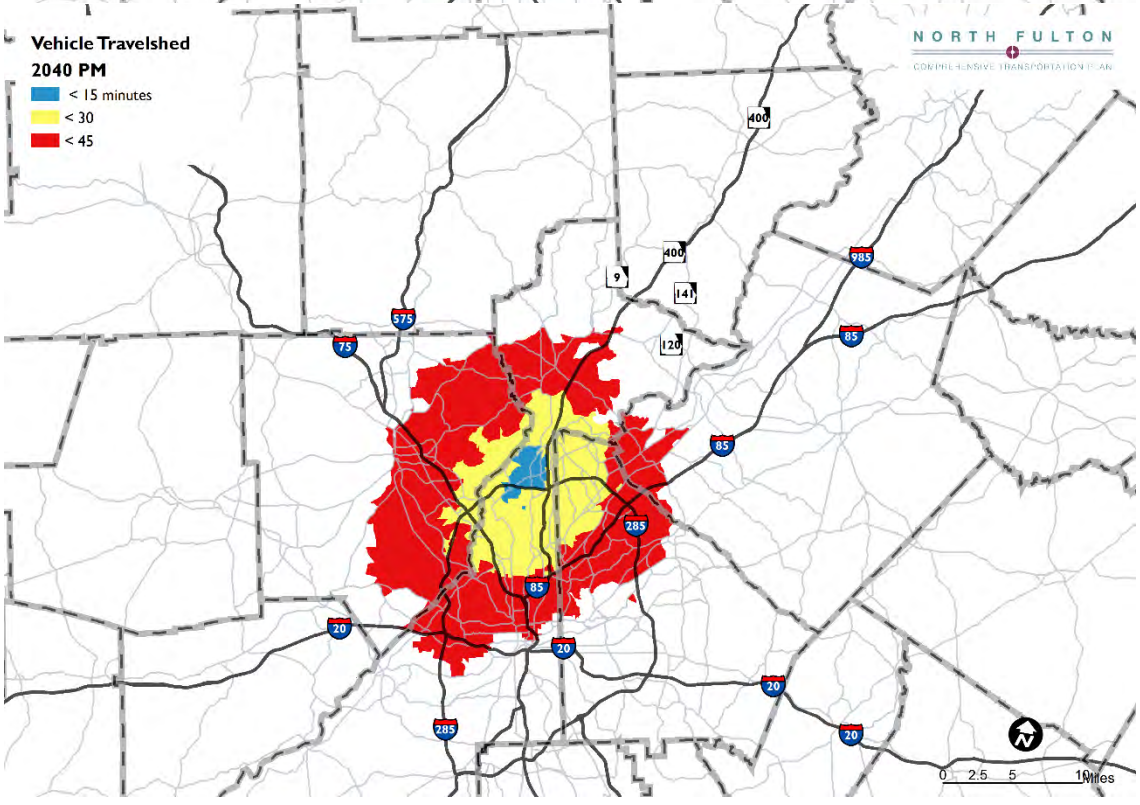


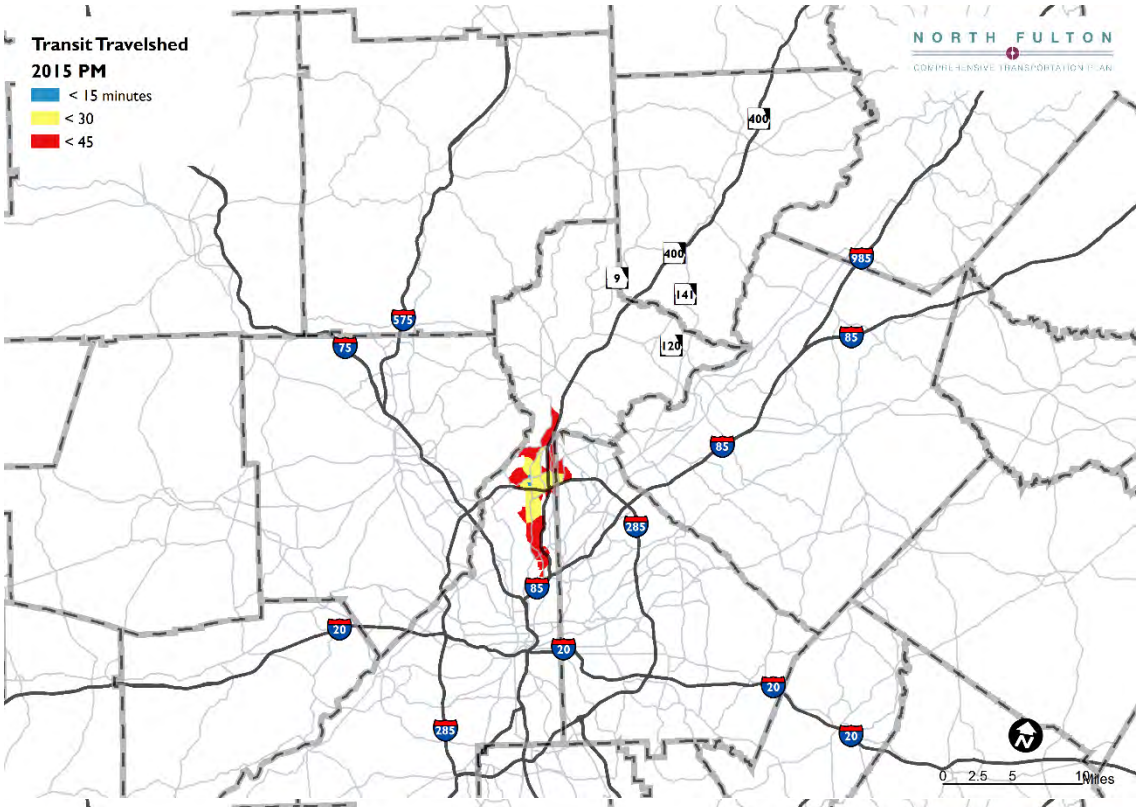

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

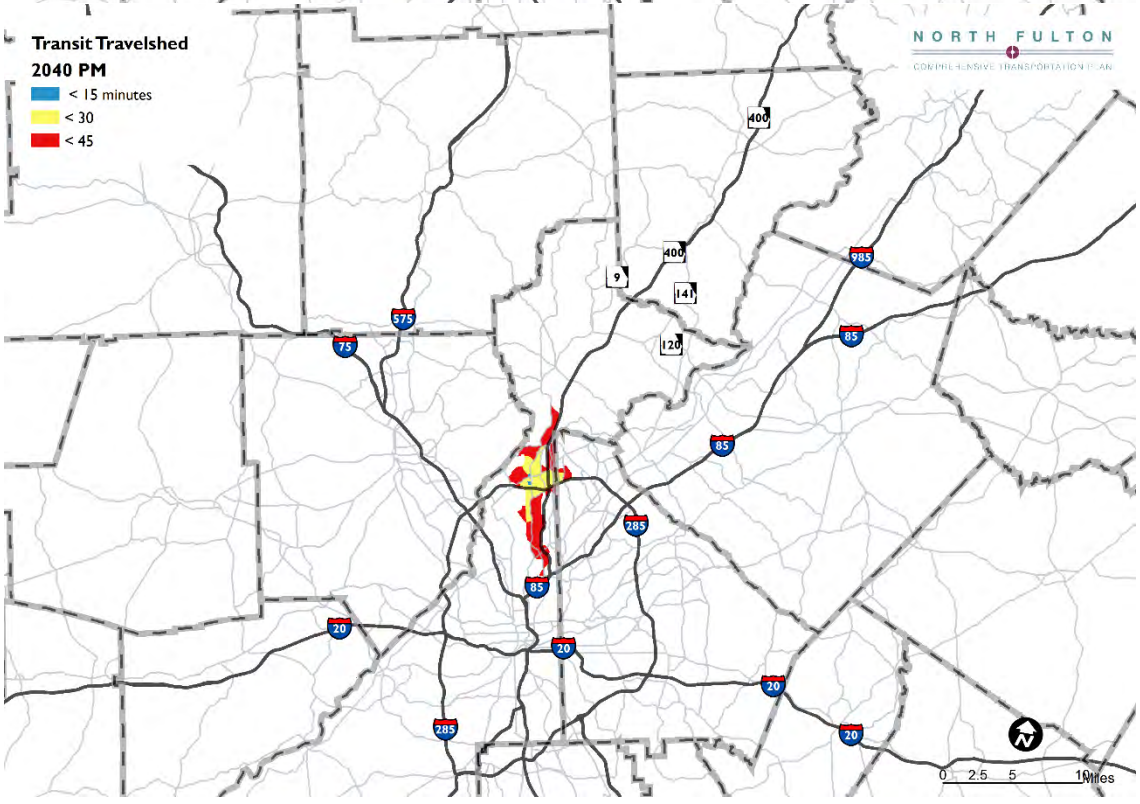

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
9
141
120
985
85
575
75
285
20
0 2.5 5 10 Miles

24. Hammond at Peachtree Dunwoody

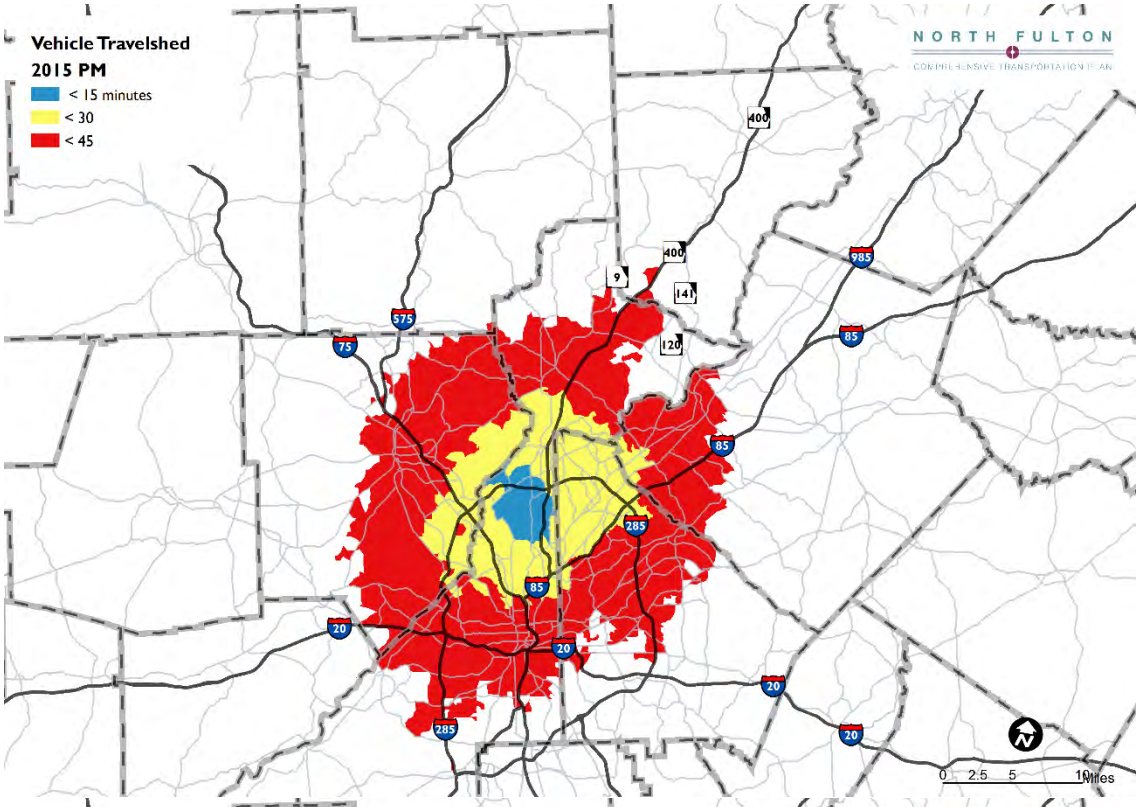


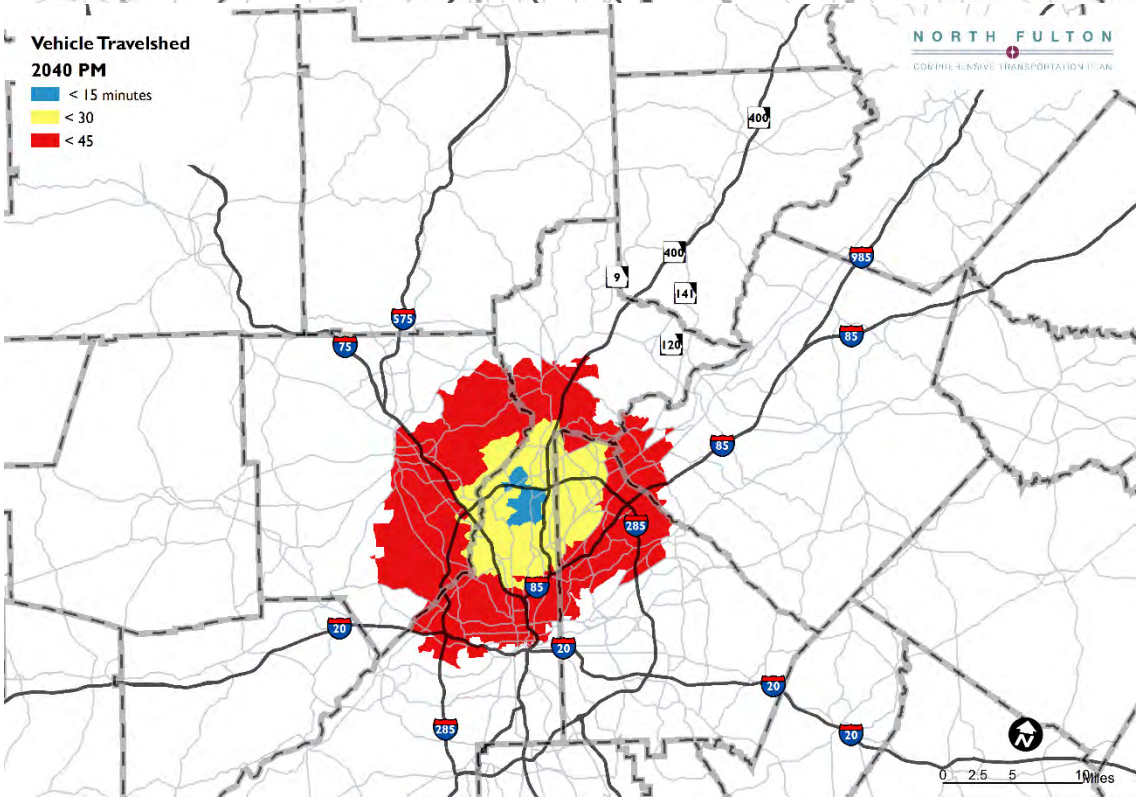


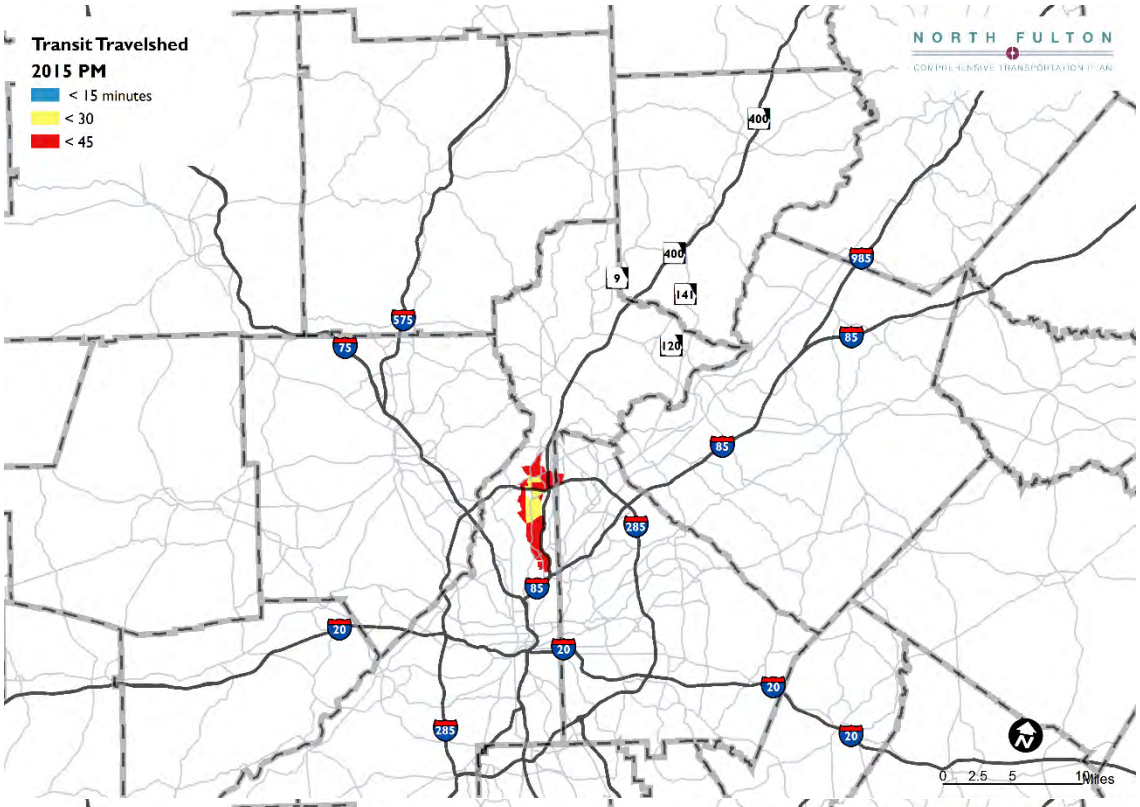

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

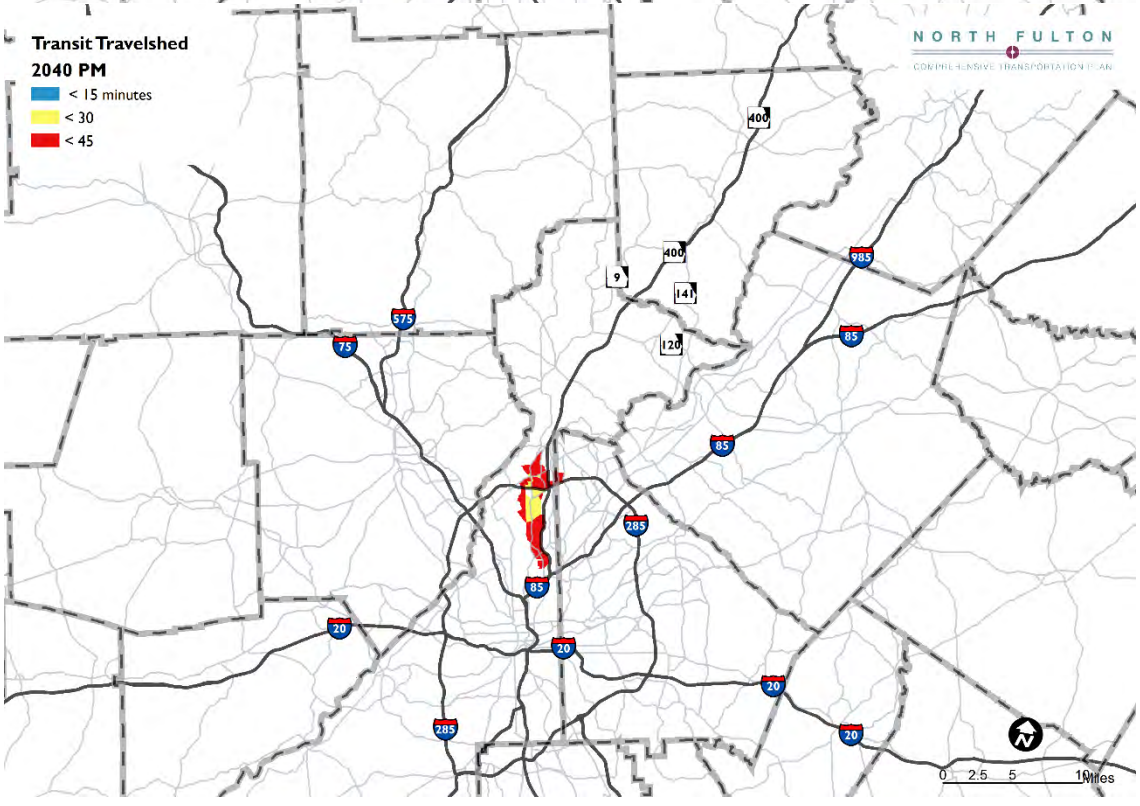

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

25. Roswell Road at Lake Placid

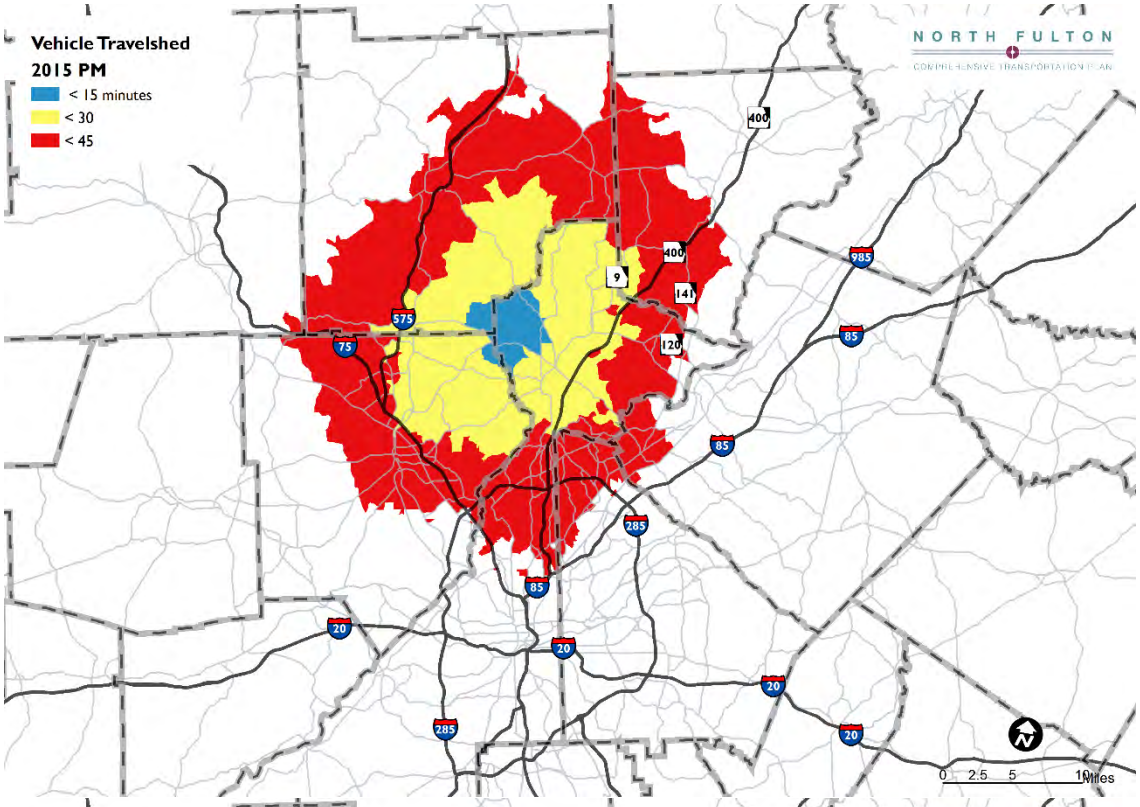


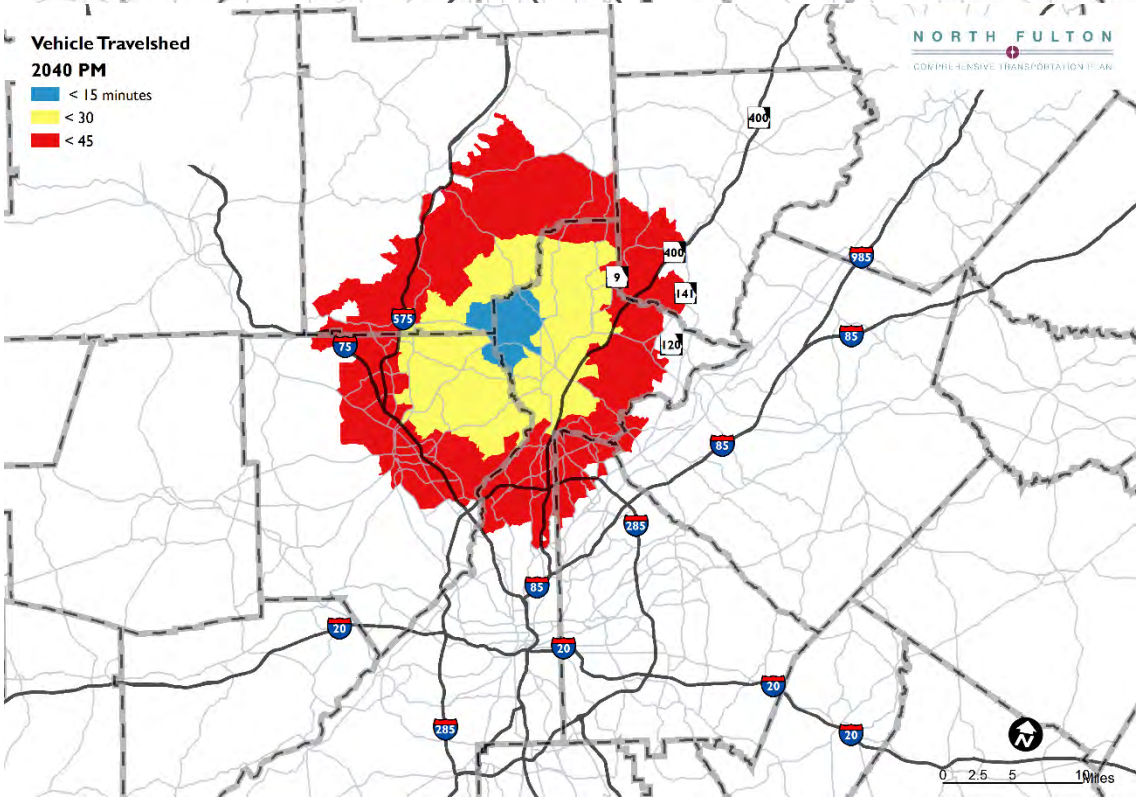


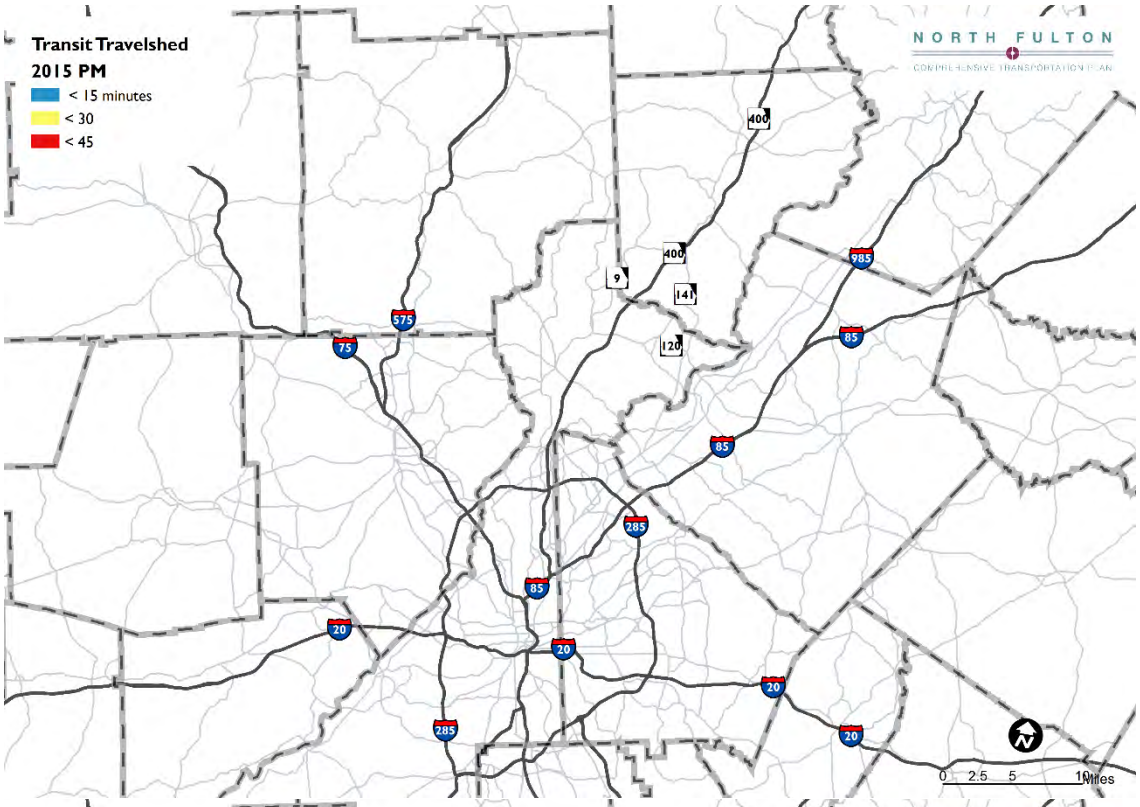

Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

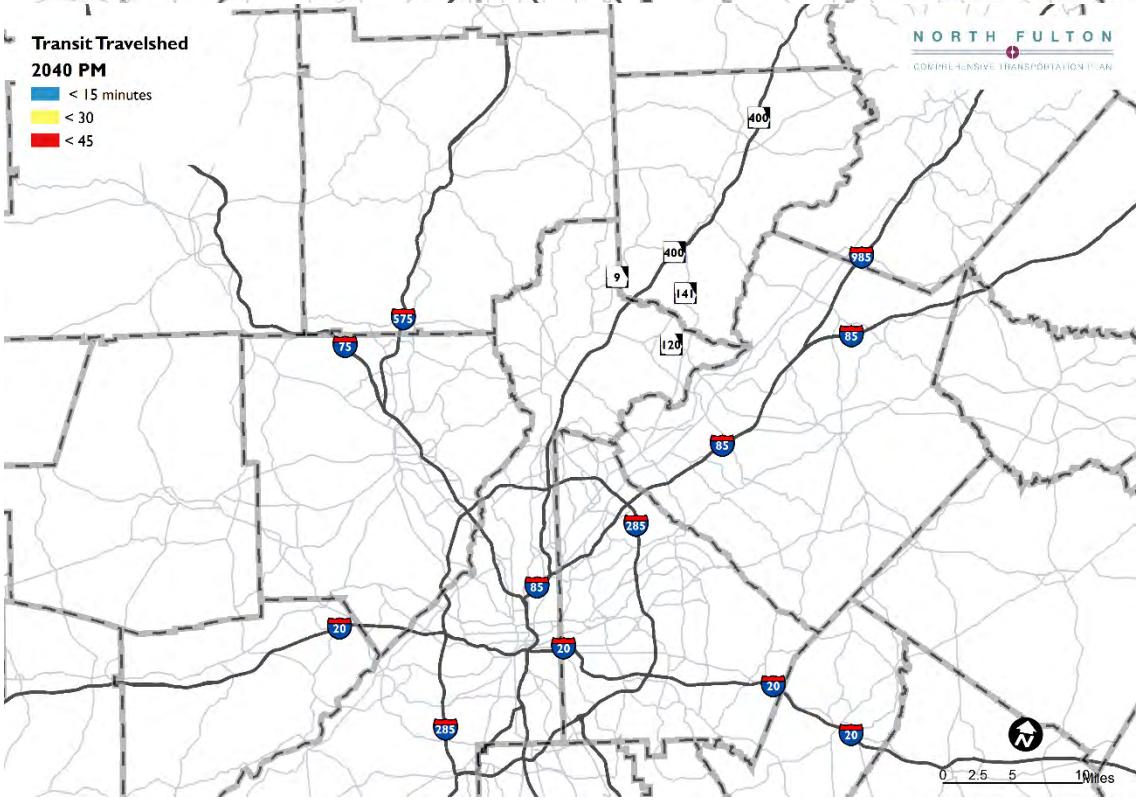

Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
0 2.5 5 10 Miles

26. Highway 92 at Hardscrabble






Transit Travelshed
2015 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles


Transit Travelshed
2040 PM
< 15 minutes
< 30
< 45
NORTH FULTON
COMPREHENSIVE TRANSPORTATION PLAN
400
985
9
141
120
575
75
85
285
20
0 2.5 5 10 Miles

Introduction

One of the tools that was used for the Needs Assessment analysis was the transportation index. The index is a spatially-oriented analysis tool that incorporates demographic characteristics with existing transportation networks to highlight areas that have high propensity for modal demand. For the index, pedestrian, bicycle, transit, and roadway were looked at individually. The transportation index serves as just one of the multitude of tools used to analyze transportation needs in North Fulton.

The index is composed of three components: existing demand, existing supply + performance, and the composite. To achieve a numeric score for the transportation index, North Fulton is divided into 5-acre grids where demand and supply components are spatially analyzed. The existing demand, existing supply + performance, and the composite score is calculated for all the 5-acre grids and represented in a heat map. The maps have low and high concentration of demand and supply depending on the associated legends. The result of each index component is a numerical scope that indicates a high to low level of concentration. For the purpose of this study, a 5-acre grid was used to allow for equal geographic comparison across the North Fulton geography.

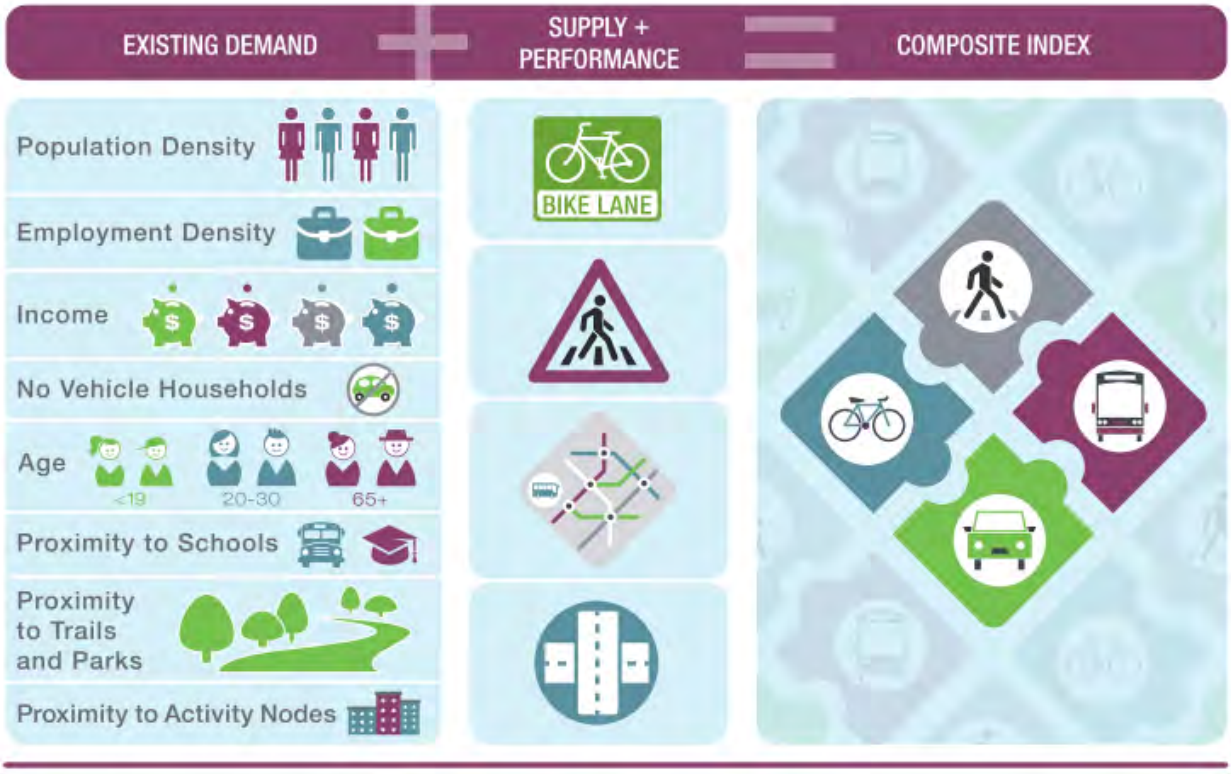


Figure 1: Transportation Index

Index Components

In collaboration with the project management team and consultant team, each demand factor was given a weighting based on its influence on a given mode. For example, transit, pedestrian, and bicycle had a higher weighting for No-vehicle Households because these modes are typically of higher demand for those who do not own a vehicle. A total of 20 points was distributed among the existing demand factors.

Existing Demand

The purpose of the existing demand was to highlight areas in North Fulton where propensity for travel exists given. The demand factors used in the analysis and the associated weighting are listed below.

Table 1: Existing Demand Factors

Data Sources: 2009-2014 American Community Survey 5-year Census Data; 2014 U.S. Census Longitudinal Employer-Household Dynamics (LEHD); Proximity factors from North Fulton Cities (2016).

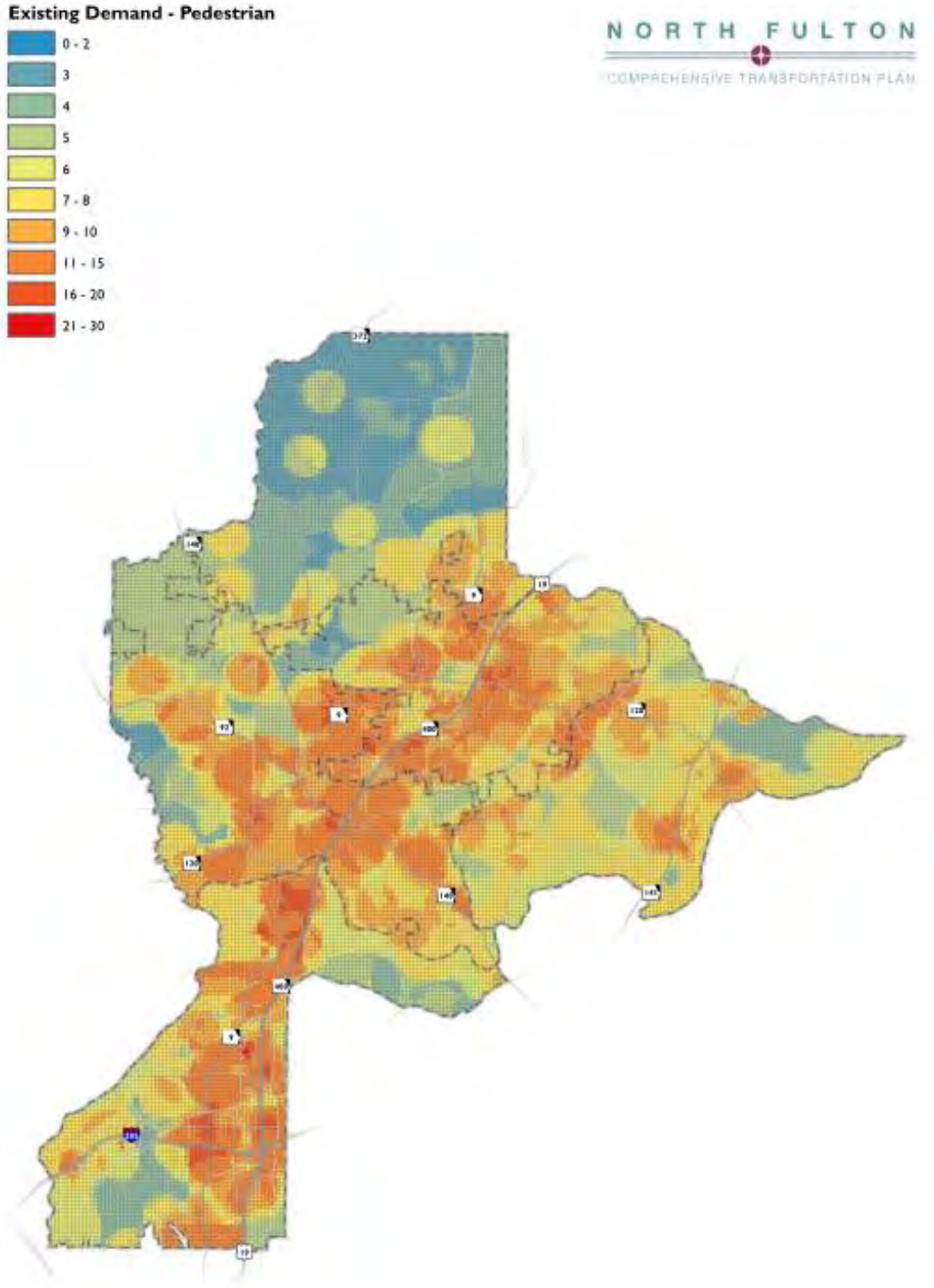
Existing Demand				
	Pedestrian	Bicycle	Roadway	Transit
Population Density	5	7	11	6
Employment Density	5	5	11	6
Income	2	1	1	5
Age Less than 19	2	2	0	0
Age 20-30	0	2	1	1
Age 65+	2	0	1	4
No Vehicle Households	4	3	0	5
Proximity to Schools	4	4	2	0
Proximity to Trails, Parks, etc.	4	4	1	1
Proximity to Activity Nodes	2	2	2	2
Total	30	30	30	30

Each demand factor was indexed based on its minimum and maximum range of numbers from 0 to 1. The index was then weighted by the predetermined weighting. The total existing demand score was then calculated in GIS using the spatial join tool. The total existing demand score range was from 0 to 30 available points. The demand factors were calculated in the Geographical Information Systems (ArcGIS) software using a spatial join tool to each 5-acre grid making up North Fulton. Each demand factor is then indexed to have a score

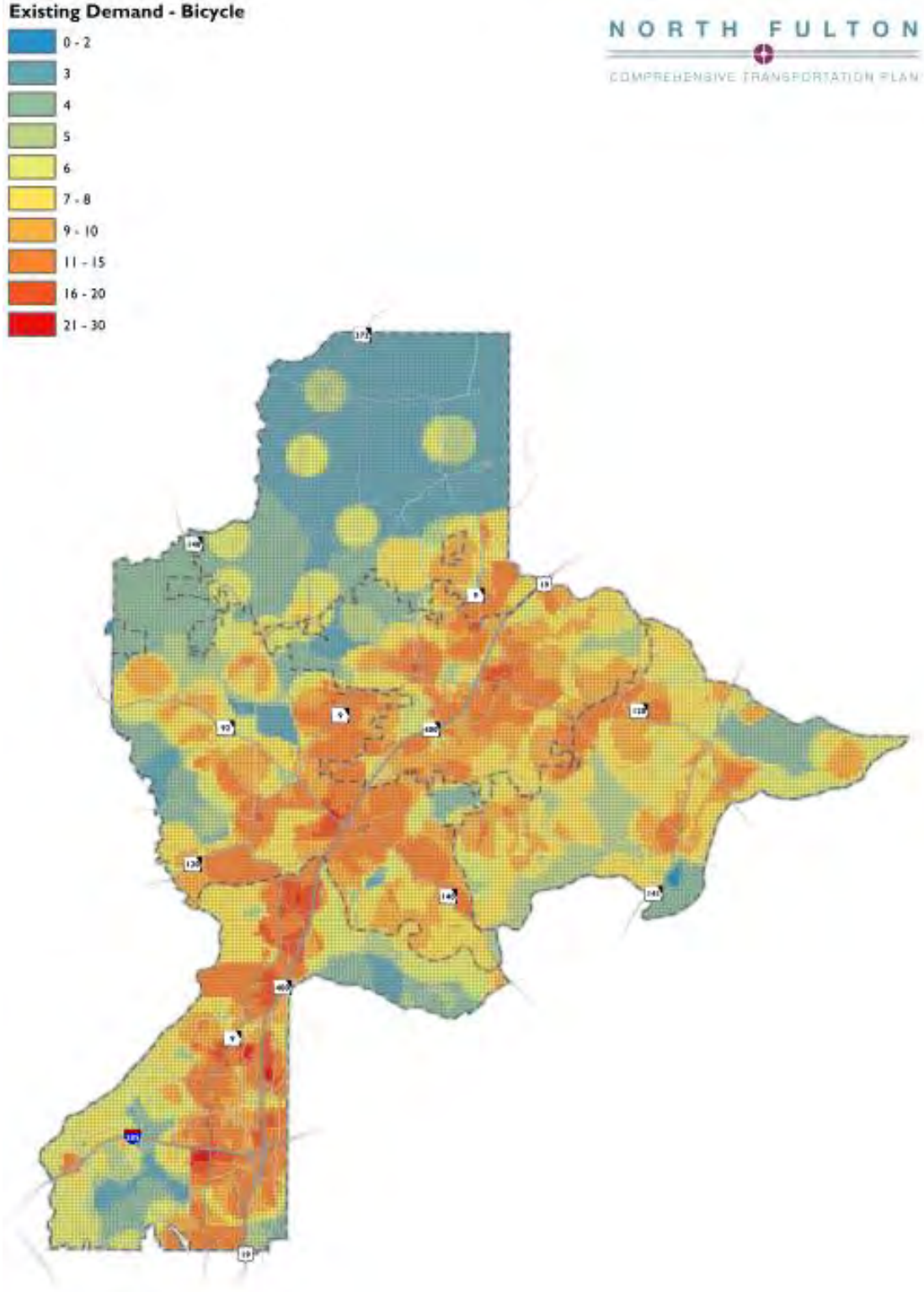
from 0 to 1. This index number is then multiplied by the weighting factors for each category. The sum of the weighted points for each demand factor category represents the Existing Demand Score ranging from 0 to 30 points.

Existing Demand Pedestrian and Bicycle

The existing demand map for pedestrian facilities highlight areas that have a higher propensity for walking trips. A map of the Pedestrian Existing Demand can be found below.

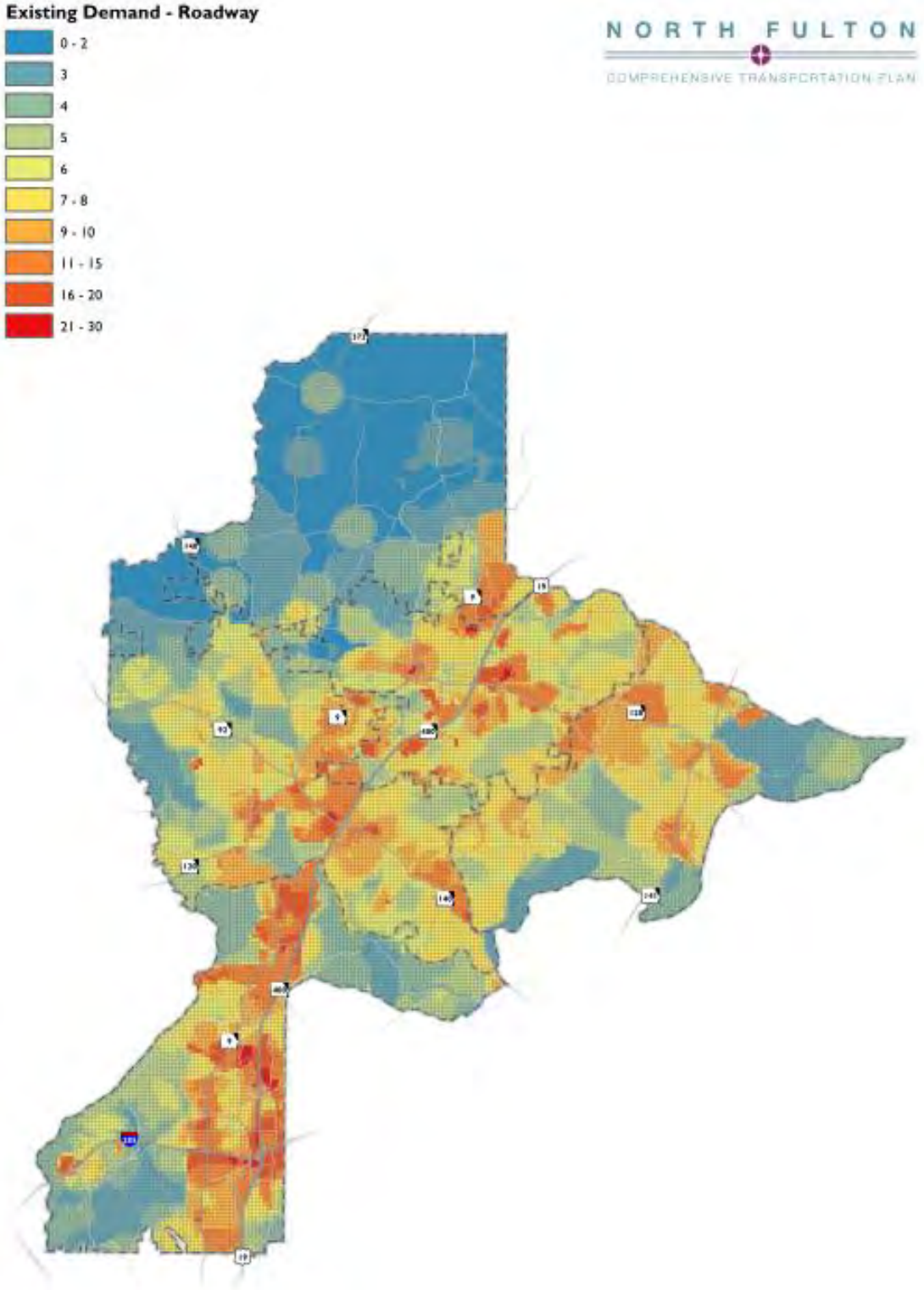


A map of the Bicycle Existing Demand can be found below.

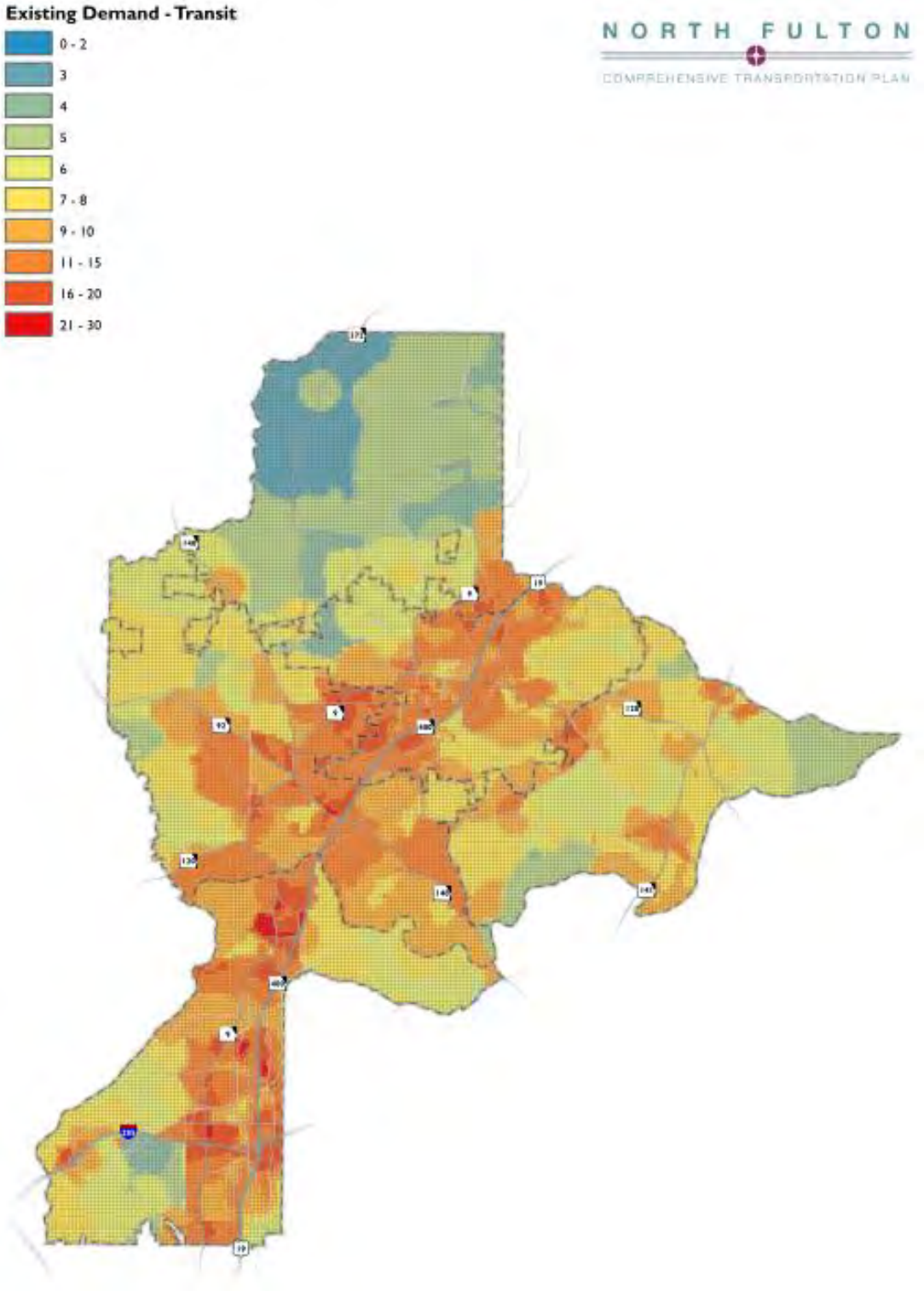


Existing Demand Roadway and Transit

The roadway index has a higher emphasis on population density and employment density. Population density and employment density both can help to forecast the future. A map of the Roadway Existing Demand is below.



The transit existing demand has an even weighting spread between population density, employment density, income, age greater than 65 and no vehicle households. These categories emphasize the geographic location of potential transit riders. A map of the Transit Existing Demand is below.



Existing Supply + Performance

The second component of the transportation index is the existing supply and performance of North Fulton. This analysis is divided by the four modes to capture the effectiveness of the existing system and spatially identifies areas where modal facilities already exist. Supply and performance measures are critical pieces to determining the adequacy of existing infrastructure. In the case of the index, these components acknowledge two assumptions:

- The presence of any facility is better than no facility at all
- In the case of active transportation, there can exist facilities that can serve as adequate substitutions for specific bicycle or pedestrian facilities given the right conditions (vehicular speed, traffic volumes, etc.)

The supply and performance categories have subcategories broken down by mode. These subcategories have assigned points based on the network supply and performance criteria. The table below describes the categories in detail with assigned points and criteria.

Table 2: Existing Supply

Data Sources: Atlanta Regional Commission 2016, Alpharetta 2016, Milton 2015, Johns Creek 2016, Roswell 2016, Sandy Springs 2016, MARTA, GRTA

Supply		
Pedestrian	**15 maximum points**	**Criteria**
Existing sidewalks and trails on roadway miles (Roadway miles exclude limited-access facilities such as Expressways and Freeways)	1 3 6 8	100 - 500 feet Between 500 - 1,000 feet More than 1,000 feet Existing Trail
Percent Coverage of walkable facilities (1/16-mile buffer around facilities)	2 4	Between 10 - 50% More than 50%
Percent Coverage of walkable facilities (1/8-mile buffer around facilities)	1 3	Between 10 - 50% More than 50%
Bicycle	**15 maximum points**	**Criteria**
Existing bicycle facilities on roadways (Roadway miles exclude limited-access facilities such as Expressways and Freeways)	1 3 6 8	100 - 500 feet Between 500 - 1,000 feet More than 1,000 feet Existing Trail
Percent Coverage of bikeable facilities (1/4-mile buffer around facilities)	2 4	Between 10 - 50% More than 50%
Percent Coverage of bikeable facilities (1/8-mile buffer around facilities)	1 3	Between 10 - 50% More than 50%
Roadway	**15 maximum points**	**Criteria**
Existing roadway facilities	6 9 12 15	100 - 750 feet Between 750 - 1,500 feet Between 1,500 - 2,000 feet More than 2,000 feet

Transit	15 maximum points	Criteria
Percent Coverage of **MARTA Rail** stops (1/2-mile buffer around stops)	6 10	Between 10 - 50% More than 50%
Percent Coverage of **MARTA Rail** routes (1/2-mile buffer around routes)	3 5	Between 10 - 50% More than 50%
Percent Coverage of **MARTA Express, GRTA Xpress, and Park and Ride** stops (1/2-mile buffer around stops)	5 8	Between 10 - 50% More than 50%
Percent Coverage of **MARTA Express and GRTA Xpress** routes (1/2-mile buffer around routes)	2 4	Between 10 - 50% More than 50%
Percent Coverage of **MARTA Bus** stops (1/4-mile buffer around stops)	4 6	Between 10 - 50% More than 50%
Percent Coverage of **MARTA Bus** routes (1/4-mile buffer around routes)	1 3	Between 10 - 50% More than 50%

Table 3: Existing Performance

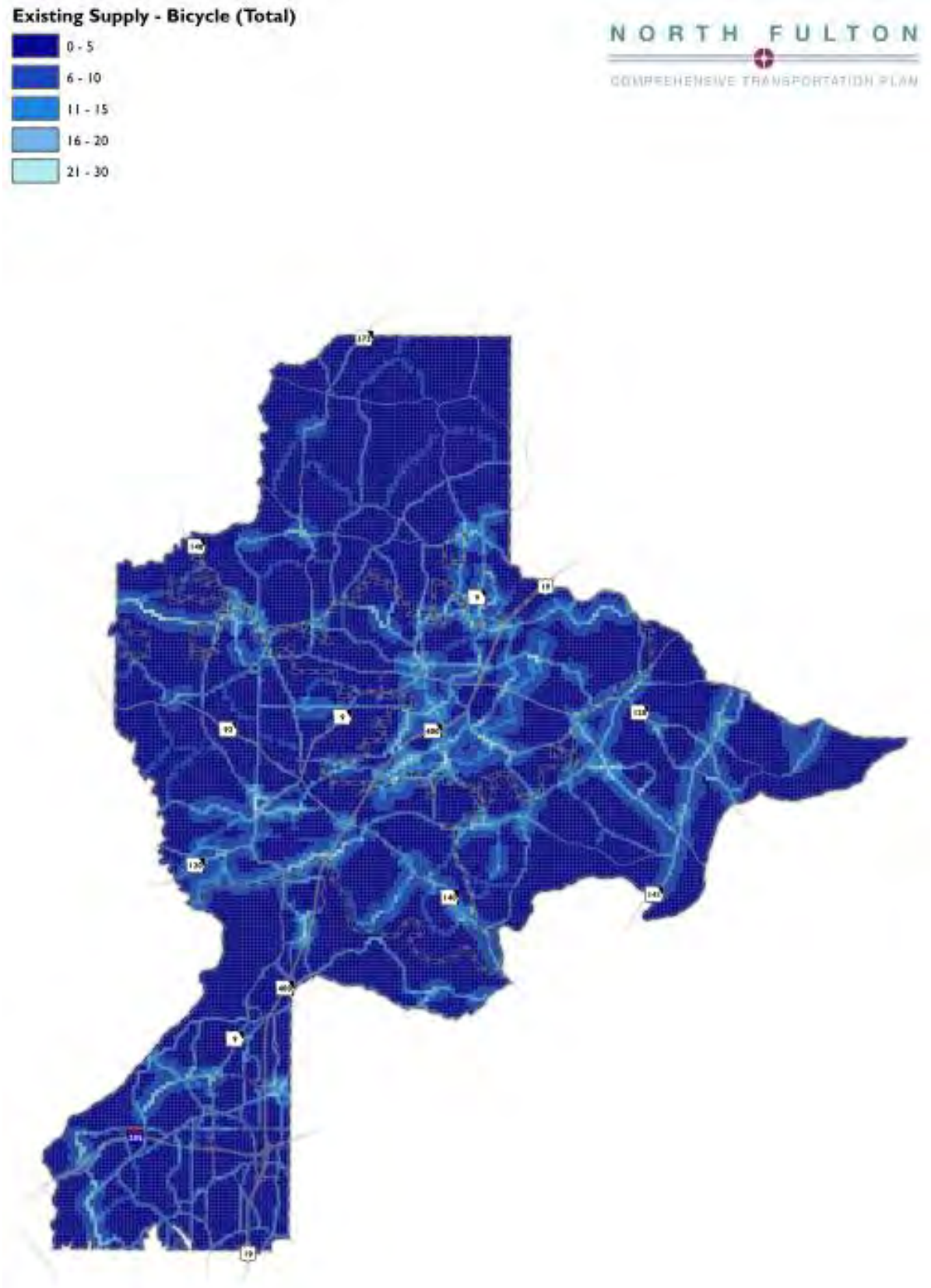
Performance		
Pedestrian	**15 maximum points**	**Criteria**
Posted Roadway Speed along roads	1 3 4 5	More than 45 mph Between 35 - 45 mph Between 25 - 35 mph Less than 25 mph
Average traffic volume along roads	0 1 2 3 4 6	Limited Access More than 15,000 veh/day Between 10,000 - 15,000 Between 5,000 - 10,000 Between 2,500 - 5,000 Less than 2,500 veh/day
Number of pedestrian crashes along roads	1 3 4	More than 3 crashes 2 crashes 1 crashes
Bicycle	**15 maximum points**	**Criteria**
Posted Roadway Speed along roads	1 3 4 5	More than 45 mph Between 35 - 45 mph Between 25 - 35 mph Less than 25 mph
Average traffic volume along roads	0 1 2 3 4 6	Limited Access Highway More than 15,000 veh/day Between 10,000 - 15,000 Between 5,000 - 10,000 Between 2,500 - 5,000 Less than 2,500 veh/day

Number of bike crashes along roads	1	More than 3 crashes
	3	2 crashes
	4	1 crashes
Roadway	**15 maximum points**	**Criteria**
Maximum traffic capacity allowed along roadway facilities	1	More than 3,000 veh/day
	2	Between 3,000 - 5,000
	3	Between 5,000 - 8,000
	4	Between 8,000 - 12,000
	5	Less than 12,000 veh/day
Level of Service (LOS) (average flow along roadway facilities)	1	E/F
	3	D
	5	C
	6	A/B
Number of total crashes along roadway facilities	1	More than 50 crashes
	2	Between 25 - 50 crashes
	3	Between 10 - 25 crashes
	4	Less than 10 crashes
Transit	**15 maximum points**	**Criteria**
Minimum route frequency that intersect the 5-acre grid	1	More than 60 minutes
	3	Between 30 - 60 minutes
	6	Between 20 - 30 minutes
	7	Between 10 - 20 minutes
	8	Less than 10 minutes
Number of transit stops that serve multiple routes in the 5-acre grid	4	Rail to Bus transfer point
	3	Bus to Bus transfer point

Supply and Performance Pedestrian and Bicycle

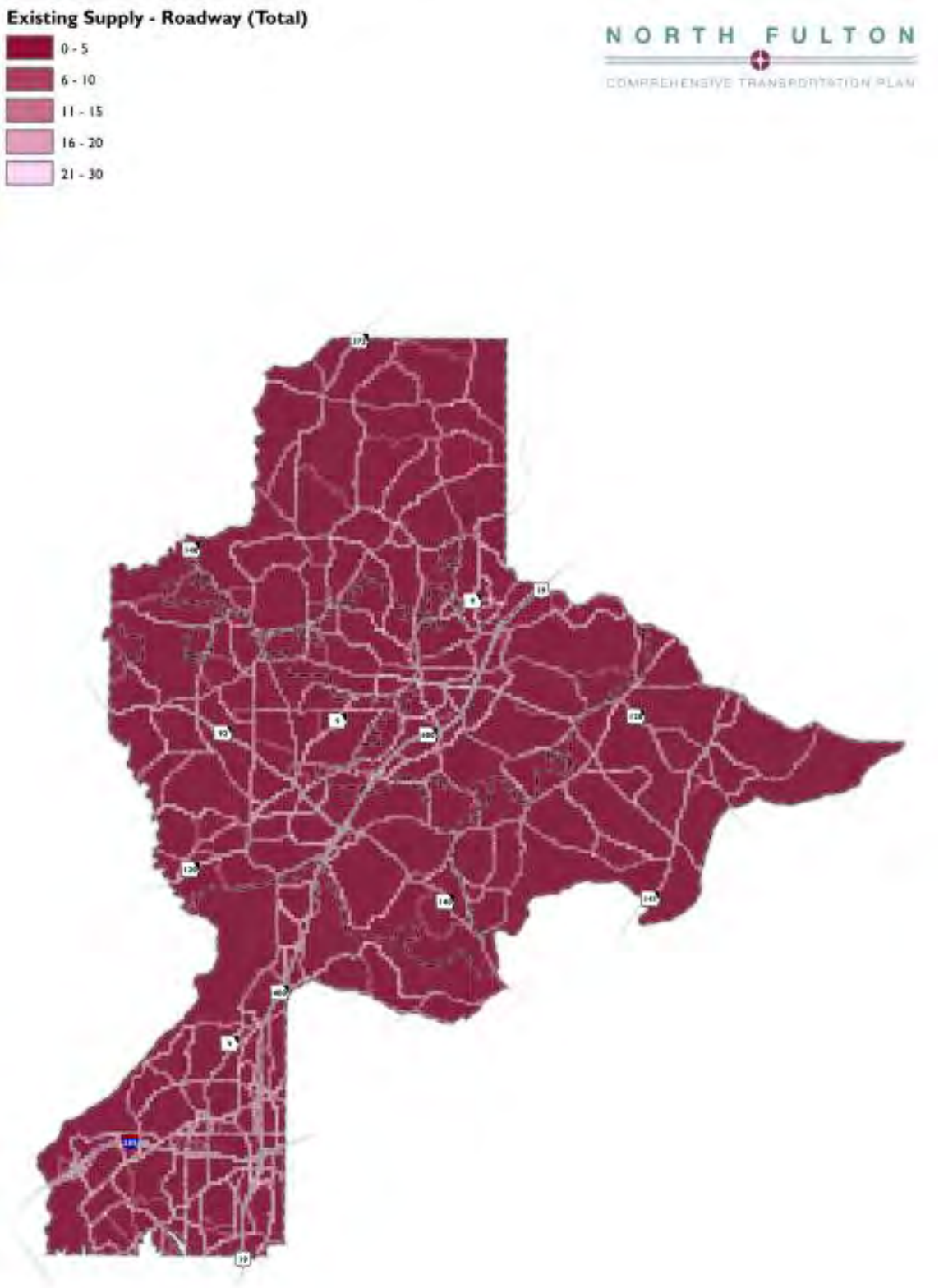
A map of the Pedestrian Existing Supply + Performance can be found below.

A map of the Bicycle Existing Supply + Performance can be found below.

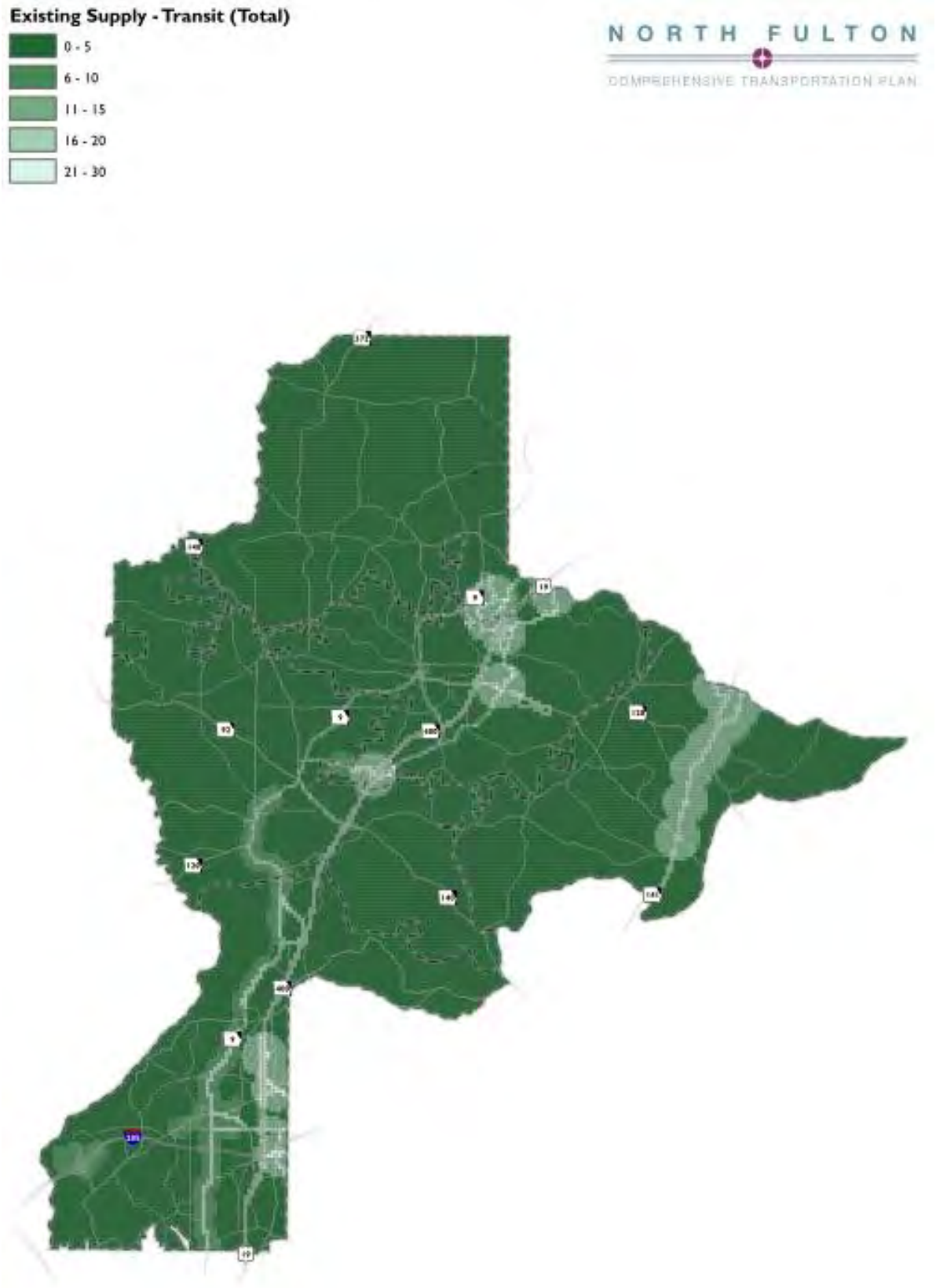


Supply and Performance Roadway and Transit

A map of the Roadway Existing Supply + Performance can be found below.



A map of the Transit Existing Supply + Performance can be found below.

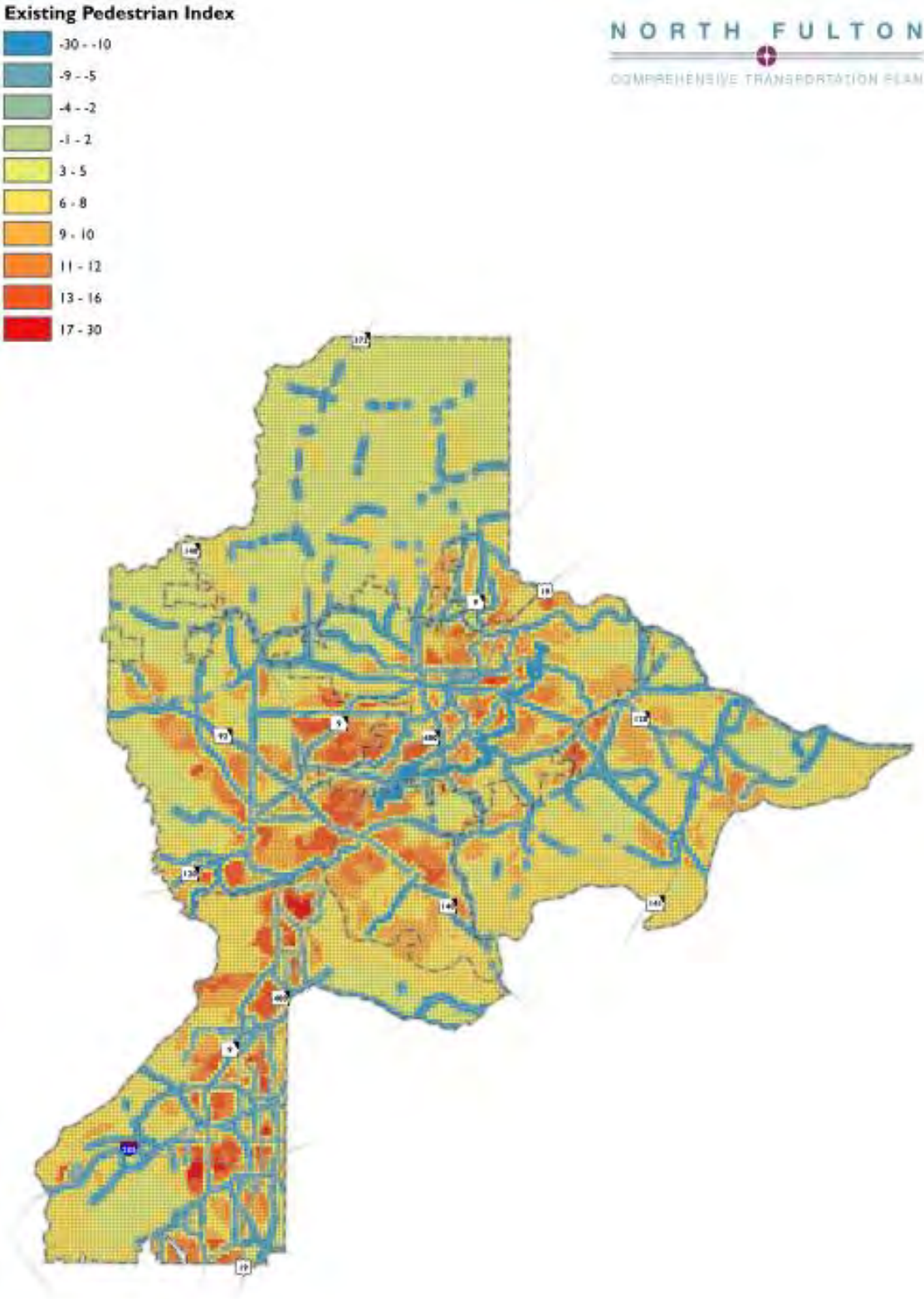


Composite

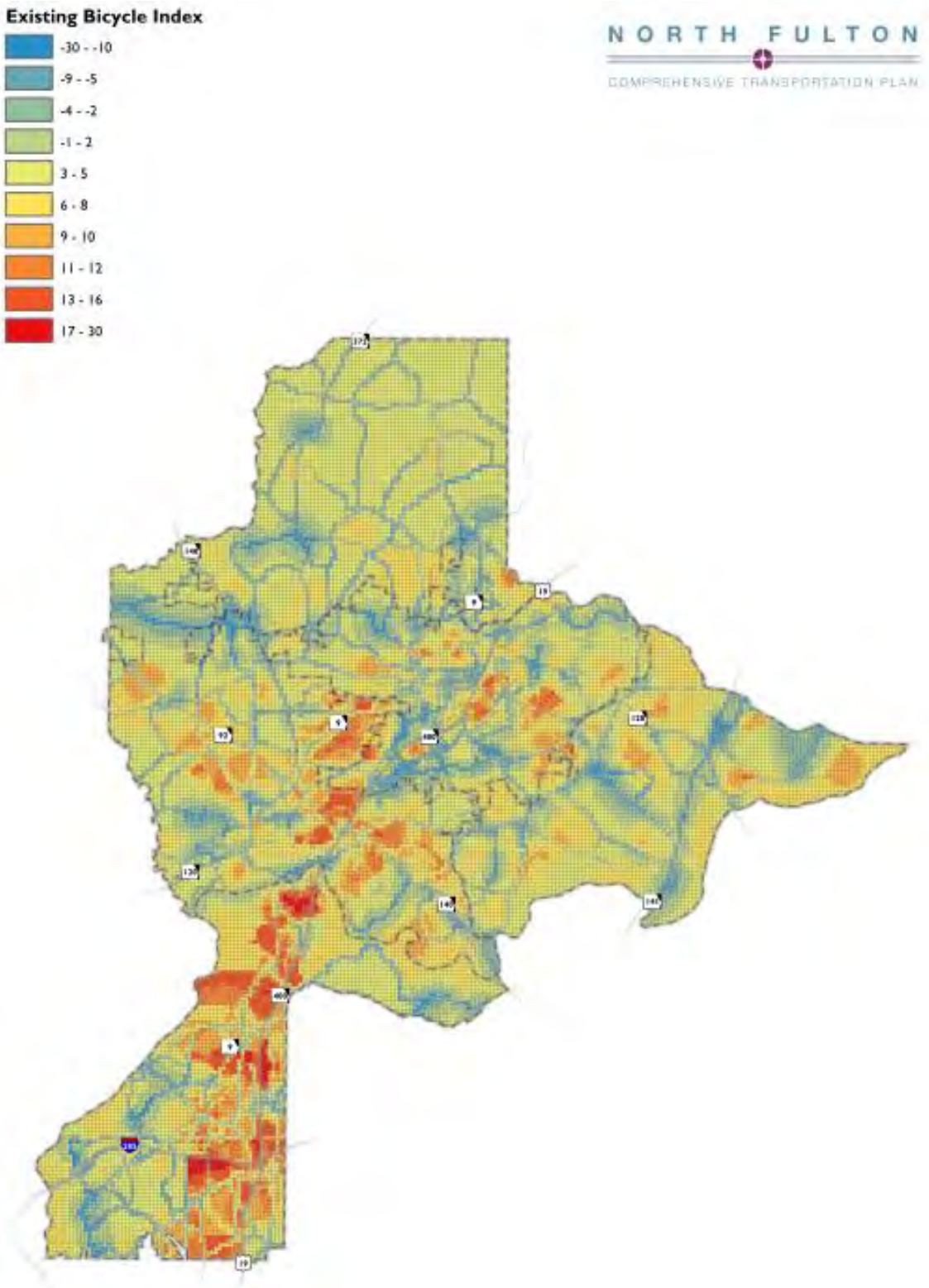
Existing Pedestrian and Bicycle Composite Index

The transportation index composite scores create a geospatial analysis of areas where propensity may not be met with the existing supply and performance of roadways. Each 5-acre grid making up North Fulton was calculated by subtracting the existing supply and performance score from the existing demand score for each mode. The lowest score a grid can obtain is -30 points, meaning those areas have low demand and high supply. The highest score a 5-acre grid can obtain is 30 points, meaning those areas have high demand and low supply. The highlighted areas that are shown on the maps provide areas of demand that need to enhanced modal facilities.

Based on the existing pedestrian index composite map, the areas of need include the Perimeter area, along GA 400, and along Holcomb Bridge Road. A map of the Existing Composite for pedestrian facilities can be found on the next page.

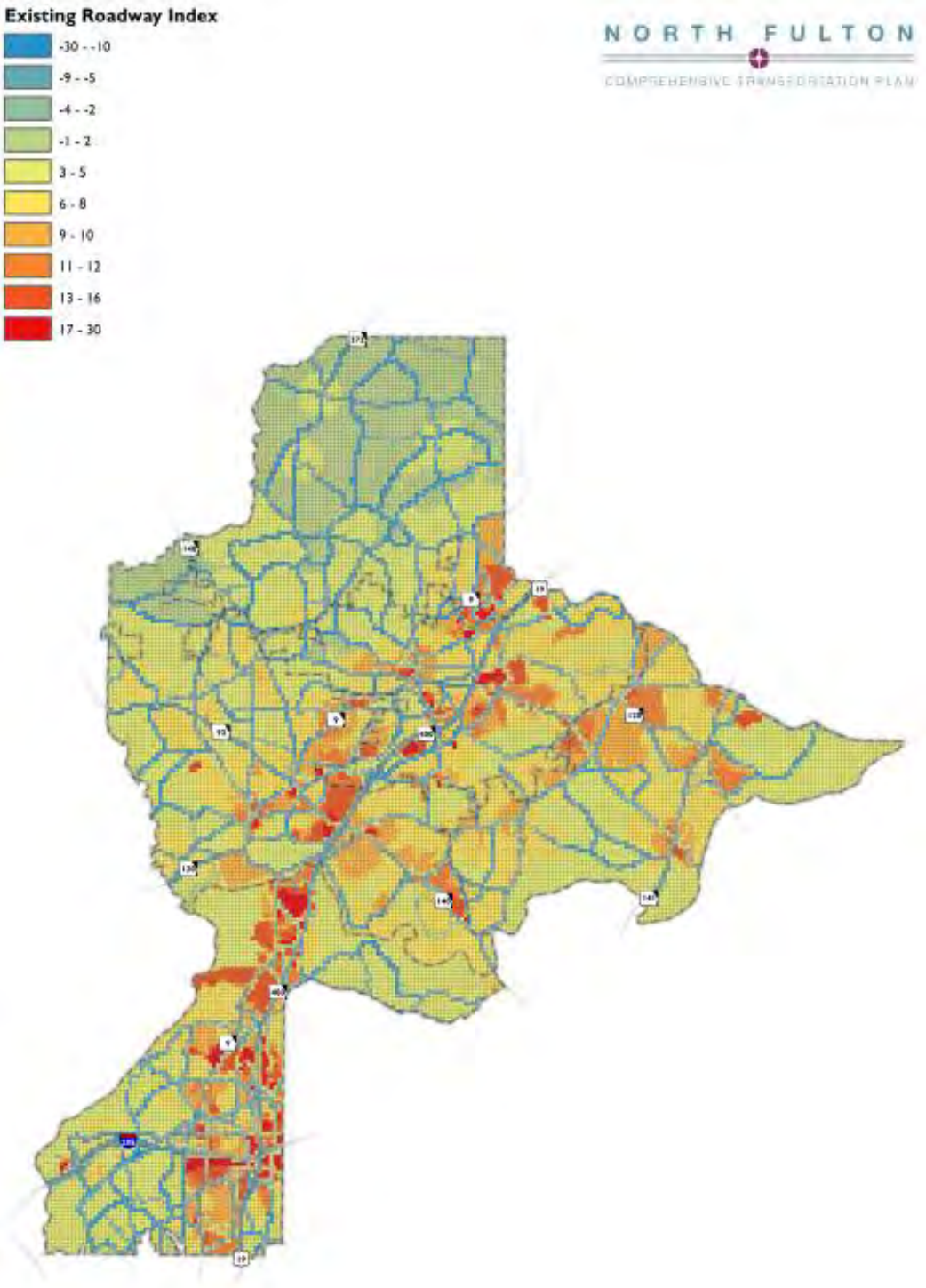

Existing Pedestrian Index
-30 - -10
-9 - -5
-4 - -2
-1 - 2
3 - 5
6 - 8
9 - 10
11 - 12
13 - 16
17 - 30

The composite bicycle index highlighted areas including the Perimeter area, along GA 400 south of Alpharetta, and along Holcomb Bridge Road. A map of the Existing Composite for bicycle facilities can be found below.

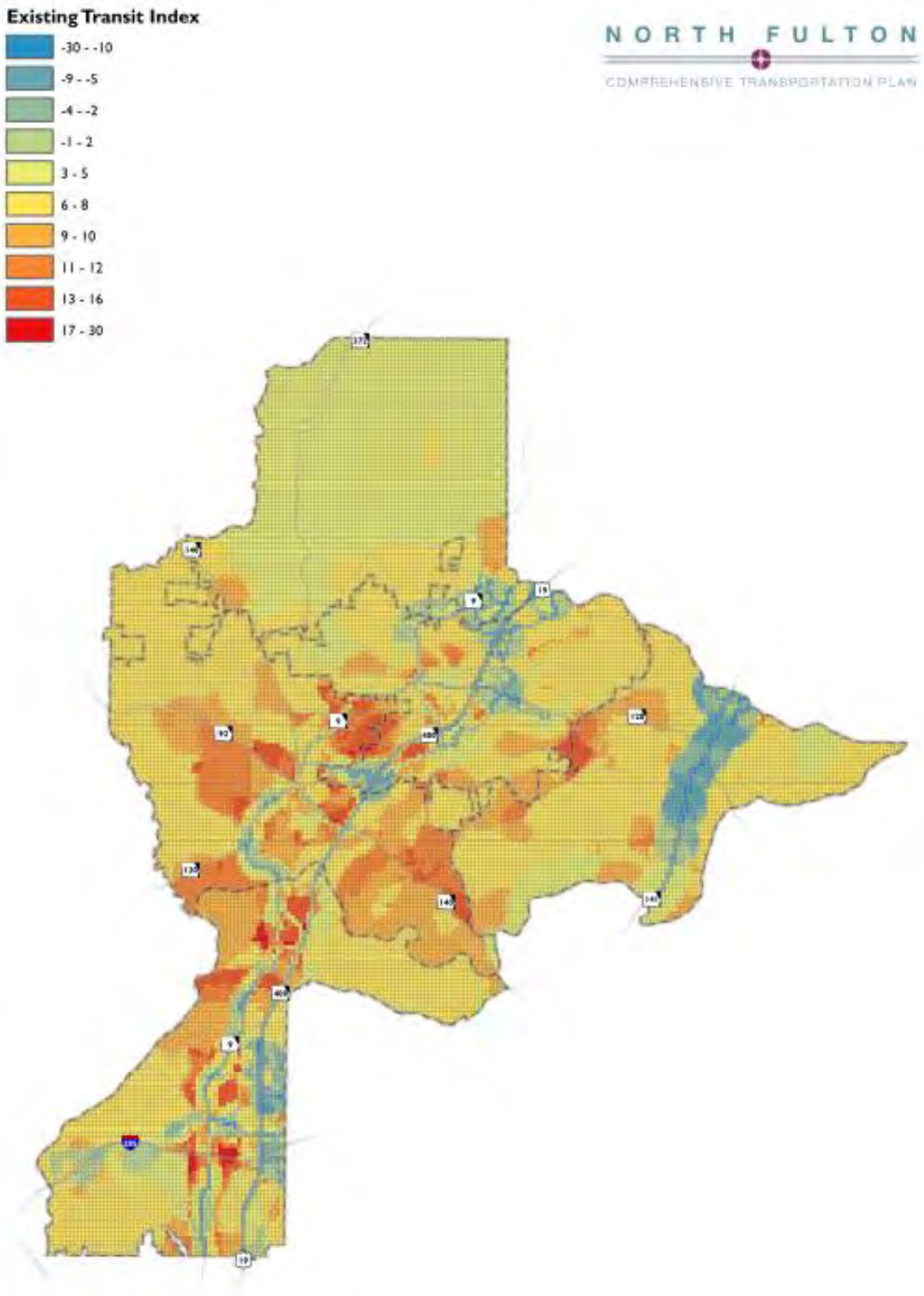


Existing Roadway and Transit Composite Index

The transportation index is just one method to analyze the roadways in North Fulton. The areas highlighted with the roadway index are along the North Fulton study network with a concentration on Perimeter, GA 400, Holcomb Bridge Road, Medlock Bridge Road, and Peachtree Industrial Boulevard. A map of the Existing Composite for roadway facilities can be found below.



The transit composite index highlights areas that demand transit services verses where existing supply currently serves. This data emphasizes the constant feedback from public meetings on common transit project areas and trends. A map of the Existing Composite for transit facilities can be found below.



Conclusion and Next Steps

The information provided from the transportation index is one of the many tools used in the Needs Assessment to visualize areas within North Fulton that needed attention in regard to projects that world address some of the unmatched propensity. This tool was used in conjunction with others to create the full universe of project considered for inclusion in the North Fulton Comprehensive Transportation Plan.

NORTH FULTON CTP

SELECT LINK ANALYSIS WITH PASSIVE LOCATION DATA

TRANSPORT FOUNDRY

Overview

This report describes an analysis of travel patterns in North Fulton County using passive location data. Passive location data refer to location points (latitude and longitude) with timestamps that are collected from in-vehicle and mobile phone devices without interaction from users. These type of data are reported to third-party companies who systematically aggregate and anonymized the data so that no individual can be identified. Because passive location data are collected from devices that are ubiquitous today, the sample size is often very robust.

The data used for this analysis comes from StreetLight Data. StreetLight Data aggregates passive location data from primarily in-vehicle global positioning system (GPS) devices. StreetLight Data provides both commercial and personal matrices that explain the flow of travel in a study region. The matrices, which are usually referred to as origin-destination matrices, aggregate observed location data into groups using trips' starting and ending points in a project-defined zone system. StreetLight Data produces two origin-destination matrices, one for personal traffic and another for commercial traffic. Because StreetLight Data produces relative relationships between trip origins and destinations rather than volume counts, personal and commercial estimates cannot be combined to describe the overall volume. These estimates are on different scales.

This analysis is part of the Needs Assessment for the North Fulton Comprehensive Transportation Plan (CTP), which examines why, how, and when people travel in North Fulton County. This analysis considers where trips at several key locations within the North Fulton region begin and end. Specifically, this is broken down into:

North Fulton County includes Alpharetta, Johns Creek, Milton, Roswell, Mountain Park, and Sandy Springs.

- The share of trips that stay within North Fulton, that begin or end in North Fulton (but not both), or that go through North Fulton (do not begin or end in North Fulton).
- The share of trips that stay within each city that make up North Fulton, that begin or end in the cities, or that go through them.
- The proportion of trips the go to or come from each zone covering all of metropolitan Atlanta.

The cities that are part of North Fulton collectively identified 57 "gates" covering key roads for this analysis. Figure 1 shows these gates, colored by the name of the city each gate resides in. Each gate is drawn using a rectangular polygon over the facility. The polygon is used to spatially query any trip that passes through the polygon sometime between its start and end. In some cases, the "gate" is composed of more than one rectangular polygon, and captures traffic traveling through any of the polygons, in either direction.

Roads are sometimes referred to as facilities.

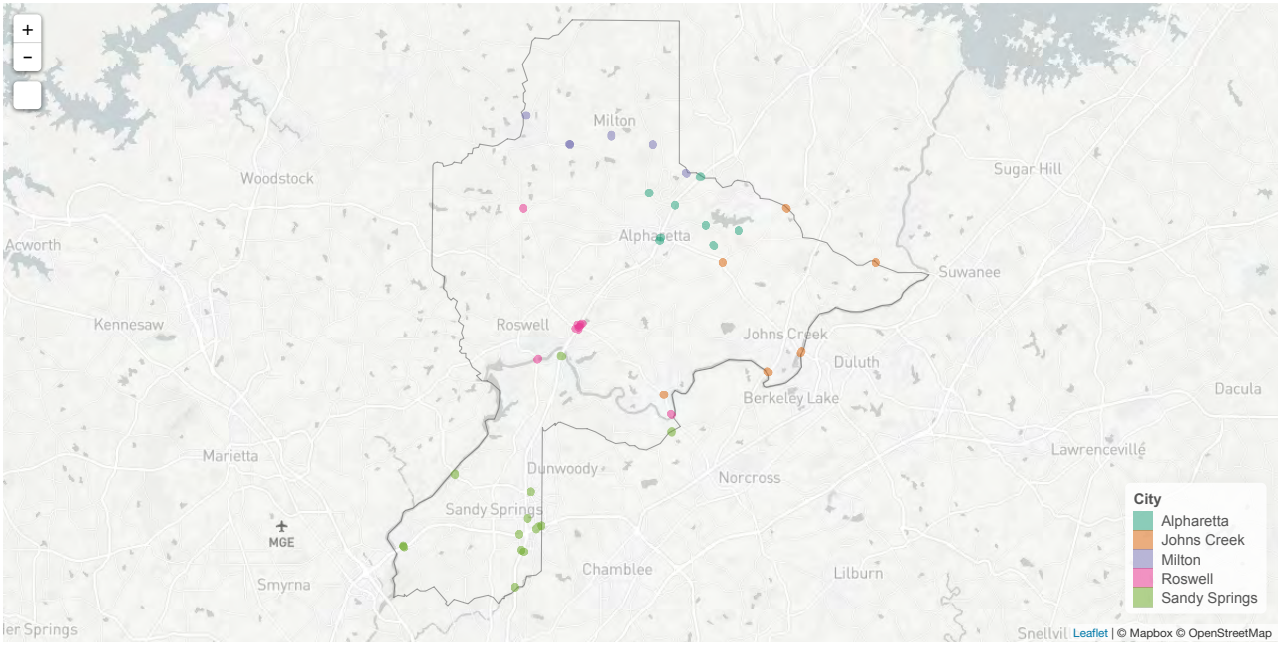


Figure 1: Gates used to conduct the select link analysis.

In concept, these gates are similar to tube counters placed across a roadway. They have the added benefit of seeing where the trips come and go rather than just enumerating the count. For each gate, one origin-destination matrix is estimated. If more than one polygon makes up a gate, trips that travel through either one or both of the polygons will be summarized into the origin-destination matrix, so that only one origin-destination matrix is produced per gate. This type of analysis is analogous to a "select link analysis" traditionally completed with a travel demand model. These types of analyses illuminate the origins and destinations of users on a particular road segment, which is helpful for the comprehensive transportation planning process.

A description of each gate is provided in a table at the end of this document.

Pass-Through Trips

A key consideration of the North Fulton Comprehensive Transportation Plan is planning for trips that stay in North Fulton (defined as local), that begin or end in North Fulton (also defined as local), or that go through it (defined as through). This section presents this analysis for some of the gates, and for collections of gates within each city. The analysis then considers the share of trips that are local to each city rather than to all of North Fulton.

The statistics shown in this section are only summarizing the traffic going through the gates. They do not speak to overall traffic in the region.

With Respect to North Fulton

Table 1 shows the type of traffic for all gates in the analysis for an average weekday. For personal trips, approximately 22% of the traffic volume for all gates are internal to North Fulton, meaning they start and end inside North Fulton County. Similarly, about 22% pass through North Fulton, neither starting nor ending in North Fulton.[1] The largest category for personal traffic are trips that have one side of the trip within North Fulton (56%), either the start or end of the trip. For commercial trips, the largest category are pass through trips when considering only the traffic through gates in this analysis.

[1] This does not mean that 22% of trips on *all* roads in North Fulton are pass through. It means that of traffic passing through the 57 gates, 22% are pass through on average.

Table 1: Percent Traffic Type, All Gates, Average Weekday, All Day

	Commercial	Personal
Internal to N.Fulton	7.50	21.70
Pass through N.Fulton	54.85	22.05
Start or end in N.Fulton	37.65	56.25

Table 2 shows the same information, but only for trips in the PM peak period. The overall breakdown is similar to the daily total, but with a slightly lower share of through trips for both personal and commercial devices.

Table 2: Percent Traffic Type, All Gates, Average Weekday, PM Peak

	Commercial	Personal
Internal to N.Fulton	7.88	24.44
Pass through N.Fulton	50.99	18.90
Start or end in N.Fulton	41.13	56.66

Table 3 breaks down the PM peak period further, dividing the gates by the city where they are located. Alpharetta, Roswell, and Milton all have high shares of trips internal to North Fulton when considering just the traffic at the 57 gates. Sandy Springs and Johns Creek have the highest share of through trips.

Table 3: Percent Traffic Type, All Gates, Average Weekday, PM Peak, Personal Only

	Alpharetta	Johns Creek	Milton	Roswell	Sandy Springs
Internal to N.Fulton	39.09	18.10	50.13	39.45	16.63
Pass through N.Fulton	9.22	15.97	6.85	7.69	25.40
Start or end in N.Fulton	51.70	65.93	43.02	52.86	57.97

Figure 2 shows the percent through trips at each gate in the peak period. A darker red indicates a higher share of through trips and a larger circle indicates the total number of personal trips (summing internal trips, through trips, and trips with one end in North Fulton).

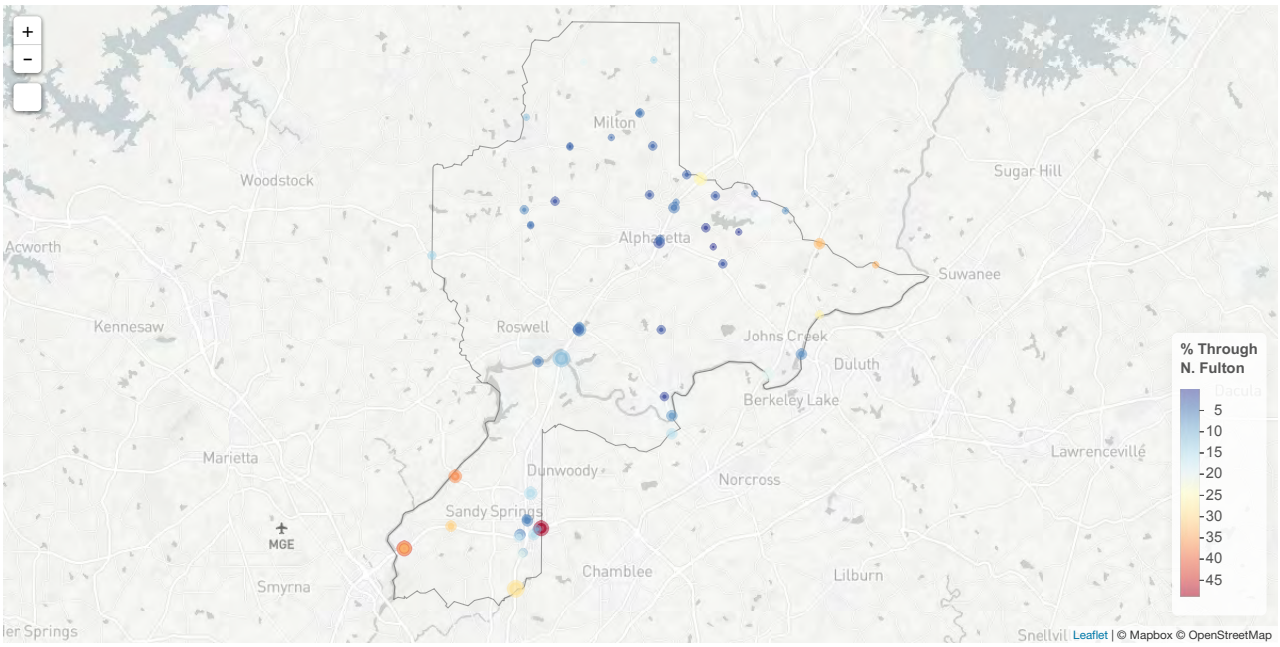


Figure 2: Percent through trips at each gate in the peak period.

Even within a small area, the percent of through trips can change dramatically with the type of roadway. Figure 3, as an example, zooms into the area around the I-285 / GA 400 interchange. There are three gates actually on the major facilities in this area: I-285 east of Peachtree Dunwoody Rd (shown as a large, darker red circle that indicates a higher volume with 48% through traffic), I-285 over the Chattahoochee River (shown as a similar sized, darker red circle[2] that indicates a similar volume with 43% through traffic), and GA 400 north of Buckhead (shown as a large, yellow circle with a popup activated that indicates the highest volume with 27% through traffic). Each of these are close to the border of North Fulton County and have a high proportion of through trips when compared with the minor facilities in this area. For example, the on and off ramps at Hammond Drive have only about 7% through trips, with the remaining 93% of traffic being local to North Fulton. This illustrates the difficulty in measuring the share of through trips at an aggregate level as was done in the analysis above, and suggests that a gate-by-gate analysis is necessary for policy decisions.

Figure 4 shows that a similar pattern, though more extreme, holds at the top of GA 400 in Alpharetta. Though GA 400 at the border

[2] The darker red circle on I-285 over Chattahoochee River is covered by a smaller, orange circle that summarizes the traffic on Powers Ferry Rd right next to I-285.

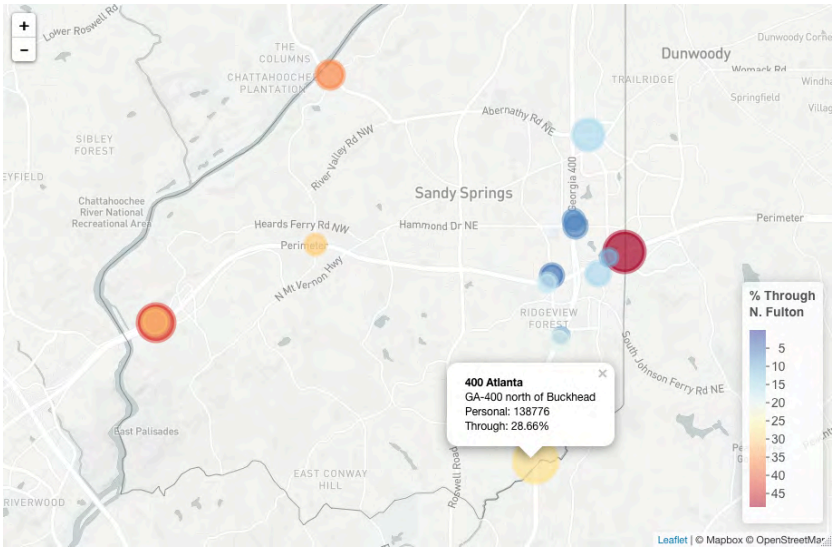


Figure 3: Percent through trips near GA 400/I-285 Interchange in the peak period.

with Forsyth County carries about 25% through trips (shown with a popup activated), the rest of the gates in view are almost entirely local traffic with only 3-5% pass-through.

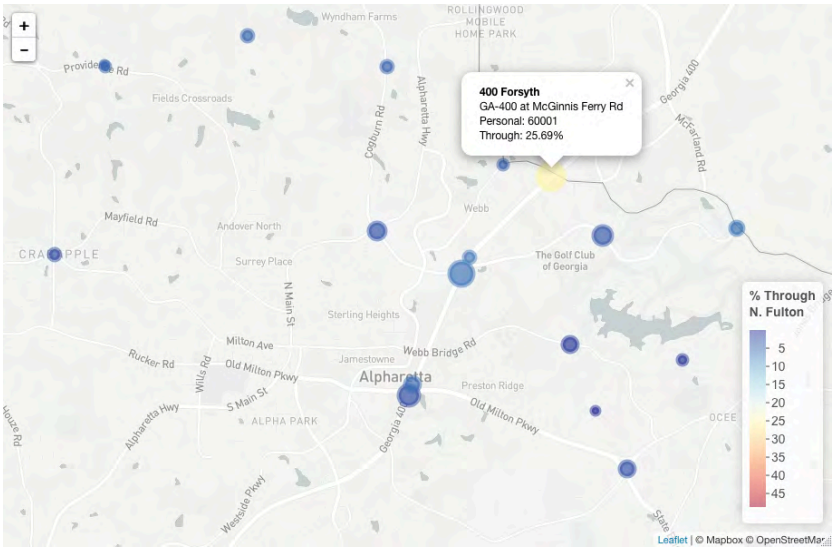


Figure 4: Percent through trips near GA 400 through Alpharetta in the peak period.

With Respect to Each City

The preceding pass-through analysis considered all of North Fulton as a single region. Another important consideration is the share of local trips to each city, in the sense that the trip starts or ends in the city where the gate is located. Figure 5 shows the city boundaries used for

this analysis. Within North Fulton, the zones roughly correspond to city boundaries; outside of the study region, the zones are counties.

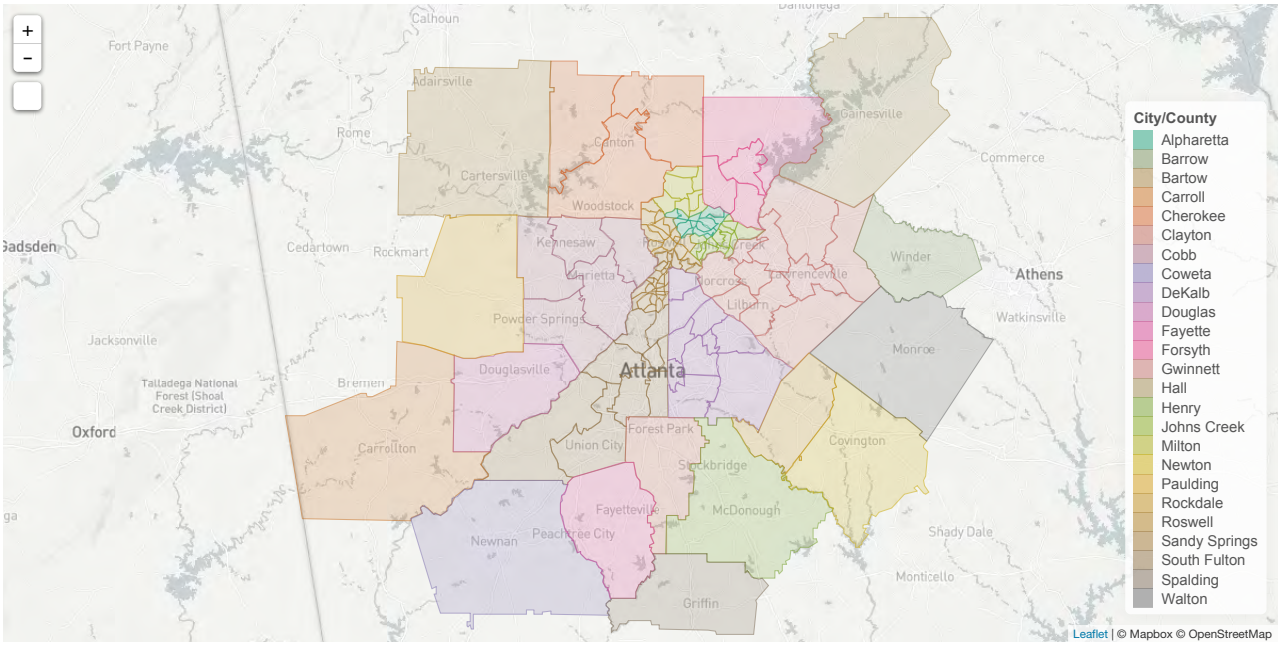


Figure 5: City boundaries approximated with the zone system in use for this analysis.

Table 4 shows the share of local trips in the weekday PM peak period passing through the gates within a city. For this table, "local" refers to the trips that are completely internal to the city as well as those that have one trip end in the city (which are split into separate categories above). As an example, consider the gates in Alpharetta: 63% of personal devices flowing through these gates have an origin or a destination (or both) within the Alpharetta zones. The city with the highest share of local personal traffic in the gates examined is Milton (75%), and the lowest is Sandy Springs (57%).

A complete breakdown of origin and destination type by city and region for each gate is provided in a table at the end of this document.

Origins and Destinations

Another consideration is where the trips through the gates start and end spatially within the Atlanta region. This is important to consider because trips from central Atlanta to Forsyth County will require different infrastructure than trips from Gwinnett to Cobb counties and trips from Milton to Roswell.

Figure 6, Figure 7, and Table 5 show where traffic going through the gate on GA 400 just before the Forsyth County border starts and ends during the PM peak period. According to this data, the largest

City	Type of Trip	Commercial	Personal
Alpharetta	Local	30.31	62.56
Alpharetta	Through	69.69	37.44
Johns Creek	Local	39.69	64.46
Johns Creek	Through	60.31	35.54
Milton	Local	58.07	73.88
Milton	Through	41.93	26.12
Roswell	Local	41.76	61.59
Roswell	Through	58.24	38.41
Sandy Springs	Local	23.15	57.34
Sandy Springs	Through	76.85	42.66

Table 4: Percent Traffic Type, All Gates, Average Weekday, PM Peak, Personal Only

share of traffic at this gate starts in Forsyth County and in Alpharetta along GA 400, with smaller contributions from Sandy Springs and central Atlanta. Conversely, about 61% of all the traffic at this gate is destined for Forsyth County, with about 12% of trips bound for Alpharetta. A surprisingly strong flow, though still relatively small, is to and from the Smyrna/Marietta area (about 3% of origins and destinations).

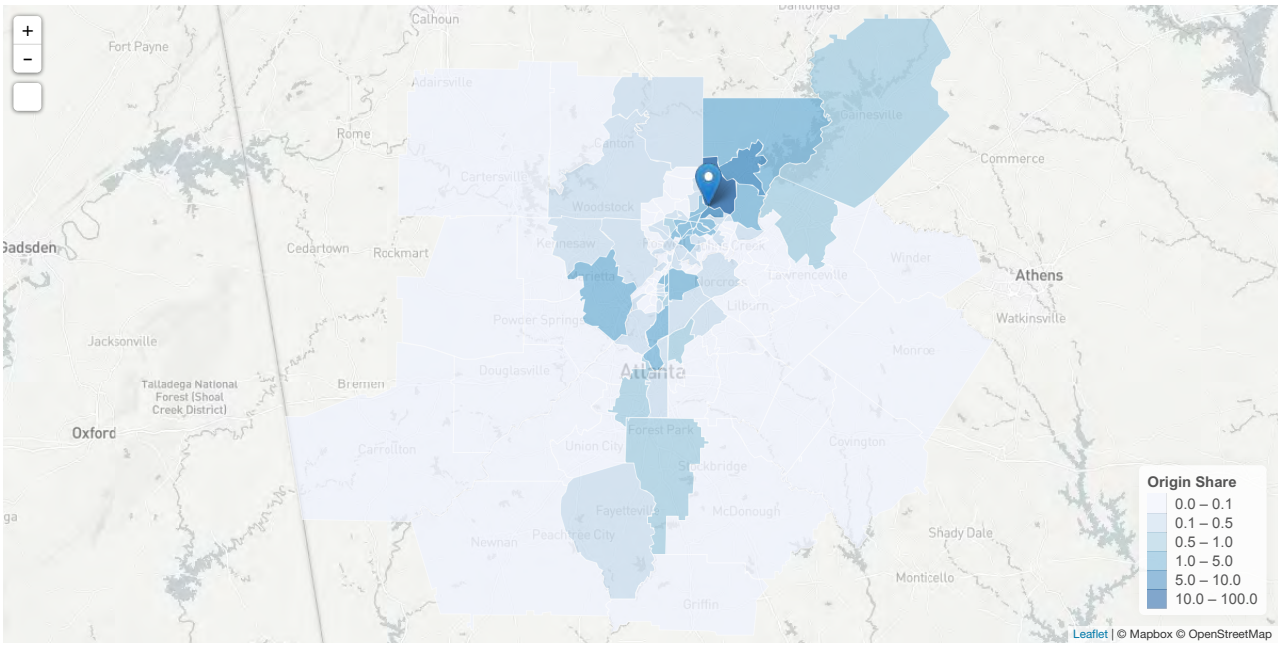


Figure 6: Proportion of trips starting in each zone that travel on GA 400 near Forsyth County in an average weekday PM peak.

Figure 8, Figure 9, and Table 6 show the same data, but for the gate on I-285 east just before the DeKalb County border. In this case, the biggest share of traffic is between DeKalb, Sandy Springs,

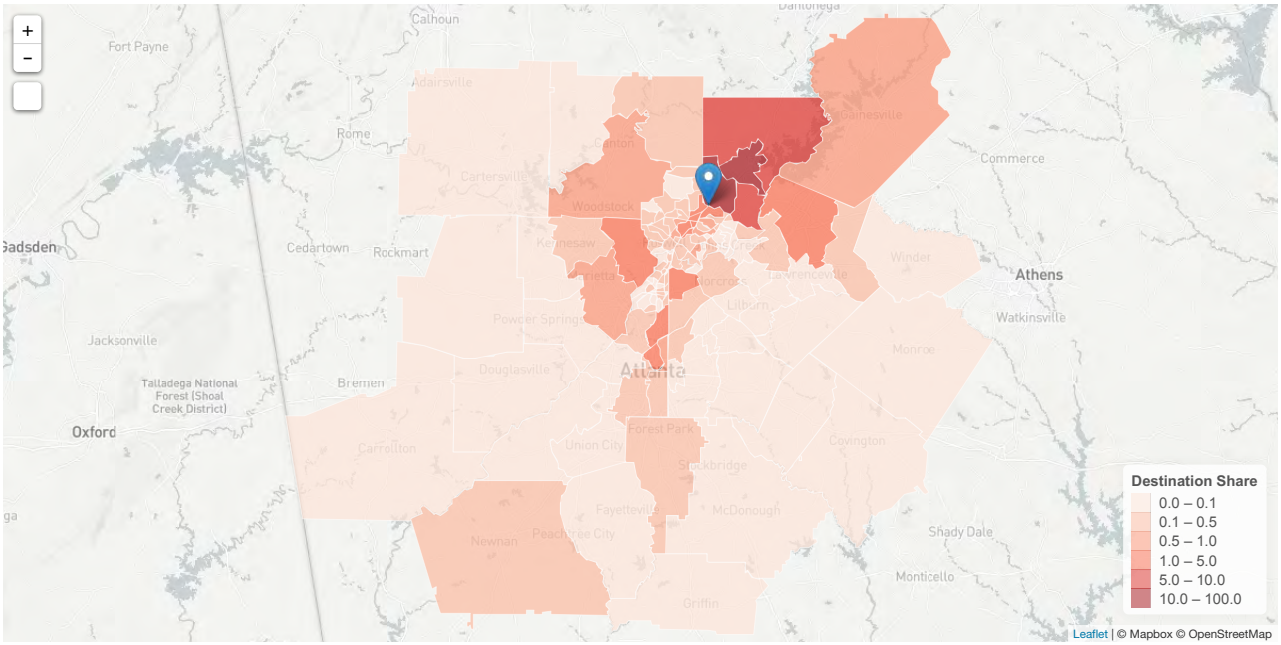


Figure 7: Proportion of trips ending in each zone that travel on GA 400 near Forsyth County.

Table 5: Largest Shares of Origins and Destinations for GA 400 at Forsyth County

City/County	Share of Trip Origins	Share of Trip Destinations
Forsyth	31.35	61.36
Alpharetta	31.04	12.00
Sandy Springs	10.83	3.33
South Fulton	5.90	4.52
Roswell	5.26	3.94
DeKalb	4.74	1.88
Milton	3.34	3.92
Cobb	3.08	3.09
Gwinnett	1.18	2.02
Johns Creek	1.08	1.85

Gwinnett, and Cobb counties. About 25% of all trips at this gate start in Sandy Springs; whereas about 33% start in DeKalb. Similarly about 19% of all trips at this gate end in Sandy Springs; whereas about 36% end in DeKalb.

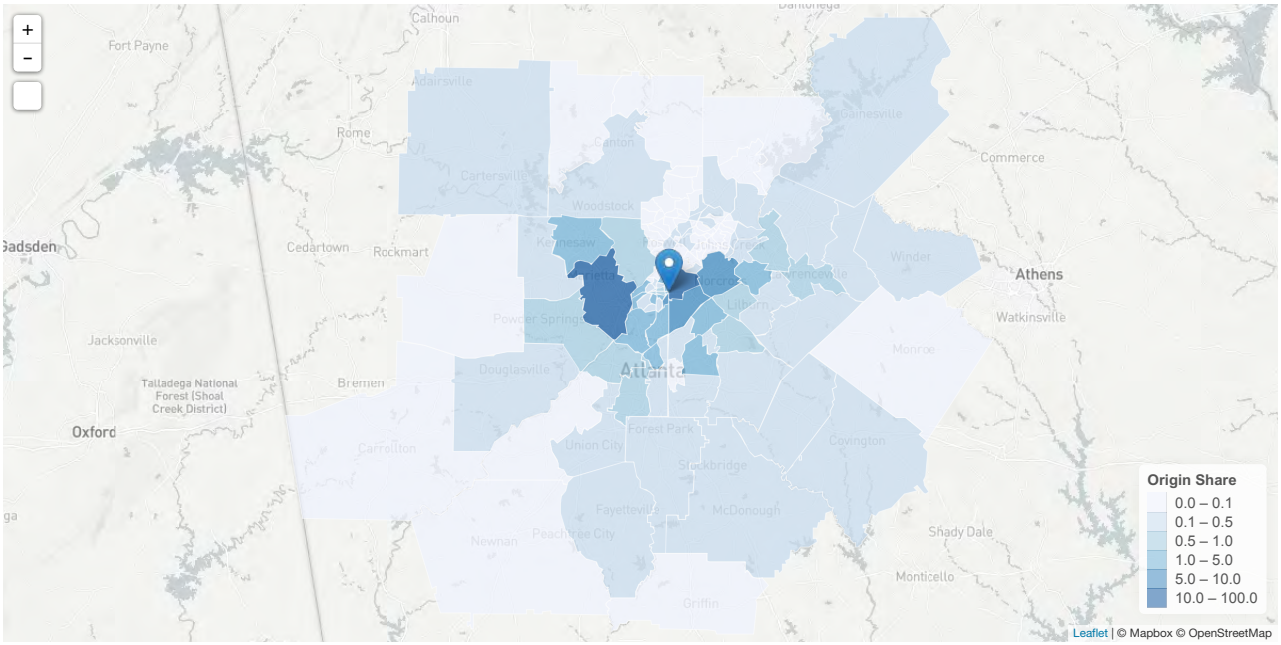


Figure 8: Proportion of trips starting in each zone that travel on I-285 near DeKalb County.

Table 6: Largest Shares of Origins and Destinations for I-285 East

City/County	Share of Trip Origins	Share of Trip Destinations
DeKalb	32.80	36.25
Sandy Springs	25.21	19.13
Cobb	13.54	13.32
Gwinnett	11.47	11.64
South Fulton	9.90	10.73
Alpharetta	1.66	1.48
Johns Creek	0.85	1.26
Roswell	0.76	1.68
Milton	0.50	0.62
Cherokee	0.47	0.64

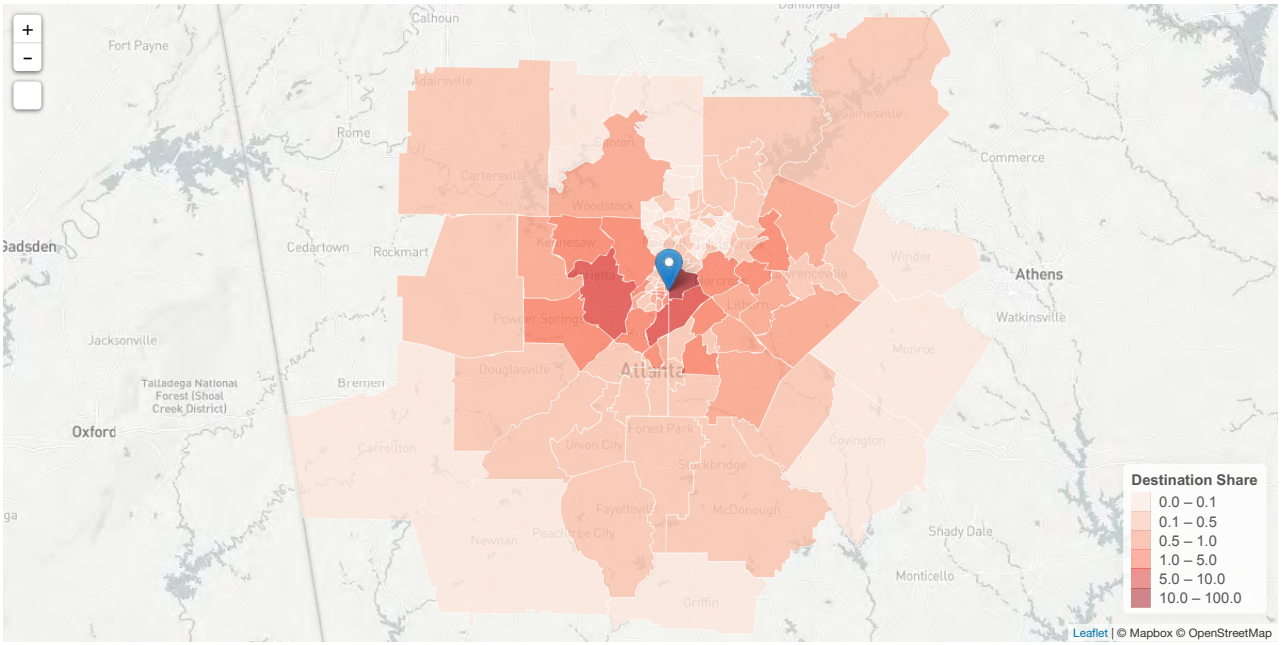


Figure 9: Proportion of trips ending in each zone that travel on I-285 near DeKalb County in an average weekday PM peak.

Summary of Traffic at Each Gate

NULL

The tables ending the report summarize the start and end locations for traffic flowing through each gate. The first table gives a text description of the location of each gate. The second table summarizes the type of traffic at each gate.

City	Gate	Description
Alpharetta	Webb Bridge	Web Bridge Rd near Twin Cedar Rd
Alpharetta	Park Bridge	Park Bridge Pkwy near Park Creek Dr
Alpharetta	Southlake	Southlake Dr near Lakewind Way
Alpharetta	Windward West	Windward Pkwy near Main St
Alpharetta	Windward Union Hill	Windward Pkwy near Union Hill Rd
Alpharetta	Windward McGinnis	Windward Pkwy at McGinnis Ferry Rd
Alpharetta	Old Milton 400 S Ramps	GA 400 ramps at Old Milton Pkwy: south on, north off
Alpharetta	Old Milton 400 N Ramps	GA 400 ramps at Old Milton Pkwy: north on, south off
Alpharetta	Windward 400 S Ramps	GA 400 ramps at Windward Pkwy: south on, north off
Alpharetta	Windward 400 N Ramps	GA 400 ramps at Windward Pkwy: north on, south off
Alpharetta	400 Forsyth	GA 400 at McGinnis Ferry Rd
Johns Creek	Jones Bridge Rd	Jones Bridge Rd at McGinnis Ferry Rd
Johns Creek	Barnwell Rd	Barnwell Rd at Holcomb Bridge Rd
Johns Creek	Kimball Bridge Rd	Kimball Bridge Rd north of State Bridge Rd
Johns Creek	Abbotts Bridge Rd	Abbots Bridge Rd over Chattahoochee
Johns Creek	Old Alabama Rd	Old Alabama Rd west of Haynes Bridge Rd
Johns Creek	State Bridge Rd	State Bridge Rd over Chattahoochee
Johns Creek	Medlock Bridge	Medlock Bridge Rd at McGinnis Ferry Rd
Johns Creek	Bell Rd	Bell Rd at McGinnis Ferry Rd
Johns Creek	Medlock Bridge Rd (S)	Medlock Bridge Rd over Chattahoochee
Milton	Cogburn	Cogburn Rd south of Hopewell Rd
Milton	Hopewell	Hopewell Rd west of Cogburn Rd
Milton	Batesville	Batesville Rd at Taylor Rd
Milton	Providence	Providence Rd east of Freemanville Rd
Milton	Morris	Morris Rd at Bethany Rd
Milton	Redd	Redd Rd between Hopewell Rd and Haygood Rd
Milton	Freemanville	Freemanville Rd north of Providence Rd
Milton	Bethany	Bethany Rd east of Cogburn
Milton	Birmingham	Birmingham Rd at Freemanville Rd
Milton	Mayfield	Mayfield Rd between Mid Broadwell Rd and Birmingham Hwy
Milton	Hopewell/Hamby	Hopewell Rd north of Hamby Rd
Roswell	Holcomb Bridge	Holcomb Bridge Rd at GA 400
Roswell	400/Holcomb N On S Off	GA 400 ramps at Holcomb Bridge Rd: north on, south off
Roswell	400/Holcomb N Off S On	GA 400 ramps at Holcomb Bridge Rd: south on, north off
Roswell	9 at Chattahoochee	Roswell Rd over Chattahoochee
Roswell	92 at Cobb	Woodstock Rd at Cobb boundary
Roswell	140 at Gwinnett	Holcomb Bridge Rd over Chattahoochee
Roswell	140 Roswell/Milton	Arnold Miller Rd between Green and Crabapple
Roswell	Houze	House Rd south of Rucker Rd
Roswell	Rucker	Rucker Rd east of Houze Rd
Sandy Springs	285 Chattahoochee	I-285 over Chattahoochee
Sandy Springs	Powers Ferry	Powers Ferry Rd over Chattahoochee

Continued on next page

City	Gate	Description
Sandy Springs	Johnson Ferry at River	Johnson Ferry Rd over Chattahoochee
Sandy Springs	400/285 Ham N On S Off	GA 400 ramps at Hammond Dr: north on, south off
Sandy Springs	Riverside at 285	Riverside Dr at I-285
Sandy Springs	Hammond Dr	Hammond Dr at GA 400
Sandy Springs	Spalding Dr	Spalding Dr near Holcomb Bridge Rd
Sandy Springs	Abernathy	Abernathy Rd east of GA 400
Sandy Springs	400 at Chattahoochee	GA 400 over Chattahoochee
Sandy Springs	Glenridge	Glenridge Dr north of I-285
Sandy Springs	Peachtree Dunwoody	Peachtree Dunwoody south of I-285
Sandy Springs	400 Atlanta	GA 400 north of Buckhead
Sandy Springs	285 East	I-285 east of Peachtree Dunwoody Rd
Sandy Springs	400/285 Glen N On S Off	GA 400 ramps at Glenridge Connector: north on, south off
Sandy Springs	400/285 Glen N Of S On	GA 400 ramps at Glenridge Connector: north off, south on
Sandy Springs	400/285 Glen W On E Off	Ramps from Glenridge Dr to I-285
Sandy Springs	400/285 PD W Of E On	Ramps from Peachtree Dunwoody Rd to I-285

Gate	City	Trip Type	AM Commercial	AM Personal	PM Commercial	PM Personal
Webb Bridge	Alpharetta	Internal to City	23.97	35.81	20.70	43.20
		Start or end in City	56.64	54.68	57.02	44.25
		Internal to N.Fulton (outside of City)	4.75	3.66	4.00	5.78
		Start or end in N.Fulton (outside of City)	9.65	4.80	11.30	5.80
		Pass through (outside of N.Fulton)	4.99	1.04	6.98	0.97
Park Bridge	Alpharetta	Internal to City	40.88	66.93	30.83	67.19
		Start or end in City	46.96	29.34	57.50	30.16
		Internal to N.Fulton (outside of City)	1.01	3.57	0.00	0.57
		Start or end in N.Fulton (outside of City)	7.09	0.16	9.17	1.97
		Pass through (outside of N.Fulton)	4.05	0.00	2.50	0.11
Southlake	Alpharetta	Internal to City	37.02	35.23	34.67	31.88
		Start or end in City	59.38	51.63	54.93	53.74
		Internal to N.Fulton (outside of City)	0.00	7.84	1.09	6.35
		Start or end in N.Fulton (outside of City)	1.44	3.98	3.28	7.24
		Pass through (outside of N.Fulton)	2.16	1.32	6.02	0.78
Windward West	Alpharetta	Internal to City	0.59	1.34	0.60	1.41
		Start or end in City	22.53	43.59	20.42	38.11
		Internal to N.Fulton (outside of City)	19.87	26.47	20.23	36.22
		Start or end in N.Fulton (outside of City)	47.04	24.66	47.13	21.24
		Pass through (outside of N.Fulton)	9.97	3.93	11.63	3.02
Windward Union Hill	Alpharetta	Internal to City	10.73	23.45	8.92	26.53
		Start or end in City	54.15	60.12	52.48	54.08
		Internal to N.Fulton (outside of City)	1.80	2.01	5.47	3.68
		Start or end in N.Fulton (outside of City)	23.72	11.20	19.93	12.41
		Pass through (outside of N.Fulton)	9.60	3.22	13.20	3.30
Windward McGinnis	Alpharetta	Internal to City	4.40	4.01	5.07	11.93
		Start or end in City	59.69	69.95	51.90	60.43
		Internal to N.Fulton (outside of City)	1.80	2.25	5.76	3.65
		Start or end in N.Fulton (outside of City)	24.23	18.03	23.04	18.90
		Pass through (outside of N.Fulton)	9.89	5.77	14.22	5.09
Old Milton 400 S Ramps	Alpharetta	Internal to City	3.18	7.52	4.15	16.18
		Start or end in City	65.62	66.90	58.92	61.97
		Internal to N.Fulton (outside of City)	4.56	8.03	6.50	8.60
		Start or end in N.Fulton (outside of City)	16.53	14.70	20.10	10.98
		Pass through (outside of N.Fulton)	10.12	2.85	10.34	2.27
Old Milton 400 N Ramps	Alpharetta	Internal to City	3.06	9.76	2.26	15.00
		Start or end in City	60.57	65.76	47.50	65.13
		Internal to N.Fulton (outside of City)	1.14	1.00	2.50	2.41
		Start or end in N.Fulton (outside of City)	18.78	15.30	26.96	12.80
		Pass through (outside of N.Fulton)	16.45	8.19	20.78	4.67
Windward 400 S Ramps	Alpharetta	Internal to City	4.22	7.79	1.92	13.10
		Start or end in City	28.32	47.53	26.73	45.36
		Internal to N.Fulton (outside of City)	9.78	11.37	11.34	13.26
		Start or end in N.Fulton (outside of City)	35.28	28.16	40.25	22.82
		Pass through (outside of N.Fulton)	22.40	5.14	19.75	5.46
Windward 400 N Ramps	Alpharetta	Internal to City	0.22	0.75	0.31	3.31

Continued on next page

Gate	City	Trip Type	AM Commercial	AM Personal	PM Commercial	PM Personal
		Start or end in City	25.57	42.58	27.28	45.40
		Internal to N.Fulton (outside of City)	0.52	0.57	1.10	1.16
		Start or end in N.Fulton (outside of City)	41.99	50.26	45.33	43.89
		Pass through (outside of N.Fulton)	31.71	5.83	25.98	6.25
400 Forsyth	Alpharetta	Internal to City	0.13	0.13	0.15	0.50
		Start or end in City	19.11	29.02	14.27	42.03
		Internal to N.Fulton (outside of City)	0.42	1.55	0.44	0.80
		Start or end in N.Fulton (outside of City)	21.05	36.05	25.70	30.97
		Pass through (outside of N.Fulton)	59.30	33.25	59.43	25.69
Jones Bridge Rd	Johns Creek	Internal to City	2.62	1.43	2.47	4.09
		Start or end in City	39.08	30.72	43.89	34.27
		Internal to N.Fulton (outside of City)	3.37	3.54	4.94	2.83
		Start or end in N.Fulton (outside of City)	39.36	52.18	35.78	50.79
		Pass through (outside of N.Fulton)	15.57	12.13	12.93	8.02
Barnwell Rd	Johns Creek	Internal to City	1.79	8.13	3.78	8.88
		Start or end in City	54.24	71.29	63.63	68.08
		Internal to N.Fulton (outside of City)	1.79	1.49	3.38	3.30
		Start or end in N.Fulton (outside of City)	33.70	17.85	24.03	18.33
		Pass through (outside of N.Fulton)	8.48	1.25	5.19	1.42
Kimball Bridge Rd	Johns Creek	Internal to City	0.57	0.74	0.87	0.54
		Start or end in City	36.64	36.48	30.61	38.70
		Internal to N.Fulton (outside of City)	13.41	24.77	15.90	30.26
		Start or end in N.Fulton (outside of City)	38.15	33.27	42.42	27.79
		Pass through (outside of N.Fulton)	11.24	4.75	10.20	2.72
Abbotts Bridge Rd	Johns Creek	Internal to City	0.12	0.80	0.26	0.79
		Start or end in City	32.05	55.39	34.04	59.73
		Internal to N.Fulton (outside of City)	0.04	0.07	0.00	0.14
		Start or end in N.Fulton (outside of City)	19.65	16.01	17.60	13.24
		Pass through (outside of N.Fulton)	48.13	27.74	48.11	26.10
Old Alabama Rd	Johns Creek	Internal to City	9.46	14.04	5.80	22.36
		Start or end in City	41.31	58.71	48.82	54.63
		Internal to N.Fulton (outside of City)	8.05	7.25	9.53	7.69
		Start or end in N.Fulton (outside of City)	29.63	16.85	27.85	12.76
		Pass through (outside of N.Fulton)	11.55	3.14	8.00	2.55
State Bridge Rd	Johns Creek	Internal to City	0.14	0.74	0.25	0.77
		Start or end in City	31.16	55.59	35.51	65.08
		Internal to N.Fulton (outside of City)	0.12	0.08	0.06	0.18
		Start or end in N.Fulton (outside of City)	42.84	34.72	37.19	26.55
		Pass through (outside of N.Fulton)	25.74	8.87	26.99	7.42
Medlock Bridge	Johns Creek	Internal to City	1.42	7.62	1.99	8.20
		Start or end in City	22.88	44.76	24.46	55.48
		Internal to N.Fulton (outside of City)	0.07	0.05	0.07	0.02
		Start or end in N.Fulton (outside of City)	4.64	5.11	4.96	3.53
		Pass through (outside of N.Fulton)	70.98	42.46	68.53	32.78
Bell Rd	Johns Creek	Internal to City	3.95	9.94	2.90	10.63
		Start or end in City	63.91	36.95	55.12	50.81

Continued on next page

Gate	City	Trip Type	AM Commercial	AM Personal	PM Commercial	PM Personal
		Start or end in N.Fulton (outside of City)	2.51	3.87	5.94	4.86
		Pass through (outside of N.Fulton)	29.64	49.24	36.04	33.69
Medlock Bridge Rd (S)	Johns Creek	Internal to City	0.02	0.58	0.21	0.48
		Start or end in City	43.31	63.85	44.57	70.23
		Internal to N.Fulton (outside of City)	0.05	0.04	0.09	0.02
		Start or end in N.Fulton (outside of City)	12.44	12.61	12.81	9.00
		Pass through (outside of N.Fulton)	44.18	22.92	42.32	20.26
Cogburn	Milton	Internal to City	14.30	25.75	12.88	37.36
		Start or end in City	56.28	53.18	56.98	46.39
		Internal to N.Fulton (outside of City)	0.15	0.38	0.39	0.10
		Start or end in N.Fulton (outside of City)	9.31	13.40	11.71	10.54
		Pass through (outside of N.Fulton)	19.95	7.29	18.04	5.61
Hopewell	Milton	Internal to City	8.74	11.89	11.06	17.04
		Start or end in City	45.57	51.40	50.58	49.65
		Internal to N.Fulton (outside of City)	0.11	0.61	0.40	0.28
		Start or end in N.Fulton (outside of City)	24.36	31.97	22.89	27.02
		Pass through (outside of N.Fulton)	21.22	4.14	15.06	6.02
Batesville	Milton	Internal to City	0.17	1.38	0.63	1.60
		Start or end in City	43.37	30.16	50.21	36.69
		Internal to N.Fulton (outside of City)	0.17	0.00	0.42	0.15
		Start or end in N.Fulton (outside of City)	27.34	54.72	25.45	49.66
		Pass through (outside of N.Fulton)	28.95	13.73	23.29	11.89
Providence	Milton	Internal to City	23.34	20.72	24.41	31.25
		Start or end in City	47.13	50.88	50.69	49.18
		Internal to N.Fulton (outside of City)	0.27	0.53	0.74	0.33
		Start or end in N.Fulton (outside of City)	12.35	22.36	12.62	14.86
		Pass through (outside of N.Fulton)	16.92	5.51	11.54	4.38
Morris	Milton	Internal to City	2.65	3.46	3.83	11.18
		Start or end in City	52.23	68.79	48.44	71.25
		Internal to N.Fulton (outside of City)	2.07	7.14	0.85	1.21
		Start or end in N.Fulton (outside of City)	33.24	14.46	36.33	12.55
		Pass through (outside of N.Fulton)	9.81	6.15	10.55	3.81
Redd	Milton	Internal to City	12.89	23.50	16.24	27.79
		Start or end in City	49.35	52.71	50.29	52.30
		Internal to N.Fulton (outside of City)	0.22	0.31	0.22	0.06
		Start or end in N.Fulton (outside of City)	11.67	16.38	16.61	15.53
		Pass through (outside of N.Fulton)	25.86	7.10	16.64	4.33
Freemanville	Milton	Internal to City	16.01	20.26	17.13	34.54
		Start or end in City	58.44	65.31	56.44	52.19
		Internal to N.Fulton (outside of City)	0.50	0.60	0.74	0.30
		Start or end in N.Fulton (outside of City)	11.06	10.81	13.06	8.96
		Pass through (outside of N.Fulton)	14.00	3.03	12.63	4.01
Bethany	Milton	Internal to City	11.84	36.60	15.32	45.49
		Start or end in City	49.11	49.08	50.04	41.38
		Internal to N.Fulton (outside of City)	0.24	0.33	0.22	0.31
		Start or end in N.Fulton (outside of City)	10.38	7.19	15.21	8.82

Continued on next page

Gate	City	Trip Type	AM Commercial	AM Personal	PM Commercial	PM Personal
		Pass through (outside of N.Fulton)	28.42	6.80	19.23	4.00
Birmingham	Milton	Internal to City	7.42	12.13	8.57	23.47
		Start or end in City	38.75	30.98	38.22	36.27
		Internal to N.Fulton (outside of City)	0.09	0.00	0.14	0.07
		Start or end in N.Fulton (outside of City)	5.90	25.44	6.44	20.25
		Pass through (outside of N.Fulton)	47.84	31.44	46.63	19.94
Mayfield	Milton	Internal to City	3.76	8.38	4.13	10.28
		Start or end in City	42.46	51.82	37.41	51.65
		Internal to N.Fulton (outside of City)	6.93	16.39	6.05	22.08
		Start or end in N.Fulton (outside of City)	23.40	19.98	37.49	13.56
		Pass through (outside of N.Fulton)	23.45	3.43	14.92	2.43
Hopewell/Hamby	Milton	Internal to City	6.05	15.56	7.76	19.27
		Start or end in City	41.28	47.08	48.09	47.20
		Start or end in N.Fulton (outside of City)	13.54	22.08	13.02	19.00
		Pass through (outside of N.Fulton)	39.13	15.28	31.13	14.53
Holcomb Bridge	Roswell	Internal to City	4.70	15.68	7.27	21.43
		Start or end in City	42.05	47.46	44.14	54.50
		Internal to N.Fulton (outside of City)	2.01	8.80	1.88	4.31
		Start or end in N.Fulton (outside of City)	18.54	19.32	15.97	11.17
		Pass through (outside of N.Fulton)	32.69	8.73	30.74	8.59
400/Holcomb N On S Off	Roswell	Internal to City	1.18	6.67	2.05	12.67
		Start or end in City	32.21	49.81	36.84	57.57
		Internal to N.Fulton (outside of City)	3.54	4.82	2.22	5.28
		Start or end in N.Fulton (outside of City)	24.72	26.85	23.76	16.88
		Pass through (outside of N.Fulton)	38.36	11.85	35.13	7.59
400/Holcomb N Off S On	Roswell	Internal to City	0.27	3.03	0.43	7.00
		Start or end in City	56.08	59.02	59.77	67.47
		Internal to N.Fulton (outside of City)	3.17	11.45	3.93	8.56
		Start or end in N.Fulton (outside of City)	23.95	20.97	17.19	12.78
		Pass through (outside of N.Fulton)	16.52	5.53	18.69	4.19
9 at Chattahoochee	Roswell	Internal to City	0.18	0.25	0.43	0.39
		Start or end in City	39.93	60.16	39.90	67.57
		Internal to N.Fulton (outside of City)	13.32	10.46	9.27	5.18
		Start or end in N.Fulton (outside of City)	33.17	20.08	36.92	20.12
		Pass through (outside of N.Fulton)	13.40	9.04	13.47	6.75
92 at Cobb	Roswell	Internal to City	0.34	0.67	0.45	0.85
		Start or end in City	34.19	40.40	36.89	55.76
		Internal to N.Fulton (outside of City)	0.10	0.02	0.05	0.08
		Start or end in N.Fulton (outside of City)	31.00	41.08	30.02	29.16
		Pass through (outside of N.Fulton)	34.36	17.83	32.60	14.15
140 at Gwinnett	Roswell	Internal to City	0.04	0.12	0.02	0.08
		Start or end in City	30.81	30.72	32.79	32.47
		Internal to N.Fulton (outside of City)	1.60	11.82	1.90	7.07
		Start or end in N.Fulton (outside of City)	29.07	48.56	32.81	52.16
		Pass through (outside of N.Fulton)	38.49	8.79	32.48	8.22
140 Roswell/Milton	Roswell	Internal to City	1.93	7.12	3.35	6.74

Continued on next page

Gate	City	Trip Type	AM Commercial	AM Personal	PM Commercial	PM Personal
		Start or end in City	24.20	32.81	28.48	41.86
		Internal to N.Fulton (outside of City)	3.67	10.00	2.83	10.15
		Start or end in N.Fulton (outside of City)	36.98	37.98	36.74	34.27
		Pass through (outside of N.Fulton)	33.22	12.09	28.60	6.98
400 at Chattahoochee	Roswell	Internal to City	0.07	0.27	0.09	0.25
		Start or end in City	14.91	36.18	19.82	40.42
		Internal to N.Fulton (outside of City)	0.15	0.27	0.17	0.25
		Start or end in N.Fulton (outside of City)	41.88	49.81	39.32	47.44
		Pass through (outside of N.Fulton)	42.99	13.46	40.60	11.64
Houze	Roswell	Internal to City	4.91	8.94	7.40	18.67
		Start or end in City	27.25	35.94	41.34	47.86
		Internal to N.Fulton (outside of City)	5.55	15.11	3.88	10.43
		Start or end in N.Fulton (outside of City)	23.77	31.52	28.92	19.12
		Pass through (outside of N.Fulton)	38.52	8.49	18.47	3.92
Rucker	Roswell	Internal to City	0.84	3.88	1.27	7.87
		Start or end in City	24.61	38.42	26.50	43.99
		Internal to N.Fulton (outside of City)	5.96	7.91	4.77	12.40
		Start or end in N.Fulton (outside of City)	47.83	40.46	40.97	29.66
		Pass through (outside of N.Fulton)	20.76	9.33	26.48	6.08
9 at Chattahoochee	Sandy Springs	Internal to City	0.18	0.25	0.43	0.39
		Start or end in City	39.93	60.16	39.90	67.57
		Internal to N.Fulton (outside of City)	13.32	10.46	9.27	5.18
		Start or end in N.Fulton (outside of City)	33.17	20.08	36.92	20.12
		Pass through (outside of N.Fulton)	13.40	9.04	13.47	6.75
285 Chattahoochee	Sandy Springs	Internal to City	0.03	0.50	0.06	0.83
		Start or end in City	13.17	43.38	15.21	45.15
		Internal to N.Fulton (outside of City)	0.01	0.05	0.01	0.04
		Start or end in N.Fulton (outside of City)	7.48	12.38	6.17	10.82
		Pass through (outside of N.Fulton)	79.31	43.70	78.55	43.17
Powers Ferry	Sandy Springs	Internal to City	2.10	2.18	1.98	3.43
		Start or end in City	38.46	48.94	36.11	57.20
		Internal to N.Fulton (outside of City)	0.00	0.01	0.00	0.01
		Start or end in N.Fulton (outside of City)	5.45	10.77	3.28	6.61
		Pass through (outside of N.Fulton)	53.99	38.10	58.63	32.74
Johnson Ferry at River	Sandy Springs	Internal to City	1.81	2.73	2.12	2.18
		Start or end in City	44.97	52.15	44.57	56.55
		Internal to N.Fulton (outside of City)	0.04	0.01	0.03	0.00
		Start or end in N.Fulton (outside of City)	2.12	3.33	6.42	4.46
		Pass through (outside of N.Fulton)	51.06	41.78	46.85	36.81
400/285 Ham N On S Off	Sandy Springs	Internal to City	5.31	12.77	5.80	21.88
		Start or end in City	35.80	58.92	43.76	52.06
		Internal to N.Fulton (outside of City)	0.06	0.12	0.31	0.09
		Start or end in N.Fulton (outside of City)	29.16	18.19	23.12	18.84
		Pass through (outside of N.Fulton)	29.67	10.00	27.02	7.13
Riverside at 285	Sandy Springs	Internal to City	6.50	22.80	9.11	21.53
		Start or end in City	58.42	46.21	50.03	42.56

Continued on next page

Gate	City	Trip Type	AM Commercial	AM Personal	PM Commercial	PM Personal
		Internal to N.Fulton (outside of City)	0.00	0.06	0.05	0.00
		Start or end in N.Fulton (outside of City)	1.54	3.24	3.61	5.12
		Pass through (outside of N.Fulton)	33.53	27.70	37.20	30.79
Hammond Dr	Sandy Springs	Internal to City	22.53	25.02	11.89	34.56
		Start or end in City	57.29	57.18	60.27	52.48
		Internal to N.Fulton (outside of City)	0.00	0.05	0.09	0.04
		Start or end in N.Fulton (outside of City)	6.81	7.38	10.54	6.37
		Pass through (outside of N.Fulton)	13.37	10.37	17.22	6.55
Spalding Dr	Sandy Springs	Internal to City	1.58	1.76	1.11	5.82
		Start or end in City	35.50	46.73	35.15	43.56
		Internal to N.Fulton (outside of City)	0.14	0.18	0.09	0.16
		Start or end in N.Fulton (outside of City)	33.62	38.23	36.03	34.07
		Pass through (outside of N.Fulton)	29.17	13.09	27.63	16.39
Abernathy	Sandy Springs	Internal to City	8.67	11.61	10.34	17.79
		Start or end in City	60.37	62.00	52.05	54.44
		Internal to N.Fulton (outside of City)	0.09	0.04	0.11	0.03
		Start or end in N.Fulton (outside of City)	7.88	8.04	8.39	12.08
		Pass through (outside of N.Fulton)	22.99	18.31	29.10	15.66
400 at Chattahoochee	Sandy Springs	Internal to City	0.07	0.27	0.09	0.25
		Start or end in City	14.91	36.18	19.82	40.42
		Internal to N.Fulton (outside of City)	0.15	0.27	0.17	0.25
		Start or end in N.Fulton (outside of City)	41.88	49.81	39.32	47.44
		Pass through (outside of N.Fulton)	42.99	13.46	40.60	11.64
Glenridge	Sandy Springs	Internal to City	25.05	31.04	16.54	38.67
		Start or end in City	63.19	61.46	59.35	53.44
		Internal to N.Fulton (outside of City)	0.00	0.00	0.15	0.00
		Start or end in N.Fulton (outside of City)	2.24	1.78	5.37	2.73
		Pass through (outside of N.Fulton)	9.52	5.72	18.59	5.17
Peachtree Dunwoody	Sandy Springs	Internal to City	17.29	22.07	9.80	21.81
		Start or end in City	63.06	65.37	61.32	61.15
		Internal to N.Fulton (outside of City)	0.00	0.01	0.00	0.00
		Start or end in N.Fulton (outside of City)	1.40	1.26	2.55	1.72
		Pass through (outside of N.Fulton)	18.25	11.29	26.33	15.32
400 Atlanta	Sandy Springs	Internal to City	0.06	0.11	0.13	0.17
		Start or end in City	18.84	37.21	24.00	44.03
		Internal to N.Fulton (outside of City)	0.04	0.10	0.07	0.05
		Start or end in N.Fulton (outside of City)	33.62	30.55	29.79	27.09
		Pass through (outside of N.Fulton)	47.43	32.04	46.00	28.66
285 East	Sandy Springs	Internal to City	0.11	0.75	0.09	1.04
		Start or end in City	12.74	34.56	13.00	42.26
		Internal to N.Fulton (outside of City)	0.00	0.01	0.02	0.03
		Start or end in N.Fulton (outside of City)	6.27	9.04	5.86	7.95
		Pass through (outside of N.Fulton)	80.88	55.64	81.03	48.73
400/285 Glen N On S Off	Sandy Springs	Internal to City	9.21	14.28	5.19	22.61
		Start or end in City	51.36	57.91	48.96	53.75
		Internal to N.Fulton (outside of City)	0.00	0.07	0.00	0.04

Continued on next page

Gate	City	Trip Type	AM Commercial	AM Personal	PM Commercial	PM Personal
		Start or end in N.Fulton (outside of City)	12.12	15.19	10.93	15.77
		Pass through (outside of N.Fulton)	27.30	12.55	34.91	7.84
400/285 Glen N Of S On	Sandy Springs	Internal to City	0.98	3.01	0.82	4.42
		Start or end in City	59.75	75.78	61.90	74.22
		Start or end in N.Fulton (outside of City)	1.30	1.04	2.46	0.91
		Pass through (outside of N.Fulton)	37.97	20.18	34.81	20.45
400/285 Glen W On E Off	Sandy Springs	Internal to City	5.65	19.79	5.60	26.84
		Start or end in City	58.26	57.30	54.99	52.56
		Internal to N.Fulton (outside of City)	0.00	0.00	0.06	0.00
		Start or end in N.Fulton (outside of City)	1.81	0.41	4.88	2.94
		Pass through (outside of N.Fulton)	34.28	22.51	34.46	17.66
400/285 PD W Of E On	Sandy Springs	Internal to City	0.53	3.10	0.92	3.36
		Start or end in City	55.15	78.16	59.40	79.08
		Internal to N.Fulton (outside of City)	0.00	0.05	0.16	0.00
		Start or end in N.Fulton (outside of City)	15.98	6.22	7.14	6.90
		Pass through (outside of N.Fulton)	28.34	12.48	32.39	10.67