



North Fulton County Transportation Resource Implementation Program (TRIP)

Needs Assessment Report



ATLANTA REGIONAL COMMISSION



April 2010

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



TABLE OF CONTENTS

Executive Summary v

1.0 Setting the Stage 1

2.0 Evaluation Framework and Tools..... 9

 2.1 Report Structure..... 9

 2.2 Vision, Goals, and Objectives..... 9

 2.3 Overview of Tools Used..... 11

3.0 Coordination, Initiatives, and Public Involvement..... 12

 3.1 Coordination Meetings..... 12

 3.2 Regionally Significant Intersections & Corridors..... 13

 3.3 Early Opportunities 14

 3.4 Public Charrettes..... 15

4.0 Land Use and Market Assessment 17

 4.1 Land Use and Accessibility..... 17

 4.1.1 Method Rationale and Application..... 17

 4.1.2 Identified Needs 20

 4.1.3 Potential Zoning Incompatibility..... 28

 4.2 Market 30

 4.2.1 North Fulton Market Summary 30

 4.2.2 North Fulton Market Key Findings..... 39

5.0 Roadway Vehicular Needs..... 49

 5.1 Introduction 49

 5.2 AADT – Growth on Key Corridors..... 50

 5.3 Crash Analysis 53

 5.4 Bridges..... 63

 5.5 Freight..... 65

 5.6 Access Management along Arterials 66

 5.7 Roadway Connectivity 72

 5.8 ARC Travel Demand Model..... 73

6.0 Pedestrian Needs..... 81

 6.1 Elements of a Pedestrian-Friendly, Active Streetscape..... 82

 6.2 Pedestrian Needs Based on Performance Measures 87

 6.3 ARC’s Potential Walking Demand Measure 89

7.0 Bicycle Needs..... 91

 7.1 Elements of a Bicycle-Friendly, Active Streetscape..... 91

 7.2 Bicycle Needs Based on Performance Measures 94

 7.3 Off-Road and Major Facility Gap Analysis 96

8.0 Transit Needs..... 97



8.1 Summary of Results..... 97

8.2 Demographic Analysis 98

8.3 Recent Population and Employment Growth Trends..... 104

8.4 ARC Travel Demand Model 107

8.5 Stakeholder Interviews..... 113

9.0 Environmental Needs Assessment..... 116

 9.1 Environmental Justice..... 116

 9.2 Environmental Conservation 117

 9.3 Air Quality 119

10.0 Transportation for Older Adults 121

11.0 Transportation Funding..... 126

 11.1 Existing Funding Sources 127

 11.2 Future Transportation Funding 130

 11.3 Conclusions and Next Steps 135

12.0 Next Steps 136

LIST OF FIGURES

Figure 1-1: Historic area in downtown Savannah, GA 3

Figure 1-2: North Fulton Population map in 1970 through 2000..... 4

Figure 1-3: 1974 Picture of Roswell with GA 400 in Background..... 5

Figure 1-4: Comparison of Different Development Patterns 6

Figure 1-5: Travel Time Profile for Typical Section of Interstate Roadway in the Atlanta Region 6

Figure 1-6: Job Locations for People that Live in North Fulton..... 7

Figure 1-7: Residence Locations for People that Work in North Fulton 8

Figure 4-1: UGP to Future Land Use Map 23

Figure 4-2: Retail Redevelopment Opportunities Map 42

Figure 4-3: Existing & Potential Mixed-Use with Office Nodes..... 44

Figure 4-4: Examples of Flex Space 45

Figure 4-5: Existing & Potential Flex Nodes 46

Figure 4-6: Increased Residential Density Opportunities 48

Figures 5-1A and 5-1B: Average Annual AADT Growth 2003-2008..... 51

Figure 5-2: Corridor Crashes 57

Figure 5-3: Heavy Vehicle Crashes..... 58

Figures 5-4A and 5-4B: Pedestrian Crashes 59

Figures 5-5A and 5-5B: Bicycle Crashes 61

Figure 5-6: Relationship between Access and Mobility..... 67

Figure 5-7: Vehicular Conflict Points for Various Median Scenarios 68



Figure 5-8: Access Management	70
Figure 5-9: 2030 E+C Vehicular Levels-of-Service	74
Figure 5-10: Select Link Analysis of GA 400 over the Chattahoochee River	75
Figure 5-11: Laborshed Maps.....	79
Figure 6-1: The Zone Approach	82
Figure 6-2: Sidewalks with Buffer, Pedestrian and Frontage zones.	83
Figure 6-3: Raised Median with Pedestrian Refuge	86
Figure 6-4: Pedestrian Facility Needs	88
Figure 6-5: Potential Walking Demand Measure	90
Figure 7-1: Short-term Bicycle Parking	93
Figure 7-2: Bicycle Facility Needs	95
Figure 8-1: % Households - Poverty Status	100
Figure 8-2: % Households - No Vehicle	101
Figure 8-3: % Population - 65+ Years	102
Figure 8-4: % Population - Disability Status	103
Figure 8-5: Yearly Population Growth	105
Figure 8-6: Yearly Employment Growth	106
Figure 8-7: 2010 Daily Origin-Destination Pairs To/From/Within North Fulton	109
Figure 8-8: 2010 Daily Origin-Destination Pairs	110
Figure 8-9: Transit Laborshed Maps	112
Figure 9-1: Regionally Important Resources	118
Figure 10-1: Senior Facilities	123
Figure 10-2: MARTA Mobility Coverage	125
Figure 11-1: Transportation Spending Relative to GDP as Presented in IT3.....	126
Figure 11-2: Existing Average Annual Funding Sources (in Millions).....	127
Figure 11-3: MARTA Revenue Sources (in Millions).....	129
Figure 11-4: North Fulton Cities Revenues by Source	129
Figure 11-5: North Fulton Annual Sales Tax Revenue	130

LIST OF TABLES

Table 2-1: Goals and Objectives.....	10
Table 4-1: Land Use Impacts on Travel.....	19
Table 4-2: Trip Reduction Factors.....	20
Table 4-3: Land Use Accessibility Strategies	24
Table 4-4: Residential Building Permits Issued	30
Table 4-5: Average sales price for new detached homes	31



Table 4-6: Average sales price for new townhomes 31

Table 4-7: Average sales price for new condominiums 32

Table 4-8: Average apartment rental rate range 32

Table 4-9: Existing Retail Space 33

Table 4-10: Existing Office Space 34

Table 5-1: Bridge Inventory 64

Table 5-2: Example of Guidelines for Access Spacing (ft) on Suburban Roads 69

Table 5-3: 2010 E+C Facility Statistics 76

Table 5-4: 2030 E+C Facility Statistics 77

Table 5-5: 2010 E+C Subarea Statistics 78

Table 5-6: 2030 E+C Statistics 78

Table 5-7: Laborshed Breakdown 80

Table 8-1: Transit Dependent Characteristics: Percent of Total Population 99

Table 8-2: 2010 E+C Subarea Transit 107

Table 8-3: 2030 E+C Subarea Transit 108

Table 8-4: 2010 E+C Regional Transit 108

Table 8-5: 2030 E+C Regional Transit 108

Table 8-6: Workers within Laborsheds 111

Table 9-1: National Ambient Air Quality Standards (NAAQS) 119

Table 11-1: Current Property Tax Revenue 130

Table 11-2: Potential Funding Sources and Projections 131

LIST OF APPENDICES

- Appendix A – Additional Market Information
- Appendix B – Pedestrian and Bicycle Levels-of-Service
- Appendix C – Maps and Information Related to Freight



EXECUTIVE SUMMARY

Project Approach

North Fulton is comprised of six municipalities, each of which has unique transportation needs. The North Fulton Comprehensive Transportation Plan (CTP) has identified regional transportation needs: that is, this study identified potential transportation improvements for transportation deficiencies that affect multiple cities within the North Fulton area. Because the existing system is primarily automobile oriented, much of the focus has been on investigating roadway capacity, finding potential new roadway connections, and improving operations at intersections. However, an evaluation of opportunities for improving access to alternative modes such as walking, cycling, and transit has also been performed.

The intent of this document is to build on the foundation of the *Existing Conditions Report* and bring to light as many transportation needs as possible in order to set the stage for the Recommendations Phase. Given limitations of resources, there was no attempt to eliminate every transportation deficiency in the area. Options will need to be evaluated in order to select an appropriate package of solutions for North Fulton. This process will take place over the coming months and will be documented fully in the *Recommendations Report*.

Summary of Major Needs and Findings

The analyses conducted during the Needs Assessment phase of the report provided insight into deficiencies of North Fulton's transportation system. Reviews of land use policies, market trends, multimodal transportation needs, environmental considerations, and funding sources were conducted in combination with a significant amount of public input.

Land Use

Regarding land use, some discrepancies exist between local land use policies and ARC's Unified Growth Policy Map. The Unified Growth Policy Map (UGPM) shows higher density areas further from the GA-400 corridor, while local policy concentrates these land uses very close to the corridor. Additionally, inconsistencies exist between some of the local land use policies along key corridors. This mostly occurs where low density residential/agriculture abuts higher density mixes of uses. Small differences exist among the jurisdictional policies relative to the implementation of transportation components of their zoning and land use including mixes of uses, connectivity (roadway, bike, and pedestrian), access management, parking, and multimodal design. How these transportation components are implemented can have important effects on the quality of transportation infrastructure between the jurisdictions.

Lifelong Communities and the aging population are important aspects of the North Fulton CTP as well. This growing population requires walkable, mixed-use areas with good transit accessibility.



As recommendations are vetted in the next phase, the needs of this population will be an important focus.

Market Study

The market study found that North Fulton has more retail space than can be supported by its population. Retail pruning will need to occur throughout the area in the coming years. Some of the abandoned strip retail centers may have the opportunity to redevelop as flex space (which typically means a sizeable office space with several employees and a small warehouse in the back) or mixed use development. Much of the multifamily development will need to redevelop as well, but mostly because of the age of the structures. A need exists for more multifamily housing opportunities throughout North Fulton, but the location of this additional housing will need to be carefully considered by the jurisdictions. Office development likely will be very targeted in the upcoming years.

Multi-Modal Transportation Needs

While roads and automobile travel dominate the North Fulton transportation system, the needs for all of the viable modes of travel were evaluated. These modes are:

- Automobile
- Bus
- Rail
- Pedestrian
- Bicycle

Roadway needs assessments focused on the following subject areas: existing conditions, traffic volume growth on corridors, crash rates, access management, roadway connectivity, and other measures of effectiveness. Areas of highest traffic volume growth within North Fulton occurred primarily in the north, near Forsyth and Cherokee Counties. Some of the Sandy Springs arterials also grew in traffic volumes, potentially as a result of drivers' increasing avoidance of congestion along I-285 and GA-400. A consistent decrease in traffic volumes was noted along significant portions of SR 9 throughout Sandy Springs and Roswell.

Regarding crashes in the study area, many roadway segments have a high number of crashes in multiple crash categories including general vehicles, heavy vehicles, pedestrians, and cyclists. Specifically, Medlock Bridge Road (SR 141) in Johns Creek from the Chattahoochee River to State Bridge Road and the SR 9 corridor from the southern border of Sandy Springs to Mayfield Road have many instances of bicycle, pedestrian, vehicle, and heavy vehicle crashes. High concentrations of pedestrian crashes can specifically be found around the intersection of Haynes Bridge Road and Old Alabama Road as well as along Dunwoody Place between Roberts Drive and SR 9. Bicycle crashes occur frequently along Holcomb Bridge Road, especially near the intersection with SR 9.

Median types, driveway spacing, and signal density were inventoried along the arterials within North Fulton. Roadways including SR 141, SR 120, and SR 92 are among the facilities with the most



effective access management. Consistency of access management techniques and implementation will be very important along arterial corridors, particularly the three regionally significant corridors: Holcomb Bridge Road / Crossville Road (SR 92 and SR 140), Arnold Mill Road / Rucker Road / Old Milton Parkway / State Bridge Road (SR 140 and SR 120), and Roswell Road / Alpharetta Highway / South Main Street / North Main Street (SR 9). Some inconsistencies exist along these corridors today.

New roadway connections should be considered wherever possible for providing additional options for users of all modes. Because North Fulton is relatively built-out, it will be difficult to provide a number of regionally significant connections. When large-scale connections cannot be considered, small intersection by-passes and local grid enhancements could be considered to relieve intersection congestion including through re-development.

The travel demand model has provided additional insight into the roadway needs of North Fulton. As noted in the *Existing Conditions Report*, many of the roadways within North Fulton are already over capacity, meaning specifically a Level-of-Service F (LOS F); additionally, the expected 2030 volumes indicate that without infrastructure improvements, the additional population and employment throughout the region will result in the degradation of all roadway facilities. A new crossing over the Chattahoochee River is needed as well as better east-west connectivity. A lack of additional limited access facilities in North Fulton concentrates a significant amount of travel onto the arterials and collectors: 55% of automobile travel occurred on these facilities while 70% of the delay was accrued there.

Accessibility to employment centers is critical: the Perimeter employment center is more accessible by vehicle than the Windward employment center. By 2030, accessibility to both employment centers is likely to reduce by 50% without supportive land use and transportation infrastructure enhancements.

Pedestrian & Bicycle

Pedestrian and bicycle needs are more local in scale rather than regional in scale. The Project Management Team has agreed upon a standard of LOS C for all study network roadways and LOS B on facilities within key activity centers. This focuses the largest improvements where they will have the greatest impact. According to the Level-of-Service assessments, approximately 20% of the facilities in North Fulton meet or exceed these standards, while the remaining 80% do not. Areas projected to have the highest demand for walking include the Perimeter area, portions of SR 9 and Holcomb Bridge Road, the downtown areas of Roswell and Alpharetta, and the Windward Parkway employment center. Off-road multi-use paths were also assessed in this report. The greatest needs for regional connectivity exist between activity centers throughout North Fulton as well as with greenway systems in surrounding counties including Forsyth, Gwinnett, and Cobb.



Transit

Transit needs, independent of technology, have been identified in the *Needs Assessment Report*. Improved transit service in the GA-400 corridor has been noted as a need as well as east-west service across North Fulton, connecting to Gwinnett and Cobb Counties. Some activity centers within North Fulton require better transit access, whether by commuter or local service. Much of the transit dependent population is located near existing transit service. However, large areas of North Fulton are not served by transit, and specifically, many over the age of 65 do not currently have good access to transit. The lack of paratransit service outside of the MARTA ¾ mile zone of a fixed route leaves a large portion of North Fulton, mostly Milton and Johns Creek, without demand responsive service. Relative to employment center accessibility, the Perimeter area has significantly better transit access than does Windward. Access to these centers by transit is projected to decrease by 2030 without any infrastructure improvements, although the laborshed size for Perimeter is anticipated to stay relatively consistent since much of its access is provided by rail. Windward's transit access is primarily by bus, so additional congestion on the roadways will have an adverse impact on transit accessibility.

Environmental

Environmental impacts of the proposed projects will be considered throughout the vetting of the Recommendations phase of the projects. A project's ability to improve air quality will be strongly considered also given that sustainability and non-attainment status are important concerns.

Funding

The transportation needs of North Fulton are substantial; however, few of them can be addressed without increasing funding for implementation. The current sources of funding were assessed for the area as well as for the Atlanta metro and the State. The 20-county region has only been receiving \$1.1 to \$1.7 billion per year in funding, which would barely be enough money to fund the *Envision6* projects within North Fulton alone through 2030. Additional funding sources that should be considered include CID expansion, TSPLOST programs, revisions to fees and taxes, and other state and federal funding programs.

Comparison of Needs to Survey Results and Charrettes

Data analysis is a critical component of determining needs, but the picture is not complete without input from the public. Two primary forms of public feedback, the public opinion survey and the needs assessment charrettes, provided additional insight into the development of the Needs Assessment Report. In many instances, consistencies were evident between the analyses and the public input, which reinforces the existence and significance of those needs.

Recurring themes between the survey and data analysis include the following:

- More transit options are of high priority, as transit is not currently convenient
- Easier and safer walking options



- Better bike lane connections between destinations
- Improved and increased vehicular connections
- A new crossing of the Chattahoochee River

Similar to the survey, consistencies also exist between the public charrette comments and the data analysis. Relative to vehicular/roadway needs, the same corridors surfaced as being regionally significant: GA-400, SR 9, SR 120, SR 140/92, and McGinnis Ferry Road. Some widening was mentioned, particularly at key intersections, as well as capacity improvements to critical interchanges with GA-400, and access management along these corridors. Bike connections to other jurisdictions and destinations and localized pedestrian connections to destinations (which are frequently schools) were noted as being important. Transit needs ranged from circulators for small activity centers to BRT and Park-N-Ride facilities to the extension of heavy rail up GA-400 to Windward.

Moving Forward

This document presents a large and comprehensive list of transportation challenges that will need to be addressed now and in the coming years. The intent of this body of work is to set the stage for the Recommendations Phase where specific projects or packages of projects can be developed to address the needs identified herein. These projects will have to be compared to funding limitations and vetted against the Stakeholder and Policy Committees. Also, a second series of open-house charrettes will be held where a public audience will have the opportunity to review recommendations and provide feedback on how leadership should prioritize implementation of these recommendations. Upon project completion, local decision makers will be able to use this information, documented in the *Recommendations Report*, to move forward with an informed and appropriate course of action.



1.0 SETTING THE STAGE

Introduction

North Fulton is comprised of six municipalities, each of which has unique transportation needs. The transportation network in North Fulton is made up of an extensive system of roadways as well as a growing network of sidewalks, bike lanes, trails and access to the ninth largest transit system in the United States. This overall transportation network allows people locally and regionally to make vital connections between destinations, goods, and services. Because this system has such a strong influence on the daily lives of residents, providing the greatest possible efficiency will also contribute to continued economic success and a high standard of living within North Fulton.

Today, transportation for most residents of North Fulton means riding in an automobile. In a recent survey, a large majority of residents in North Fulton reported being on the roads during morning and afternoon peak hours. Traffic count data collected along Holcomb Bridge Road (SR 140) indicate volumes at some locations of over 65,000 vehicles per day. That is the equivalent of the entire population of the City of Alpharetta passing a single location by car daily. Sections of GA 400 average over 200,000 cars daily. Such high volumes of vehicles cause North Fulton's vital arterials to suffer congestion through much of the day. In some areas of North Fulton, other modes of travel are available but these limited facilities do not allow alternative modes to compete with personal vehicles in terms of trip time, convenience, and safety. Only 7% of residents report regularly using transit as a mode of travel.¹

An enormous network of roadways is needed to carry such a high demand on the system. Currently, over 300 miles of arterials and collector roadways exist within the study network. This does not include the thousands of miles of local and neighborhood classified streets that are also in North Fulton. Building and maintaining these roadways has required a significant investment of land, labor, and financial resources.

Current levels of congestion indicate that available resources are not able to keep pace with the rapid growth experienced in the region. In order to continue serving high volumes of automobiles and to maintain the quality of life for which North Fulton is known, future investments must include intersection upgrades, new roadway connections, and more lanes – all very large investments. In fact, the level of investment needed to keep pace with roadway demand may be so large that this model for growth may not be economically sustainable. Even if these new facilities can be afforded financially, the community impacts required to construct this infrastructure will likely transform the character of North Fulton's neighborhoods and landscape into a setting that is different than exists today.

¹ In the survey performed at the outset of this project, only 7% of respondents report using transit several times a week. This survey is available in the Appendix of the *Existing Conditions Report*.



At the current underfunded level, if North Fulton continues to pursue automobile-oriented growth where roadways cannot keep pace with congestion, other costs will become substantial as well. Estimates indicate that in metro Atlanta, congestion costs per person will double over the next 20 years. Economically, over-congested roadways could cause the pool of talent available to employers within 30-45 minutes to shrink by 33 percent compared with today.² Avoiding these costs of overcrowded roads will require a more comprehensive approach to transportation planning and a committed investment to providing access to alternative modes of travel.

To address the transportation challenges ahead, this report will comprehensively document identified transportation needs within the region. These needs will be used to develop specific recommendations to address vehicular congestion, increase funding, and improve access to alternative modes of travel. Having a comprehensive transportation network that improves vehicular operations and also provides opportunities for alternative modes will be important for protecting the vitality of North Fulton.

Evolution of Transportation in North Fulton

In order to understand how transportation in North Fulton developed into the system that exists today, it is necessary to look back at the history of transportation in the United States as well as within the region. Before the automobile and even before bicycles, trains, and horses, the original mode of transportation was walking. People walked to get to their destinations, and likewise, cities and towns were built to support this mode. In older cities, buildings typically are closer together, there is a mixture of uses and building types, and street grids have much greater connectivity. These features allow people efficient access to their jobs, schools, services, stores, and residences all on foot.

An example of this is the City of Savannah, originally laid out in the 1700's by James Oglethorpe.³ Figure 1-1 shows a typical section of Savannah's historic downtown area. Although many of the buildings and uses have changed, the original street grid is still the same as it was during the 18th century. The street network forms a very tight grid and the buildings include a mix of uses. A series of public squares regularly break up the rows of buildings. These elements combine to create an attractive and efficient environment for pedestrians, while also accommodating other modes of travel including vehicles and transit.

² Draft Statewide Strategic Transportation Plan 2010-2030 (December 2009)

³ <http://www.georgiaencyclopedia.org/nge/Article.jsp?id=h-1056&hl=y>



Figure 1-1: Historic area in downtown Savannah, GA



Source: Bing Maps

The Transition to the Automobile

As automobiles became more affordable and commonplace in American culture, walkability seemed less necessary as growth took on a very different pattern. Outward expansion from traditional urban centers began to occur rapidly, fueled largely by the national investment in roadway projects.

The Federal-Aid Highway Act of 1956, passed under President Dwight D. Eisenhower, provided the funding catalyst for building the Dwight D. Eisenhower National System of Interstate and Defense Highways, more commonly known as the Interstate System.⁴ This network of superhighways was designed under the 1956 act to be 41,000 miles of high-speed freeways that would connect the principal metropolitan areas of the United States. This system would encourage economic development and improve national defense capabilities by providing improved domestic mobility. Today the nation's Interstate System has nearly 47,000 miles of roadways and connects 45 state capitals.

Although not originally designed as part of the Interstate System, GA 400 has served a very similar function in North Fulton. The first section of GA 400 opened in 1971. This freeway section extended north of I-285, and during the 1980's this route was extended northward to Dahlonega. In 1993, the final link between I-285 and I-85 was opened, thus completing the route from Dahlonega to downtown Atlanta.

One result of building the interstate system was that freeways allowed for the rapid outward expansion of traditional metropolitan areas. These roadways provided quick access from

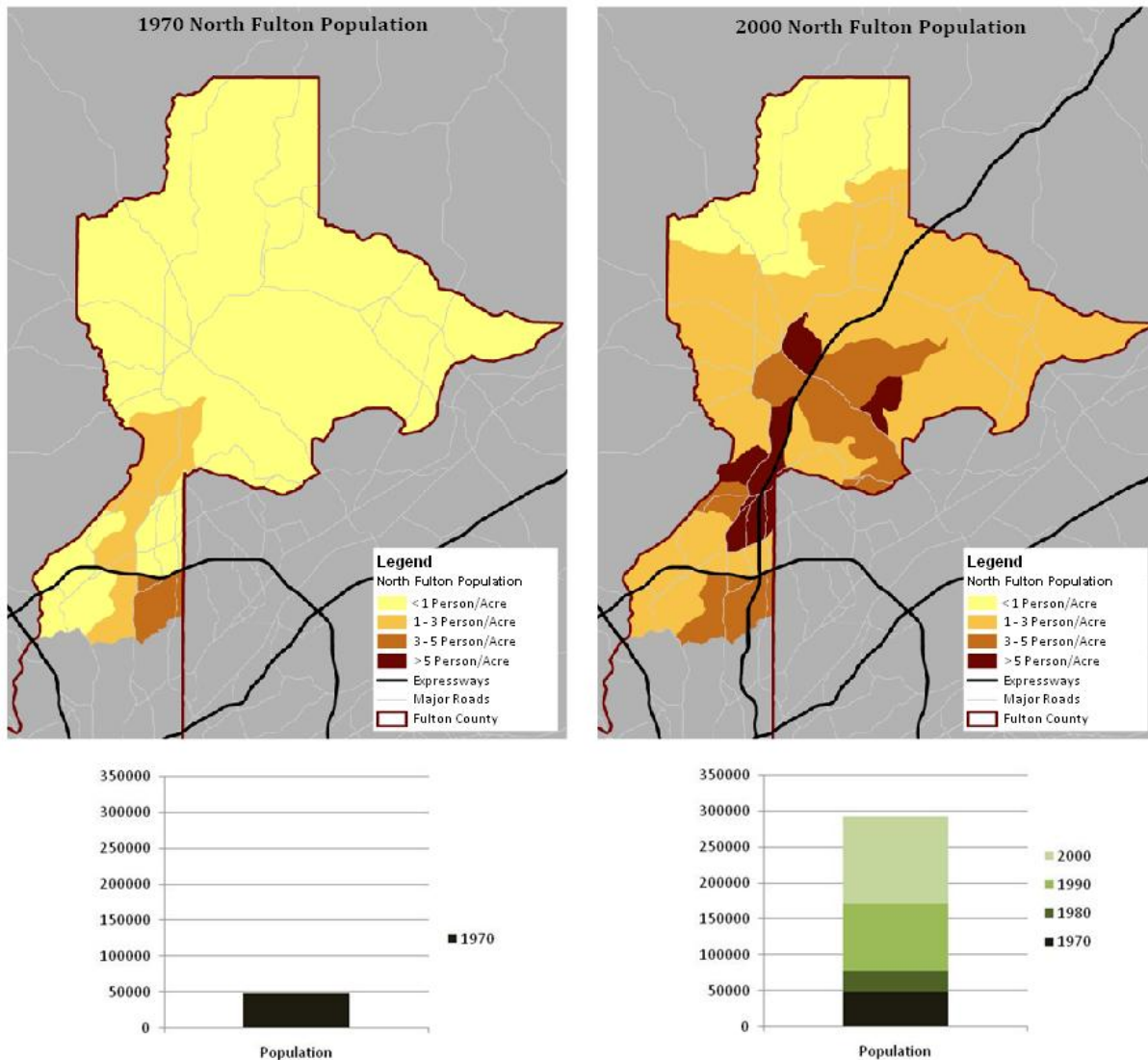
⁴ <http://www.fhwa.dot.gov/programadmin/interstate.cfm>



downtown areas to cheaper, more spacious, and more private housing options in rural areas. The Interstate System allowed people to continue working at their downtown jobs while living far outside the urban core.

The construction of GA 400 has undoubtedly had a major impact on facilitating growth in North Fulton. Figure 1-2 shows the relative distribution of population before and after GA 400 was in place. North Fulton populations were very sparse in 1970 before the opening of GA 400. By 2000, when the full facility had been operational for several years, the total population of North Fulton was six times as large.

Figure 1-2: North Fulton Population map in 1970 through 2000



Source: US Census Bureau



This rapid expansion outward had a drastic impact on the shape of the landscape. Instead of designing for pedestrians, new developments were being built for automobile access. Note in Figure 1-3 how this 1974 development featured large amounts of parking. Also, there is a distinct separation of uses and less dense development pattern evident from this aerial image.

Figure 1-3: 1974 Picture of Roswell with GA 400 in Background



Courtesy of the Roswell Historical Society

Implications for an Automobile-Based Network

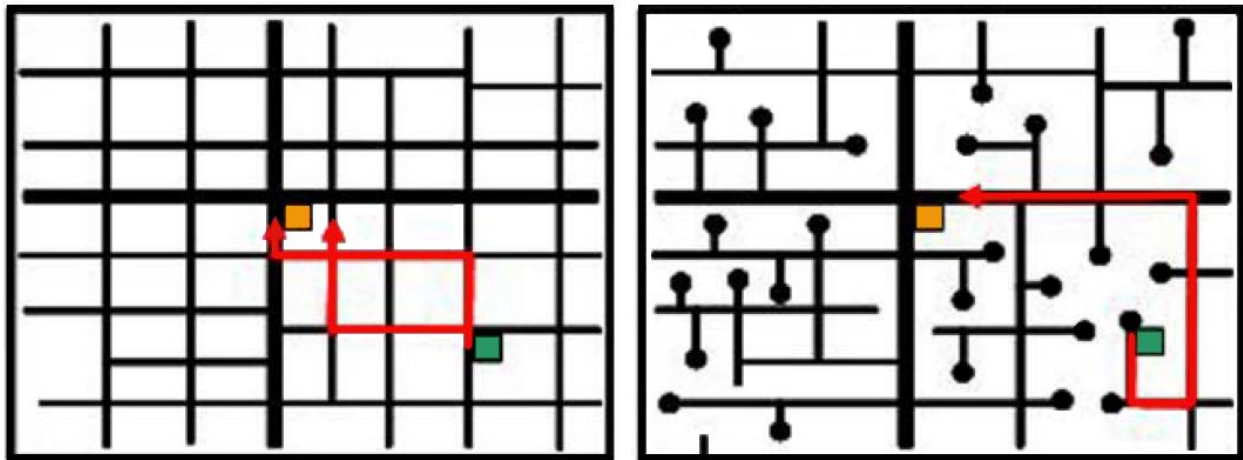
The transition into automobile dependence has had far-reaching effects on our landscape and culture. The freedom the automobile allows has caused our destinations to become separated by very large distances. As a result, these auto-driven destinations consist of larger lots and increased parking, creating building densities that are much lower than in older urban cores.

Suburban roadway systems typically do not follow a grid pattern that would be common in a more urban setting. This translates into fragmented development patterns and reduced connectivity, causing more vehicles to use fewer roads as areas develop over time. If these roadways have enough capacity to carry the expected traffic volumes, this system can work very efficiently. However, this system is also more susceptible to delay caused by bottlenecks from traffic accidents, road closures, etc. Another unintended consequence of this pattern of growth is reduced mobility for alternative modes. Reduced connectivity means longer distances for pedestrians and cyclists. Likewise, this makes transit services more expensive to operate.



This concept is demonstrated by Figure 1-4, where the street network on the left is a traditional urban street grid, while the network on the right is that of a typical suburban pattern. In the urban network, the drivers have many different alternate routes to reach their destination, while in the suburban street system, drivers have very few alternate routes and essentially all traffic “funnels” into large corridors.

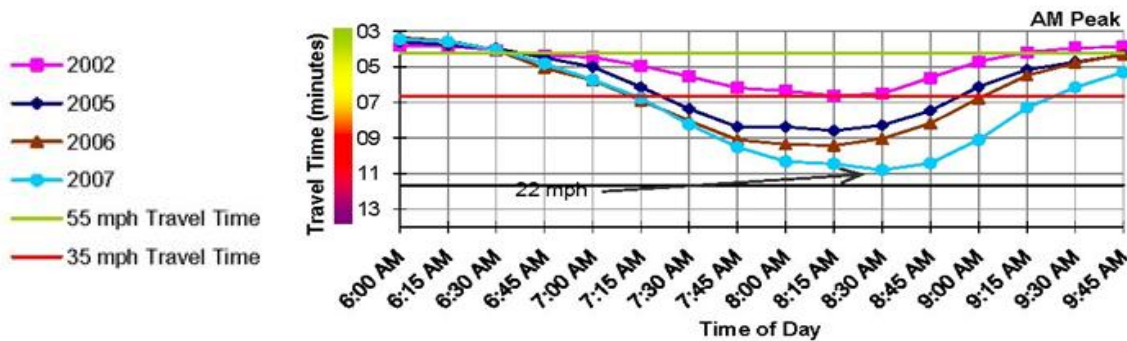
Figure 1-4: Comparison of Different Development Patterns



Source: Kimley-Horn and Associates, Inc.

Further, some factors indicate that maintaining adequate capacity on suburban networks through periods of rapid growth may not be feasible. Due to escalating costs of right-of-way acquisition, construction costs, and increased environmental considerations, building new roads and expanding existing ones is becoming more and more expensive. Figure 1-5 shows a travel time chart for a typical stretch of interstate in the Atlanta Region. The different color lines denote travel times in different years, and the travel time for this section of roadway has grown in recent years as a result of increasing congestion. Also, the peak travel time period has broadened, meaning that congested periods (“rush hour”) take up a greater portion of day.

Figure 1-5: Travel Time Profile for Typical Section of Interstate Roadway in the Atlanta Region

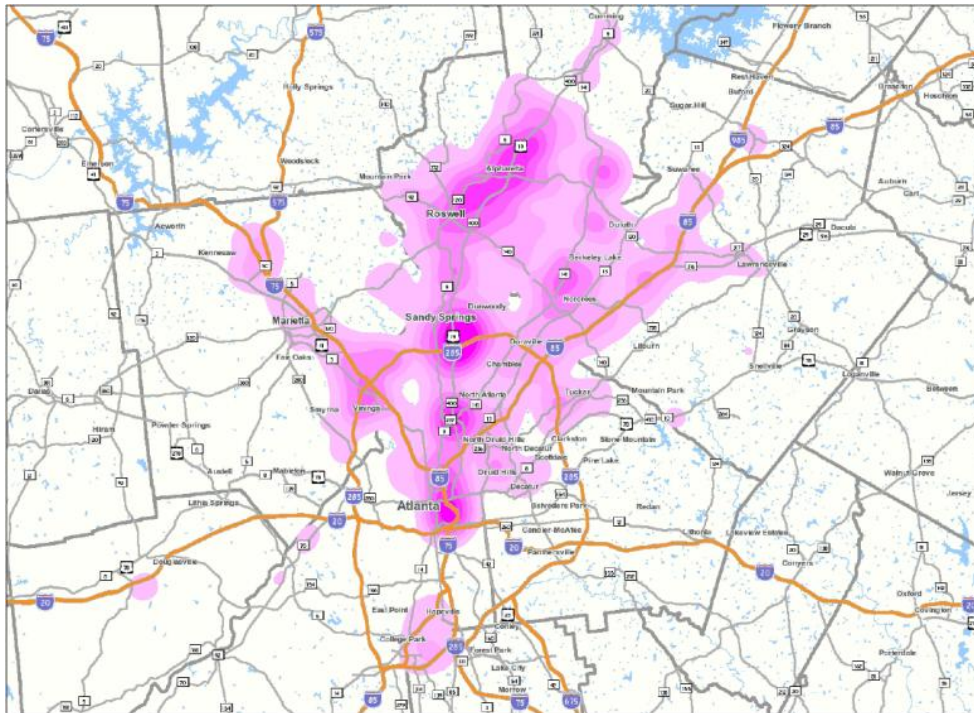


Source: Georgia NaviGator



Part of the trend causing increased congestion in North Fulton is the high number of jobs located in the area. While a large portion of people that live in North Fulton also remain in North Fulton for their workday, many workers from surrounding counties commute to North Fulton every day. Figure 1-6 shows the job locations for people who live in North Fulton. Figure 1-7 then shows the reverse – where people live who work in North Fulton.

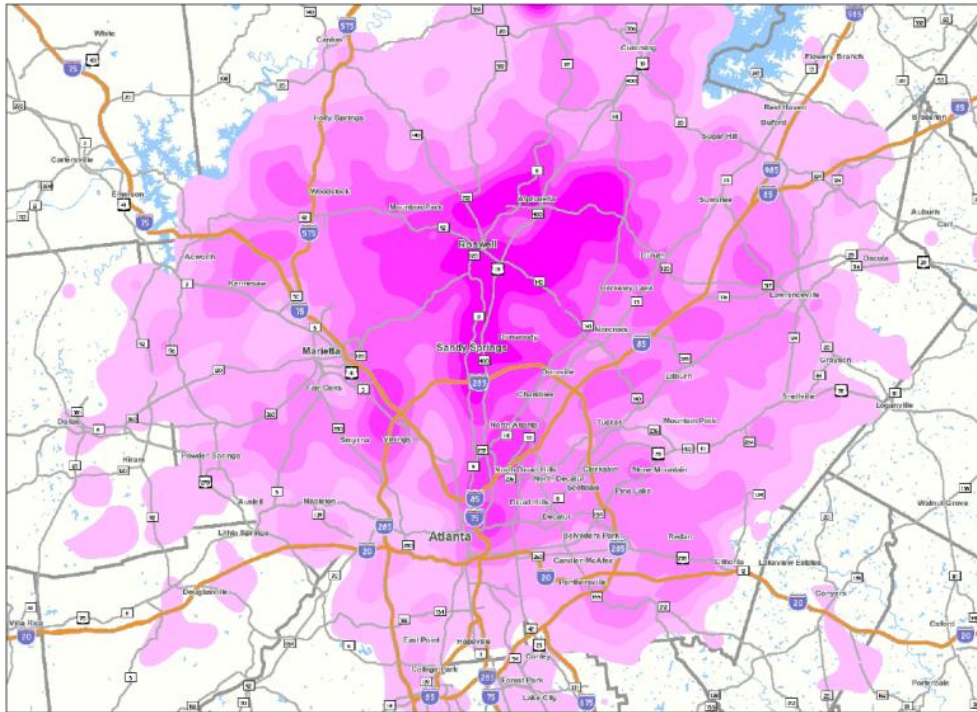
Figure 1-6: Job Locations for People that Live in North Fulton



Source: US Census Bureau LED OnTheMap



Figure 1-7: Residence Locations for People that Work in North Fulton



Source: US Census Bureau LED OnTheMap

Project Approach

The project team for the North Fulton CTP has taken many different approaches to assessing current needs for the transportation network in North Fulton. Because the existing system is primarily automobile oriented, much of the focus has been on investigating roadway capacity, finding new connections, improving signal timing, and implementing Intelligent Transportation Systems (ITS). However, an intense evaluation of opportunities for improving access to alternative modes such as walking, cycling, and riding transit has also been performed.

The intent of this document is to bring to light as many needs as possible in order to set the stage for the Recommendations Phase. Addressing every need fully will be impossible given limitations of resources; therefore, choices and tradeoffs will need to be evaluated in order to bring about the best possible package of solutions for North Fulton. This process will take place over the coming months and will be documented fully in the *Recommendations Report*.



2.0 EVALUATION FRAMEWORK AND TOOLS

2.1 Report Structure

This report, the *Needs Assessment Report*, is the second in a series of three reports associated with each phase of the North Fulton CTP. The *Existing Conditions Report*⁵, the first of the three, is a review of the existing transportation network in North Fulton. This report builds on that foundation and focuses on assessing current and future transportation deficiencies in the area. The final phase of the project will result in the *Recommendations Report*, which will provide a final list of prioritized transportation enhancement recommendations.

2.2 Vision, Goals, and Objectives

The vision statement for the North Fulton CTP was developed at the start of the project in cooperation with government officials from each of the six municipalities⁶ in North Fulton. It was then vetted through local stakeholders, adjacent county stakeholders, and through extensive public outreach. The framework for the project will be rooted in this vision through the entire life of the project:

The North Fulton Comprehensive Transportation Plan's vision is to develop a functional, reliable and implementable transportation system that...

- Supports economic vitality, environmental responsibility, innovation, and quality of life
- Is designed to achieve safety, connectivity, accessibility, and mobility for users of all modes and support lifelong communities enabling independence as citizens age
- Works cooperatively with the area's infrastructure and jurisdictional land use policies
- Is developed cooperatively with respect for the preservation of individual jurisdiction's community character

Upon the establishment of the plan's vision, a list of goals and objectives was developed to guide the long-range transportation planning process. The goals and objectives attempt to balance the goals expressed by the ARC board and committees, each government entity, citizens, and key community stakeholders. The following goals and objectives listed in Table 2-1 are aimed at supporting the successful implementation of the vision statement.

⁵ The *Existing Conditions Report* was published in January 2010 and can be downloaded from the website www.atlantaregional.com/nfctp.

⁶ The six municipalities in North Fulton are Alpharetta, Johns Creek, Milton, Mountain Park, Roswell, and Sandy Springs.



Table 2-1: Goals and Objectives

Goal	Objectives
Develop a functional, reliable, and implementable transportation system	<ul style="list-style-type: none"> Responsibly account for future growth Ensure improvements are properly designed and maintained Identify improvements that can be realized given funding constraints Identify funding sources and their respective eligibility requirements and application processes
Support economic vitality, environmental responsibility, innovation, and quality of life	<ul style="list-style-type: none"> Improve transportation facilities that support centers of economic development Identify and improve existing transportation barriers to economic vitality Identify and protect important environmental resources Improve facilities and accessibility for all modes to reduce personal vehicle transportation demand Develop ways to address roadway congestion by using strategies to improve mobility and provide alternatives Consider all users across various geographic areas and demographic sectors equitably Provide alternative transportation modes, particularly for the non-driving population
Achieve safety, connectivity, accessibility, and mobility for users of all modes and support lifelong communities enabling independence as citizens age	<ul style="list-style-type: none"> Leverage public input and technical analysis to identify safety improvements and concerns for motorists, pedestrians, and cyclists Increase public awareness of existing safety issues Consider improving access to transit services in appropriate areas as determined by local municipalities Improve facilities for transit riders, pedestrians, and cyclists to encourage use of alternative modes Leverage existing transit infrastructure, such as existing bus routes and heavy rail stations, by targeting these areas for mixed use or transit oriented developments where supported by local comprehensive plans Increase intermodal connectivity Ensure that the transportation plan considers multi-modal uses for all roadway projects
Work cooperatively with area's infrastructure and jurisdictional land use policies	<ul style="list-style-type: none"> Incorporate alternative transportation modes into future infrastructure design Ensure the transportation plan is consistent with current and planned local land use Identify and preserve right of way for future transportation infrastructure expansion needs Use growth models to predict where future demand will necessitate infrastructure improvements Consider multimodal and transit-oriented design and the development of proposed transportation infrastructure in relation to land use policies and market development opportunities identified through the study
Develop the CTP cooperatively with respect for the preservation of individual jurisdiction's community character	<ul style="list-style-type: none"> Ensure strong public participation Include representatives from each community in the planning process Define characteristics that identify each community and encourage policies that preserve them Preserve historical, archaeological, and other cultural resources Develop strategies for managing commuter traffic from surrounding areas to reduce impacts on local communities



2.3 Overview of Tools Used

In an extensive effort to identify existing and future deficiencies in our transportation system, many approaches and tools were used. The following is a summary of those tools:

Public Involvement was one of the primary methods utilized for developing a list of transportation needs, particularly current needs. Residents and stakeholders in the area represent the greatest source of information for those system needs that are currently causing concern. Many opportunities for public input were utilized including public charrettes, email correspondence, telephone calls, a project website, and Facebook. More information on public involvement strategies and results can be found in the following chapter of this document.

Geographic Information Systems (GIS) is a software tool used to relay spatial information in the form of maps. Economic, census, demographic, and land data can all be displayed using this software. Unless noted otherwise, the maps included in this document were created using the software ESRI ArcGIS Version 9.3 (ArcView).

Census Data from the US Census Bureau were obtained for the purposes of understanding population and employment trends. This information is useful for identifying area employment centers, areas with greater density, areas with aging populations, and areas with lower incomes that may have different transportation needs. This data has limitations, however, based on the size of the census tracts and because the census is conducted every 10 years. The most recent census was conducted in 2000 so this data is nearly 10 years old.

The Atlanta Regional Commission's (ARC) Travel Demand Model is a computer generated simulation of travel and transit patterns in the Atlanta region. The model takes into account the existing and planned roadway network, travel behaviors, land use patterns, and socioeconomic data to recreate travel patterns of the people traveling through the area. Additional detail was added to the model, specifically within North Fulton, for the purposes of this project. ARC's travel demand model utilizes the Cube suite of programs.

Crash Data statistics were analyzed in order to identify safety needs and trends within the transportation system. This crash data was obtained from the Critical Analysis Reporting Environment (CARE) database developed by the University of Alabama and covers the years 2006-2008. This data provides insight into the nature of vehicular, bicycle, pedestrian, and commercial vehicle crashes. Geospatial data was also obtained from the Georgia Department of Transportation (GDOT) so that locations of these crashes could be identified.



3.0 COORDINATION, INITIATIVES, AND PUBLIC INVOLVEMENT

Several key meetings and activities occurred during the Needs Assessment phase. Comments from participants at these meetings guided the investigation of needs within the study area. Notable coordination efforts and key meetings are described herein.

3.1 Coordination Meetings

Project Management Team/Stakeholder Committee Joint Meetings

Four joint meetings of the Project Management Team and Stakeholder Committee have been held to date. They are as follows:

- Tuesday August 25, 2009 – at Roswell (Project Kick-off Meeting)
- Tuesday September 8, 2009 – at Johns Creek
- Tuesday November 10, 2009 – at Alpharetta
- Tuesday January 26, 2010 – at Milton

These joint meetings have been an avenue for development of consensus of key fundamental principles associated with the project. While each meeting has included a myriad of discussion topics, the key outcomes of these meetings have included the following:

- Presentation of project schedule and scope
- Discussion of early opportunities for short-term improvements
- Development of vision statement
- Presentation of survey instrument
- Presentation of the *Existing Conditions Report*
- Discussion of Needs Assessment Public Meetings
- Preliminary funding approach discussions

Adjacent Counties Stakeholder Meeting

Representatives from each county adjacent to the North Fulton CTP study area were present at this meeting held Thursday, November 19th. These counties include Cherokee, Cobb, DeKalb, Forsyth, and Gwinnett. The purpose of the meeting was to outline the intent of the study to the counties, and more importantly, to gather information regarding their perspective of area transportation. Major items discussed at the meeting included:

- Existing and planned vehicular, transit, bike, and pedestrian projects
- Major travel patterns
- Major congested areas
- Development trends
- Potential coordination efforts between counties



MARTA Meeting

Meetings were held with MARTA staff on February 18, 24, and March 1, 2010 to discuss the Transportation Planning Board's Concept 3 recommendations specific to North Fulton. Discussion also included recent studies initiated by MARTA, public private partnership initiatives, and funding strategies.

Atlanta/Dunwoody Meeting

On Wednesday, March 3rd, 2010, the North Fulton CTP was discussed with planning staff from the Cities of Atlanta and Dunwoody. Staff were given a brief summary of project activities to date. High-level infrastructure project concepts were also communicated with the staff, including a new bridge connection over the Chattahoochee River east of GA 400. They were asked to provide feedback regarding particular projects of interest. Both cities communicated desires for more bicycle/pedestrian-type infrastructure improvements.

Mayors' Meetings

The mayors of North Fulton make up the Policy Committee for this project. Consultant Team members attended regularly scheduled North Fulton Mayors' Meetings on November 19, 2009, December 10, 2009, and February 18, 2010. These meetings were used as an avenue to give project status updates to the mayors and solicit feedback on key issues.

3.2 Regionally Significant Intersections & Corridors

At the outset of the North Fulton CTP, an objective of the program was to identify ten intersections in North Fulton (two from each of the five participating jurisdictions) considered to be regionally significant. These intersections could be studied to develop specific recommendations for improving operations. In November, 2009, the Project Management Team determined that a more regionally beneficial strategy would be to identify regionally significant corridors rather than intersections. This approach could be further accomplished by teaming with another ARC planning study – the Strategic Regional Thoroughfares Plan. This study will commence in 2010 and will create a regional plan for all of the region's critical thoroughfares. As part of the thoroughfares plan, there will also be a more in-depth case study look at several key corridors in the greater Atlanta area. The mission statement from the plan is as follows:

*"To develop an innovative and sustainable thoroughfare network and management plan that will **enhance the region's accountability** in providing acceptable levels of services, prioritize future investment for the primary arterial system of the region, and strengthen the link between transportation planning, traffic management and operations."*⁷

⁷<http://www.atlantaregional.com/transportation/current-studies/strategic-regional-thoroughfare-plan/strategic-regional-thoroughfare-plan>



For the benefit of North Fulton, several key corridors within North Fulton will be included in the Strategic Regional Thoroughfares Plan and one key corridor will specifically be selected as an in-depth case study. Initial findings from the North Fulton CTP can be used to aid and inform the thoroughfares plan, thereby positioning North Fulton to receive the maximum benefit from this future plan. The regionally significant corridors in North Fulton that will be included in this plan will be chosen through the Strategic Regional Thoroughfares Plan. The North Fulton CTP study is proposing that the following three routes be designated as strategic regional thoroughfares:

- State Route 9
- State Route 92/State Route 140
- State Route 140/State Route 120/State Bridge Road

3.3 Early Opportunities

In order to gain early momentum and set a tone of implementation for the North Fulton CTP, several projects have been identified. Each jurisdiction within the limits of the study area were given the opportunity and staffing resources to select one project that supports operational improvements, is relatively low-cost, and can be performed in a relatively short time frame, perhaps even as this study is in progress.

Project selection efforts are currently underway, however, four specific projects have been identified to date. They are as follows:

- Various changes, including laneage striping modifications, to the intersection of Medlock Bridge Road (SR 141) and State Bridge Road in Johns Creek. These changes are targeted to improve traffic congestion.
- Safety improvement including installation of a guardrail at the northern terminus of Juniper Street in Mountain Park.
- Modifications to the intersection of Marietta Highway (SR 120) and Atlanta Street (SR 9) in Roswell. These modifications will slow damage occurring to an adjacent existing historical wall and better maintain the roadway shoulder through providing a larger turning radius to accommodate large trucks.
- Feasibility assessment of a roundabout at the intersection of Jett Ferry Road and Spalding Drive in Sandy Springs. This improvement may aid in traffic congestion relief.

Each of the above mentioned projects are being investigated by members of the Project Management Team along with their respective Community Client Manager. The consultant team is also providing analysis as directed by each member of the PMT. Coordination with state and local engineering staff (as needed) is anticipated to occur for each of the projects listed within the next few months. Additional early opportunity projects are being considered for the remaining jurisdictions and will be added at a later date.



3.4 Public Charrettes

Over a two week period in January, six Public Information Open House meetings (PIOH) – one for each municipality within North Fulton - were held for the North Fulton CTP project. These meetings were conducted in charrette format, allowing attendees to break up into smaller groups, each with a facilitator, to discuss the transportation needs of the region. Each meeting began with an introduction to the project and its mission/goals, an overview of the events and activities to date, upcoming milestones, and a brief educational presentation on general transportation planning principles. Following this, participants spent over an hour offering their input on issues, opportunities, and solutions. Attendees were encouraged to draw on maps to indicate the location of problem intersections and corridors, popular destinations, and desired facilities (roadway, pedestrian, bicycle, and transit).

Public Input Received

More than 170 people participated in the charrettes to provide input for the project. Additionally, emails were received from some individuals who could not attend the meetings.

All comments were sorted by mode type (vehicular, pedestrian, bicycle, and transit). A breakdown of the mode specific comments follows:

- 54% of comments are regarding vehicular travel
- 24% of comments are regarding pedestrian or bike travel
 - 60% of the ped/bike comments are pedestrian-related
 - 40% of the ped/bike comments are bike-related
- 22% of comments are regarding transit travel
 - 73% of the transit comments are regarding bus travel
 - 27% of the transit comments are regarding rail travel

Vehicular Comments

As would be expected, the vehicular comments cover topics ranging from very specific local issues to larger regional needs. Among the more regional facilities, the following were consistently discussed:

- GA 400
- SR 9 (Roswell Road, Alpharetta Highway)
- SR 120 (Abbotts Bridge Road, State Bridge Road, Old Milton Parkway)
- SR 140/SR 92 (Holcomb Bridge Road, Crossville Road)
- McGinnis Ferry Road

Less than one third of the comments about GA 400 related to a desire to widen the facility. The more common comments were specific to interchanges along GA 400. The Holcomb Bridge Road/SR 140 and potential McGinnis Ferry Road interchanges generated the most attention, with



mixed opinion on whether the McGinnis Ferry interchange would be a benefit or detriment to the traffic situation in North Fulton.

The other prominent north/south corridor commentary was centered on SR 9. While several intersections along the corridor were singled out for improvement, a common theme was evident regarding the need for additional capacity along the corridor, with half of the jurisdictions recommending widening in multiple locations (most prominently to the north from Hembree Road and at the I-285 interchange).

The east-west linked facilities of SR 120, Abbotts Bridge Road, State Bridge Road, and Old Milton Parkway were identified as candidates for capacity improvements, including widening along the corridor and lane additions at congested intersections.

SR 92/SR 140 (Crossville Road/Holcomb Bridge Road) was also mentioned often. While the corridor stretches across all of North Fulton, the only over-arching theme was the need for improvement to the interchange at GA 400. Some other common opinions were related to the need to address cross-county commuters and access management along the corridor.

As mentioned above, the potential McGinnis Ferry Road interchange with GA 400 generated a number of comments, though there is a difference of opinion on whether or not the interchange would improve travel within North Fulton. Almost every other comment regarding McGinnis Ferry Road indicated a need for additional capacity (widening) to serve as a better facility for east-west travel.

Pedestrian/Bicycle Comments

The comments regarding pedestrian and bicycle facilities had much more localized themes. Generally speaking, people expressed a desire for increased connectivity and more consistency with both types of facilities. The discussion about sidewalks tended to be very specific, with participants expressing a desire to have a sidewalk in a detailed location or connecting to a specific use (schools were mentioned often). Bicycle facility recommendations tended to be more conceptual, expressing a desire to connect to “facilities in other municipalities” and to a variety of retail and entertainment venues.

Transit Comments

The overwhelming majority of comments regarding transit were about buses. Small, in-town circulators, bus rapid transit, and park and ride facilities were all mentioned multiple times. It seems that North Fulton residents are asking for access to comprehensive bus service. Though mentioned less often, rail generated more consistent comments, with a common desire for a rail extension along GA 400, from the existing North Springs Station to Windward Parkway.



4.0 LAND USE AND MARKET ASSESSMENT

4.1 Land Use and Accessibility

This section reports land use and development findings as they relate to transportation in North Fulton. The primary focus is on accessibility and the regulatory framework that can enhance or inhibit accessibility. Land use factors can affect trip distance, mode split, commute patterns, driveway placement, and ultimately the total amount of trips generated. Therefore, land use regulations have enormous potential to improve or reduce transportation efficiency.

During initial meetings for the North Fulton CTP, city representatives indicated that they were, in general, satisfied with their respective, adopted Future Land Use policies⁸ and did not want this program to presume any need to change land uses. Recognizing the tension between a desire to protect existing high-quality suburban patterns and the need to mitigate future congestion, North Fulton cities have the challenge of implementing forward-looking action as they manage future land development, especially where adopted policies indicate additional growth.

There is potential to leverage future growth opportunities to actually improve transportation efficiency. These opportunities exist where there are undeveloped parcels, parcels approved for DRI projects, sites ripe for redevelopment, and along commercial corridors likely to redevelop over the next twenty years given aging stock and conditions.

This chapter on land use provides an overview of existing regulations that are influencing transportation in North Fulton. Section 4.1.1 of this chapter describes method rationale for the land use analysis. Section 4.1.2 establishes six regulatory strategies to use as a performance benchmark. These strategies were selected because they meet the respective cities' adopted land policy objectives that relate to mitigating congestion in the future. Section 4.1.3 then describes regulation inconsistencies across borders of adjacent cities.

Regional agencies have begun to consider incorporating land use measures as factors in their project prioritization for transportation. Land use has become an important component in the evaluation of transportation projects and will continue to be so going forward.

4.1.1 Method Rationale and Application

Several land use factors impact travel behavior, but because many of these factors overlap, measuring any one in isolation can exaggerate or underestimate its effect. Some research indicates that factors associated with density – accessibility, land use mix, walkability—may account more for changes in travel behavior than density itself.^{9,10} The Victoria Transport Institute reports

⁸ The City of Roswell and the City of Alpharetta will be updating their Comprehensive Plans by November 2011.

⁹ Ewing (1995). “*Beyond Density, Mode Choice, and Single-Purpose Trips*” *Transportation Quarterly*, Vol 49, No 4, pp 15-24.



several studies on specific factors.¹¹ For example, one study indicates a range of change in drive-alone share between 1 and 6 percent accounted for by land use characteristics.¹² Another study showed weekday travel reduced by 14% when worksite amenities included a set of common personal services. One US EPA study found that roadway design features like aesthetics, pedestrian-friendly, and more extensive transit services have a positive impact on system performance, regardless of density.

For the region, the distribution of density does matter and will affect regional congestion and travel time. The *Envision6* land use sensitivity modeling showed a significant reduction of congestion on arterials under a land use scenario that capped sprawl and distributed densities along existing infrastructure. The local governments of North Fulton have little room for growth, and density is not the desired focus of their land use management needs; therefore, the assessment focuses on land management regulations that create the conditions that can impact travel behavior.

Impacts on travel choice and on congestion levels will depend upon type of trip and type of traveler (work trips, special needs traveler, etc). Although nearly half of all trips and about a third of travel mileage gets generated from shopping and recreation, these trips tend to occur during off peak travel times. Commute trips account for about 18% of local mileage, but because they occur during peak periods, reducing them can impact congestion. That accounts for the emphasis regional planning agencies place on the jobs/housing balance, which is the ratio of jobs to residential units in an area. A balance of about 1.0 can reduce average commute distance and per capita vehicle travel. In the North Fulton subarea, the ratio is .83, which is relatively high for the region as a whole. What local governments have most control over is land use and creating the conditions that make a healthy jobs and housing mix even possible.

With limited and competitive funding available for road projects that can increase capacity, North Fulton cities will benefit from considering the items identified in Table 4-1, which summarizes some of the effects of land use factors on travel trips and mode.

¹⁰ Kockelman (1995). “Which Matters More in Mode Choice: Income or Density?” Compendium of Technical Papers, ITE 65th Annual Meeting.

¹¹ Litman (Aug 2009). Land Use Impacts on Transport How Land Use Factors Affect Travel Behavior. Victoria Transport Policy Institute.

¹² Cambridge Systematics (1994). The Effects of Land Use and Travel Demand Management Strategies on Commuting Behavior. Travel Model Improvement, USDOT.



Table 4-1: Land Use Impacts on Travel

Factor	Definition	Travel Impacts
Density	People or jobs per unit of land area (acre or hectare).	Increased density tends to reduce per capita vehicle travel. Each 10% increase in urban densities typically reduces per capita VMT by 1-3%.
Mix	Degree that related land uses (housing, commercial, institutional) are located close together.	Increased land use mix tends to reduce per capita vehicle travel, and increase use of alternative modes, particularly walking for errands. Neighborhoods with good land use mix typically have 5-15% lower vehicle-miles.
Regional Accessibility	Location of development relative to regional urban center.	Improved accessibility reduces per capita vehicle mileage. Residents of more central neighborhoods typically drive 10-30% fewer vehicle-miles than urban fringe residents.
Centeredness	Portion of commercial, employment, and other activities in major activity centers.	Centeredness increases use of alternative commute modes. Typically 30-60% of commuters to major commercial centers use alternative modes, compared with 5-15% of commuters at dispersed locations.
Network Connectivity	Degree that walkways and roads are connected to allow direct travel between destinations.	Improved roadway connectivity can reduce vehicle mileage, and improved walkway connectivity tends to increase walking and cycling.
Roadway design and management	Scale, design and management of streets.	More multi-modal streets increase use of alternative modes. Traffic calming reduces vehicle travel and increases walking and cycling.
Walking and cycling conditions	Quantity, quality and security of sidewalks, crosswalks, paths, and bike lanes.	Improved walking and cycling conditions tends to increase non-motorized travel and reduce automobile travel. Residents of more walkable communities typically walk 2-4 times as much and drive 5-15% less than if they lived in more automobile-dependent communities.
Transit quality and accessibility	Quality of transit service and degree to which destinations are transit accessible.	Improved service increases transit ridership and reduces automobile trips. Residents of transit oriented neighborhoods tend to own 10-30% fewer vehicles, drive 10-30% fewer miles, and use alternative modes 2-10 times more frequently than residents of automobile-oriented communities.
Parking supply and management	Number of parking spaces per building unit or acre, and how parking is managed.	Reduced parking supply, increased parking pricing and implementation of other parking management strategies can significantly reduce vehicle ownership and mileage. Cost-recovery pricing (charging users directly for parking facilities) typically reduces automobile trips by 10-30%.
Site design	The layout and design of building and parking facilities.	More multi-modal site design can reduce automobile trips, particularly if implemented with improved transit services.
Mobility management	Policies and programs that encourage more efficient travel patterns.	Mobility management can significantly reduce vehicle travel for affected trips. Vehicle travel reductions of 10-30% are common.

Source: Litman (Aug 2009). Land Use Impacts on Transport: How Land Use Factors Affect Travel Behavior



Table 4-2 below summarizes research results of how a mix of uses contributes to reducing trip generation.

Table 4-2: Trip Reduction Factors					
Minimum Floor Area Ratio	Mixed-Use	Commercial Near Bus	Commercial Near LRT Station	Mixed-Use Near Bus	Mixed-Use Near LRT
No minimum	-	1%	2.0%	-	-
0.5	1.9%	1.9%	2.9%	2.7%	3.9%
0.75	2.4%	2.4%	3.7%	3.4%	4.9%
1.0	3.0%	3.0%	5.0%	4.3%	6.7%
1.25	3.6%	3.6%	6.7%	5.1%	8.9%
1.5	4.2%	4.2%	8.9%	6.0%	11.9%
1.75	5.0%	5.0%	11.6%	7.1%	15.5%
2.0	7.0%	7.0%	15.0%	10.0%	20%

Source: Litman 2009 (from Portland 1995). *Parking Ratio Rule Checklist: Self-Enforcing Strategies*

Method Application

Given the relationships of land use and transportation established by secondary data, the needs assessment focused on reviewing land development measures known to influence travel behavior. These were drawn from the research established above and organized into the following strategies relevant to North Fulton:

- Strategy #1: Efficient location and mix of uses
- Strategy #2: Connectivity design requirements
- Strategy #3: Bicycle and pedestrian improvements
- Strategy #4: Access management
- Strategy #5: Parking supply and management
- Strategy #6: Multi-modal site design

The entire set of ordinances for each city was reviewed for zoning, subdivision, land use and street design regulations affecting the six strategies above. The results were entered into a matrix so that conclusions and generalities could be drawn across the subregion.

4.1.2 Identified Needs

Findings: Regional and Local Policy Comparison

Overlaying the Unified Growth Policy Map (UGPM) on top of a map showing adopted future land use designations indicates a general cohesion in policy direction. The main difference lies in the amount of coverage identified for the UGP “Mega Corridor” category. Mega Corridors are defined as the most intensely developed radial corridors in the region. They may include multiple regional centers. Both local government policy and the UGP target intensive development along GA 400, but the UGP Mega Corridor designation that categorizes this intensity covers a larger amount of



acreage, spilling over into areas the municipalities identify as single family residential use in the future. Refer to Figure 4-1 to view the noted discrepancies.

This difference does not suggest a need to change either set of policy assumptions; rather it merely provides cities greater latitude in future policy planning. Examples of the difference include:

The City of **Alpharetta** differs from the Atlanta region Unified Growth Policy Map (UGPM) on the area west of Hopewell Road, which is identified as part of the Mega Corridor. On the other hand, the City's Future Land Use Map has this area as primarily Low Density residential, which is mostly built out. The city emphasizes the need to preserve single family neighborhoods.

Sandy Springs: ARC's UGP categories correspond with a majority of the City's future land use designations. The area between Roswell Road and the eastern boundary of the City and the area along GA 400 are designated as Mega Corridor in the UGP. This coincides with the future land use of the City, which designates the area as Living Working - Regional.

The UGP areas that fall outside of the Mega Corridor and Town Center designations fall into the Urban Neighborhood category in the UGP map. Urban Neighborhoods are distinct areas that are located in an urban area and may have a small commercial component that serves the local area. According to the *Envision6* Regional Development Types Matrix, Urban Neighborhoods have 5 to 22 residential units per acre. This designation may conflict with Sandy Springs' Future Land Use Map which shows Residential (0 to 0.5, 0 to 1, and 1 to 2 unit per acre) in the area. Further, the Atlanta region UGP does not appear to indicate any "Suburban Neighborhoods" in the City of Sandy Springs, while the city's adopted Future Land Use Map identifies a number of areas including those along the Chattahoochee River as Residential (0 to 1 acre). In addition, current zoning supports low density single-family development with suburban characteristics. The Sandy Springs adopted Character Area identifies a significant portion of the residential area as "Suburban" with limited a limited amount of "Urban" area.

Findings: Local Land Use Policies

Future land changes along key corridors bring the greatest opportunity for coordination, but these are also the most challenging areas because they will involve incremental redevelopment decisions and adaptive re-use. The greatest need that emerges from this assessment lies in coordinating redevelopment along the primary corridors; the three greatest opportunities are SR 9, Holcomb Bridge Road (SR 140) and State Bridge Road (SR 140/120). Reviewing the future land use categories along key corridors indicates shared expectations of development type.

A review of the municipalities' respective Comprehensive Plans also suggests several consistent land use policy themes across the study area that impact travel behavior and transportation planning. Most, if not all, of the Comprehensive Plans indicate policy commitment to create conditions to allow the following development or improvements:

- Mix/Range of Housing Types *
- Senior Housing and/or Lifelong Communities *



- Cluster Housing
- Redevelopment *
 - each municipality has redevelopment issues along major corridors
 - this is a policy area where the cities could greatly benefit from coordinated management of redevelopment, especially in terms of consolidating excessive curb-cuts to improve flow
 - see the consolidated future land use maps for three key corridors: SR 9, Holcomb Bridge Road (SR 140), and State Bridge Road
- Preserve Single Family
- Gateways
- Pedestrian Circulation/Accommodate Pedestrians *
- Trail Connections/Greenway Connections *
- Access Management (Corridors)
- Sidewalk Infill
- Focused Densities *
- Nodal Development *
- New street networks
- Design Standards

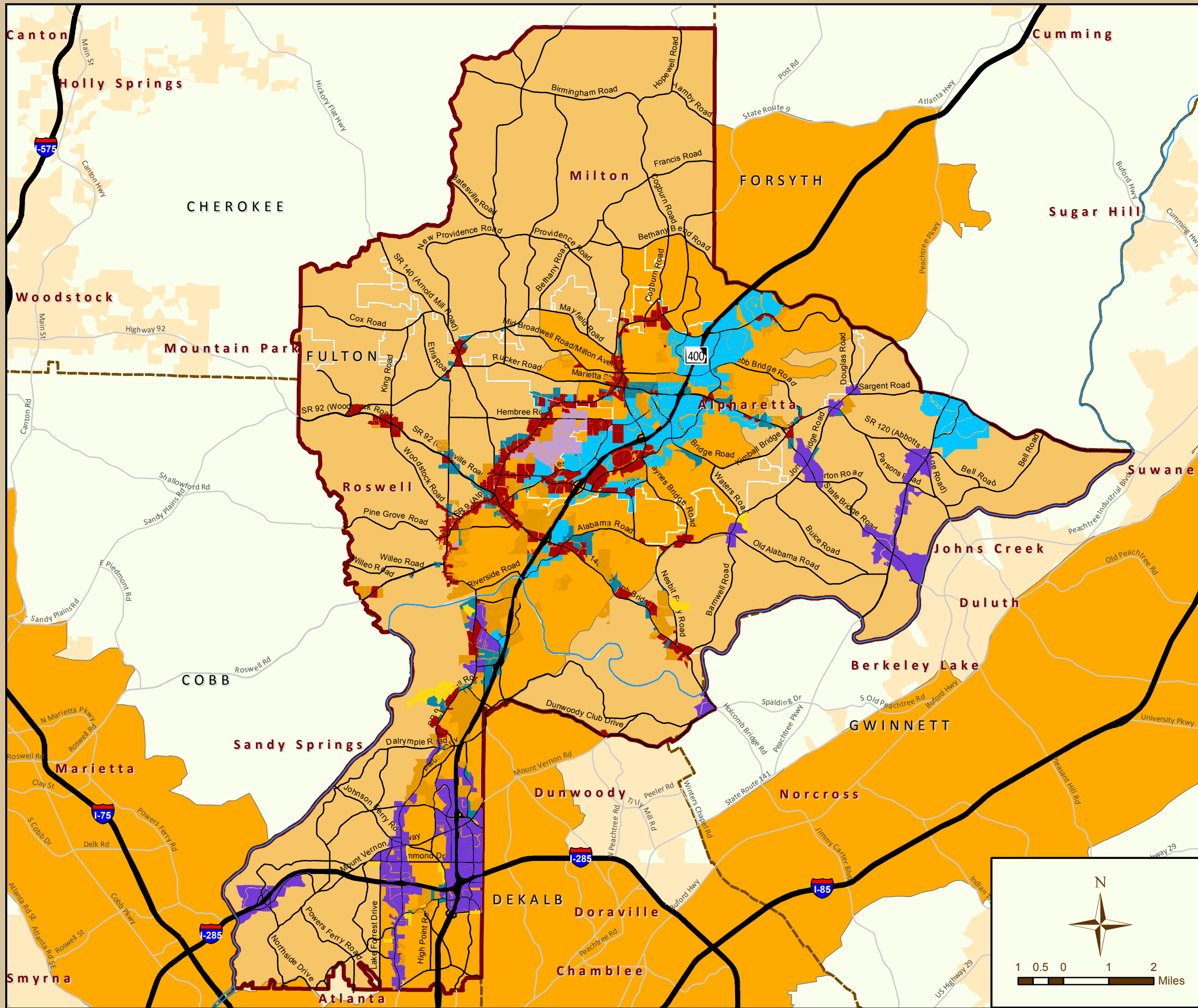
The categories starred (*) above indicate policy categories that are common to the Atlanta region UGP.

This study assumed that gaps may exist between the adopted policies and the degree to which the individual municipal regulatory framework fosters ways to achieve the policy objective. To assess the regulatory context, regulations were reviewed and organized within a framework of land development management strategies that enhance accessibility. This framework incorporates most of the above policy target areas, with the exception of fostering gateways.

Findings: Accessibility Enhancing Strategies

As a predominately built-out subregion, North Fulton cities have few opportunities to modify existing development patterns; therefore, redevelopment and infill, along with limited new development opportunities take on special strategic importance for municipalities to manage incremental change in land development.

Adopted land use and transportation policy indicates a commitment to achieving patterns that create better access to destinations in the future. An assessment of existing zoning and development regulations indicates most of the cities now have regulations that promote creating conditions to do so. Zoning and development regulations were reviewed to determine whether North Fulton cities employed the six strategies described in Section 4.1.1 provides the rationale for these strategies, based upon published travel behavior research.





**North Fulton County
Transportation Resource
Implementation Program**

ARC
ATLANTA REGIONAL COMMISSION

**Kimley-Horn
and Associates, Inc.**

Reference Location

**ARC
20-County
Region**



Legend

FLU "Activity Centers" Category (High Density/Intensity)

- General Commercial
- High Density Residential
- Medium Density Residential
- Mixed Use
- Office Professional
- Office Campus
- Unified Growth Policy Mega Corridor
- Study Network
- Other Major Roads
- Expressways
- Chattahoochee River
- Study Area
- Counties
- Other Cities

Source: ARC GIS Data

**Figure 4-1
Future Land Use (Activity Centers)
Vs. UGP Mega Corridors**

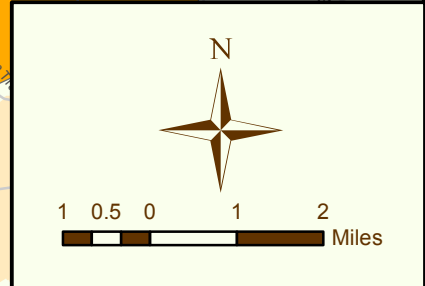




Table 4-3: Land Use Accessibility Strategies

Strategy	Description	Regulatory Measure
#1 <i>Efficient Locations and Mix of Use</i>	<p>Destinations or "activities" (jobs, retail, school, amenities) allowed or required to be located close to residential</p> <p>Permitting and encouraging mix of uses on site</p> <p>Cluster residential and employment at transit stations (TOD districts)</p> <p>Level of accessibility and transport of disadvantaged people relative to more advantaged people (non-drivers, low income, special needs)</p>	<p>Existing patterns (to measure: 30 minute or less travel time); allow mixed use</p> <p>Mixed-use zoning or overlay districts</p> <p>Incentives and/or requirements for developments near transit (high density zoning districts (TOD), development regulations)</p> <p>Location criteria for senior/special needs housing</p>
#2 <i>Connectivity: Design requirements</i>	<p>Require inter-parcel connectivity</p> <p>Require stub-out for possible future connectivity</p> <p>Grid-pattern for streets; walkable block lengths</p>	<p>Regulations provide for inter-parcel requirements</p> <p>Connectivity Ratio requirements (link to node) for subdivisions and streets</p> <p>Regulations require stub-out and coordination with adjacent properties</p> <p>Road design standards establish connection requirements and maximum block lengths for new developments</p> <p>Regulations for subareas with adopted circulation plan (e.g., LCI)</p>
#3 <i>Connectivity: Bicycle and Pedestrian Improvement Requirements</i>	<p>Quantity: Require new and re-development projects to complete the sidewalk and bicycle network</p> <p>Quality: Standards create not just safe walking and cycling conditions, but invite use of facilities</p>	<p>Development regulations requiring sidewalk and/or bicycle path improvements</p> <p>Adopted streetscape standards</p>
#4 <i>Access Management</i>	<p>Reduce and/or consolidate curb-cuts</p>	<p>Shared drive requirements</p> <p>Shared "frontage" drive options</p> <p>Regulations reducing curb-cut (especially redevelopment); median management</p> <p>Adopted access plan for segments of specific roads and/or road types</p>
#5 <i>Parking Supply and Management</i>		



Supply, price, and management of parking impact automobile travel behavior; constrained parking promotes reduction of vehicle use

Shared parking; park-n-ride opportunities
Parking reductions near transit stations
Car-free districts

#6 Multi-modal site design

Site design includes bicycle, pedestrian and transit (e.g., benches for bus stops) amenities

Development regulations identify coordination with bus service providers
Regulations require bicycle parking

Strategy #1 Findings: Efficient locations and mix of use

Mixed-Use Zoning and Mixed-Use Land Use Designations:

All the municipalities have at least one mixed-use zoning district, although they vary in regard to specific dimensions, thresholds and requirements. For example the minimum acreage eligible for mixed-use may be 3 to 10 acres for the MIX zoning district in Sandy Springs to a 25-acre minimum for a Mixed-Use zoning in Alpharetta. Density bonuses appear to only be available in a Roswell district (MP_PUD), but only up to 6 units to the acre, which also grant higher FAR¹³ for office-commercial mixed use located near transit. To promote redevelopment, cities may wish to consider creating more flexible mixed use zoning districts for smaller sites.

Although both the Roswell and Alpharetta comprehensive plans identify the need for mix of housing types and mixed-use development neither Future Land Use Maps identify a Mixed- Use Category, or what some of the other jurisdictions designate a “Living and Working” category. Johns Creek, Sandy Springs, and Milton all follow the Fulton County designations for “Living and Working” which identify the scale and intensity of the development to compliment the scale and infrastructure of the surrounding development. The three categories are neighborhood, community, and regional¹⁴.

The greatest opportunity for improved access and changing travel behavior at the neighborhood and local level will come with redevelopment opportunities, which are usually incremental in scale. Thus, municipalities wishing to promote a mix of uses through redevelopment and infill opportunities will need modifications to zoning districts to allow parcel-by-parcel mix of uses, rather than wait for assemblage of parcels with large acreage.

¹³ FAR, or Floor to area ratio, is the term used to describe the arithmetic relationship of the total square feet of a building to the square footage of the land area. The floor-area ratio is often limited by the zoning code and may have an important influence on the land value. (FAR = Total Building Area/Land Area)

¹⁴ The City of Johns Creek does not include “regional” category



Transit Oriented Development:

Sandy Springs is the only municipality with rail transit options. Sandy Springs currently has “Living and Working” as the land use category around the existing MARTA stations. The Sandy Springs zoning map though does not represent a full mixed-use area. Some properties are mixed-use but are also coupled with Commercial (C-1) and Office-Institution (O-I) zoning categories; the O-I district allows for a mix of uses but not for the same purpose. The Land Use Policy supports Transit Oriented Development (TOD). The city has implemented reduced parking standards around MARTA, but has not developed a TOD ordinance.

For the limited bus routes that exist, any long range planned stations should include consideration of maximizing clusters of residential uses and amenities near stations, as promoted by TOD design principles. Alpharetta’s park-and-ride option represents another potential transit amenity that may benefit from TOD design.

Town Center:

Sandy Springs, Johns Creek, and Milton policy documents all express a need to determine a location for a “Town Center” and to establish development regulations to support this.

Strategy #2 Findings: Connectivity: design requirements

Most of the cities now require inter-parcel and pedestrian connectivity; the City of Milton allows the community development department to determine whether inter-parcel access is in the best interest of the public health, safety, or welfare. A few of the cities also allow a city staff official (public works or city engineer) to determine the location of an inter-parcel access connecting drive, should the parcel owners not achieve agreement on the drive’s location. All of the cities would benefit from this provision, as it removes any loop-holes in standardizing inter-parcel connections as parcels develop or redevelop.

Strategy #3 Findings: Connectivity for Bicycles and Pedestrians

All of the North Fulton cities require sidewalk improvements providing connectivity. The cities of Roswell, Milton, and Johns Creek require bicycle improvements in the following forms:

- Roswell requires right-of-way bicycle improvements along arterials and collectors designated in the City of Roswell Comprehensive Master Plan
- Milton requires trail construction (much of which provides bicycle access) along specific roadways as part of the Trail Development Standards Ordinance
- Johns Creek specifies requirements for multi-modal paths in their zoning ordinances

All of the cities could benefit from either developing or expanding streetscape standards to ensure provision of facilities and to establish high aesthetic standards such that the facilities invite use. Research indicates that the more pedestrian-friendly the facility is, the more use. The cities could also benefit from prioritizing funding for these improvements as well.



Strategy #4 Findings: Access management

In the past, the development regulations in North Fulton generally regulated land development on an individual basis which created a built environment with numerous curb-cuts, a lack of a roadway grid system, and little, if any interconnectivity between subdivisions and surrounding land uses. Without these regulations tied to land use development, uses along major corridors such as SR 9, SR 120, SR 92, SR 140, State Bridge Road, Johnson Ferry Road, and Abernathy Road have caused streetscapes to be formed with unnecessary vehicular access conflicts and challenging situations for pedestrians.

Now, all municipalities in North Fulton address access in terms of safety, with rules for new development establishing the standard distance between driveways, driveway width, and site triangles. Several of the cities also have detailed road design illustrations and requirements for deceleration lanes for left and right-turns, with varied driveway distances depending upon road segment speed.

The regulations do not appear to require all redevelopment to share access, although Milton grants the community development department authority to determine whether or not to require shared access. Regulations also do not appear to address possible driveway closings in redevelopment scenarios or to establish greater distances which could and should vary depending upon road type and land use to facilitate better operations. Along strategic corridors that cross jurisdiction boundaries, coordination of managing access across local government boundaries could lead to improved roadway functioning.

Strategy #5 Findings: Parking supply and management

All of the municipalities provide for some type of shared parking options. Both Roswell and Alpharetta policy address the use of parking decks to provide parking in the urban historic downtown area. The ordinances do not address parking deck regulations. Sandy Springs has implemented reduced parking standards around the MARTA stations but has not developed a TOD ordinance. Johns Creek requires parking to be distributed around the building with 50% minimum in the rear of the building.

An innovative approach to limiting parking while providing alternative access to key destinations could have a positive impact on local trip generation and neighborhood accessibility. This is especially true given the desire for local governments to alleviate local congestion. Generally, ample parking is provided at destinations throughout North Fulton. This creates disincentives for using alternative travel modes because drivers know they are guaranteed a parking space at their final destination. Strategies to reduce available parking supply, while not always popular, can have a positive impact on traffic conditions on the regions roads.



Strategy #6 Findings: Multi-modal site design

Aside from sidewalks, none of the cities' ordinances appear to require comprehensive multi-modal considerations in site design. Roswell does require bike racks in the Midtown district; Alpharetta's mixed-use district requests transit opportunities and amenities and Milton's overlays support bike parking. Park-n-ride is an area of opportunity for commercial properties with excess surface parking or areas experiencing vacancies. Alpharetta has park-n-ride lots along Mansell Road and Windward Parkway, but no regulation provides incentives or requirements for providing these options.

Additional Findings: Infrastructure planning

During the re-zoning process, cities have the greatest opportunity to coordinate infrastructure planning with land use decision-making. Traffic impact studies provide the quantitative data to support decisions to obligate applicants to mitigate a proposed development's impact. Most of the North Fulton cities require traffic studies, albeit with varying thresholds and implications. Alpharetta's code authorizes the city engineer to determine whether or not a traffic impact study is necessary. Milton's ordinance provides for a detailed standard, with thresholds for a variety of land use types and associated Level-of-Service results.

4.1.3 Potential Zoning Incompatibility

In general, zoning designations along shared city boundaries appear compatible. The following areas indicate potential incompatibility and present areas for coordinating land use across jurisdictional boundaries:

Roswell and Sandy Springs

Along GA 400 northbound from Sandy Springs to Roswell:

The northern part of Sandy Springs (at the Roswell border) is zoned O-I (Office Institutional) and A (Medium Density Apartment), while the southern part of Roswell (at this border) is zoned R-4 (Residential) and I-1 (Light Industrial). The area around GA 400 appears to be a variety of zoning and development types. The residential zoning districts for both cities are higher intensity which often lends well to zoning transitions.

Along SR 9 northbound from Sandy Springs to Roswell:

The northern part of Sandy Springs at the Roswell border (separated by the Chattahoochee River) is zoned O-I, while the southern part of Roswell at this border is zoned R-3/R-4 (Multi-family).



Alpharetta and Roswell

Along the west side of GA 400:

The southern part of the Roswell border as it touches the Alpharetta border is R-3 and R-1 (single family) with some C-1 to the north which abuts I-1 and RM-10 in Alpharetta. The latter commercial intensities conflict with the less intense residential uses. Moving north along this border in Roswell, the O-I, C-1 and I-1 become prevalent and coincide with Alpharetta with the exception of two parcels which are zoned R-1.

Johns Creek and Roswell

Along Old Alabama Road from the western boundary of Roswell to the eastern boundary of Johns Creek:

Area is zoned FC-A (Fulton County Annex) and R-1. The FC-A property appears, by parcel designation, to be residential in nature. FC-A follows the zoning designation when it was under Fulton County jurisdiction and is not represented on the current zoning map. Johns Creek has a variety of residential zoning districts. The potential conflict arises when the FC-A or R-1 abuts TR (Townhouse Residential) in Johns Creek as well as the denser residential district in Johns Creek which abut the R-1.

Johns Creek and Alpharetta

Northwest of Jones Bridge Road and south of McGinnis Ferry:

There are a few parcels zoned Ag (Agricultural) in Alpharetta, while Johns Creek shows a variety of single family zoning designations. Where Sargent Road intersects with Jones Bridge Road from Johns Creek to Alpharetta is a C-1 node which likely creates conflict with CUP, SU and Ag property in Alpharetta.

The node at Abbotts Bridge Road features C-1 and O-1. The O-1 on the Johns Creek side abuts a mixture of SU and Ag in Alpharetta. There is also a conflict on the southern border where Johns Creek has a property zoned TR (Townhouse residential) abutting CUP in Alpharetta. By the parcel lines it can be assumed that the Alpharetta property is single-family residential.



4.2 Market

4.2.1 North Fulton Market Summary¹⁵

Like other areas across the Atlanta region and United States, North Fulton has seen a dramatic decline in market activity during the past several years. On a positive note, however, North Fulton has seen a slightly less dramatic dip in market activity than other comparable areas. The following sections describe market activities as they relate specifically to the residential, retail, office, and industrial markets. This section provides market information that is most relevant for a long range regional transportation plan. Some additional market information has been provided in Appendix A.

North Fulton¹⁶

Residential: During the first eleven months of 2009, there were approximately 236 residential permits issued in North Fulton. This figure represents a decrease of 60% from the first ten months of 2008, when 596 permits were issued. The decrease in residential building permits in North Fulton has taken place over a number of years. The number of permits actually increased by 33% between 2005 and 2006, but has declined ever since. Between 2006 and 2007, the number of permits dropped from 870 to 844, even though the statistics for three new cities were added in 2007. Permits continued to decline between 2007 and 2008. In 2008, there were 636 residential permits issued in North Fulton, which was a decrease of 25% from the 844 permits issued during 2007. Some of this slowdown reflects the mature stage of North Fulton’s development cycle and the established dedication of much of the area to residential uses.

Table 4-4 shows the number of building permits issued from 2005 to 2009.

		2005	2006	2007	2008	2009*
Alpharetta	Single-Family	388	365	268	76	29
	Multi-Family	0	216	0	0	0
	Total	388	581	268	76	29
Johns Creek	Single-Family			139	154	96
	Multi-Family			0	0	4
	Total			139	154	100
Milton	Single-Family			87	175	41

¹⁵ North Fulton is defined here as the cities of Alpharetta, Johns Creek, Milton, Roswell and Sandy Springs. Mountain Park is not specifically highlighted in the market assessment because it does not have significant residential or commercial development, within the context of greater North Fulton.

¹⁶ Sources: US Census Bureau, CoStar, and Market + Main.



Table 4-4: Residential Building Permits Issued

		2005	2006	2007	2008	2009*
	Multi-Family			0	0	0
	Total			87	175	41
Roswell	Single-Family	249	289	201	91	42
	Multi-Family	16	0	0	0	0
	Total	265	289	201	91	42
Sandy Springs	Single-Family			149	136	24
	Multi-Family			0	4	0
	Total			149	140	24
North Fulton	Single-Family	637	654	844	632	232
	Multi-Family	16	216	0	4	4
	Total	653	870	844	636	236

Source: US Census Bureau

* Permits through November 2009.

Average sales price for homes in North Fulton have generally reflected the rate of building permits being issued. During the period from 2005 to 2009, home prices generally increase during the early years, plateau in 2007/2008, then begin drastically declining in 2009. Table 4-5, Table 4-6, and Table 4-7 show average sales prices for various types of housing from 2005 to 2009.

Table 4-5: Average sales price for new detached homes

	2005	2006	2007	2008	Jan-Oct 2008	Jan-Oct 2009
Active Subdivisions	83	87	93	87	82	78
New Homes Sold	601	492	522	384	338	237
Average Sales Price	\$690,876	\$718,608	\$681,964	\$651,716	\$658,130	\$607,161

Source: Smartnumbers

Table 4-6: Average sales price for new townhomes

	2005	2006	2007	2008	Jan-Oct 2008	Jan-Oct 2009
Active Subdivisions	31	35	45	42	42	33
New Homes Sold	981	677	557	312	263	180
Average Sales Price	\$256,699	\$312,409	\$327,408	\$303,900	\$305,444	\$260,173

Source: Smartnumbers



Table 4-7: Average sales price for new condominiums

	2005	2006	2007	2008	Jan-Oct 2008	Jan-Oct 2009
Active Subdivisions	11	8	8	6	6	4
New Homes Sold	254	371	147	31	31	25
Average Sales Price	\$165,553	\$161,489	\$163,432	\$202,630	\$202,630	\$142,182

Source: Smartnumbers

Research on North Fulton’s apartment rental rates and occupancy rates indicates a relatively strong rental market. 23 apartment communities in North Fulton were surveyed, representing almost 7,000 apartment units. Due to the scope of this study, a broad cross-section of apartment communities were interviewed to serve as a sample of the overall apartment market. In an effort to accurately represent the overall apartment market, consideration was given to geographic location, community size, and age of development. The survey looked at communities from five North Fulton municipalities (not including Mountain Park which has no apartment communities) and those of different sizes and ages.

The oldest apartment community surveyed was built in 1970 and the newest in 2006. The smallest apartment complex in the survey has 155 units and the largest has 636 units. Because the apartment communities across North Fulton vary greatly, the results of the survey have been divided into three tiers based on age. Tier one apartments are defined as those built in the last ten years. Tier two communities were built between 1990 and 1998. The third tier consists of apartment complexes that were built in 1989 or earlier. What immediately stands out from Table 4-8 below is that the rental ranges are not as different between tiers as might be expected in a typical market.

Table 4-8: Average apartment rental rate range

	# of Complexes	Year Built	Occupancy Rate	# of Units per Complex	Average Rental Rate Range		
					1 BR	2 BR	3 BR
Tier One	6	1999-2006	91% - 97%	210 - 636	\$650 - \$890	\$800 - \$1,130	\$950 - \$1,500
Tier Two	8	1990-1997	90% - 95%	228 - 530	\$595 - \$898	\$780 - \$1,141	\$1,033 - \$1,384
Tier Three	9	1970-1989	89% - 98%	155 - 395	\$399 - \$638	\$545 - \$750	\$730 - \$900

Source: Market + Main

There is not a great deal of land still available in North Fulton to build additional large-scale communities of detached single-family homes. There will be, however, a demand in the future for additional housing at higher densities close to the area’s established job centers.

Retail: There are approximately 1,410 retail buildings in North Fulton. Total retail space is roughly 28 million square feet, which equates to approximately 85.6 square feet of retail space for



each resident. This is nearly twice the national average of 43.7 square feet per person.¹⁷ The median age of retail buildings is 17 years. Table 4-9 provides specific information regarding existing retail space for each jurisdiction within North Fulton.

Table 4-9: Existing Retail Space

	# of Buildings	Total Square Feet	% of North Fulton	2009 Population	Retail SF per Person	Median Year Built
Alpharetta	390	8,240,000	29%	55,560	148.3	1997
Johns Creek	140	3,625,000	13%	70,360	51.5	2000
Milton	50	1,685,000	6%	32,930	51.2	2006
Roswell	490	8,485,000	30%	83,630	101.5	1987
Sandy Springs	340	6,125,000	22%	86,430	70.9	1983
North Fulton*	1,410	28,160,000	100%	328,910	85.6	1993

Source: CoStar and Market + Main

* Does not include City of Mountain Park

Because retail space is greatly overbuilt across North Fulton, there will be little demand for additional retail space in the foreseeable future. The only exceptions may be tenant-driven deals where a particular retailer wants to locate on a very specific site. Many of North Fulton’s older retail centers will need to be renovated and re-tenanted or demolished and replaced with a new use. Even some of the new centers in the far sections of North Fulton will struggle to find tenants and may need to shift to another use.

Office: There are approximately 1,660 office buildings in North Fulton. Total office space is roughly 51.5 million square feet. Approximately 56% of office space is classified as Class A. Roughly 34% is considered to be Class B, while 10% is Class C. Table 4-10 provides specific information regarding existing office space for each jurisdiction within North Fulton.

North Fulton is in the enviable position of having two major office nodes for regional/national tenants. One of these nodes is the portion of the Perimeter office market that is located in Sandy Springs. The other is the North Point market in Alpharetta. These office markets bring prestige, wealth, and economic vitality to the area. As long as metro Atlanta continues to grow, both of these office markets should continue to grow. Unfortunately, the local-serving office market is overbuilt and most likely will be for the foreseeable future.

¹⁷ Source: “No Sign of a Meltdown in Third Quarter Retail Real Estate Trends: Retail Vacancy and Rents Hold Steady Despite Addition of New Space; Rising Retail Space Per Capita.” CoStar Advisor Newsletter, October 17, 2008.



Table 4-10: Existing Office Space

	# of Buildings	Total Square Feet	% of North Fulton	2009 Population	Office SF per Person
Alpharetta	540	19,300,000	37.5%	55,560	347
Johns Creek	65	2,700,000	5.2%	70,360	38
Milton	35	1,450,000	2.8%	32,930	44
Roswell	555	6,250,000	12.1%	83,630	75
Sandy Springs	465	21,800,000	42.3%	86,430	252
North Fulton*	1,660	51,500,000	100%	328,910	157

Source: CoStar and Market + Main

* Does not include City of Mountain Park

Industrial: There are roughly 300 industrial buildings in North Fulton with approximately 11.5 million square feet of space. This industrial market is quite small when compared to the area’s retail and office markets. Approximately 40% of the industrial space is classified as Flex, which has a large office component.

Future industrial growth in North Fulton will be limited by the lack of available land and interstate access. There will be a demand, however, for additional Flex space if suitable sites can be located. The most likely potential sites will be land currently occupied by failing retail centers.

City of Alpharetta¹⁸

Residential: Over the first eleven months of 2009, approximately 12% of residential permits in North Fulton were issued by the City of Alpharetta. Alpharetta’s housing stock is predominately detached single-family, but the City also has a sizeable number of attached single-family homes (townhomes) and rental multi-family communities.

There is not a great deal of land still available in Alpharetta for large-scale detached single-family communities. Because of the City’s tremendous retail and office development, there will be a demand in the future for additional housing at higher densities close to the City’s job centers.

Retail: There are approximately 390 retail buildings in the City of Alpharetta. Total retail space is roughly 8.2 million square feet, which represents 29% of the total retail square feet in North Fulton. There is approximately 148.3 square feet of retail space for each resident, which is by far the highest of North Fulton cities and over three times the national average of 43.7 square feet per

¹⁸ Sources: US Census Bureau, CoStar, and Market + Main.



person.¹⁹ The median age of retail buildings is 1997, which is newer than the median age of buildings in Roswell and Sandy Springs, but older than retail structures in Johns Creek and Milton.

The future of the Alpharetta retail market will rest largely on the ability of North Point Mall to remain a strong regional draw. Major new office development would also create additional demand for retail. As consumer preferences shift, product type will have to shift also, which will most likely lead to redevelopment of some of the City's Power Centers.

Office: There are approximately 540 office buildings in the City of Alpharetta. Total office space is roughly 19.3 million square feet, which represents 38% of the total office square feet in North Fulton. In Alpharetta, approximately 63% of office space is classified as Class A. Roughly 32% is considered to be Class B, while 5% is Class C.

Alpharetta is home to one of metro Atlanta's major office nodes for regional/national tenants, North Point. Over the five- to twenty-year time period, there will be considerable demand for additional office space geared to these regional/national tenants. Just as in the rest of North Fulton, the demand for local-serving office will most likely be very weak.

Industrial: Alpharetta has the highest concentration of Warehouse industrial space in North Fulton and the second highest amount of Flex space. Industrial development in Alpharetta has been hampered by the City's high land costs.

There is not much land in Alpharetta for additional industrial development. There will be a demand for additional Flex space if sites can be found. Most of this demand, however, will be satisfied by development near GA 400 in Forsyth County.

City of Johns Creek²⁰

Residential: Over the first eleven months of 2009, approximately 42% of residential permits in North Fulton were issued by the City of Johns Creek. Residential development in Johns Creek has historically been predominately a detached single-family product.

Because of the City's rapid growth over the last decade, there is not a great deal of land still available for large-scale residential development. In the future, development will trend towards smaller infill single-family neighborhoods. There will also be a demand for additional attached single-family homes (townhomes) for the empty-nester market, and demand for additional rental multi-family communities for families drawn to the area by the reputation of the local schools.

Retail: There are approximately 140 retail buildings in the City of Johns Creek. Total retail space is roughly 3.6 million square feet, which represents 13% of the total retail square feet in North Fulton.

¹⁹ Source: "No Sign of a Meltdown in Third Quarter Retail Real Estate Trends: Retail Vacancy and Rents Hold Steady Despite Addition of New Space; Rising Retail Space Per Capita." CoStar Advisor Newsletter, October 17, 2008.

²⁰ Sources: US Census Bureau, CoStar, and Market + Main.



There is approximately 51.5 square feet of retail space for each resident, which is low within North Fulton, but still higher than the national average. The median age of retail buildings is 2000, which is newer than all other cities in North Fulton except Milton. Retail development in Johns Creek largely follows the typical suburban development model with retail separated from other uses and located in strip shopping centers along major highways.

Johns Creek has an over-abundance of strip retail development. Some of these centers (especially those without anchors) will most likely have to be redeveloped for other uses. Although Johns Creek has a lot of wealth, demand for future high-end specialty retail will be limited by the area's proximity to regional shopping centers in nearby cities.

Office: There are approximately 65 office buildings in Johns Creek. Total office space is roughly 2.7 million square feet, which represents 5% of the total office square feet in North Fulton. In Johns Creek, approximately 51% of office space is classified as Class A. Roughly 47% is considered to be Class B, while only 1% is Class C.

While the Johns Creek office market will grow over time, it will most likely never have a major regional/national office cluster because it lacks access to GA 400 and does not contain a major regional shopping center. There will, however, be a limited market for additional office space in Johns Creek because of the area's extensive executive housing. Medical office space is greatly overbuilt and most likely will be for the foreseeable future.

Industrial: Even though it is surrounded by industrial development in neighboring communities, the City of Johns Creek does not have a significant industrial market. The city is home to a manufacturing facility for Ciba Vision in Technology Park and a few other smaller industrial uses. Most of the industrial development in the area is actually in Forsyth County.

It is unlikely that there will be much additional industrial development in Johns Creek. Available land has become scarce, and the high average home price makes residential development more likely on the land that is available. Small business owners living in the City who are looking for Flex space fairly close to their home, have many choices in Norcross, Duluth, or Forsyth County.

City of Milton²¹

Residential: Over the first eleven months of 2009, approximately 17% of residential permits in North Fulton were issued by the City of Milton. While Milton is known as an area of very large lots and high-end single-family homes, the City actually has a sizeable number of townhome and multi-family communities, mostly in the area around the Deerfield development.

Milton is the only city in North Fulton with a significant amount of undeveloped land available for new residential development. The limits to this growth will be decided by the availability of infrastructure and the City's land use policies. Over the long-term, there will be demand for

²¹ Sources: US Census Bureau, CoStar, and Market + Main.



additional detached single-family homes on large lots. There will also be demand for townhomes and rental multi-family communities, primarily in the southeast corner of the City near the Deerfield development.

Retail: There are approximately 50 retail buildings in the City of Milton. Total retail space is roughly 1.7 million square feet, which represents just six percent of the total retail square feet in North Fulton. There is approximately 51.2 square feet of retail space for each resident, which is higher than the national average but the lowest of the five cities in North Fulton. The median age of retail buildings is 2006, which is the newest building age of the cities in North Fulton. Retail centers range from major Power Centers to small specialty retail.

Because of a lack of infrastructure in most sections of the city, major retail development in Milton will most likely be confined to the Deerfield area near GA 400 where there is already major commercial development. There will also be a limited opportunity for small-scale retail development in the Crabapple and Birmingham communities.

Office: There are approximately 35 office buildings in the City of Milton. Total office space is roughly 1.45 million square feet, which represents just three percent of the total office square feet in North Fulton. In Milton, approximately 81% of office space is classified as Class A. Roughly 19% is considered to be Class B. There is no Class C office space.

The overwhelming majority of office space in the City of Milton is located in the Deerfield development near GA 400. Over the long-term, there will be demand for additional office space in this area serving the regional/national tenant base. This area will be especially attractive for tenant-owned buildings with fairly large parking requirements. In addition, small-scale office development for local-serving tenants should also be possible in the Crabapple community.

Industrial: There is currently no significant industrial development in Milton, although there is a sizeable industrial market in adjacent Forsyth County.

It is unlikely that there will be extensive industrial development in Milton. There is the possibility that a limited number of industrial properties could be built in the eastern portions of the City, but land costs will make this difficult. It is more likely that Flex space would work in this area, rather than Warehouse industrial.

City of Roswell²²

Residential: Over the first eleven months of 2009, approximately 18% of residential permits in North Fulton were issued by the City of Roswell. While the majority of housing in Roswell is single-family detached product, there is also a sizable number of attached single-family housing (townhomes) and rental multi-family communities.

²² Sources: US Census Bureau, CoStar, and Market + Main.



While there is a limited amount of land available for small infill residential development, the focus of the residential market is shifting from development to redevelopment. There are several apartment communities that are fairly old and will soon require major reinvestment, but could likely require municipal incentives.

Retail: There are approximately 490 retail buildings in the City of Roswell. Total retail space is roughly 8.5 million square feet, which represents 30% of the total retail square feet in North Fulton. There is approximately 101.5 square feet of retail space for each resident, which is over twice the national average. The median age of retail buildings is 1987, which ranks Roswell's shopping centers as the second oldest in North Fulton.

Roswell has too much strip retail development. If some of the retail space is not removed from the market (retail pruning), the result will almost certainly be lower rents and poorly maintained properties. In some of the older areas, such as Holcomb Bridge Road, demographics are changing and future tenant mixes will reflect those changes with fewer national tenants.

Office: There are approximately 555 office buildings in the City of Roswell. Total office space is roughly 6.25 million square feet, which represents 12% of the total office space in North Fulton. In Roswell, approximately 16% of office space is classified as Class A. Roughly 52% is considered to be Class B, while 32% is Class C.

It is possible that major office development for regional/national tenants will take place in Roswell along GA 400 as an extension of the two existing office nodes in Alpharetta and Sandy Springs. For this to take place, however, there would have to be a major redevelopment of the older, underutilized multi-family and retail properties in the area around the Holcomb Bridge/GA 400 interchange.

Industrial: Roswell has the highest concentration of Flex industrial space in North Fulton and the second highest amount of Warehouse space. Much of this industrial space is located along the City's border with Alpharetta.

Because there is very little Flex space to the south in Sandy Springs, Roswell has the opportunity to grow its Flex market to meet the demand of business owners living in North Fulton's executive housing. The challenge will be finding suitable sites. One solution may be reusing the sites currently occupied by some of the City's troubled shopping centers. These sites typically have a great deal of land and are often located along major transportation corridors, both of which are important for Flex development.

City of Sandy Springs²³

Residential: Over the first eleven months of 2009, approximately 10% of residential permits in North Fulton were issued by the City of Sandy Springs. When compared to the rest of North Fulton,

²³ Sources: US Census Bureau, CoStar, and Market + Main.



Sandy Springs is more equally balanced between detached single-family homes, attached single-family homes, and multi-family properties.

Although Sandy Springs is largely built-out, the demand for housing will grow in the future because of the City’s strong employment base and central location. While the growth in detached single-family product will be severely limited by a lack of land, there should be a great deal of demand for new townhome, condominium, and rental multi-family product.

Retail: There are approximately 340 retail buildings in the City of Sandy Springs. Total retail space is roughly 6.1 million square feet, which represents approximately 70.9 square feet of retail space for each resident. This figure is greater than Johns Creek and Milton, but much lower than Alpharetta and Roswell. The median age of retail buildings is 1983, which is by far the oldest of all five cities in North Fulton.

Sandy Springs has too much retail space, and a lot of it is old and outdated. Because of the area’s strong demographics, it will make sense to redevelop and re-tenant some of these shopping centers. This has already occurred with several older centers in the area. Others will likely have to be demolished and replaced by non-retail uses.

Office: There are approximately 465 office buildings in the City of Sandy Springs. Total office space is roughly 21.8 million square feet, which represents 42.3% of the total office space in North Fulton. In Sandy Springs, approximately 60% of office space is classified as Class A. Roughly 31% is considered to be Class B, while 9% is Class C.

Sandy Springs is home to one of metro Atlanta’s major office nodes for regional/national tenants, Perimeter Center. Over the five- to twenty-year time period, there will be considerable demand for additional office space geared to these regional/national tenants. There will also likely be demand for additional medical office space in the “Pill Hill” area.

Industrial: Currently, there is very little industrial development in Sandy Springs. This is not surprising, considering the City’s high land costs.

Because of the City’s executive housing, Sandy Springs has the opportunity to create a small Flex market to meet the demand of business owners living in the City. While there are almost no greenfield sites available for this type of development, Sandy Springs does have a great deal of land devoted to retail that will most likely need to find a new use. Some of these properties might be suitable for Flex space. Former retail sites are often well suited for Flex development because they are typically fairly large sites with good access to transportation corridors.

4.2.2 North Fulton Market Key Findings

Moving from Development to Redevelopment

North Fulton is known as a fast-growing suburb of metro Atlanta, with a great deal of its total development less than twenty years old. While this perception is largely true, North Fulton has, in



fact, grown so fast that it is rapidly becoming built-out in terms of large-scale development, and growth will necessarily slow in the coming years. Because North Fulton was in the later stages of the development cycle, it has fared better in the current economic downturn than areas farther away from downtown Atlanta that had ongoing massive speculative development, which quickly stopped. The downside, however, to North Fulton's rapid growth and build-out is that a great deal of its real estate will require reinvestment at the same time. Typically, communities develop more slowly, and there is always the possibility of new development to encourage the redevelopment of nearby older properties. In North Fulton, however, there will not be substantial greenfield sites for new construction, so economic development efforts will have to focus on redevelopment; much of which will have to be done on the same timeline.

The most immediate areas of focus for redevelopment are the retail and multi-family markets. Figure 4-2 shows the locations where retail redevelopment is most likely to occur during the long-term.

Retail Pruning

Overall, North Fulton has much more retail space than its population can support now or in the foreseeable future. While this is largely a result of overbuilding in a fast-growing market, there has also been a nationwide shift in the retail market that has had a noticeable effect on North Fulton. In an effort to cut costs and boost profitability, retailers are consolidating into fewer locations and opening smaller stores. The result is more vacant retail space and fewer retailers available to fill these spaces.

Particularly in Sandy Springs and Roswell, there is aging strip center development that is struggling and ripe for redevelopment. In other areas of North Fulton there are many newly-built anchorless shopping centers that are failing to gain traction in the marketplace. Having too much retail space in a market can quickly lead to blight and economic stagnation. When landlords have to compete for a limited pool of tenants, rental rates drop and property maintenance begins to suffer. Secondary and tertiary uses then begin to overwhelm the marketplace and discourage the interest of developers and potential merchants. Retail pruning takes place when a local government actively encourages the removal of excess retail space from the market. This is based on the idea that having a significant amount of low-quality space is worse than having less space, but of higher quality.

For retail pruning to take place in an orderly and efficient manner, local governments must take the lead. This includes looking at the amount of retail that is sustainable, considering other uses that may be supported in the market, and then pro-actively amending land use and zoning regulations to match this reality.

Multi-Family Redevelopment

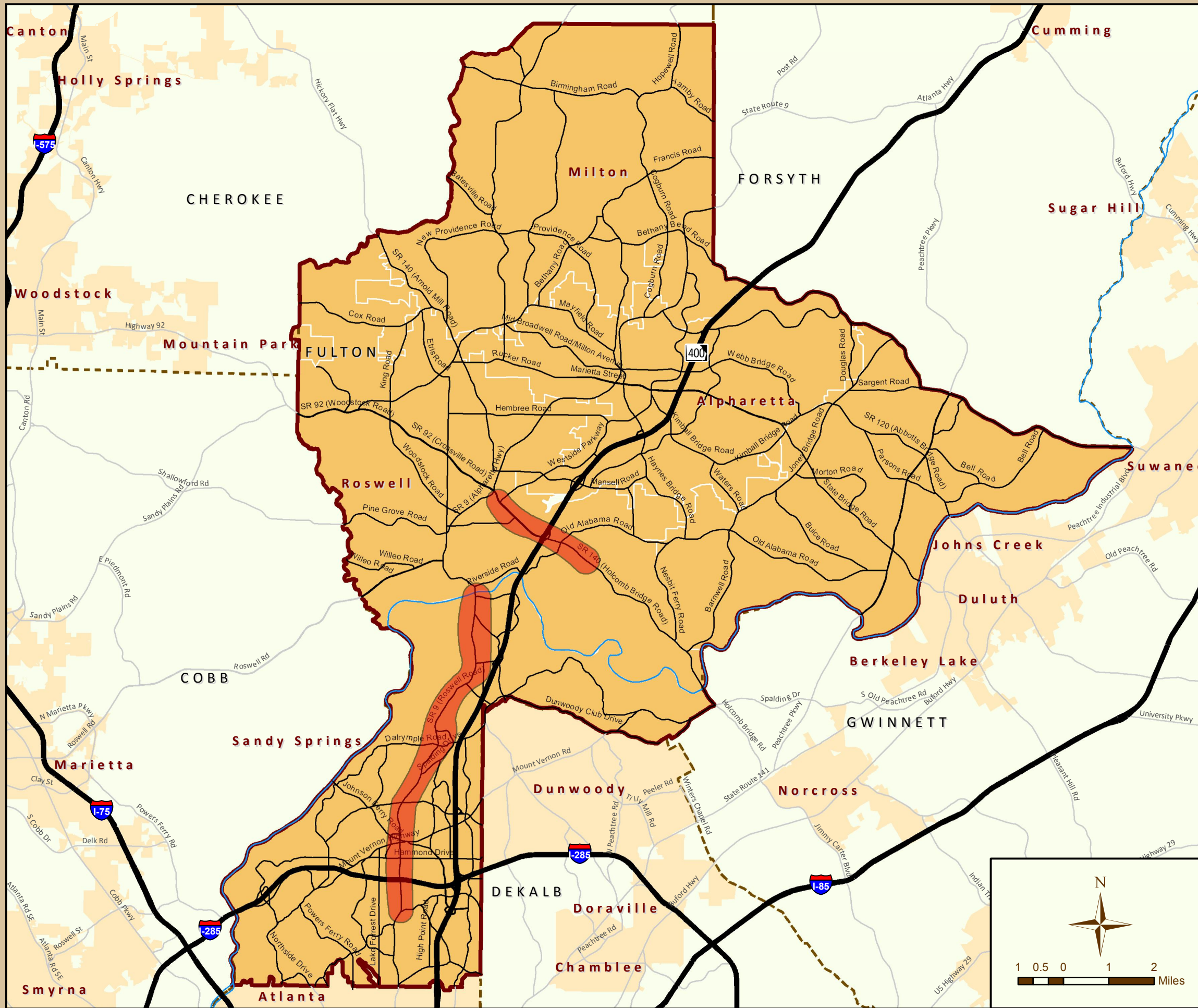
When apartment communities reach 40+ years in age, they typically require major reinvestments to remain economically viable. Finishes and building systems have limited useful lives, and



buildings with failing systems can become an unpleasant place to live and, in some cases, dangerous. It is vital to local communities that this reinvestment takes place, or the properties may become blighted and a serious hindrance to economic development efforts.


Sometimes reinvestment in an aging apartment complex takes the form of a complete renovation of the structures with the replacement of all systems and finishes. In other situations, the aging buildings are actually demolished and either replaced with new apartments or a completely different use.

There are many multi-family communities in Sandy Springs and Roswell that are now nearing the end of their lifecycle. The other cities in North Fulton will eventually face this problem also. To get out in front of this issue and protect the value of surrounding properties, local governments must plan for the course that they would like for these properties to take. If a city would prefer that aging complexes be demolished and rebuilt, they will have to implement land use policies that will create a situation where the land is worth more than the buildings in order to incentivize redevelopment. This will often require either higher allowable densities for housing, or a change to another land use such as mid-rise office, where the market warrants such a change.




North Fulton County
 Transportation Resource
 Implementation Program
 ATLANTA REGIONAL COMMISSION


Reference Location

ARC
20-County
Region


Legend

-  Future Retail Redevelopment Opportunities
-  Study Network
-  Other Major Roads
-  Expressways
-  Chattahoochee River
-  Study Area
-  Counties
-  Other Cities

Figure 4-2
Retail Redevelopment Opportunities



Future Office Development

Like all of metro Atlanta, the market for office space in North Fulton has seen a decline. There is unlikely to be any new office development in the next three years unless it is built for a specific user. Depending on economic conditions, there is a possibility of demand for additional office space for regional/national tenants in the three- to five-year time frame. It is not likely that there will be any significant demand for local-serving office over the next five years. There will most likely not be new construction of medical office within the next five years, with the possible exception of the “Pill Hill” area. However, any increased demand for medical office in this area may be absorbed by older, traditional office buildings.

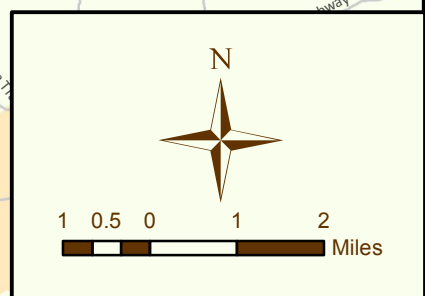
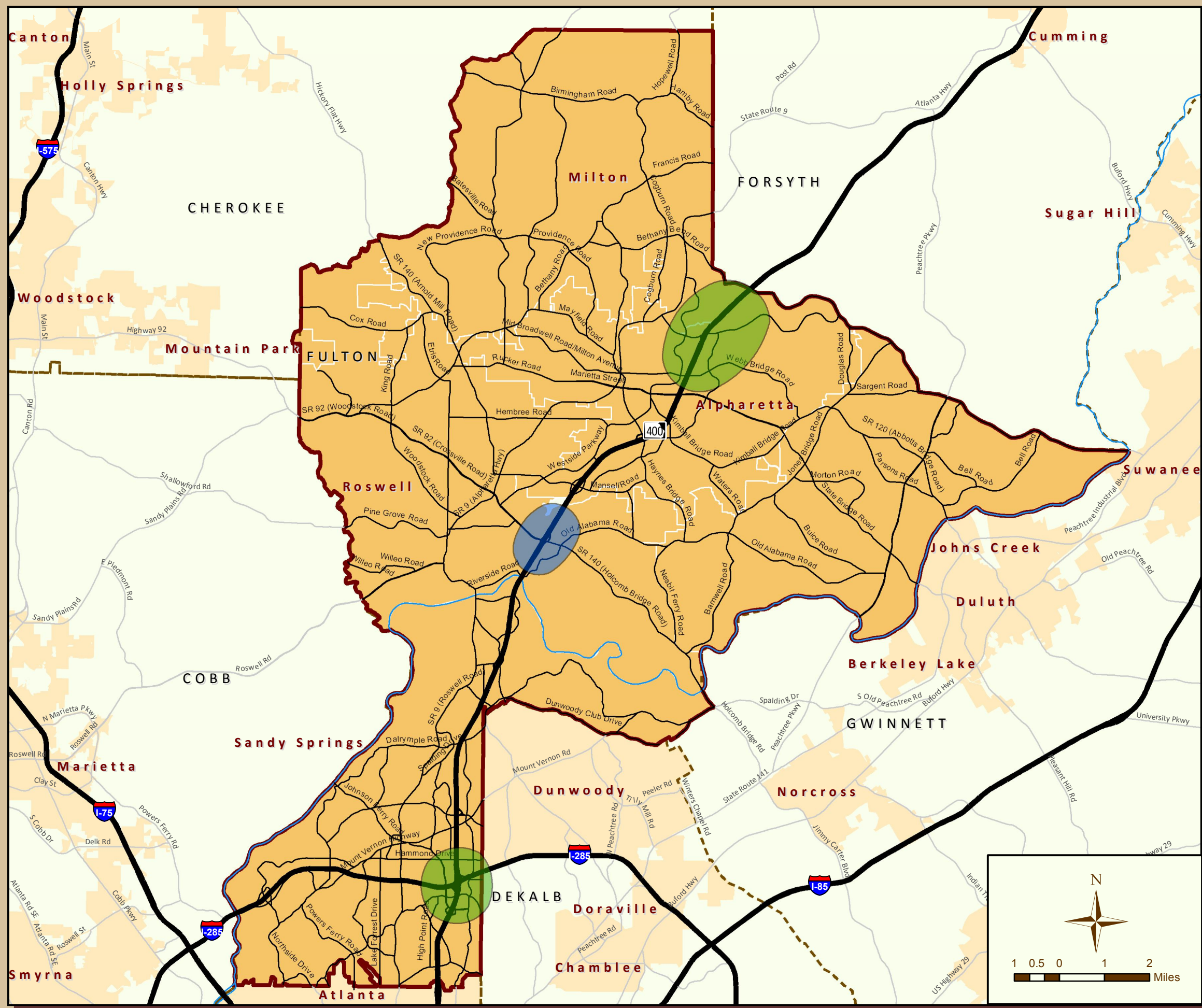
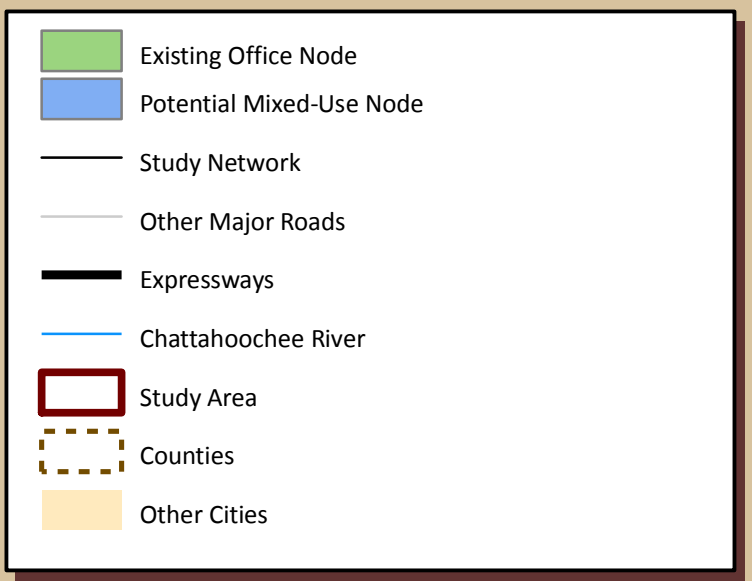
There are two major office submarkets located in North Fulton. Therefore, the long-term trend is expected to consist of higher demand for additional office space in North Fulton geared to regional/national tenants. This development will be clustered in the existing office nodes in Alpharetta and Sandy Springs. It is also possible that major office development could take place in Roswell along GA 400 as an extension of the two existing office nodes, particularly if municipal incentives are offered.

Over the five- to twenty-year time period, there will also be significant demand for additional medical office space in the “Pill Hill” area. However, even in the long-term, there will be very little demand for additional office space for local-serving tenants in North Fulton. Without a major increase in population, this product type is overbuilt, and will also have to compete with the excess of retail space for potential tenants. Figure 4-3 shows areas prone for mixed-use and office development.

Reference Location



Legend



**Figure 4-3
Existing & Potential
Mixed-Use w/Office Nodes**



Increasing the Industrial Base

Compared to the other market segments, North Fulton has a very small industrial base. North Fulton is unlikely to grow into a major distribution or manufacturing hub because it lacks available and/or affordable land, and because GA 400 is not a major interstate highway. The area can, however, encourage additional small-scale light industrial development which will aid in balancing the local economy.

Flex space is the industrial product that would most likely be successful in the North Fulton market. Buildings classified as Flex contain a fairly sizeable portion of office space along with a warehouse in the back. This product type is typically attractive to the small business with a limited distribution need. Many of these business owners live in North Fulton's extensive executive housing and would prefer to locate their business close to their home. The area's access to mass transit and its status as an established employment center would also make it attractive for Flex space development. Figure 4-5 on the following page shows the locations of existing flex space and areas prone for development as flex space.

While additional Flex space makes sense for the North Fulton market, the lack of land is a serious stumbling block. The area's failing shopping centers could provide sites for this land use. Many of these aging shopping centers sit on fairly large tracts of land along major transportation corridors; both requirements for Flex development.

Figure 4-4: Examples of Flex Space



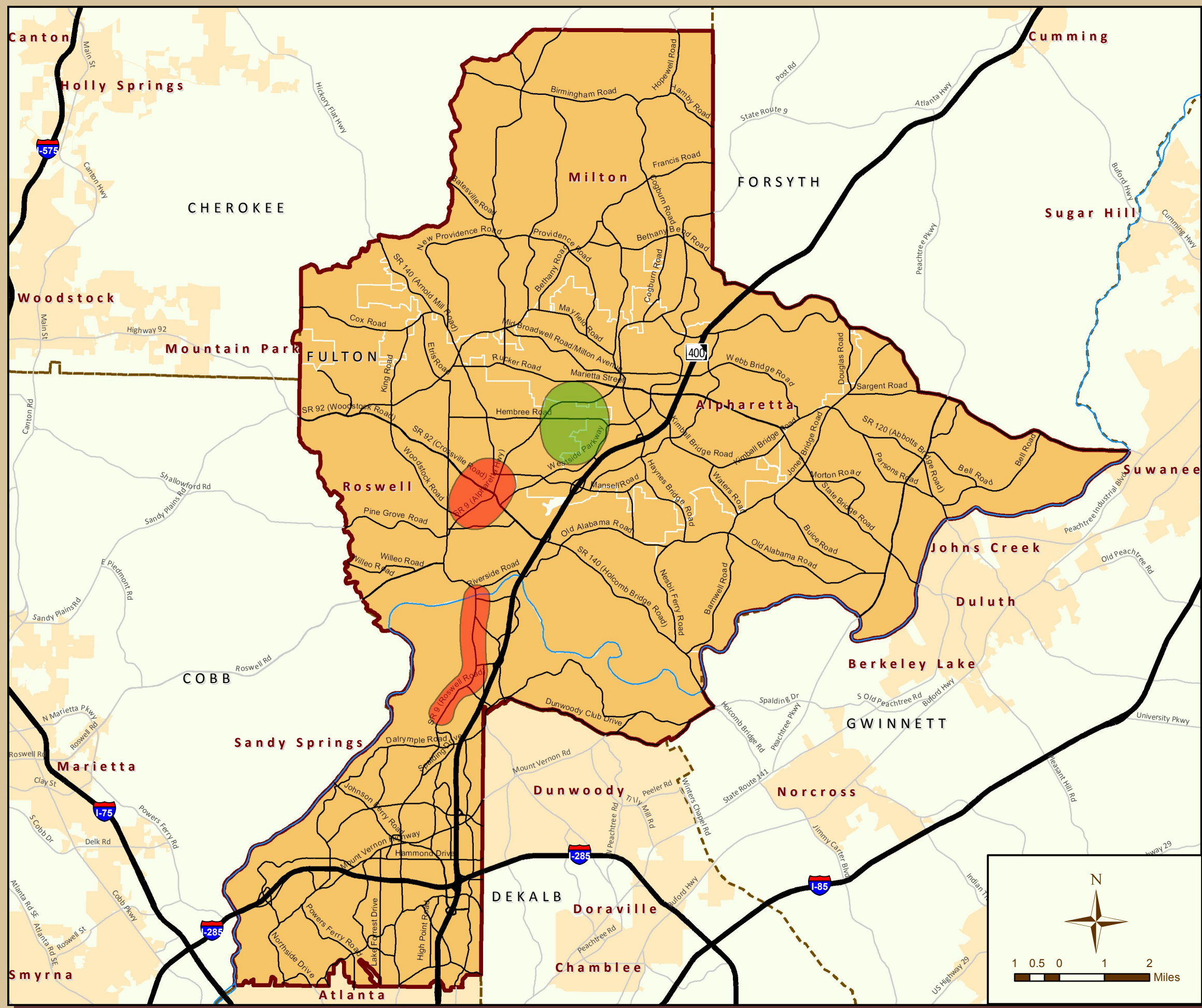
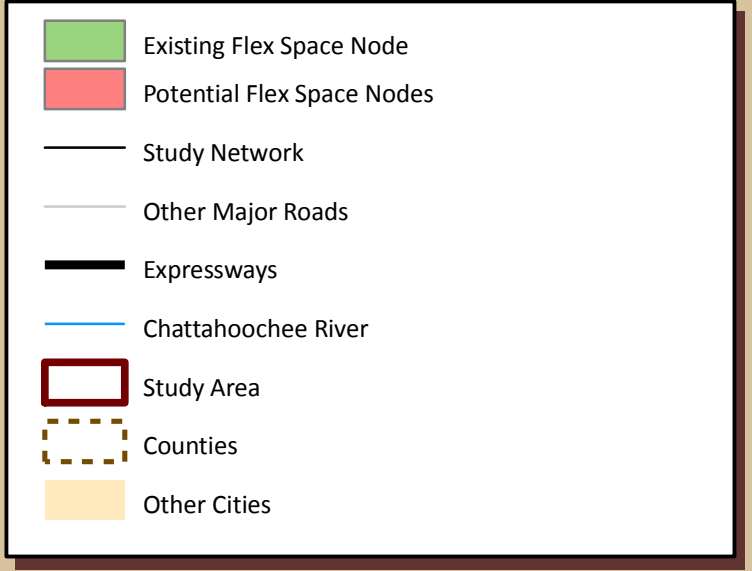
Source: <http://www.steelwoodboise.com/>

People often assume that industrial buildings are unsightly, but well-built Flex space looks like an office park and can be very attractive with the right controls on exterior finishes and landscaping. This type of product is commonly referred to as "light industrial," but it could also be considered "heavy office." Often, these buildings consist of a sizeable office space with several employees and a small warehouse in the back for storage or distribution. This type of development would serve as a complement to the area's already strong traditional office market and employment base.

Reference Location



Legend



**Figure 4-5
Existing & Potential
Flex Nodes**

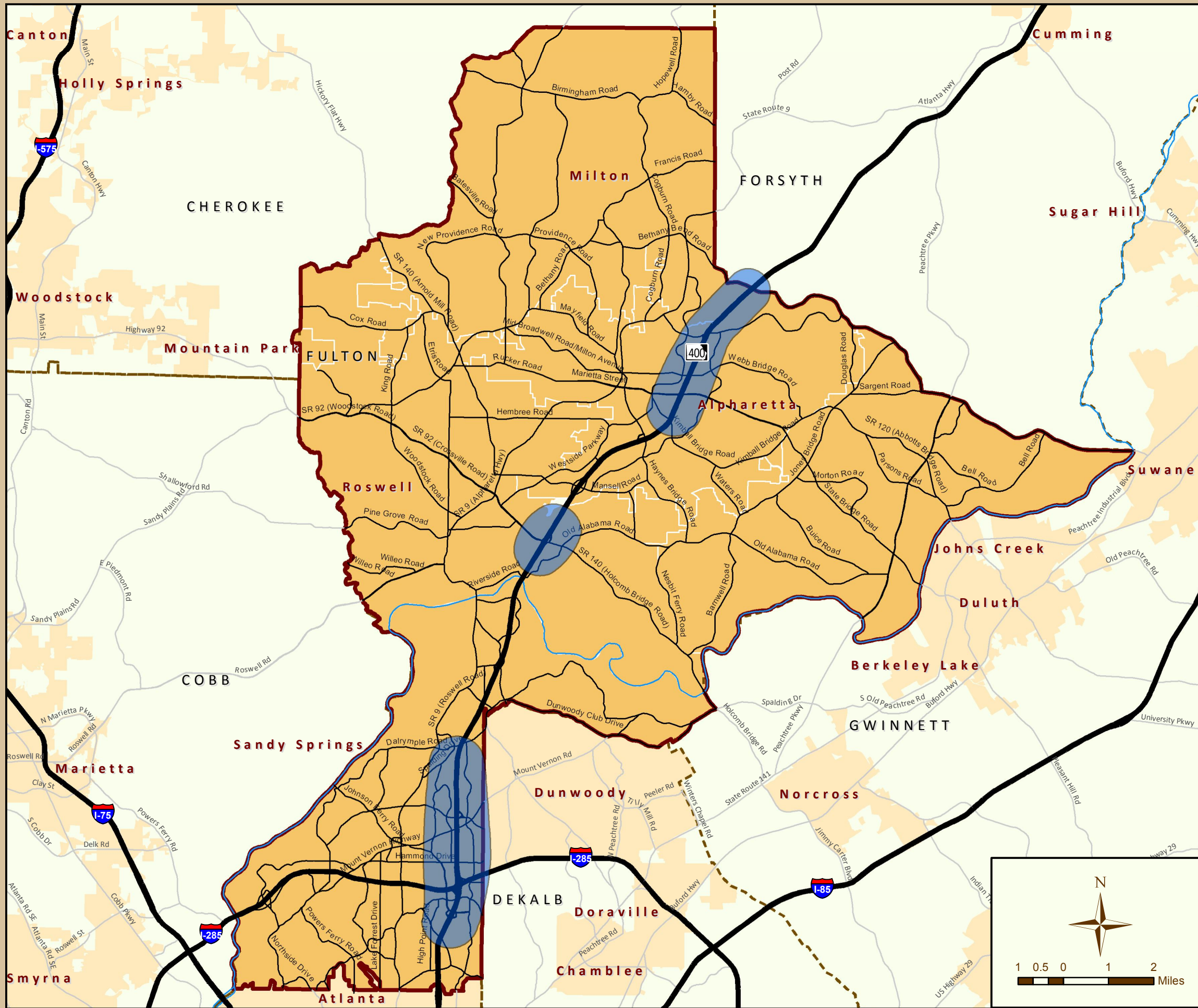


Increasing Residential Density

North Fulton is approaching build-out from a suburban, car-oriented development standpoint. This does not mean that the area will not be able to grow, but significant growth can only take place with increased densities. North Fulton is fortunate to have this option if it chooses to pursue future growth opportunities. Most suburban areas lack the attributes necessary to support mid- to high-density development. North Fulton's high concentration of Class A office space along with its proximity to high-end retail and amenities, make it a very attractive place to live for a large segment of the metro Atlanta population. Many of those potential residents are willing to pay more for less space to live in the area.

Higher density housing will not work well everywhere in North Fulton. It will be most successful close to employment centers and mass transit. Sandy Springs is the most logical choice for mid- to high-end condominiums, primarily in the Perimeter Center area. Over the long-term, this product type could also work in well-planned mixed-use communities in Alpharetta and Roswell. Figure 4-6 depicts the most likely areas where more dense residential development is most likely to occur during the long-term.


Much of the rental multi-family housing in North Fulton is beginning to age and will soon require major reinvestment. At the same time, there will continue to be demand for newer multi-family housing. Because of the lack of land available for new development, it will make sense in many cases for local governments to encourage the demolition of older apartment complexes and the construction of new multi-family units on the same site. To incentivize this redevelopment, it will most likely be necessary for the local government to allow a higher-density community than the one it replaces.




North Fulton County
 Transportation Resource
 Implementation Program




Reference Location

ARC 20-County Region


Legend









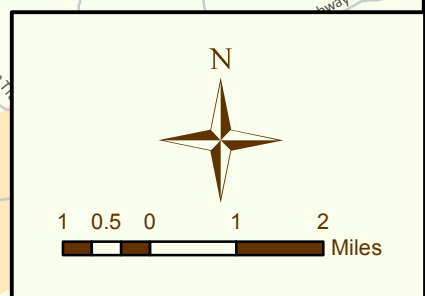
-  Future Increased Density Residential Opportunities
-  Study Network
-  Other Major Roads
-  Expressways
-  Chattahoochee River
-  Study Area
-  Counties
-  Other Cities

Figure 4-6
Increased Density Residential Opportunities





5.0 ROADWAY VEHICULAR NEEDS

5.1 Introduction

This section describes vehicular needs that have been identified within the roadway network of North Fulton. While the *Existing Conditions Report* documented the extent of infrastructure and facilities in the system, the purpose of this report is to assess the performance of those facilities and locate potential deficiencies. This assessment has been performed by analysis in the following areas:

- Growth in AADT volumes along key corridors
- Crash data
- Bridge deficiencies
- Access management along key corridors
- Network connectivity
- Network level-of-service as measured by ARC's Travel Demand Model

It should be noted that while the most common mode of travel associated with roadways is the vehicle, roadways are also intended to carry all modes, such as pedestrians and bicyclists, and all user groups, such as old and young. While this section focuses most specifically on vehicular needs, the roadway network within the North Fulton study area should also be evaluated for performance for other users as well, which is covered in later sections of this report.

This equitable consideration of multiple modes has come to be known as “complete streets.” The National Complete Streets Coalition²⁴ (NCSC) defines a complete street as one that is designed to enable safe access for all users. The NCSC goes on to state that pedestrians, bicyclists, motorists, and transit riders of all ages and abilities must be able to safely move along and across a complete street.

The desire to accommodate all users along roadways has risen to the highest levels of government. In March 2010, The United States Department of Transportation adopted a Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations²⁵. This policy requires all new projects that use federal-aid to consider complete streets design principals. More locally, the City of Roswell made “completing their streets” a priority in March 2009 by adopting a complete streets policy²⁶ that requires design to accommodate all users of any new or reconstructed roadway facility.

²⁴ <http://www.completestreets.org/>

²⁵ http://www.fhwa.dot.gov/environment/bikeped/policy_accom.htm

²⁶ <http://www.roswellgov.com/documentview.aspx?did=613>



The intent of this full report is to present a comprehensive complete streets approach to identifying needs of North Fulton. This section focuses on vehicular specific needs, while the subsequent sections go on to focus on pedestrian, bicycle, and transit needs.

5.2 AADT – Growth on Key Corridors

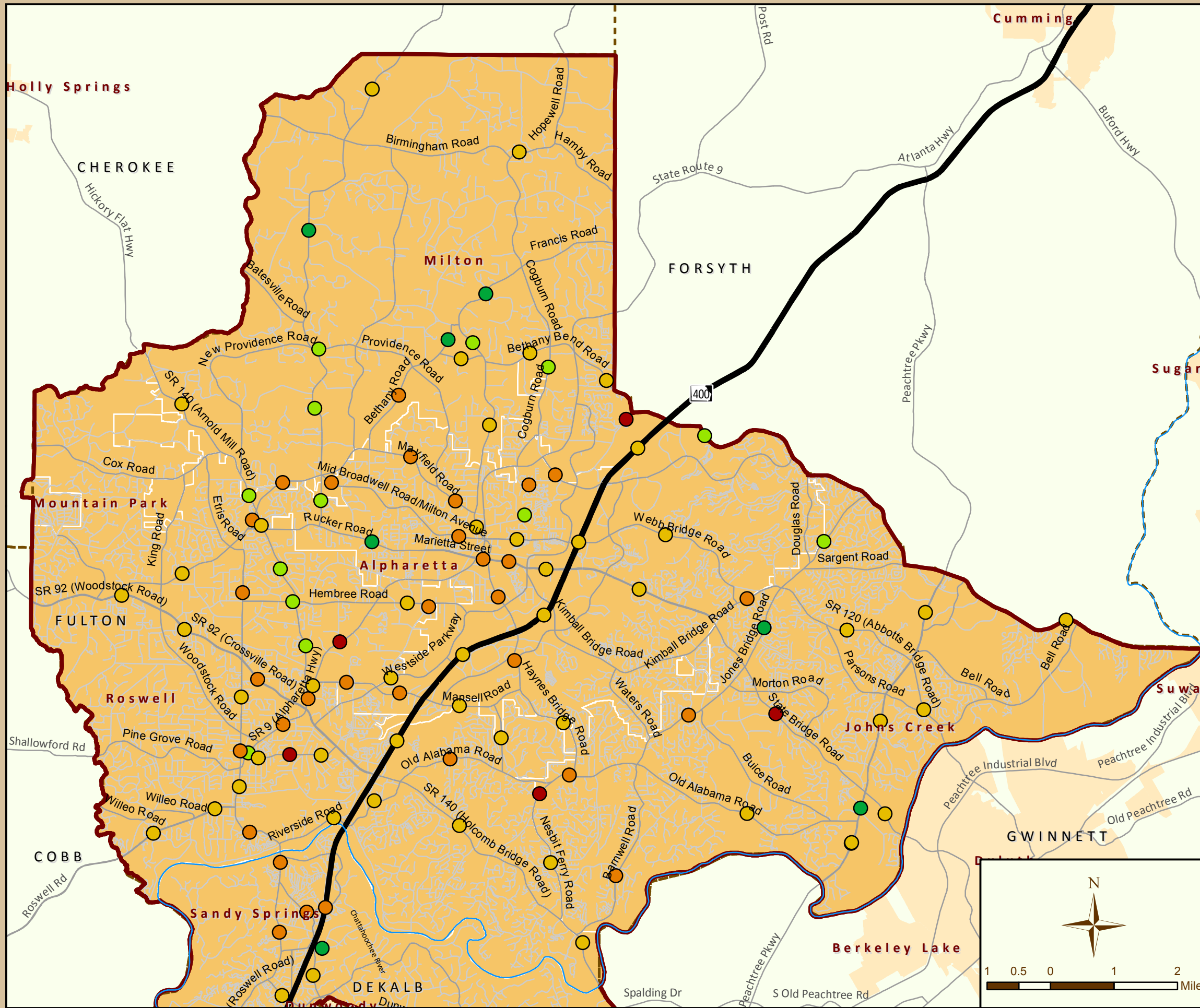
Compounded annual growth rates were calculated for Annual Average Daily Traffic (AADT) volumes taken from 2003 to 2008 along the study roadways. Figures 5-1A and 5-1B illustrate these growth rates, segmented in five categories:

- greater than a 6 percent reduction in traffic from 2003 to 2008
- between a 6 and 2 percent reduction
- between a loss of 2 percent and gain of 2 percent
- between 2 and 6 percent growth
- and greater than 6 percent growth

The growth analysis highlighted several general growth trends in North Fulton since 2003. The highest levels of traffic growth are occurring within the northern limits of the county, most notably in the City of Milton and northern Roswell and Alpharetta. Growth is also occurring in southern portions of Sandy Springs. Corridors showing trends of high levels of growth (generally over 2 percent per year from 2003 to 2008) include Birmingham Highway (SR 372), Arnold Mill Road (SR 140), Rucker Road, and Jones Bridge Road north of State Bridge Road. Several collector facilities in southern Sandy Springs and south of I-285 are also experiencing strong growth. Among these are most notably Northside Drive, Powers Ferry Road, and Long Island Drive.

While much of North Fulton is seeing positive growth, some negative growth trends are present. Traffic volumes are decreasing in portions of central Fulton County. This negative growth is sporadic, however, and strong trends along corridors are difficult to identify. State Route 9 does show a strong trend of decreased growth (-2 to -6 percent per year since 2003) from Hammond Drive to Old Milton Parkway (SR 120). I-285 and portions of GA 400 from I-285 to Holcomb Bridge Road (SR 140) have also experienced a decline of traffic volumes (from -2 to -6 percent since 2003).

The growth trends identified seem to indicate that most of North Fulton's and the region's growth is occurring at locations north of North Fulton, both in Cherokee and Forsyth County. This development pattern will likely continue, thus impacting the operational efficiency of the roadway network in North Fulton. While it's difficult to know for sure, one hypothesis for the decline in growth along SR 9 and the local freeways is that the connection between vehicular trips between North Fulton and the central business district of Atlanta is decreasing slightly. This may be due to several factors, including a slowing economy, increased transit ridership, more telecommuting, or even a slight shift of employment to North Fulton.




**North Fulton County
Transportation Resource
Implementation Program**









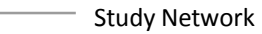

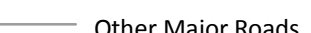
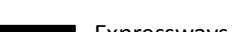




Reference Location

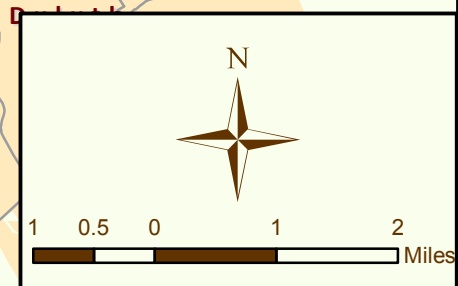
**ARC
20-County
Region**



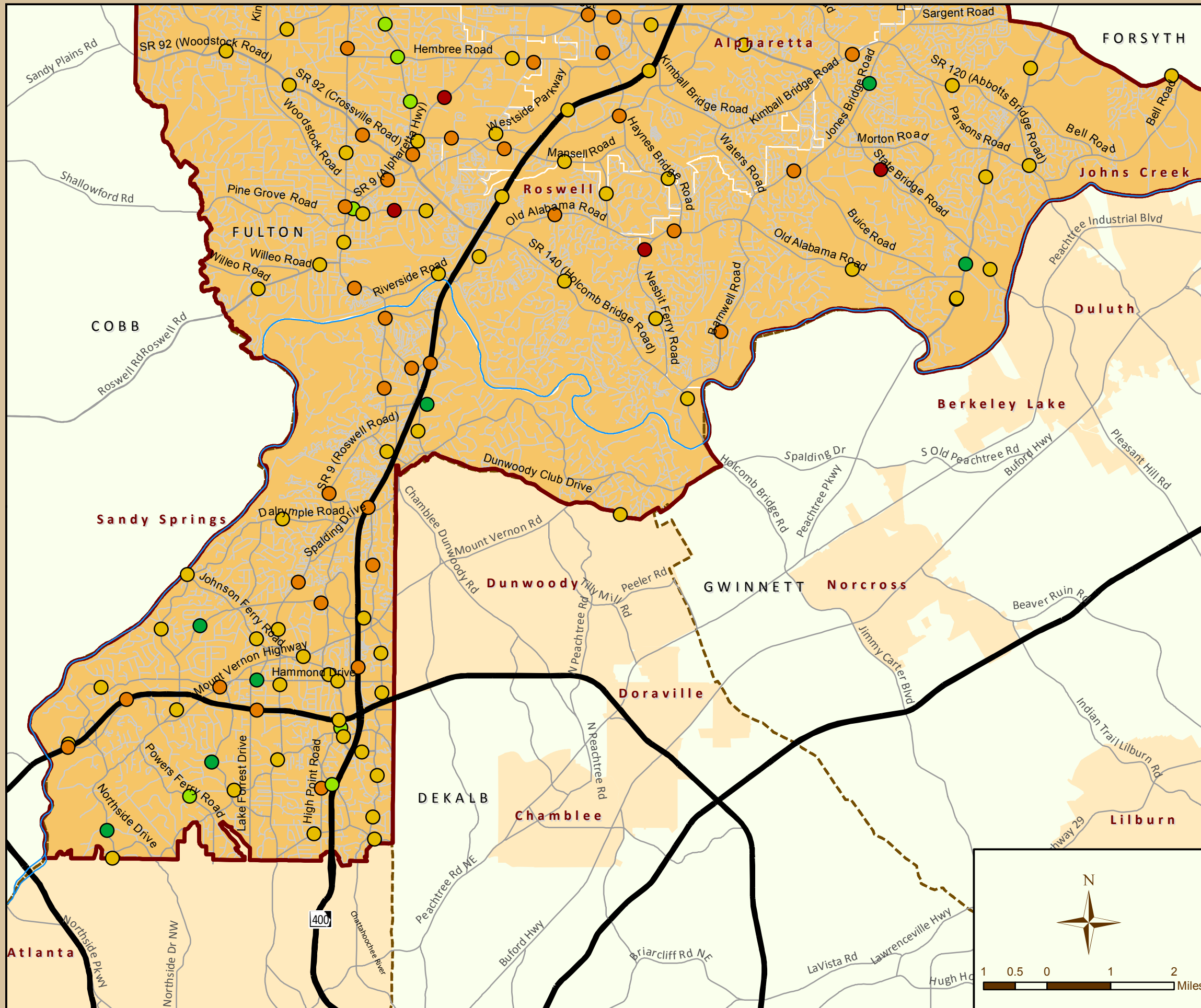
Legend

AADT Growth	 North Fulton Study Area
 <-6%	 Counties
 -6% - -2%	 Other Cities
 -2% - 2%	
 2% - 6%	
 >6%	
 Study Network	
 Local Roads	
 Other Major Roads	
 Expressways	
 Chattahoochee River	

Source: Georgia Department of Transportation



**Figure 5-1A
AADT Growth 2003-2008**




**North Fulton County
Transportation Resource
Implementation Program**

















Reference Location

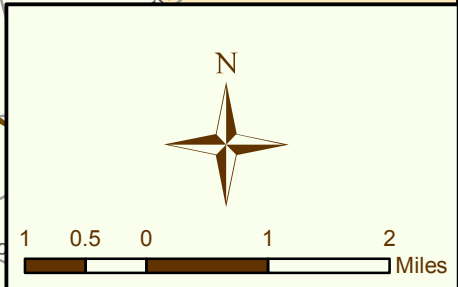
**ARC
20-County
Region**



Legend

AADT Growth	 North Fulton Study Area
 <-6%	 Counties
 -6% - -2%	 Other Cities
 -2% - 2%	
 2% - 6%	
 >6%	
 Study Network	
 Local Roads	
 Other Major Roads	
 Expressways	
 Chattahoochee River	

Source: Georgia Department of Transportation



**Figure 5-1B
AADT Growth 2003-2008**



5.3 Crash Analysis

Methodology

For this analysis, crash data was obtained from GDOT and the CARE database for the years 2006 through 2008. Over 30,000 crashes occurred in the study area during this period. This data was analyzed using four different approaches:

- Calculation of crash rates for corridor sections in the study network (considering all vehicle types)
- Calculation of crash rates for heavy vehicles
- Mapping of pedestrian crashes
- Mapping of bicycle crashes

Crash rates were calculated using the following standard crash rate equation:

$$Rate = \frac{(no. of accidents)(10^6)}{(ADT)(no. of years) \left(365 \frac{days}{yr}\right) (L_{mi})}$$

For total crash rate calculations, all vehicle types were considered, while for heavy vehicle crash rates, only crashes involving heavy vehicles were included. ADT volumes were not available on all major segments of the roadways included within the study network; therefore, ADT volumes were estimated using the 2010 travel demand model for all of the study roadways in North Fulton. Because the model is calibrated against GDOT count stations, this was believed to provide a reasonable estimation of traffic volumes on the roadways.

To determine the number of crashes occurring for each roadway segment, the locations of all crashes in the study area were mapped, and those crashes occurring within 50 feet of a study roadway were attributed to that roadway. In order to avoid duplication of crashes at intersections, crashes that would be attributed to two different roadways were only attributed to the route with the highest route designation (e.g. U.S. Route, State Route, County Road, etc.), which is the same methodology used by GDOT for crash assignment. The other inputs for the equation included 3 years for the number of years, and the individual length of each segment for each individual rate calculation. This produces a crash rate per 100 million vehicle miles traveled (HMVM).

For pedestrian and bicycle crashes, the numbers of these types of crashes was small enough that mapping these crashes individually was more beneficial for identifying trends in the study network than the calculation of a rate. Maps of the locations and severity of these crashes are included as part of this section.

Total Crashes

GDOT develops average crash rates by functional classifications and location (urban versus rural) for the state. These rates were used to compare the approximate rates within North Fulton to the



rest of the state to determine which road segments are significantly higher than average. The GDOT crash rates for 2008 are as follows:

- Principal arterial (non-freeway): 524 crashes / HMVM
- Minor arterial: 471 crashes / HMVM
- Collector: 443 crashes / HMVM

The average of these three rates is approximately 480 crashes / HMVM. Crash rates that fell above or below 20% of the average were considered to be in the range of the average and are displayed in yellow in Figure 5-2. Those corridors that had crash rates below the average are displayed in green. All other corridors are displayed in orange or red: the orange roadways are between 20% above the average and 100% above the average; the red roadways are over twice the crash rate average.

The corridor sections that are longer than ½ mile and have crash rates higher than approximately three times the statewide average are listed below:

- Abernathy Road from Johnson Ferry Road to Roswell Road/SR 9
- Alpharetta Highway/SR 9 from East Crossville Road/SR 92 to Hembree Road
- Atlanta Street/SR 9 from Marietta Highway/SR 120 to Magnolia Street
- Dunwoody Place from Northridge Road to Roberts Drive
- Abbotts Bridge Road/SR 120 from Medlock Bridge Road/SR 141 to Parsons Road
- Mount Vernon Road from GA 400 to the eastern boundary of Sandy Springs
- Hammond Drive from GA 400 to the eastern boundary of Sandy Springs
- Abbotts Bridge Road/SR 120 from Parsons Road to Jones Bridge Road
- Deerfield Parkway from Webb Road to Alpharetta Highway/SR 9
- Brandon Mill Road from Abernathy Road to North Mill Road
- Holcomb Bridge Road/SR 140 from Alpharetta Highway/SR 9 to GA 400
- Colquitt Road from Pitts Road to Northridge Road
- Dalrymple Road from Princeton Way to Roswell Road/SR 9

Heavy Vehicle Crashes

This analysis involves calculating a crash rate using only heavy vehicle crashes (vehicle types 3 through 8 in the GDOT recording system). These heavy vehicle rates for the North Fulton study network can be seen in Figure 5-3. Because ADT volumes specifically for heavy trucks are not available, total ADT volumes were used in the crash rate equation. This produces a much smaller rate than for the overall crash analysis, however, the rate is useful for a relative comparison within the study network. The corridor sections that are longer than ½ mile and have the ten highest heavy vehicle crash rates are as follows:

- Brandon Mill Road from Abernathy Road to North Mill Road
- Atlanta Street/SR 9 from Marietta Highway/SR 120 to Magnolia Street
- Dalrymple Road from Princeton Way to Roswell Road/SR 9
- Broadwell Road from Rucker Road to Crabapple Road/SR 372



- Abbotts Bridge Road/SR 120 from Parsons Road to Jones Bridge Road
- Alpharetta Highway/SR 9 from East Crossville Road/SR 92 to Hembree Road
- Abbotts Bridge Road/SR 120 from Medlock Bridge Road/SR 141 to Parsons Road
- Medlock Bridge Road/SR 141 from the Chattahoochee River to Old Alabama Road
- Long Island Drive from Mount Paran Road to Roswell Road/SR 9
- Dunwoody Place from Northridge Road to Roberts Drive

Pedestrian Crashes

The locations and severity of pedestrian crashes can be seen in Figures 5-4A and 5-4B. Several areas and corridors have concentrated instances of pedestrian crashes including:

- Medlock Bridge Road (SR 141) in Johns Creek from the Chattahoochee River to State Bridge Road
- Intersection of Haynes Bridge Road and Old Alabama Road
- Dunwoody Place in Sandy Springs between Roberts Drive and State Route 9
- State Route 9 Corridor from the southern border of Sandy Springs to Milton Avenue/Academy Street

Bicycle Crashes

The locations and severity of pedestrian crashes can be seen in Figures 5-5A and 5-5B. Several areas and corridors have concentrated instances of bicycle crashes including:

- Medlock Bridge Road (SR 141) in Johns Creek from the Chattahoochee River to State Bridge Road
- Holcomb Bridge Road Corridor from the Chattahoochee River to State Route 9
- State Route 9 between Holcomb Bridge Road and Mansell Road
- State Route 9 between Glenridge Drive and Trowbridge Road

Summary

Many of the roadway segments stand out in all of the crash categories for vehicles, heavy vehicles, pedestrians, and cyclists. Other segments have patterns that stand out very clearly in specific categories. The following is an overall summary of these trends:

Medlock Bridge Road (SR 141) in Johns Creek from the Chattahoochee River to State Bridge Road

This section of roadway stands out for all types of crashes. In addition to high crash rates for general vehicles and heavy vehicles, this roadway also exhibits clear patterns of pedestrian and bicycle crashes including at least one fatality.

State Route 9 Corridor from the southern border of Sandy Springs to Mayfield Road

Due to its regional significance, this roadway carries a high volume of traffic. Likewise, there are high numbers of crashes and high crash routes at various locations along its length. Pedestrian and



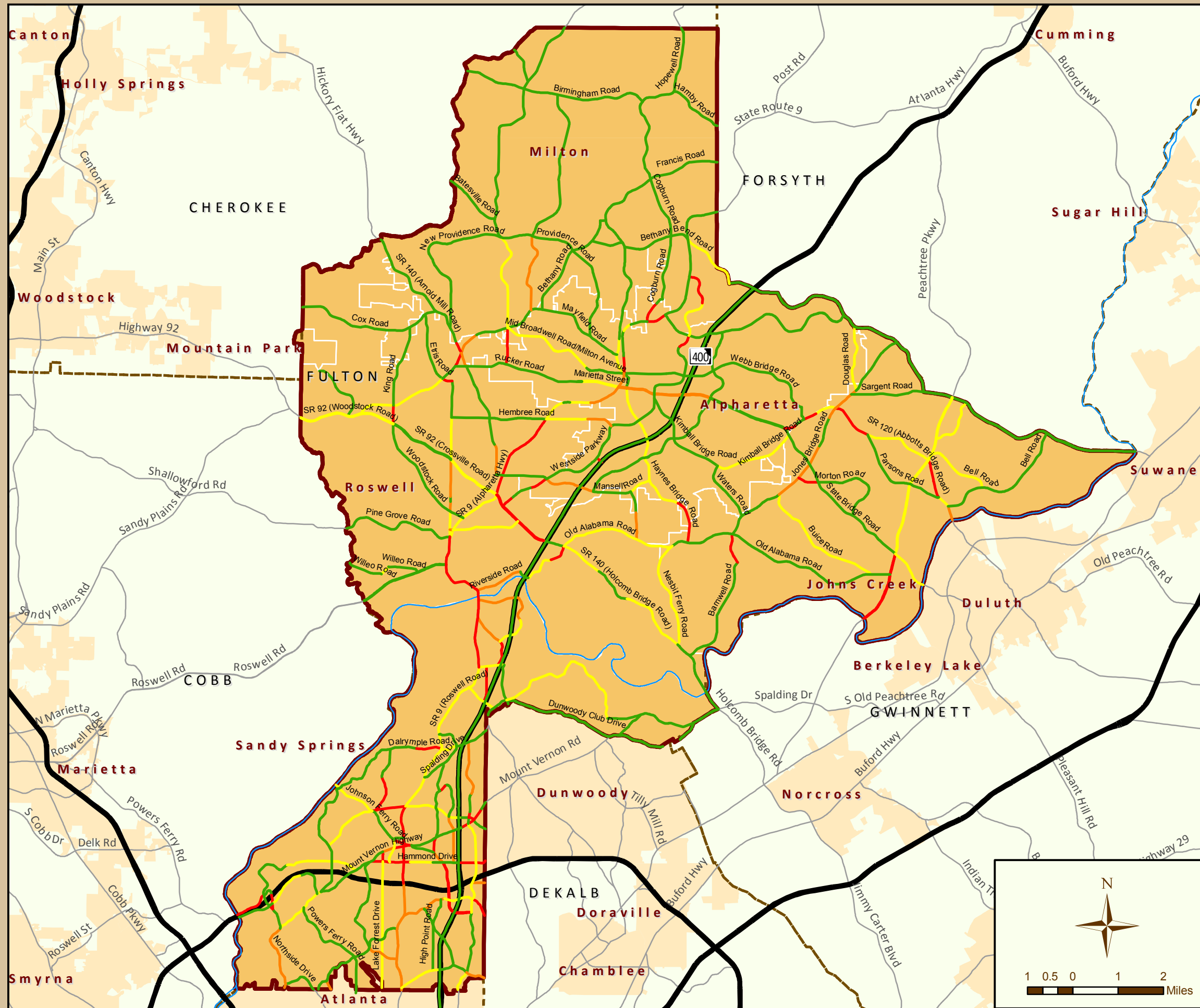
bicycle crashes appear at major intersections throughout, while general vehicle and heavy vehicle crash rates are highest between I-285 and Abernathy Road NW, Marietta Highway/SR 120 and Magnolia Street, Holcomb Bridge Road/SR 120 and Hembree Road, and between Milton Avenue/Academy Street and Mayfield Road.

Other roadway segments with very high crash rates for both general vehicles and heavy vehicles

- Hammond Drive from GA 400 to the eastern boundary of Sandy Springs
- Brandon Mill Road between Abernathy Road and Mill Road
- Abbotts Bridge Road/SR 120 between Medlock Bridge Road/SR 141 and Parsons Road
- Holcomb Bridge Road/SR 140 between GA 400 and SR 9
- Abbotts Bride Road/SR 120 between Jones Bridge Road and Parsons Road
- Broadwell Road between Rucker Road and Crabapple Road/SR 372
- Dalrymple Road NE for ½ mile west of Roswell Road/SR 9

Pedestrian and Bicycle Crash Trends


Pedestrian crashes, as noted above are very frequent along the SR 9 corridor. They also are concentrated around the intersection of Haynes Bridge Road and Old Alabama Road as well as along Dunwoody Place between Roberts Drive and State Route 9. Dunwoody Place happens to be located in one of the areas with higher amounts of low income residents, which may indicate a higher number of pedestrians in this area. Bicycle crashes occur frequently along Holcomb Bridge, specifically near the intersection with SR 9. Both bicycle and pedestrian crashes seem to frequently occur along the above mentioned corridor of Medlock Bridge Road (SR 141) from the Chattahoochee River to State Bridge Road.











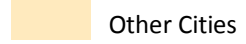

North Fulton County
 Transportation Resource
 Implementation Program



Reference Location

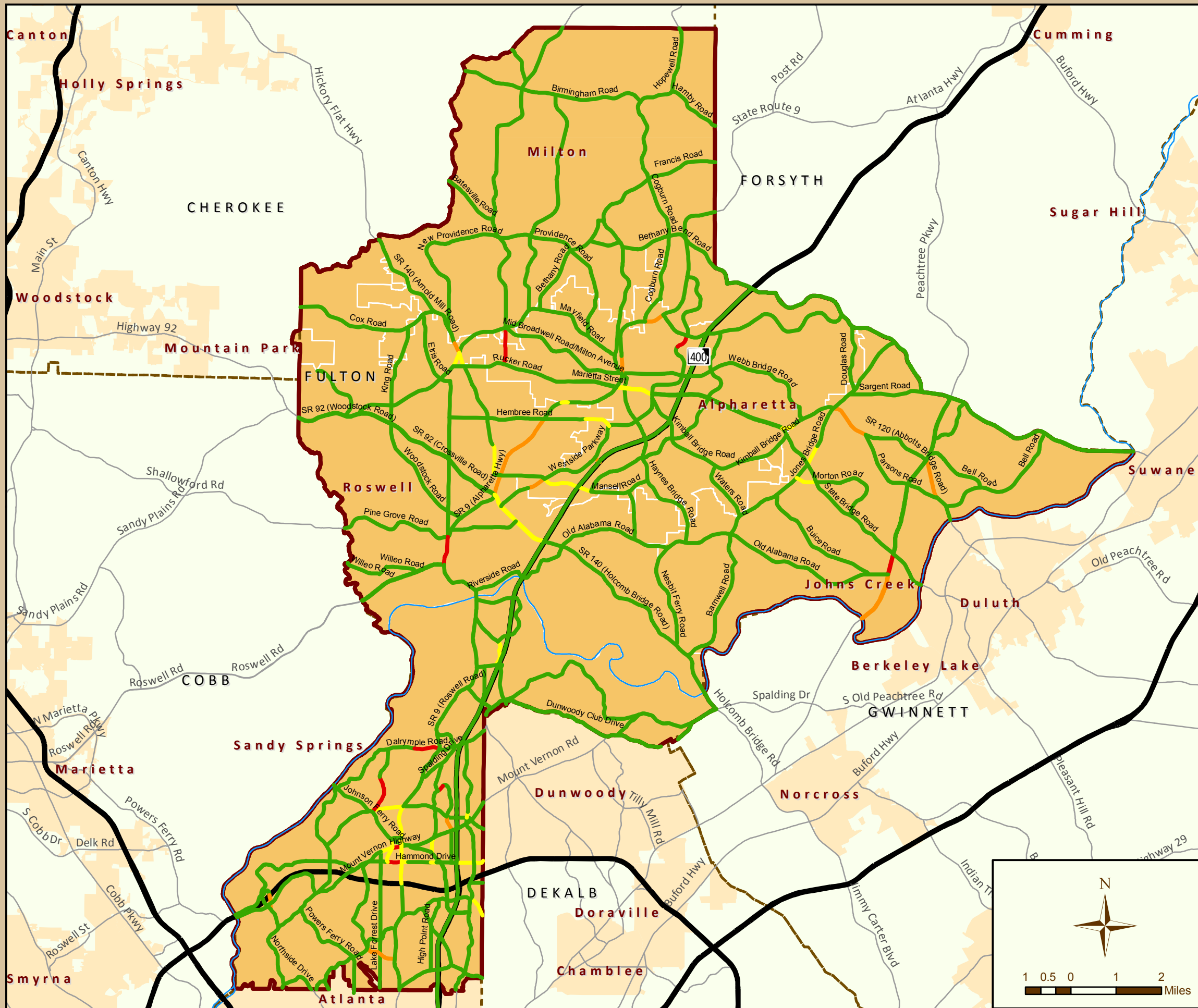
ARC
20-County
Region


Legend

Crash Rates (per HMVM)	Other Major Roads
 < 380	 Expressways
 380 - 580	 Chattahoochee River
 580 - 960	 North Fulton Study Area
 > 960	 Counties
	 Other Cities


Source: Georgia Department of Transportation, CARE Database (2006-2008)

Figure 5-2
Corridor Crashes













North Fulton County
 Transportation Resource
 Implementation Program



Reference Location


Legend

Crash Rates (per HMVMT)	Other Major Roads
 0 - 30	 Expressways
 31 - 60	 Chattahoochee River
 61 - 90	 North Fulton Study Area
 Over 90	 Counties
	 Other Cities

Source: Georgia Department of Transportation, CARE Database (2006-2008)


Figure 5-3
Heavy Vehicle Crashes




North Fulton County
 Transportation Resource
 Implementation Program




Reference Location

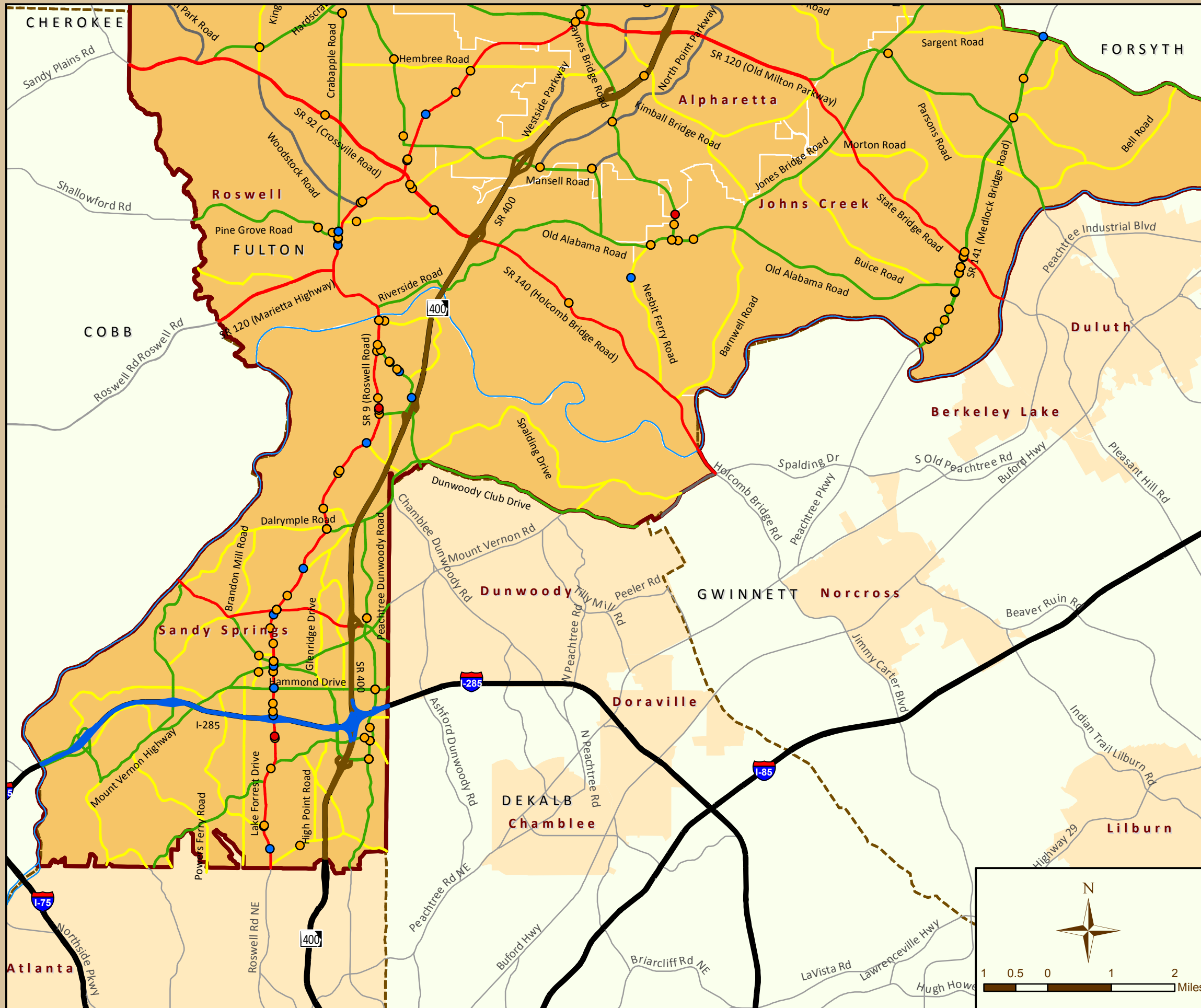
ARC 20-County Region


Legend

Pedestrian Crashes <ul style="list-style-type: none"> ● No Injury ● Injury ● Fatality 	Study Network Functional Classification <ul style="list-style-type: none"> — Interstate — Freeway — Principal Arterial — Minor Arterial — Collector — Local — Other Major Roads
<ul style="list-style-type: none"> — Expressways — Chattahoochee River North Fulton Study Area Counties Other Cities 	

Source: Georgia Department of Transportation, CARE Database (2006-2008)

Figure 5-4A
Pedestrian Crashes




**North Fulton County
Transportation Resource
Implementation Program**




Reference Location

**ARC
20-County
Region**

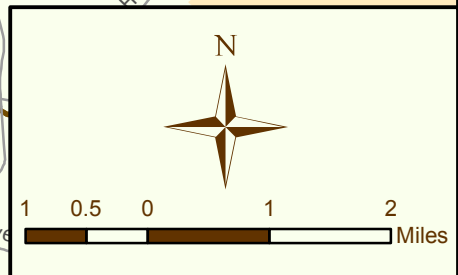


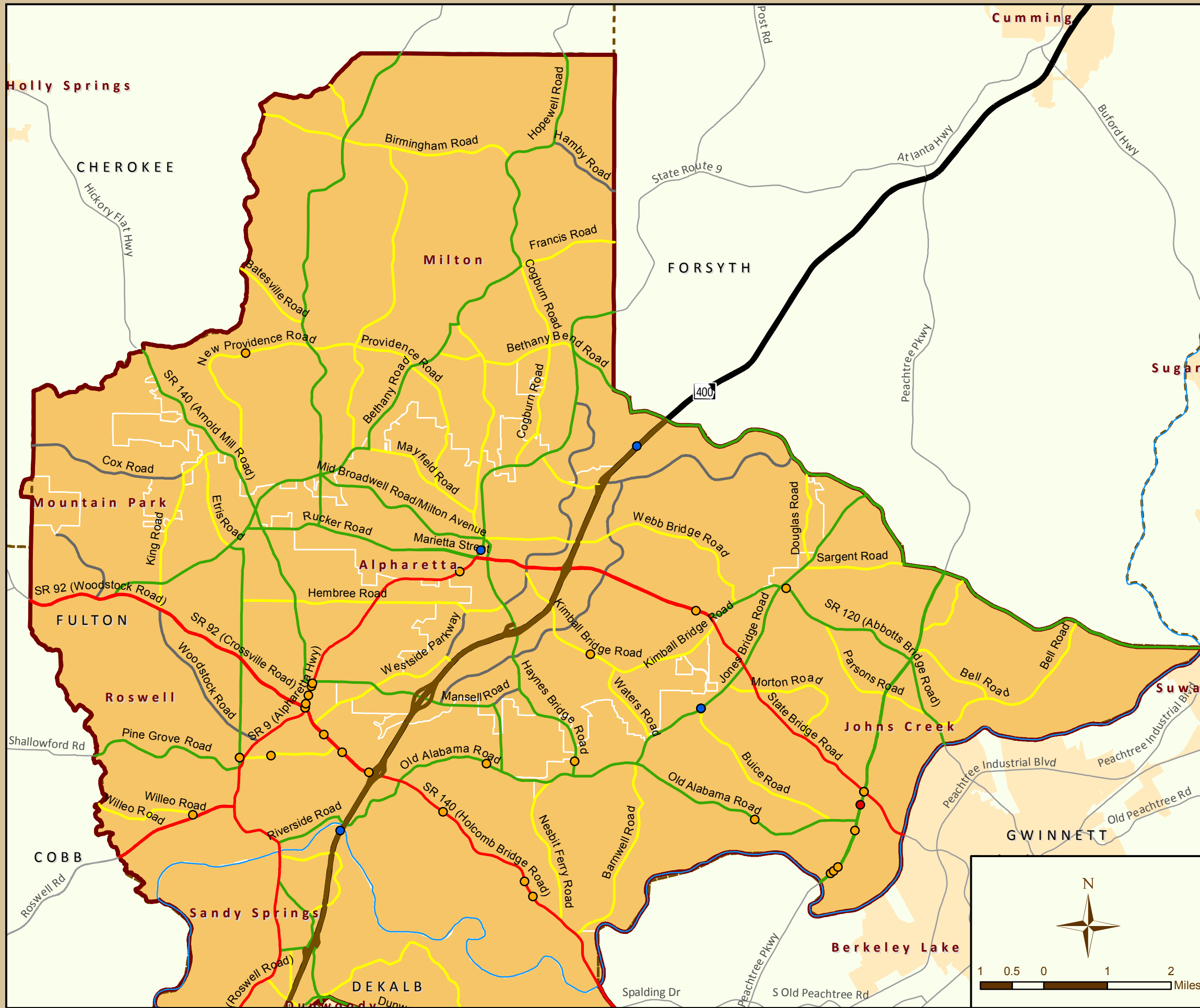
Legend

Pedestrian Crashes	Study Network
● No Injury	Functional Classification
● Injury	— Interstate
● Fatality	— Freeway
— Expressways	— Principal Arterial
— Chattahoochee River	— Minor Arterial
— North Fulton Study Area	— Collector
— Counties	— Local
— Other Cities	— Other Major Roads

Source: Georgia Department of Transportation, CARE Database (2006-2008)

**Figure 5-4B
Pedestrian Crashes**










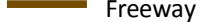



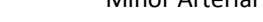


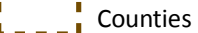

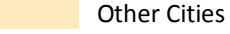


North Fulton County
 Transportation Resource
 Implementation Program

 ATLANTA REGIONAL COMMISSION


Reference Location

ARC 20-County Region


Legend

Bicycle Crashes		Study Network	
	No Injury	Functional Classification	
	Injury		Interstate
	Fatality		Freeway
	Expressways		Principal Arterial
	Chattahoochee River		Minor Arterial
	North Fulton Study Area		Collector
	Counties		Local
	Other Cities		Other Major Roads

Source: Georgia Department of Transportation, CARE Database (2006-2008)

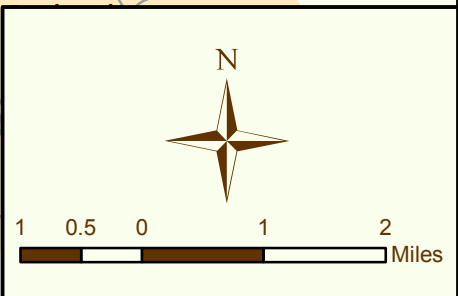
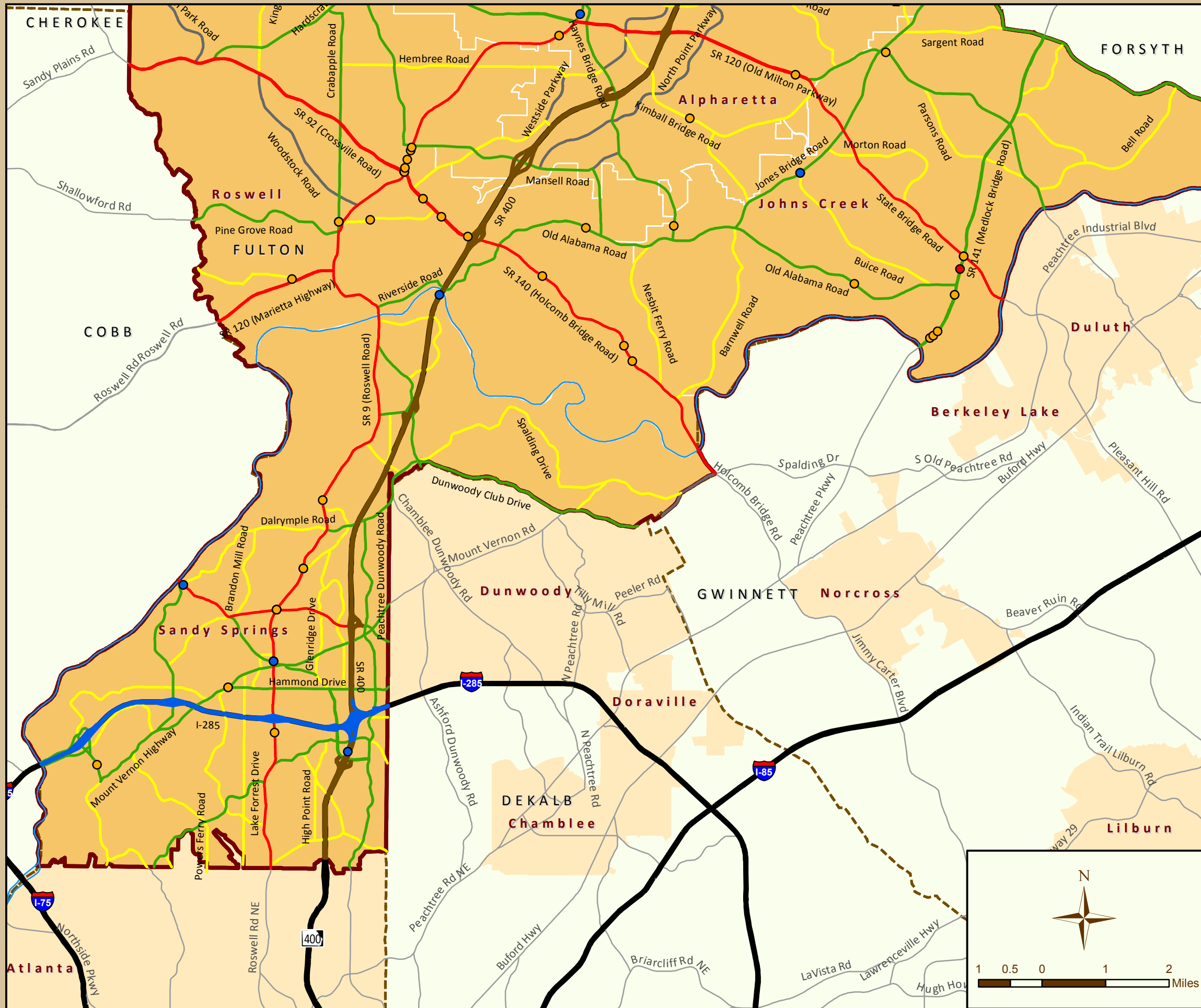


Figure 5-5A
Bicycle Crashes




**North Fulton County
Transportation Resource
Implementation Program**




Reference Location

**ARC
20-County
Region**

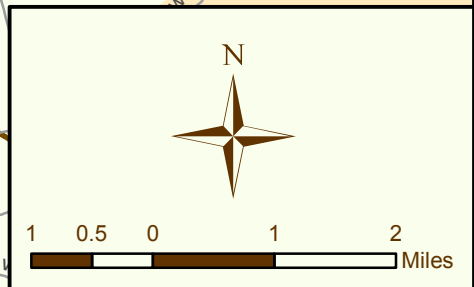


Legend

Bicycle Crashes	Study Network
● No Injury	Functional Classification
● Injury	— Interstate
● Fatality	— Freeway
— Expressways	— Principal Arterial
— Chattahoochee River	— Minor Arterial
— North Fulton Study Area	— Collector
— Counties	— Local
— Other Cities	— Other Major Roads

Source: Georgia Department of Transportation, CARE Database (2006-2008)

**Figure 5-5B
Bicycle Crashes**





5.4 Bridges

There are 24 bridges in North Fulton listed in the *Existing Conditions Report* that have sufficiency ratings less than 50. A sufficiency rating of 50 or below indicates that a bridge is in need of full replacement or significant repair. Because bridge projects can be very large investments for municipalities, finding the most efficient method for prioritizing and implementing these repairs is critical.

One deficient bridge has already been programmed to be replaced as a part of roadway widening projects. This is the Arnold Mill Road bridge over the Little River (Bridge ID # 057-0029-0). Therefore, this bridge can be removed from the list of bridge replacement priorities.

The remaining bridges can then be considered in the larger context of balancing needs as part of the North Fulton CTP. For instance, a roadway that is in need of widening and also has a bridge in need of replacement may receive priority over other widening projects. These remaining bridges can be seen in Table 5-1.



Table 5-1: Bridge Inventory

Bridge ID	Feature Type	Road Name	Feature	Year Const	Year Recon	2007 ADT	GDOT Suffic. R'ting
121-5015-0	Over Stream	New Providence Road	Cooper Sandy Creek	1962	--	003610	18.71
121-5019-0	Over Stream	Bell Road	Cauley Creek	1960	1989	006800	26.84
121-0304-0	Over Stream	Riverside Road	Big Creek	1958	--	012920	27.27
121-0281-0	Over Stream	Bethany Road	Cooper Sandy Creek	1951	--	003230	27.70
121-5002-0	Over Stream	Clarity Road	Little River	1954	--	001900	27.78
121-5022-0	Over Stream	Parsons Road	Johns Creek	1964	--	006800	29.57
121-5017-0	Over Stream	Douglas Road	Caney Creek	1955	1962	006800	29.60
121-0629-0	Over Stream	Windward Pkwy (EBL)	Big Creek	1986	--	032850	30.27
121-0630-0	Over Stream	Windward Pkwy (WBL)	Big Creek	1986	--	032850	30.27
121-5027-0	Over Stream	Rockmill Way	Foe Killer Creek	1964	--	000320	34.65
121-5003-0	Over Stream	Birmingham Road	Chicken Creek Trib.	1961	1994	006800	36.95
121-0288-0	Over Stream	McGinnis Ferry Road	Johns Creek	1962	--	000500	39.00
121-0291-0	Over Stream	Old Alabama Road	Johns Creek Trib.	1956	1962	017510	40.13
121-5176-0	Over Stream	Jett Road	Long Island Creek	1946	--	002460	40.54
121-5151-0	Over Stream	Birmingham Road	Little River	1968	--	006800	40.83
067-0109-0	Over Stream	I-285	Chattahoochee River	1962	1994	184080	40.99
121-5133-0	Over Stream	Old Holcomb Bridge Rd	Big Creek	1941	--	001900	41.83
121-0292-0	Over Stream	Old Alabama Rd	Johns Creek	1956	--	017510	43.94
121-0451-0	Over Stream	Powers Ferry Road	Long Island Creek	1993	2004	005930	46.63
121-5106-0	Over Stream	New Bullpen Road	Little River	1939	--	008230	48.98
121-5030-0	Over Stream	Spalding Drive	Ball Mill Creek	1929	--	001900	49.76
121-5020-0	Over Stream	Bell Road	Chattahoochee River Tributary	1958	--	006800	47.57

Source: Georgia Department of Transportation

Note: *Year Const* = Year that bridge was constructed

Note: *Year Recon* = Year that bridge was reconstructed (if applicable)



5.5 Freight

As was noted in the *Existing Conditions Report*, the North Fulton area has some parcels zoned for light industrial, manufacturing, and wholesale uses which rely on truck freight for both inbound and outbound products. The area does not contain heavy concentrations of intermodal traffic, heavy industry, or heavy truck traffic. However, the area does have significant local delivery needs which rely on truck freight.

Several data sources were reviewed to understand the truck freight needs of the Atlanta region and the North Fulton area. These are summarized as follows:

Existing Land Uses

Existing land uses throughout the Atlanta region are compiled by ARC in the LandPro database for 2009. Those land uses that typically correspond to heavy demands for truck freight include industrial/commercial, quarries, TCU (transportation, communications, utilities), and sometimes institutional uses such as military bases. A regional map has been included for reference in Appendix C. The distribution of these uses in the region suggests heavy freight demands originate near:

- Hartsfield Jackson airport
- Along Fulton Industrial Boulevard in south Fulton and US 278 in Douglas County and south Cobb County
- Near the CSX and NS intermodal yards in west Atlanta (Bankhead Highway area)
- Along the Peachtree Industrial Boulevard, I-85 and SR 316 corridors in Gwinnett County and
- In relatively small pockets in many smaller cities, including Alpharetta

Regional Employment Trends

Existing employment (from ARC) was reviewed to identify the spatial distribution of employment categories that typically demand freight (construction, manufacturing, TCU, wholesale and retail). This pattern is similar to that noted above for existing land uses, with densities in North Fulton similar to much of surrounding Cobb and Gwinnett Counties, and noticeably more than neighboring DeKalb County. A map of regional employment trends has been included in Appendix C.

ARC's Atlanta Regional Freight Mobility Plan

ARC's Atlanta Regional Freight Mobility Plan mapped distribution centers throughout the region. This information identifies only a few distribution centers in North Fulton, and perhaps less concentration than in much of the Atlanta region. This information has been included in Appendix C.

Volumes of Heavy Trucks

The existing volume of heavy trucks in the North Fulton area is also consistent with the review of land uses, employment data, and locations of distribution centers as described above. Existing



truck traffic counts along the major corridors in North Fulton do not appear to be greater than truck traffic percentages in similar areas around the region.²⁷

Sample count locations in North Fulton:

- Johnson Ferry Road, west of Abernathy Road - 3% trucks
- SR 9, north of Northridge Road - 2% trucks
- SR 92, west of Mountain Park Road - 2% trucks
- Mansell Road, east of SR 9 - 4% trucks
- SR 9, north of Cogburn Road - 6% trucks
- GA 400, north of I-285- 4% trucks

Sample major arterial corridors outside the North Fulton area:

- Canton Road, north of I-75 - 7% trucks
- SR 120 North Loop, west of I-75 - 5% trucks
- Delk Road, adjacent to Lockheed/Dobbins - 4% trucks

Conclusions

The LandPro data and employment data noted above does confirm field observations that significant retail uses in North Fulton contribute to significant demand for local deliveries via truck. The relatively low counts of heavy trucks in the area suggest that many local deliveries are made in smaller trucks. This is an important distinction as heavy trucks require higher standards of roadway design than do autos or small trucks.

In conclusion, this data suggests two key points. First, while the area does not contain high concentrations of heavy truck traffic, the principal arterials (such as SR 120, SR 140, SR 9, Mansell Road, Haynes Bridge Road) should consider the needs of heavy trucks in their physical design criteria. Secondly, while most minor arterials and collectors may experience only the occasional heavy truck, these roadways may frequently see smaller truck traffic making local deliveries. These roadways most likely do not merit significant design consideration in order to facilitate these trips.

5.6 Access Management along Arterials

Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. It also involves roadway design applications, such as median treatments and auxiliary lanes, and the appropriate spacing of traffic signals.²⁸ By improving access management along a corridor, it is possible to improve its operations and to increase the capacity of the facility without widening the cross-section of the roadway.

²⁷ GDOT STARS

²⁸ Definition from the Transportation Research Board's *Access Management Manual*



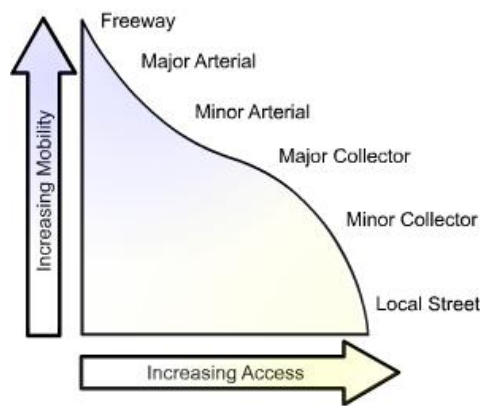
North Fulton is heavily developed today; therefore, opportunities for designing new facilities with aggressive access management measures are sparse. While enhancing and retrofitting access management on existing roadways is more difficult, it can be accomplished through the addition of medians or removal of left-turning traffic from through lanes, driveway consolidation, improved inter-parcel access, and at times, grade separation of key intersections.

Freeways and interstates have inherently excellent access management. The goal of this analysis within North Fulton, therefore, focuses on principal and minor arterials as being the key facilities requiring improvement. Three key characteristics were inventoried and mapped as relevant to determining the quality of access management on each facility: median type, driveway spacing, and signal location.

Median Type

Different types of medians can provide varying levels of access management. Landscaped or concrete medians are non-traversable in nature and require the driver to turn only at designated locations. When median breaks and signals are well-spaced, these types of medians have a tremendous ability to reduce turning conflicts and to keep through traffic moving. Two-way-left-turn lanes do not restrict when or where a vehicle can turn; however, they provide a separate lane for left-turning traffic, which allows the through movements to continue efficiently. When a roadway lacks a median treatment, vehicles are able to turn at any roadway or driveway, which reduces travel speeds and increases the number of vehicle conflicts. Figure 5-6 depicts the relationship between access and mobility showing the highest forms of medians with the darkest colors.

Figure 5-6: Relationship between Access and Mobility



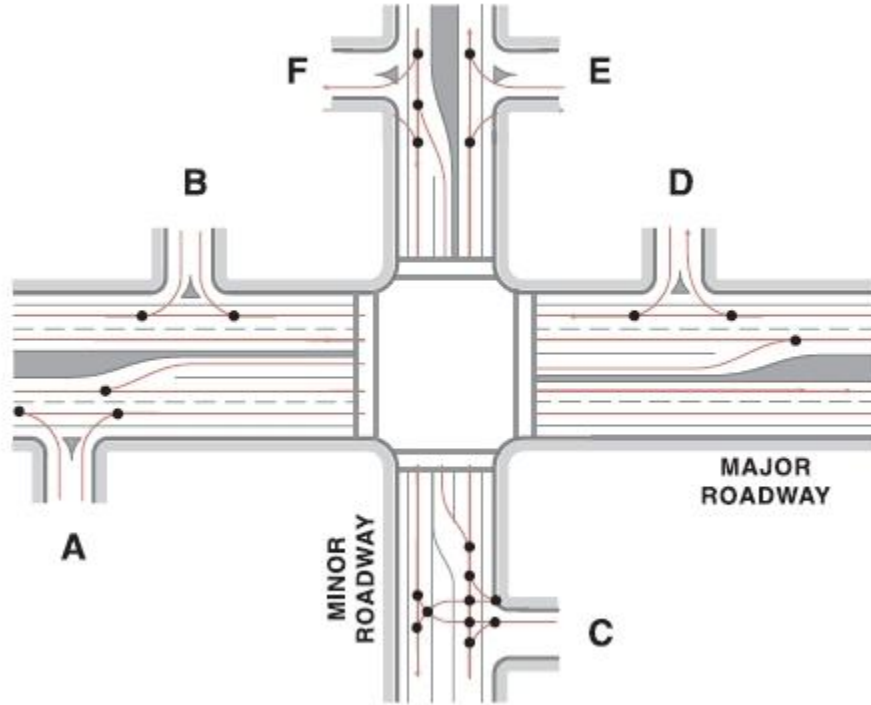
Source: USDOT FHWA - Office of Operations, "What is Access Management?"
http://ops.fhwa.dot.gov/access_mgmt/what_is_accsmt.htm

In addition to improving the capacity of a roadway, medians can also greatly improve the safety of roadways by reducing conflict points. The difference in conflict points for intersections with and without a median can be seen in Figure 5-7. The intersection without a median control,



intersection “C”, has 10 potential conflict points compared to 2 or 3 conflict points at other intersections where medians exist.

Figure 5-7: Vehicular Conflict Points for Various Median Scenarios



Source: USDOT FHWA – Intersection Safety Briefs
http://safety.fhwa.dot.gov/.../fhwas10005/brief_13.cfm

Driveway Spacing

Driveway spacing is another key component of access management. The more driveways that exist along a facility, the more opportunities there are for vehicles to stop or slow for turning – impeding the flow of through-moving vehicles. Additionally, when driveways are spaced very close together (less than 250 feet), it is difficult for a driver to differentiate between adjacent driveways while preparing to turn. Average driveway spacing (including unsignalized intersections) was calculated for segments of the principal and minor arterials throughout North Fulton. The roadways with the largest driveway spacing (optimal) are shown with the darkest colors in Figure 5-8.

Specific requirements for access spacing (minimum distances between driveways and cross streets) can vary based on roadway type, speed limit, adjacent land use, and other factors. There are no one set of guidelines that are always applicable. The Transportation Research Board (TRB) *Access Management Manual, 2003*, provides guidelines on access spacing based on a number of different criteria. Through a review of research on a number of different criteria, they created Table 5-2 as a base set of guidelines for access spacing.



Table 5-2: Example of Guidelines for Access Spacing (ft) on Suburban Roads

Functional Class of Roadway	Undivided Roadway	Divided Roadway		
		Full Median Opening	Directional Median Opening	Right In/Out Only
Principal Arterial	2640	2640	1320	990
Minor Arterial	660	1320	660	330
Collector	330	Not applicable, medians typically not used		
Local Road	100			

Source: Transportation Research Board *Access Management Manual, 2003*

Signal Spacing

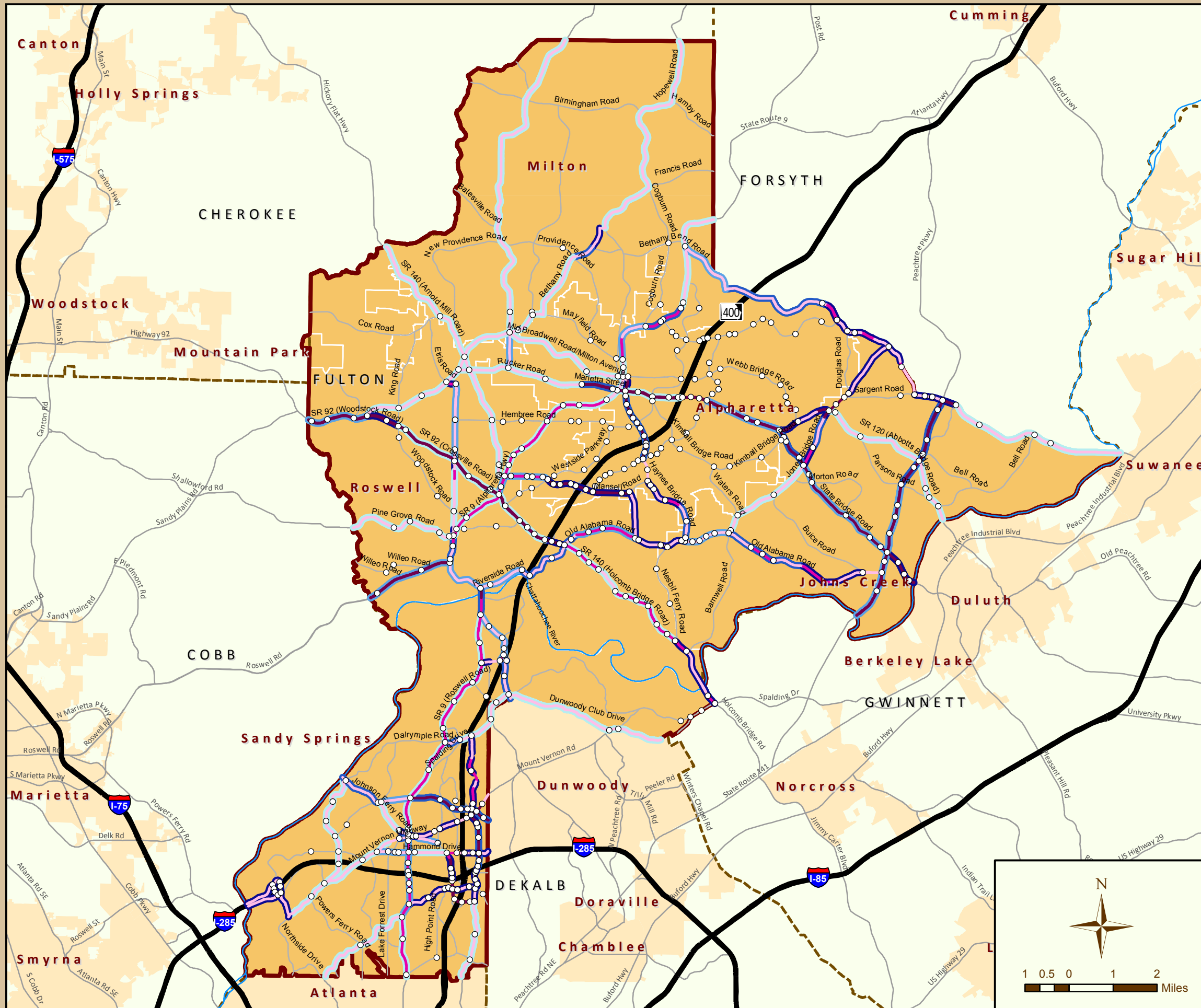
Signal spacing is also important to developing good access management. Increased signals over small distances results in more stop-and-go traffic along a corridor. As signals are placed closer together, it becomes increasingly difficult to time them so that the mainline travel receives long bands of green time. These stop-and-go patterns result in more startup time for drivers and less travel time which in turn creates more congestion.

Access Management Needs

Figure 5-8 displays the three characteristics – median type, driveway spacing, and signal spacing – as an access management system. The more restrictive the median and the higher the driveway spacing, the darker the roadway is displayed in the map. Likewise, arterials with no median and closely spaced driveways appear lighter on the map. Finally, white signals are overlaid on the roadways, reducing the overall darkness of the roads wherever they exist. It is important to also note that the driveway spacing does not differentiate between residential and commercial driveways. Commercial driveways have a more significant impact on travel speeds because of the higher volume of people accessing them, relative to residential driveways.

The arterial and collector roadways within North Fulton that have the most aggressive access management (i.e. strong median treatments in combination with fewer driveways and signals) include the following:

- Medlock Bridge Road (SR 141)
- State Bridge Road (SR 120) from GA 400 to the Gwinnett County line
- Marietta Highway (SR 120) from the Cobb County line to Roswell Road (SR 9)
- Woodstock Road (SR 92) from the Cobb County line to King Road



**North Fulton County
Transportation Resource
Implementation Program**

ARC
ATLANTA REGIONAL COMMISSION

**Kimley-Horn
and Associates, Inc.**

Reference Location

**ARC
20-County
Region**

Legend

Median	Other Major Roads
None	Expressways
TWLTL / Striped	Chattahoochee River
Concrete / Landscaped	Study Area
Driveway Spacing	Counties
< 200 ft	Other Cities
200 ft - 350 ft	
350 ft - 660 ft	
> 660 ft	
Signals	

Source: Kimley-Horn and Associates, Inc.

**Figure 5-8
Access Management**



Other roadways have a combination of two of the three characteristics present. The deficient characteristic is noted in parentheses:

- Crossville Road (SR 92) from King Road to GA 400 (small driveway spacing)
- Mansell Road from Westside Parkway to Old Alabama Connector (signal density)
- Haynes Bridge Road from Old Milton Parkway to North Point Parkway (signal density)
- Old Milton Parkway from Haynes Bridge Road to GA 400 (small driveway spacing)
- Peachtree Dunwoody Road from Glenridge Connector to Mount Vernon Road (signal density)
- Abernathy Road from Roswell Road (SR 9) to the DeKalb County line (signal density)

Three corridors throughout North Fulton are considered to be the primary travel corridors by the ensuing analyses, and by the Project Management Team, members of the Stakeholder Committee, and members of the public:

- Arnold Mill (SR 140) to Rucker Road/Old Milton Parkway (SR 120) to State Bridge Road (SR 120)
- Crossville Road (SR 92) to Holcomb Bridge Road (SR 140)
- Roswell Road/Alpharetta Highway (SR 9)

In review of these specific corridors, some inconsistencies are brought to light relative to access management. The most eastern two-thirds of the first corridor (SR 120/SR 140) have strong access management characteristics, but a stark difference is noticeable where Rucker Road becomes Old Milton Parkway. The west third of the corridor is primarily closely spaced residential driveways with no median. Fewer signals do exist on the west third; however. As this corridor is reviewed in further detail and project recommendations are considered, consistency in access management techniques will be considered as well.

The segment of SR 92 / SR 140 west of GA 400 has better access management than the segment to the east of GA 400, however, within the western segment, a significant portion of the roadway does have very closely spaced driveways. The portion to the east of GA 400 has closely spaced driveways in combination with intermittent two-way left-turn lanes. This section of the corridor is slightly more residential in nature than the west section, so this may account for some of the differences in character.

The final corridor, SR 9, has the least restrictive access management of the three primary corridors. A two-way left-turn lane is the highest form of median along this corridor throughout all of North Fulton. Much of the corridor has no median of any kind. Additionally, many miles of this roadway have high densities of closely spaced driveways that result in a multitude of vehicular conflicts. A positive note about SR 9 is that it has lower signal densities than the other two corridors overall.

The access management techniques used along all of the arterials in North Fulton will be considered throughout the Recommendations Phase of the report; however, specific emphasis will be placed on the three priority corridors.



5.7 Roadway Connectivity

As discussed in the introductory portion of this report, roadway connectivity is important for providing options to users of all modes. Enhanced connectivity allows drivers, transit users, cyclists, and pedestrians opportunities to make the most direct and efficient trip possible while experiencing reduced congestion relative to the primary corridors.

Because North Fulton is very developed today, it is difficult to construct large new connections without impacting existing development. In some cases, where new regional connections cannot be made, smaller local connections can be considered to provide relief to key intersections that are currently over capacity. Both tiers of connections will be considered as a part of this analysis, while only the regional connections will be considered within the travel demand model. Small connections that serve as bypass routes to intersections are too local in nature to impact a regional model; therefore, they will be addressed separately in the Recommendations Phase.

A number of significant new roadway connections are being considered in this transportation plan. Some of them have already been studied by the local governments and are being advanced for consideration in this report, while others have yet to be included in a regional modeling effort. These connections would be multimodal in nature. Some of the new regional connections that are being considered are as follows:

- A **New Chattahoochee River Crossing** involves a new bridge over the Chattahoochee River to connect to existing roadway facilities on either side of the river. Various locations for this crossing have been considered in the past, and an optimal crossing location will be determined as part of this process.
- The **Big Creek Bridge** involves a new connection between Old Alabama Road and Warsaw Road to the north of Holcomb Bridge Road including a new bridge over GA 400.
- The **Northeast Connector (Sun Valley Connection)** involves a roadway extension of Old Ellis Road/Lakewood Parkway to connect with Sun Valley Drive which then connects to Alpharetta Highway (SR 9). Additional side-street connections to this roadway extension would include connections to a Warsaw Road extension and to Mansell Place.
- The **Sandy Springs Circle Connection** involves an upgrade and widening to the existing Sandy Springs Circle with a bridge over I-285 and a connection to Roswell Road (SR 9) at the Glenridge Connector. Other additional connections are proposed east to west between Lake Forrest Drive and SR 9.
- The **McGinnis Ferry Road Interchange** involves a new diamond interchange along GA 400 at McGinnis Ferry Road. Additional access roads are being considered in conjunction with the new interchange as well.

Other smaller roadway connections will be discussed throughout the Recommendations phase of the report. Wherever opportunities for enhanced grid networks or bypass systems around complex intersections present themselves, they should be strongly considered. Other bike/ped connections may be possible as well and will be discussed further in the bike/ped section of the report.



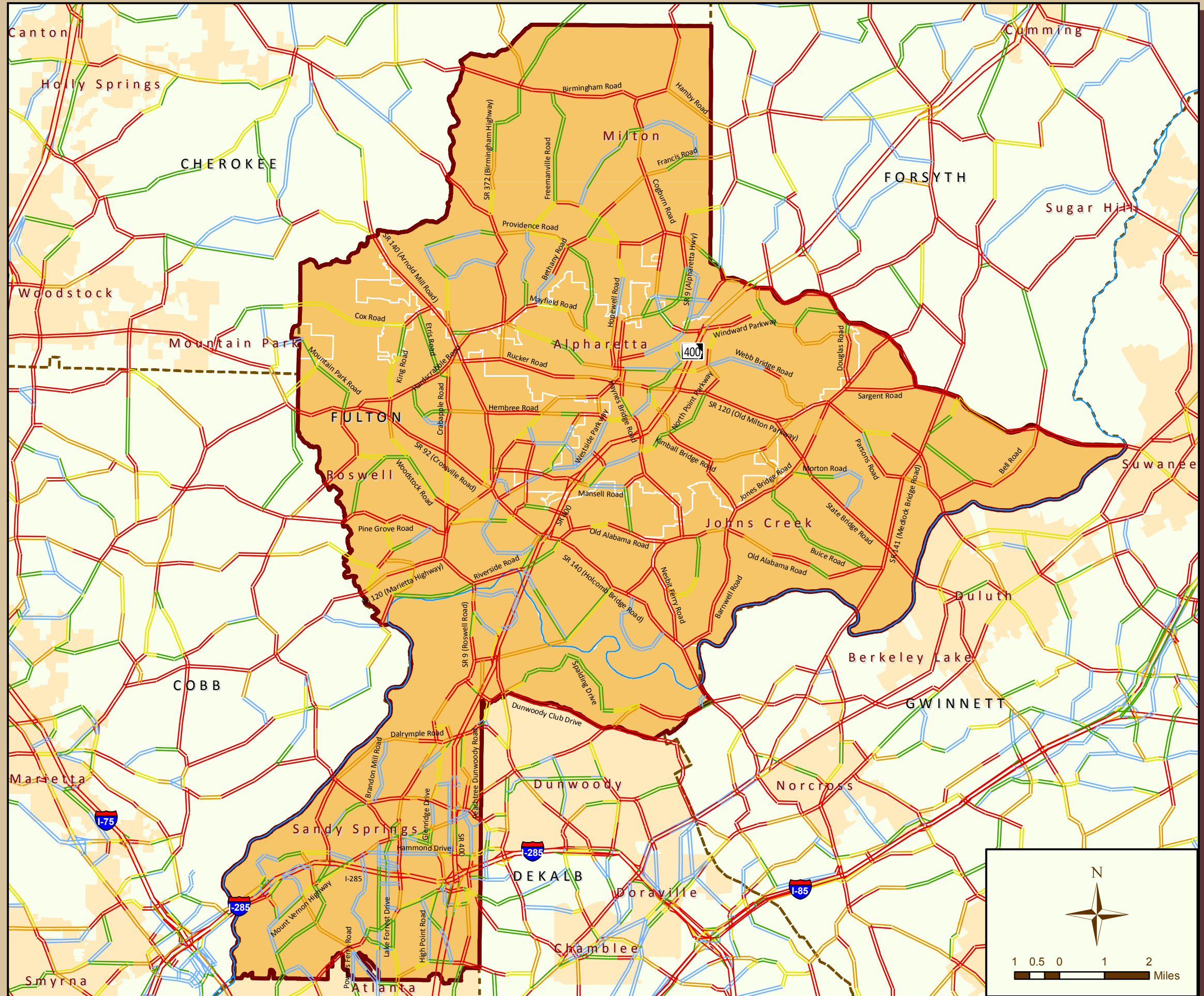
5.8 ARC Travel Demand Model

The ARC travel demand model is a critical tool in the assessment of needs as well as the testing of future project scenarios. Four different analyses relative to roadway needs were conducted using the model during the Needs Assessment phase of the report: 2030 E+C²⁹ Level-of-Service, a select link analysis of GA 400 over the Chattahoochee River, the calculation of regional and subarea metrics, and a laborshed analysis for the two primary employment centers within North Fulton. These analyses assist in determining the roadway needs of the area and will also serve as framework for comparison to future scenarios being tested in the Recommendations portion of the report.

2030 E+C Level-of-Service

The 2030 E+C Level-of-Service analysis is similar to that of the 2010 E+C analysis detailed in the *Existing Conditions Report*. The 2030 E+C analysis maintains the same transportation infrastructure as in the 2010 E+C, but it uses the 2030 population and employment projections determined by ARC. The Levels-of-Service of the roadways within North Fulton are displayed in Figure 5-9. As can be expected, the majority of the roadways exhibit increased delay and, therefore, worsened Level-of-Service as a result of the increased population and employment with the unchanged infrastructure. Many of the roadways that were LOS D or LOS E (yellow or orange, respectively) in 2010 are projected to become LOS F (red) by 2030. Some of the roads projected to experience this change include Holcomb Bridge Road (west of GA 400), Old Milton Parkway / Rucker Road (west of GA 400), Jones Bridge Road, Birmingham Highway, Birmingham Road, Cogburn Road, and Roswell Road/Alpharetta Highway. This degradation in travel conditions is not isolated to North Fulton. As the map illustrates, reduced mobility is projected in all of the neighboring counties as well. A lack of transportation improvements throughout the region would result in worsening travel conditions in the coming years if the region continues to grow as projected.


²⁹ 2030 E+C means the existing roadway network in addition to any committed future roadway projects.



**North Fulton County
Transportation Resource
Implementation Program**




Reference Location



**ARC
20-County
Region**

Legend

Daily Vehicular Level-of-Service

- A/B (V/C < 0.50)
- C (V/C = 0.50 - 0.70)
- D (V/C = 0.70 - 0.84)
- E (V/C = 0.84 - 1.00)
- F (V/C > 1.00)
- Chattahoochee River
- North Fulton Study Area
- Counties
- Other Cities

Source: Atlanta Regional Commission, Kimley-Horn and Associates, Inc.

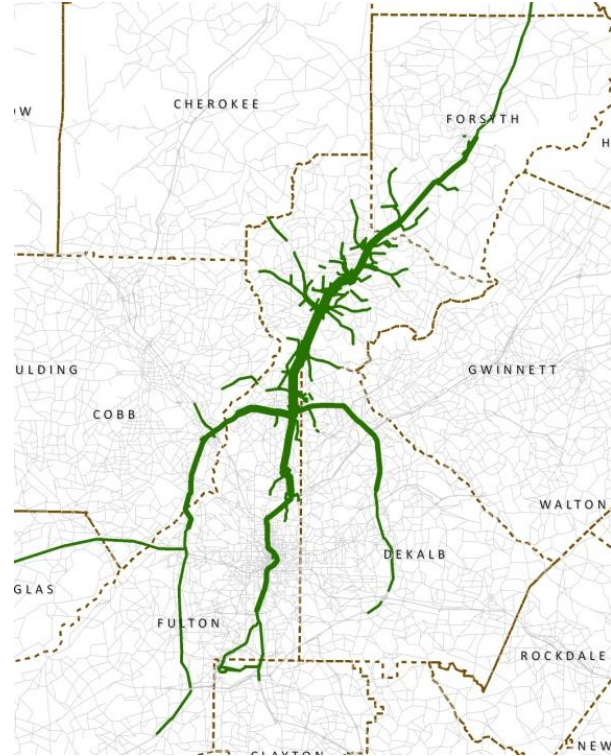
**Figure 5-9
2030 E+C Vehicular
Level-of-Service**



Select Link Analysis – GA 400 over the Chattahoochee River

The Chattahoochee River is known to be a barrier to connectivity between North Fulton and other parts of the region, including to South Fulton, DeKalb County, Cobb County, and Gwinnett County. GA 400 is a key bridge over the Chattahoochee River and is likely the most important crossing between northern and southern portions of Fulton County. A select link analysis was conducted to better understand the travel patterns over the bridge. In a select link analysis, the paths of all vehicles traveling across the selected link are aggregated. The thickest lines shown in the map indicate the largest numbers of vehicles using the link. GA 400 has the thickest lines, followed by I-285 on the top end. It is important to also note the thickness of the lines of many of the east-west arterials that intersect GA 400, particularly along Holcomb Bridge Road/Crossville Road. Understanding these travel behaviors helps to illuminate some of the roadway deficiencies within and around North Fulton.

Figure 5-10: Select Link Analysis of GA 400 over the Chattahoochee River



Source: ARC Travel Demand Model, Kimley-Horn and Associates, Inc.

Regional and Subarea Metrics

In order to understand how the region and subarea of North Fulton perform relative to roadways and transit travel, sets of metrics will be monitored for the Existing + Committed models as well as for each of the future project scenarios. The 2010 E+C and 2030 E+C roadway metrics for the region (20-county metro) and North Fulton are listed below and will serve as a baseline for comparison with future scenario testing.



Table 5-3: 2010 E+C Facility Statistics

2010 E+C Regional Facility Statistics	Daily		
	Interstates/Ramps Expressways	HOV	Arterials/Collectors
VMT	61,194,983 <i>43.87%</i>	1,637,721 <i>1.17%</i>	76,661,651 <i>54.96%</i>
VHT	1,489,726 <i>34.84%</i>	38,344 <i>0.90%</i>	2,747,323 <i>64.26%</i>
% Congested VHT	57.27%	54.20%	31.40%
Total Delay	443,874 <i>42.18%</i>	10,677 <i>1.01%</i>	597,877 <i>56.81%</i>
Person Trips	200,763,417 <i>36.64%</i>	16,960,701 <i>3.10%</i>	330,167,737 <i>60.26%</i>

2010 E+C Subarea Facility Statistics	Daily		
	Interstates/Ramps Expressways	HOV	Arterials/Collectors
VMT	5,058,642 <i>45.02%</i>	0 <i>0.00%</i>	6,177,872 <i>54.98%</i>
VHT	129,006 <i>30.72%</i>	0 <i>0.00%</i>	290,908 <i>69.28%</i>
% Congested VHT	70.19%	0.00%	54.98%
Total Delay	42,089 <i>30.43%</i>	0 <i>0.00%</i>	96,243 <i>69.57%</i>
Person Trips	15,895,177 <i>37.38%</i>	0	26,624,278 <i>6,177,872</i>

Source: ARC Travel Demand Model, Kimley-Horn and Associates, Inc.

It is first important to understand the significant impact of growing population and employment without transportation enhancements to accommodate the travel needs of the increasing population. It is also important to understand how potential future scenarios compare with the 2030 E+C (or “do-nothing”) scenario. The associated tables show some of the basic metrics used for comparison for the 2010 E+C by facility type. The metrics include VMT (vehicle miles traveled), VHT (vehicle hours traveled), % of Congested VHT (how many hours of travel are conducted during congested periods), total delay (aggregated for all travel in the area), and person trips (total number in the area). The tables display the metrics by groups of facilities including interstates/ramps/expressways, HOV facilities, and arterials/collectors. Because there are no HOV facilities in North Fulton, no metrics exist for the HOV column within the subarea.

A few of the aspects are worth noting:

- a greater percentage of travel time in North Fulton is congested compared to the region



- approximately 55% of North Fulton travel occurs on arterials/ collectors, but nearly 70% of the delay occurs on those roadways;
- the same percentage of VMT occurs on arterials/collectors throughout the region, but less delay is accrued on those same roadways.

Table 5-4: 2030 E+C Facility Statistics

2030 E+C Subarea Facility Statistics	Daily		
	Interstates/Ramps Expressways	HOV	Arterials/Collectors
VMT	6,018,197 <i>42.72%</i>	0 <i>0.00%</i>	8,069,381 <i>57.28%</i>
VHT	212,876 <i>27.77%</i>	0 <i>0.00%</i>	553,662 <i>72.23%</i>
% Congested VHT	93.17%	0.00%	84.96%
Total Delay	108,061 <i>27.05%</i>	0 <i>0.00%</i>	291,435 <i>72.95%</i>
Person Trips	18,954,731 <i>35.46%</i>	0 <i>0.00%</i>	34,497,258 <i>64.54%</i>

2030 E+C Regional Facility Statistics	Daily		
	Interstates/Ramps Expressways	HOV	Arterials/Collectors
VMT	75,162,791 <i>40.00%</i>	2,066,519 <i>1.10%</i>	110,672,442 <i>58.90%</i>
VHT	2,537,861 <i>31.34%</i>	65,319 <i>0.81%</i>	5,494,316 <i>67.85%</i>
% Congested VHT	86.64%	86.40%	67.68%
Total Delay	1,242,544 <i>35.06%</i>	30,071 <i>0.85%</i>	2,271,379 <i>64.09%</i>
Person Trips	247,635,603 <i>33.59%</i>	20,936,621 <i>2.84%</i>	468,714,422 <i>63.57%</i>

Source: ARC Travel Demand Model, Kimley-Horn and Associates, Inc.

In 2030, the relative amount of VMT to VHT and overall delay remains relatively constant. Some important comparisons, however, include the following: the percentage of congested VHT increases drastically for both North Fulton and the region as a whole; increased percentages of VMT and VHT are projected to occur on the arterials and collectors both within North Fulton as well as across the region.

Viewing the 2010 E+C and 2030 E+C scenarios relative to overall VMT and VHT without respect to facility type, some other interesting characteristics are worth noting. VMT and VHT per capita within North Fulton are anticipated to increase, while only VHT per capita is anticipated to increase



for the region. Likewise, travel during the peak 8 hours of the day (four hours in the AM and four hours in the PM) is anticipated to increase in North Fulton. Because this analysis is conducted per capita, the increase within North Fulton is likely a combination of increased travel by North Fulton residents as well as those traveling to/through North Fulton.

Table 5-5: 2010 E+C Subarea Statistics

2010 E+C Subarea Statistics	Total	Per Capita
Daily VMT	11,236,514	35.32
Daily VHT	419,914	1.32
8-Hour Peak VMT	6,438,899	20.24
8-Hour Peak VHT	279,727	0.88
2010 E+C Regional Statistics		
	Total	Per Capita
Daily VMT	139,494,355	27.90
Daily VHT	4,275,393	0.86
8-Hour Peak VMT	79,319,810	15.87
8-Hour Peak VHT	2,735,399	0.55

Table 5-6: 2030 E+C Statistics

2030 E+C Subarea Statistics	Total	Per Capita
Daily VMT	14,087,578	39.30
Daily VHT	766,538	2.14
8-Hour Peak VMT	7,916,394	22.09
8-Hour Peak VHT	539,400	1.50
2030 E+C Regional Statistics		
	Total	Per Capita
Daily VMT	187,901,752	27.56
Daily VHT	8,097,496	1.19
8-Hour Peak VMT	105,823,341	15.52
8-Hour Peak VHT	5,562,006	0.82

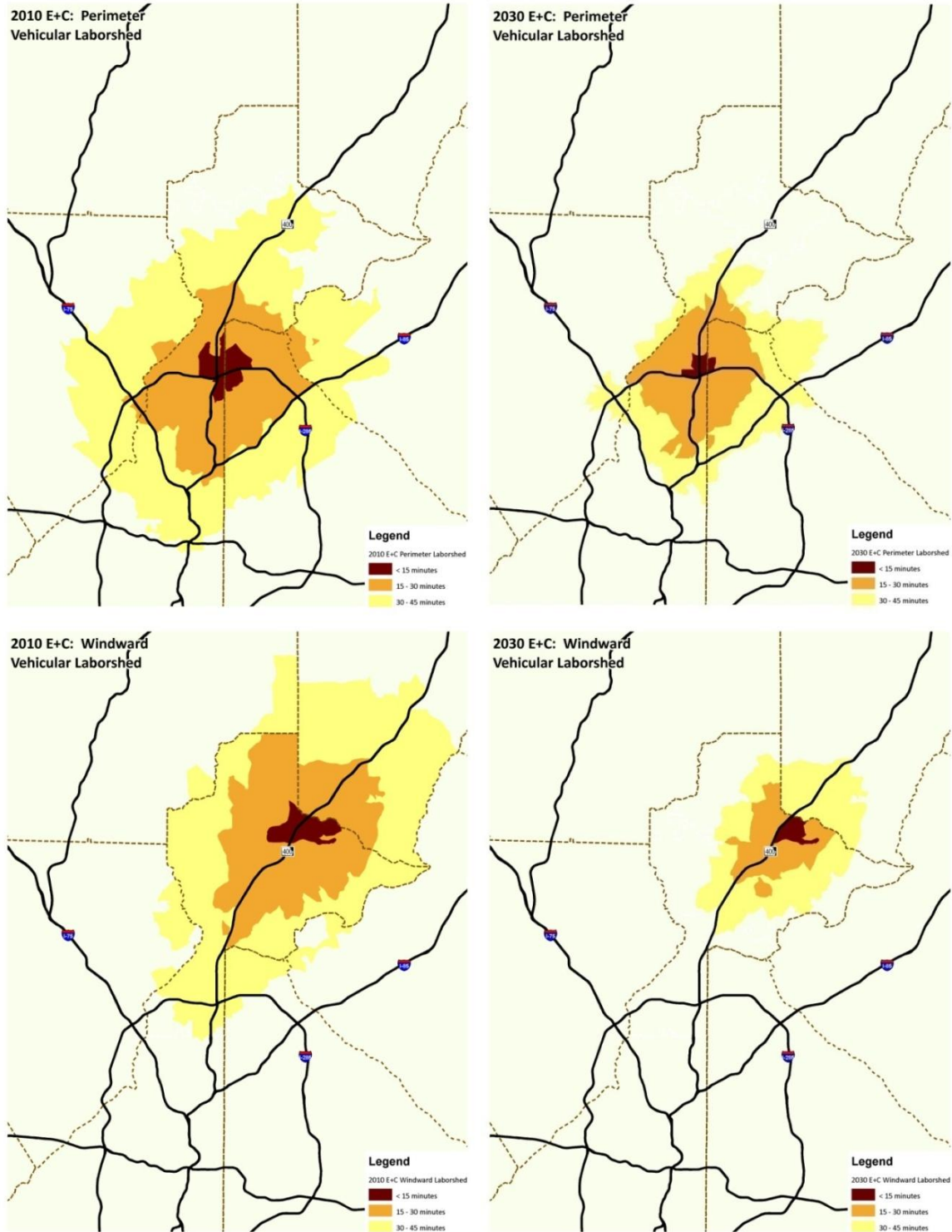
Source: ARC Travel Demand Model, Kimley-Horn and Associates, Inc.

Laborshed Analyses – Vehicular

Laborshed analyses were conducted in order to determine how many workers live within 15, 30, and 45 minutes of one of the two primary employment centers in North Fulton: Perimeter and Windward. As in the Investing in Tomorrow's Transportation Today (IT3) study, the precursor to the Statewide Transportation Plan, this approach viewed transportation enhancements through an economic lens. By maximizing the number of available workers within 30 to 45 minutes of employment centers, employers are able to increase the size of their talent pools and workers have an improved accessibility to a greater number of jobs. The 2010 E+C and 2030 E+C laborsheds for both Perimeter and Windward were developed to understand how many workers are currently able to access (2010 E+C) and will be able to access (2030 E+C) these employment centers given our current roadway infrastructure. As expected, the 2010 E+C laborsheds are larger than those in 2030 as a result of fewer people living and working within the metro, and therefore, less congestion. Without infrastructure improvements, the laborsheds are projected to shrink in the future due to increased congestion. The laborsheds within North Fulton are relatively similar in size (area) in 2010; however, the Perimeter laborshed remains larger than the Windward laborshed in 2030, likely because of its location near to a better connected roadway system.



Figure 5-11: Laborshed Maps



Source: ARC Travel Demand Model, Georgia Regional Transit Authority (GRTA),



Kimley-Horn and Associates, Inc.

While the laborsheds may be of similar size (area) in 2010, it is evident from the table that the number of workers accessible to both employment centers varies significantly as a result of greater population density near the Perimeter laborshed. With no infrastructure improvements, the number of workers accessible to both employment centers is reduced drastically between 2010 and 2030. As future scenarios are tested, the expansion of the laborsheds and an increase in workers within them will be important metrics to evaluate.

Table 5-7: Laborshed Breakdown						
Workers within Laborsheds	Perimeter			Windward		
	2010 E+C	2030 E+C	Change	2010 E+C	2030 E+C	Change
< 15 minutes	13,456	3,061	-77.25%	9,863	2,296	-76.72%
< 30 minutes	162,542	115,737	-28.80%	106,118	32,354	-69.51%
< 45 minutes	505,627	277,577	-45.10%	281,270	116,325	-58.64%

Source: ARC Travel Demand Model, Kimley-Horn and Associates, Inc.



6.0 PEDESTRIAN NEEDS

Pedestrian needs can be conceptualized in a number of ways. Many people express a desire for areas to possess a certain quality which they might describe as “walkability”, or “pedestrian friendliness.” North Fulton residents desire these qualities for their communities as well. Over 50% of respondents to the telephone survey conducted during the Existing Conditions phase of this project rated “making it easier and safer to walk” as a high or extremely high priority. Additionally, a majority of survey respondents indicated a desire for more sidewalks in most areas around their communities. The elements that contribute to these factors can be difficult to pin down and are not necessarily directly linked to safety. What these qualities seek to describe, however, are environments in which walking is perceived as a practical and comfortable mode of travel.

One important aspect of the practicality of walking in a given environment is the land use pattern of the area. If the area possesses a relatively balanced mix of trip origins (residences and places of employment) and trip destinations (other shops, restaurants, recreational and social destinations, etc.) within a walkable distance, then it is likely that walking could be perceived as a practical mode of transportation within that environment. Land use considerations that may impact the practicality of walking in North Fulton are discussed in other sections of this plan, but land use alone does not determine the frequency of which people actually walk.

Considerations of user comfort also play an important role in getting people to actually experience walking as a desirable activity. Frequently, the built environment can be experienced as unpleasant for pedestrians. Section 6.1 describes a number of elements that can contribute to a positive feeling toward an area on the part of potential pedestrians, and may help transform streets situated near supporting land use patterns into active environments in which the walking mode provides both utility and pleasure to people’s daily routines.

Another way to conceive of pedestrian facility needs is to more quantitatively assess the performance of roadways in the study area according to some measure and to select a value of that measure that represents an acceptable performance for the facilities under consideration. The *Existing Conditions Report* analyzed pedestrian conditions along the North Fulton CTP study network with a measure called the Pedestrian Level-of-Service Model; Section 6.2 describes how threshold values of this measure are used to distinguish facilities that are currently accommodating pedestrians at an acceptable level from those that need improvement in that regard.

The needs of pedestrians should be considered when planning and designing any roadway. This does not mean that all roadways need to be designed as *active streetscapes*. Many of North Fulton’s roadways are higher speed, suburban type collector and arterial roadways and are not conducive to the active street principles – they will not attract families out for a recreational stroll, shops are not present in a density that provides a walkable environment, or perhaps they front the perimeters of large residential developments. However, all roadways within urban or transitional areas should be designed with sidewalks and pedestrian features at all signalized intersections. Sidewalks should



be separated from the roadway by a buffer area, and if possible located outside the clear zone. Midblock crossings should be considered at high demand locations and be signed and marked accordingly.

6.1 Elements of a Pedestrian-Friendly, Active Streetscape

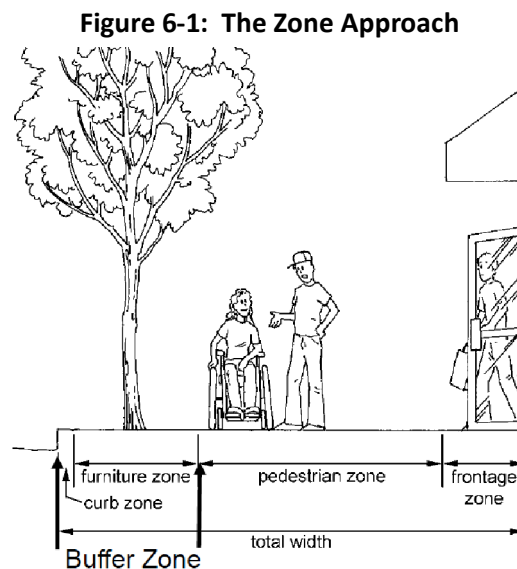
It is an idyllic scene: families walking, children playing, teens socializing, all along a street in the cities of North Fulton. How can this happen? What are the essential ingredients to create active streets? How do we get there from here? This section of the North Fulton CTP report addresses these questions.

There is no one ingredient that provides for active streetscapes. Creating active streetscapes and walkable and bikeable communities requires a community commitment to focus on these modes, and not just a desire to provide for high speed motor vehicle traffic.

Some of the ingredients that go into creating an active streetscape, and some ingredients that must be left out, are discussed herein.

The Zone Approach

To provide an active streetscape, the space between the right-of-way lines and the pavement of the street should be thought of as having three distinct zones: the buffer zone, the pedestrian zone, and the frontage zone. Each of these is described in more detail below, starting with the pedestrian zone.



Source: Designing Sidewalks and Traits for Access, FHWA, 2001



The Pedestrian Zone – Sidewalks

The most obvious ingredient for an active streetscape is sidewalks – this is the pedestrian zone. It is intended for the mobility of pedestrians. The pedestrian zone should be kept free of any obstacles which could impede a pedestrian walking along the sidewalk. It must be compliant with the Americans with Disabilities Act in terms of surface treatments, vertical encroachments, and horizontal encroachments.

The width of the pedestrian zone is dependent upon the volume of pedestrians envisioned for the corridor. For a downtown area the minimum recommended width is eight feet.³⁰

Figure 6-2: Sidewalks with Buffer, Pedestrian and Frontage zones.



Source: www.pedbikeimages.org
Photographer: Dan Burden

The Buffer Zone

People do not like standing next to moving motor vehicle traffic. Consequently, it is critical to provide space between the sidewalk (pedestrian zone) and the roadway. How much of a buffer? An effective buffer should be wide enough to provide for the amenities which can make a good day out walking into a great day in North Fulton. Six feet is a desirable minimum buffer width to provide these amenities; two feet should be considered the absolute minimum.

So what do you put in the buffer zone?

Plant Material

Pedestrians like green space. The buffer zone provides space to plant trees, ground cover and low shrubs. Planter boxes provide a more positive barrier to traffic and allow for better channelization of pedestrians to desirable street crossing locations.

³⁰ Specific capacity analyses can be performed using the *Highway Capacity Manual*.)



These green features provide pedestrians an additional psychological buffer from traffic and make them feel more safe and comfortable walking, socializing and shopping along the street.

Care must be taken when designing, installing, and maintaining plant materials to ensure that key sight lines with motorists – such as at crosswalks and intersections – are maintained.

Trash Receptacles

Keeping litter to a minimum is important to maintaining a pleasant sense of place. Dirty streets are often associated with areas that are not safe or secure to walk. Providing trash receptacles at regular intervals helps pedestrians keep the street clean.

Drinking Fountains

Drinking fountains allow for people to spend more time, more comfortably, on an active street. Particularly during North Fulton’s hot summer months, drinking fountains provide a needed respite for thirsty people so that they can stay longer and be more active.

Bicycle Racks

Creating active streets means that one accommodates bicyclists as well as pedestrians. Bicycle parking, typically U-racks, can be conveniently located in the buffer zone.

Bus Shelters and Alighting Areas

Active streets should also support transit. This means placing bus shelters at key stops. Additionally, five-foot by eight-foot flat alighting areas are needed to ensure buses with accessible features can load and unload passengers who use wheelchairs.

Seating

Benches and low walls provide opportunities for people to rest, chat, or just “people watch.” Seating is particularly important for families with children or for people with disabilities. When providing seating, space should be provided next to benches or walls for people in wheelchairs so that they can sit next to others in their parties.

Lighting

Lighting is critical to ensuring pedestrians feel safe and secure at night. But lighting for pedestrians must be carefully considered and designed. Lighting must be designed in the context of the planned landscaping and planters, bus shelters, informational kiosks, and other obstructions that could create dark shadows. Special care must be taken to light the sidewalk approaches to crosswalks, ensuring that pedestrians are front-lit so that motorists can see them as the pedestrians approaching the street.



The Frontage Zone

The Frontage Zone is the area between the Pedestrian Zone and the right-of-way. This space serves a variety of purposes and should be wide enough to comfortably serve each of those purposes. For areas with retail and window shopping, the minimum width of the frontage zone should be two and a half feet. Other uses that should be considered when determining width include the following:

Café Spaces

Sidewalk cafés help complete the active street by converting a portion of the sidewalk into an activity center. They extend the commercial areas beyond the storefronts into the street area. As with other features of active streets, care must be taken not to allow café spaces to block the pedestrians' accessible route along the street.

Commercial Activities

Sidewalk sales, sandwich boards, and other shop related furniture may extend into the frontage zone. Again, this extends commercial uses into the street and promotes street activity.

Other Elements

Roadway design treatments can also have a significant impact on the activity level along a street.

On-Street Parking

Most active streets have provisions for on-street parking. On-street parking provides an additional buffer and screen between pedestrians on the sidewalk and motor vehicles on the roadway. Additionally, on-street parking has a calming effect on the motor vehicle traffic along the street. By slowing cars on the roadway, parking further improves the pedestrians' perceptions of safety and comfort.

An additional aspect of on-street parking that contributes to an active street is simply the fact that one may not be able to find a parking space directly in front of the store that is the primary destination. The result is that motorists become pedestrians, as they must walk along the street past additional businesses.

Curb Extensions

Curb extensions, sometimes referred to as bulbouts, provide additional space to provide amenities along the street. Curb extensions can be installed either midblock or at intersections. They can extend beyond parking spaces to provide better visibility for pedestrian crossings. Information kiosks with shop directories, transit alighting areas, landscaping, planter boxes, bike racks, can be placed in the curb extensions. Curb extensions also provide space for curb ramps to be placed outside of the pedestrian zone.



Figure 6-3: Raised Median with Pedestrian Refuge



Source: www.pedbikeimages.org
Photographer: Dan Burden

Curb extensions also reduce the amount of time pedestrians must spend to cross the street. At pedestrian crossings they help the motorist identify the crossings and provide a space to install signs.

Raised Medians

Particularly important on roadways with four or more lanes, medians serve numerous purposes on the active street. If pedestrian cut-throughs are provided, they make it easier and safer for pedestrians to cross the street. They provide space for planting additional trees which may calm traffic. They allow for the placement of streetlamps. They also reduce motor vehicle crashes.

Midblock Pedestrian Crossings

To be an active street, a street must accommodate not only those pedestrians who wish to walk along the street, but also those who wish to cross the street. Pedestrian crossings that minimize crossing distances, separate conflicts, and provide clear sight lines are a key ingredient to active streets.

What to Leave Out

When assembling the ingredients to create an active streetscape, the one ingredient which must be left out is high speed motor vehicle traffic. Active streets need to focus on the needs of pedestrians, not only motorists. Curb extensions, medians, and on-street parking can all serve to reduce vehicle speeds.



To facilitate pedestrian street crossings, traffic lanes can be narrowed to as little as 10 feet. This does not mean that the capacity of the street or the motor vehicle safety needs to be compromised. To the contrary, research has shown that narrowing lanes to 10 feet has no effect on capacity and often improves safety.

6.2 Pedestrian Needs Based on Performance Measures

Pedestrian accommodation along the roadways of the North Fulton CTP study network was evaluated with the pedestrian Level-of-Service Model. As discussed in the *Existing Conditions Report*, the distance weighted average pedestrian level-of-service in the North Fulton study area is 4.20, which is equal to a pedestrian level-of-service grade of “D”. The distribution of pedestrian level-of-service results for the study area is discussed in greater detail in the *Existing Conditions Report*, with full results and a technical description of the model included as appendices.

Through coordination with the Project Management Team, performance thresholds have been established for pedestrian accommodation in the North Fulton CTP study area, with a general performance threshold of pedestrian level-of-service “C” along the roadways of the study network and level-of-service “B” within areas of particular emphasis. These areas of particular emphasis are comprised of Livable Centers Initiative study areas and “Regional Places,” as identified on ARC’s Unified Growth Policy Map.

Roadways that meet or exceed their appropriate performance threshold are generally understood to be currently operating in a satisfactory manner, while those which are performing below the appropriate threshold are determined to have need for improvements. In the North Fulton CTP study area, 55 miles of roadway currently meet or exceed their designated performance threshold, while 259 miles of roadway are in need of improvement. A map depicting the roadways of the study network and their status with respect to the performance thresholds is provided in Figure 6-4. Also, a table listing the roadways and their status is included as Appendix B.

Strategies for meeting the needs for improvement, identified by this analysis will be included in the Recommendations Report.

Study Area



Legend

- Pedestrian Study Network**
- LOS Met ("B" Threshold")
 - LOS Met ("C" Threshold")
 - Needs Improvement ("B" Threshold")
 - Needs Improvement ("C" Threshold")
 - Other Major Roads
 - Expressways
 - Chattahoochee River
- ARC Regional Places**
- Regional Center
 - Town Center
 - Station Community
 - LCI Areas 2000-2008
 - Study Area
 - Counties
 - Other Cities

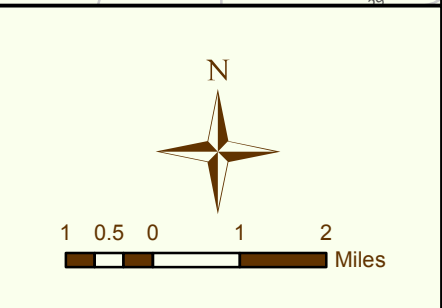
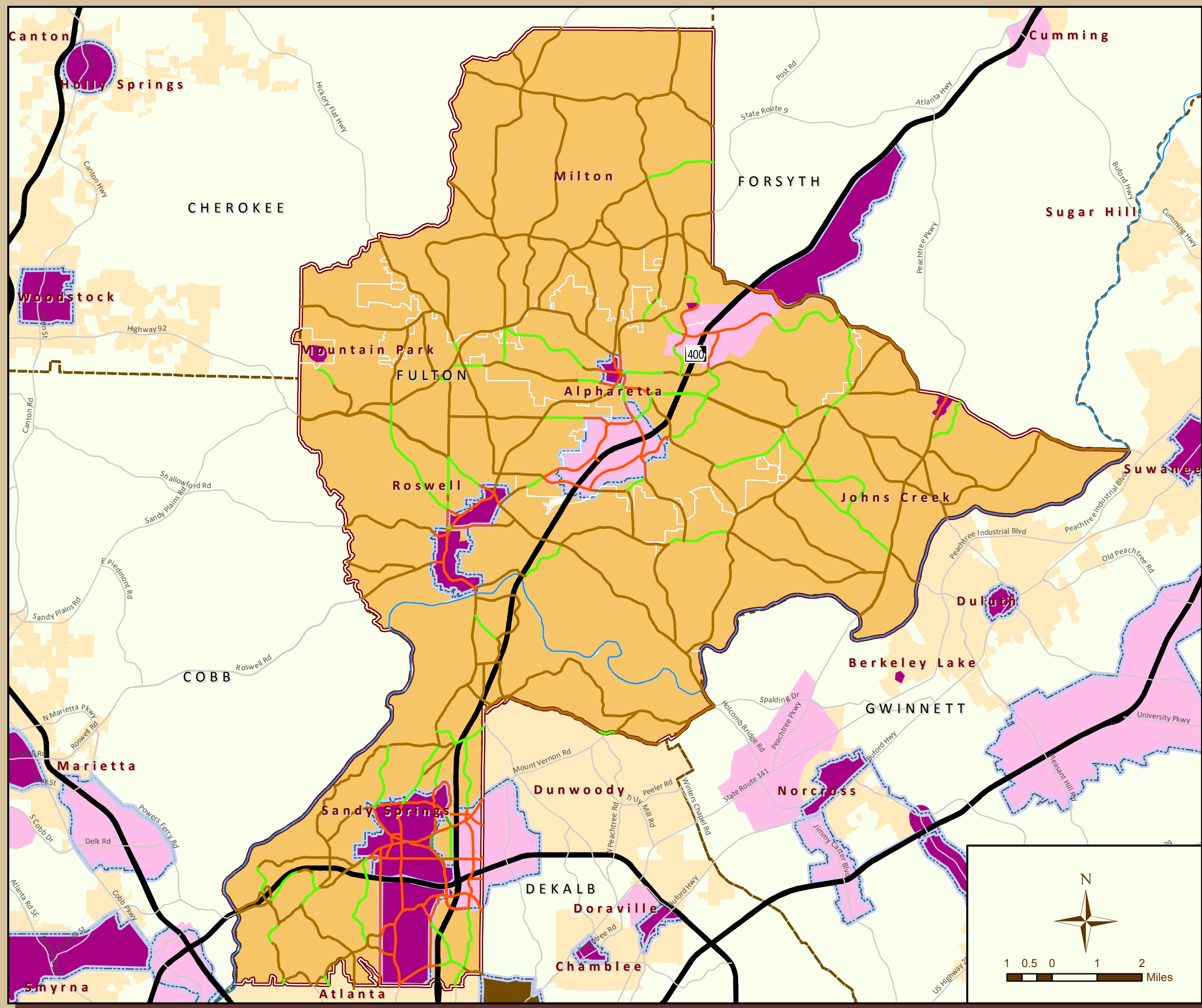


Figure 6-4
Pedestrian Facility Needs



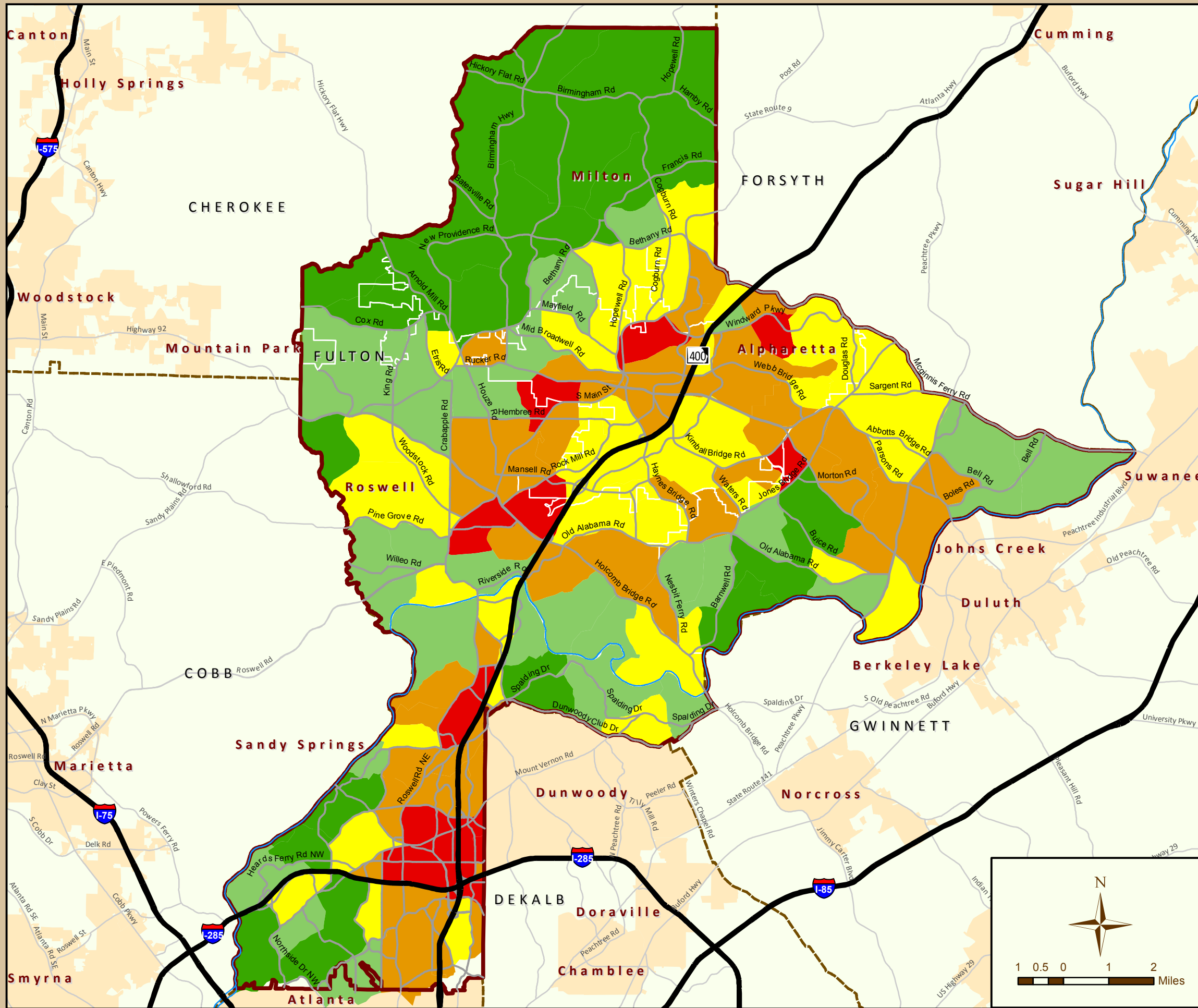
6.3 ARC’s Potential Walking Demand Measure

The Atlanta Regional Commission has developed the Potential Walking Demand Measure for the Atlanta Metropolitan Region. The intent of the measure is to provide a replicable, standard methodology to assess the potential demand for walking trips of an area based on the latent demand for short trips in that area. Scores can then be applied to pedestrian/transit project prioritization and regional needs assessment. It should be noted that the measure identifies levels of potential walkability (if adequate sidewalks were provided) on a relative basis, meaning comparisons are made between locations within the North Fulton study area, not between other locations throughout the region, state, or country. If a location ranks High on walkability, it simply means it has a relatively high level of potential walkability in comparison to the rest of the North Fulton study area.

More specifically, the Potential Walking Demand Measure is a description of the spatial relationship between households, retail and service jobs, and intersection-density within a 10 minute walk. It also serves as a proxy for and correlates with density. Values ranging from 1 – 100 are created to describe the walkability of an area, with 1 being least and 100 being most walkable in comparison to the rest of the Atlanta region.


Figure 6-5 shows the Potential Walking Demand Measure for North Fulton in year 2030 using ARC’s projected land use assumptions. As depicted in the figure, the highest levels of walking demand will lie in the more densely populated areas with mixes of housing, services, and jobs. Areas with the highest levels of walking demand include the Perimeter Regional Center and LCIs in Sandy Springs, the area east of SR 9 from Dalrymple Road to Northridge Road in Sandy Springs, areas west of GA 400 along Holcomb Bridge Road/Downtown Roswell/Roswell LCI and Town Center, areas around the Downtown Alpharetta LCI/Town Center, the Windward Parkway Regional Center east of GA 400, and areas along State Bridge Road and Jones Bridge Road in Johns Creek and Alpharetta.

The Potential Walking Demand Measure focuses on estimated demand for pedestrian activity based on land uses. The tool does not account for the presence of adequate pedestrian facilities (sidewalks, crosswalks, etc.). To that end, the Measure should be used to prioritize pedestrian enhancement projects. Projects in the most walkable areas should have priority over facilities in less walkable areas. Specifically, projects needed to fill gaps in existing pedestrian infrastructure should receive priority. This will assure that resources will be used to accommodate maximum use of pedestrian facilities within the region. The projects developed during the Recommendations phase will use this Measure to make these prioritized lists.
















North Fulton County
 Transportation Resource
 Implementation Program
 ATLANTA REGIONAL COMMISSION
 Kimley-Horn and Associates, Inc.

Reference Location

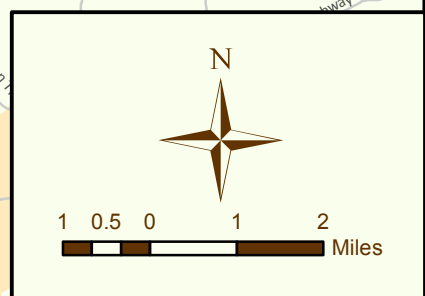
ARC
20-County
Region


Legend

 Almost None  Low  Medium-Low  Medium-High  High	 Study Network  Other Major Roads  Expressways  Chattahoochee River  Study Area  Counties  Other Cities
--	--

Source: ARC Analysis

Figure 6-5
2030 Potential Walking
Demand Measure





7.0 BICYCLE NEEDS

Bicycling needs can be conceptualized in a number of ways. People sometimes express a desire for a quality described as “bicycle friendliness.” From an infrastructure perspective, bicycle friendliness can be achieved through the provision of bicycle facilities—either on-road or off-road—that allow bicyclists to move through an area in a manner that is acceptably comfortable and efficient. This section focuses on on-road facilities, while Section 7.3 discusses off-road facilities.

An important aspect of a bicycle friendly environment is the surrounding land use. If the area possesses a relatively even mix of trip origins (residences and places of employment, for example) and trip destinations (other shops, restaurants, recreational and social destinations, etc.) within a distance reasonable to a typical bicyclist (three to five miles), then it is likely that bicycling might be perceived as a practical mode of transportation within that environment. Land use considerations that may impact the practicality of bicycling in North Fulton are discussed in other sections of this plan. Land use alone does not determine the level at which people actually cycle. As stated above, considerations of user comfort also play an important role in getting people to actually experience biking as a desirable activity. Frequently, much of the built environment can be experienced as unpleasant for bicyclists. Section 6.1 described a number of elements that can contribute to a positive feeling toward an area on the part of potential pedestrians; most of these elements will also contribute to a perception of bicycle friendliness as well. Section 7.1 describes some additional elements that will tailor the environment more specifically to bicycling.

Providing a walkable, active street environment will encourage bicycling. Lower speed roadways with mixes of land uses and pedestrian/bicycle amenities (including bike parking) are natural attractors for bicyclists. However, providing sidewalks is not a substitute for providing roadway improvements. Bicyclists do not mix well with pedestrians on the sidewalks in an active street environment; they need on-street travel accommodations.

Another way to conceive of bicycle facility needs is to more quantitatively assess the performance of roadways in the study area according to some measure of performance and to select a value of that measure that represents an acceptable performance for the facilities under consideration. The *Existing Conditions Report* analyzed bicycling conditions along the North Fulton CTP study network with a measure called the Bicycle Level-of-Service Model; Section 7.2 describes how threshold values of this measure are used to distinguish facilities that are currently accommodating bicyclists at an acceptable level from those which need improvement in that regard.

7.1 Elements of a Bicycle-Friendly, Active Streetscape

Traffic Calming

Effective traffic calming in a designated area will benefit bicyclists as well as pedestrians, because the volume and speed of motor vehicle traffic are major contributors to the stress experienced by



bicyclists who ride in the roadway. Reducing motor vehicle speeds and volumes will increase bicyclists' perceptions of safety and comfort. This section describes various techniques that can calm traffic to the benefit of both pedestrians and bicyclists. It is possible for some of these techniques to adversely affect bicycling if not carefully designed with the needs of bicyclists in mind. These techniques and their particular considerations for bicycling are listed herein.

On-street parking

If on-street parking is provided on a street with bike lanes, then the bike lane should be designed according to the specific recommendations for such roadways in the AASHTO *Guide for the Development of Bicycle Facilities*. Among these recommendations is a minimum bike lane width of five feet, which allows for more operating space for the bicyclist between moving and parked vehicles and more maneuvering space in the event of a car door being opened in the path of a bicyclist.

Curb Extensions

If curb extensions are used on a roadway with bike lanes, they should not extend into the operating space of the bike lane, so that they force bicyclists to suddenly and/or repeatedly switch between using the bike lane and sharing a lane with motor vehicles.

Speed tables and/or speed bumps

Speed tables and speed bumps are sometimes used as traffic calming devices and can cause serious problems for bicyclists. Very sharp speed bumps should be avoided because they can throw a bicyclist to the ground, even when the bicyclist is operating at a very slow speed. Speed tables with a ramped rise and flat top are better for bicyclists. The best solution for bicyclists, however, is to leave a flat passage toward the outside of the road for bicyclists to continue through without a potentially dangerous change in the roadway surface.

It is also worth noting that bike lanes may not be necessary on roadways along which traffic calming measures have been effectively applied. If traffic speeds and volumes are effectively reduced, then a shared lane may be sufficiently comfortable for most bicyclists. On roadways where some additional emphasis may be desired due to heavier traffic, the Shared Lane Marking (sometimes referred to as the "Sharrow") may be also be appropriate.

Bicycle Parking

If someone seeks out a destination they want to reach on their bicycle, it is important to provide them with opportunities to secure their bicycle when they arrive at that destination (i.e. end-of-trip facilities). Bicycle parking should be positioned in easy-to-find locations, convenient to likely destinations, and feature hardware that allows for the bicycle frame to be secured at more than one point, thereby increasing both the security and stability of the locked bicycle.



Short term parking, consisting of one or two bike rack elements, should be provided in areas convenient to the entrances of businesses and other destinations. If placed within a sidewalk environment, bike racks should be situated so that they (and any bicycles properly secured to them) do not interfere with the accessible route provided in the pedestrian zone, as described in Section 6.1 of this report. Short term parking is intended to allow bicyclists to park in front of their principal destination for a short time such as for a visit to a particular shop, or a meal at a nearby restaurant. Individual short term parking locations may have a capacity of only one or two bicycles, but they can be spread across an area to serve multiple locations. Long term parking should provide a greater degree of security as they are meant to hold a bicycle for the better part of a day or overnight on a regular basis.

Long term facilities may consist of enclosed lockers for individual bikes, or cages or dedicated rooms within buildings. These facilities can be spaced a little more removed from the destinations they serve, but should be protected from the weather and periodically monitored by security personnel. Such long term facilities are important to provide at places of employment, apartments and other multi-family housing, and near transit.

Figure 7-1: Short-term Bicycle Parking



Photo Credit: <http://salinepups.org/>

Wayfinding

Another important aspect of a bicycle friendly area is wayfinding assistance. A wayfinding system may be part of a larger route-identification system that guides bicyclists to popular destinations from the surrounding area, via routes along selected facilities that are known to be more accommodating to bicyclists. But within an area such as a shopping district or town center it will be important to lead bicyclists from these incoming routes to bicycle parking areas, especially any long term parking that may be behind or inside a building. Another important aspect of wayfinding to consider at areas of activity is providing overview maps of the local bike route system or depicting general facility conditions. If posted prominently, perhaps in a special kiosk, such maps not only show current bicyclists their options for accessing other activity centers from their present location, they also inform potential bicyclists that this is a bicycle friendly area. The wayfinding



system then becomes a form of advertising, informing new riders that this is a place where bicycling is a practical transportation option.

7.2 Bicycle Needs Based on Performance Measures

Bicycle accommodation along the roadways of the North Fulton CTP study network was evaluated with the Bicycle Level-of-Service Model. As discussed in the *Existing Conditions Report*, the distance weighted average Bicycle level-of-service in the North Fulton study area is 3.94, which is equal to a Bicycle level-of-service grade of “D”. The distribution of Bicycle level-of-service results for the study area is discussed in greater detail in the *Existing Conditions Report*, with full results and a technical description of the model included as appendices.

Performance thresholds have been established for bicycle accommodation in the North Fulton CTP study area, with a general performance threshold of Bicycle level-of-service “C” along the roadways of the study network and Bicycle level-of-service “B” within areas of particular emphasis. These areas of particular emphasis are comprised of Livable Centers Initiative study areas and “Regional Places,” as identified on ARC’s Unified Growth Policy Map.

Roadways that meet or exceed their appropriate performance threshold are generally understood to be currently operating in a satisfactory manner, while those that are performing below the appropriate threshold are determined to have need for improvements. In the North Fulton CTP study area 58 miles of roadway currently meet or exceed their designated performance threshold, while 255 miles of roadway are in need of improvement. A map depicting the roadways of the study network and their status with respect to the performance thresholds is included with this report as Figure 7-2, while a table listing the roadways and their status is included as Appendix B.

Strategies for meeting the needs for improvement identified by this analysis will be included in the Recommendations Report.

Study Area



Legend

Bicycle Study Network

- LOS Met ("B" Threshold)
- LOS Met ("C" Threshold)
- Needs Improvement ("B" Threshold)
- Needs Improvement ("C" Threshold")

ARC Regional Places

- Regional Center
- Town Center
- Station Community
- LCI Areas 2000-2008
- Other Major Roads
- Expressways
- Chattahoochee River
- Study Area
- Counties
- Other Cities

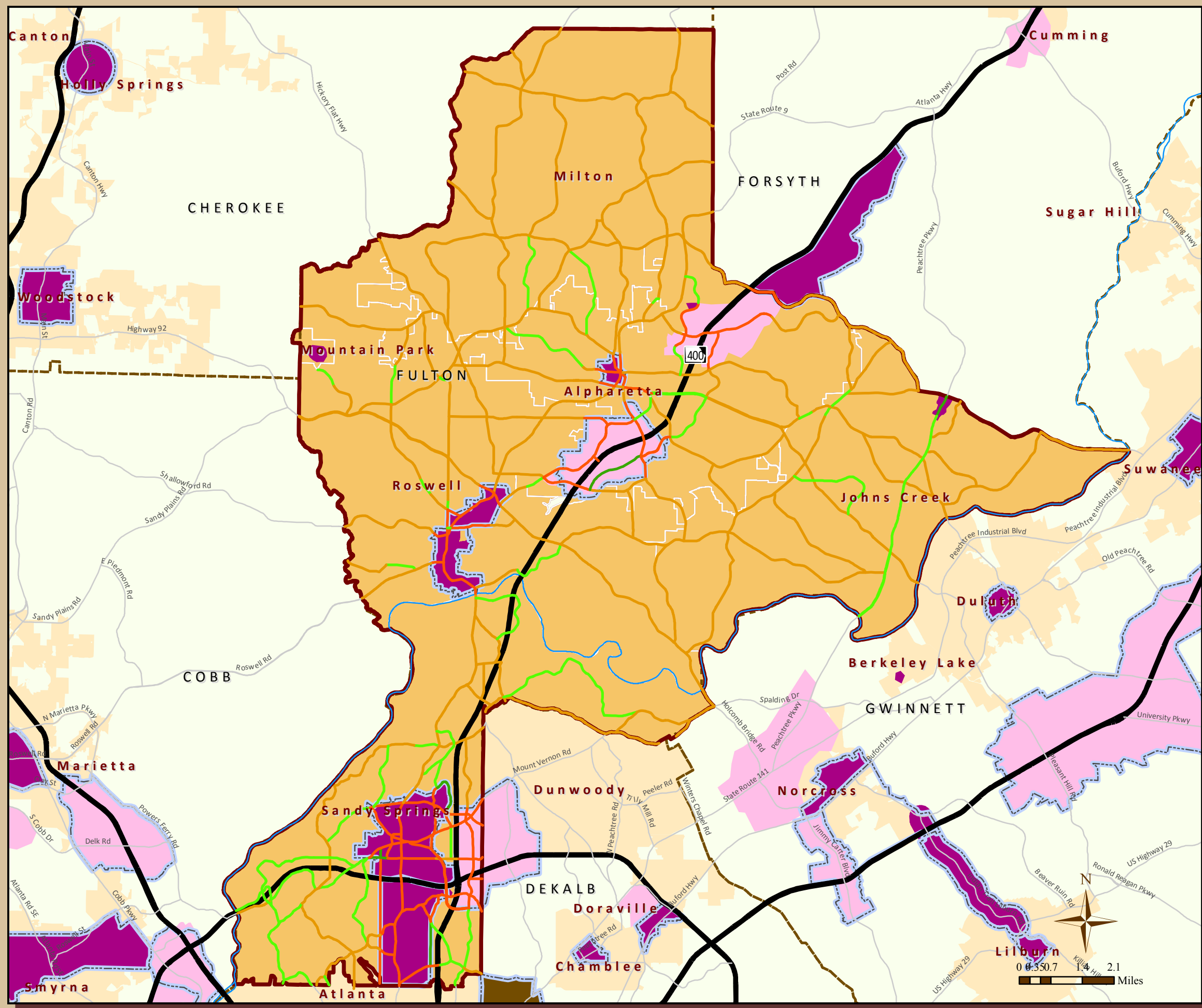


Figure 7-2 Bicycle Facility Needs



7.3 Off-Road and Major Facility Gap Analysis

In addition to on-road bicycle and pedestrian facilities, this report also addresses off-road bicycle and pedestrian paths, or shared-use paths. These types of facilities are widely used for recreational and fitness purposes, however commuter-type trips should not be discounted, especially as North Fulton continues to grow.

The largest off-road multi-use path in North Fulton is the Big Creek Greenway, located in the City of Alpharetta. This trail extends approximately 8.3 miles, beginning just north of Old Alabama Road at Holcomb Bridge Road and ending at Webb Bridge Road. The trail includes amenities such as emergency call boxes and parking/restroom facilities at several locations. There are plans to extend the trail to the north to eventually connect to the Forsyth County trail system. Further development of the Big Creek Greenway is a need. Traversing only a few barriers will allow a connection to the Chattahoochee River and the City of Roswell's existing bicycle network to the south.

The Big Creek Greenway, while a singular path at this point, can begin to create a framework for a regional system of shared-use paths. Several specific routes to consider are as follows:

- An additional north-south oriented path along the west side of GA 400 connecting northern portion of Fulton County, Cherokee County, and Forsyth County to the City of Atlanta and Dunwoody to the south.
- East-West oriented paths connecting with Cobb and Gwinnett Counties

While off-road shared-use paths may create the most pleasant and safe experience for bicyclists and pedestrians, opportunities along existing roadways with adequate rights-of-way will comprise the majority of bicycle facilities.

The following specific key connections should be strongly considered for inclusion as part of a regional shared-use path network:

- Adjacent Counties and their trail plans
- Existing and Proposed Activity Centers
- Major Destinations, Such as Schools and Business Parks
- Local Natural Resources
- Northern Crescent State Bicycle Route

Creating a more complete and integrated network of off-road shared-use paths will not come without its own challenges. The North Fulton area is very built-out and acquiring right-of-way will be difficult. Unique solutions should be used to aid in making new connections. Opportunities for public private partnerships may make themselves available. Easements within privately held property and utility properties, and efficient design within existing right-of-way are several ideas that should be explored to aid in implementation.



8.0 TRANSIT NEEDS

This section describes the analysis performed to identify North Fulton's major transit needs. The analysis evaluated the needs of the region's transit dependent population, the impact of recent population and employment growth trends, as well as feedback from the public and key stakeholders. The key data sources for the analysis include Census and ARC demographic data, interviews with representatives from the North Fulton jurisdictions, and public planning charrettes.

8.1 Summary of Results

The following provides the key conclusions of the transit needs assessment and reflects the diversity of the demographic, economic, and land development conditions among the North Fulton jurisdictions:

Local Bus Service Improvements

Based on feedback provided by local communities, there are key destinations not currently being served by the local bus route system. Some of these areas contain growing populations of transit dependent residents. Other areas, although currently served by local buses, may not be receiving a high level-of-service as indicated by the use of taxis and jitney-type services. Finally, the growing employment centers in North Fulton are creating an increased need for direct service from MARTA rail stations. Many of the trips to these employment centers could be served by transit if the growing centers and the transit services are planned appropriately.

Regional Bus Service Improvements

A common issue raised by the jurisdictions is the lack of high-speed, cross-county service that connects multiple jurisdictions and major destinations, specifically for east-west movements. Currently, transit passengers attempting to make any east-west trips must travel through Downtown Atlanta and transfer to a different route to reach their destination. The number of transfers, combined with the long distances needed to make this trip, discourages ridership.

Future Paratransit (Demand-Response) Service

The Americans with Disabilities ACT (ADA) requires transit operators to provide demand response service to eligible disabled passengers within a 3/4 mile radius of existing bus routes. The results of the data analysis and interview process indicate there will be a future need for enhanced paratransit service. Currently, paratransit service is only provided within a 3/4 mile radius of MARTA service³¹. When considering the growing population of adults age 65 and older, substantial

³¹ The Americans with Disabilities ACT (ADA) requires transit operators provide demand response service to eligible disabled passengers within a 3/4 mile radius of existing bus routes.



demand for paratransit service is likely to develop beyond areas of existing service. This will be especially true in northern communities where MARTA access is already limited.

Future enhanced commuter services

With population levels growing fastest in the northern communities and existing regional commuter services experiencing slow travel speeds, there is a need for enhanced commuter transit service to existing major employment and activity centers. Commuter transit service would need to provide transit travel times competitive with auto trips.

8.2 Demographic Analysis

Two sets of demographic data were analyzed as part of the transit needs assessment. The first set of data reflects demographic characteristics that are typically used to identify transit dependent populations. This includes information related to zero-vehicle households, poverty levels, residents age 65 and older, and disabled population levels. The second data set reviewed was the average annual population and employment growth trends over the 2000 to 2008 period. This information is useful for determining demand for existing and future transit services.

It should be noted that Census data as the basis for the transit dependent analysis. Although this is the most current information available, the data is nearly 10 years old as it is from the 2000 Census. The results may not exactly match current conditions in the study area, but it is reasonable to assume that overall trends shown in the analysis still hold true today. The second data set, the 2000 to 2008 population and employment growth estimates, reflect on-going work by ARC staff to track changes in the region's residential and employment base.

Transit Dependent Population Analysis

Areas that have large transit dependent populations typically can support much higher levels of transit service. The purpose of the transit dependent population analysis is to identify those areas within North Fulton that have the greatest need for transit based on the number of residents who may not have the means or access to a personal vehicle.

The first step of the analysis involved comparing several key transit dependent characteristics within the North Fulton study area to the City of Atlanta and the greater Atlanta region. This would aid in evaluating the relative transit need of the study area's population for service by public transit from MARTA and GRTA. As shown in Table 8-1, North Fulton's percentages are significantly less than the City of Atlanta for three of the four characteristics and slightly less than the greater Atlanta region. This is likely due to the suburban nature of North Fulton as compared to the more urban environment in the City of Atlanta. One characteristic where North Fulton's average (6.9 percent of the population) is relatively close to the other two geographic boundaries is population levels of residents age 65 and older. This factor, combined with the population with disability status (11.3 percent of the population), indicates a potential need for increased demand-response service within North Fulton.



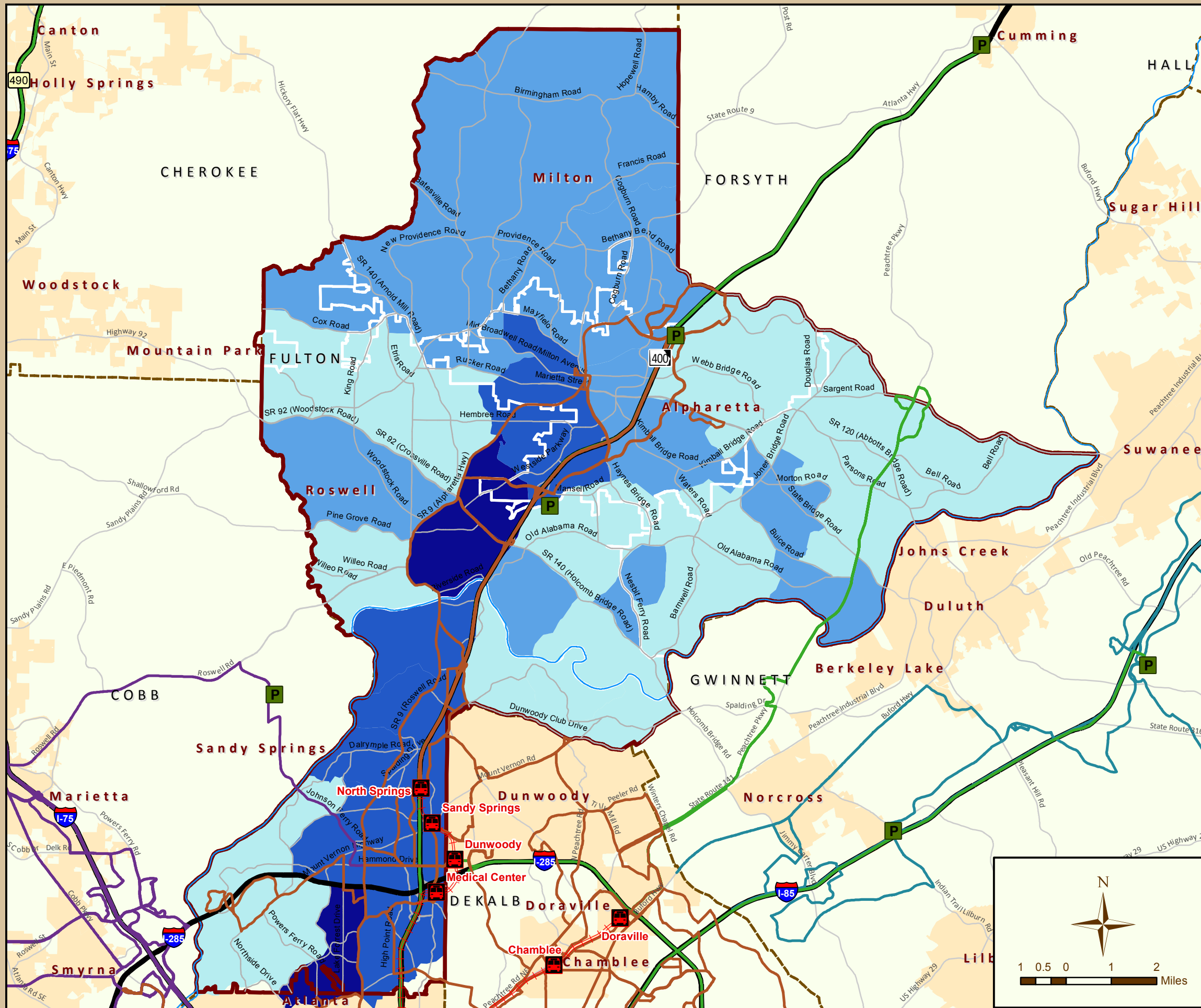
Table 8-1: Transit Dependent Characteristics: Percent of Total Population

Characteristic	North Fulton	City of Atlanta	Atlanta Region
Population below poverty line	4.72%	24.40%	9.40%
Households with no vehicles	3.78%	23.58%	7.34%
Population older than 65	6.94%	9.73%	7.56%
Population with disability status	11.31%	22.22%	16.75%

Source: U.S. Census Bureau (2000 Census)

The second step of the transit dependent analysis involved comparing existing MARTA and GRTA transit routes to the location of North Fulton’s dispersion pattern for the four transit dependent population characteristics. Separate maps were created to thematically show the relative concentrations of each characteristic at the Census tract level with the existing transit network overlaid. Additionally, the legends of each map indicate the study area’s average for each characteristic to highlight which locations are above the study area average. As shown in Figure 8-1 through Figure 8-4, key conclusions that can be drawn from these maps include:

- The highest transit dependent population levels for all categories are located along the western side of the GA 400 corridor, specifically along the SR 9 corridor between Sandy Springs and Roswell. Alpharetta and Johns Creek have the lowest concentrations.
- In general the existing transit network provides coverage to the highest transit dependent concentrations. Within some of the high concentration areas of Sandy Springs and Roswell, multiple bus lines and connections to MARTA rail stations are provided. Even in areas where access is provided, additional considerations should be made for the walkability of these communities as well as whether or not the transit routes provide efficient access to employment centers in order for transit service to be effective.
- Poverty levels and households with no vehicles levels above the North Fulton average are primarily located in the SR 9 corridor between Sandy Springs and Roswell.
- There are areas west of SR 9 in Roswell and Milton as well as in the Johns Creek area where population levels of residents age 65 and older are higher than the study area average and no fixed route bus service exists.
- The highest concentrations of disabled-status residents are proximate to existing bus routes and rail stations. There are areas west of SR 9 in Roswell that have higher levels than the study area’s average and extend beyond the 3/4 mile American with Disabilities Act (ADA) boundary from existing fixed route service. Given the size of each census tract, one cannot determine where the disabled passengers are located within each Census tract. Nevertheless, there is the potential for demand response service beyond the reach of existing bus routes.




**North Fulton County
Transportation Resource
Implementation Program**






















ATLANTA REGIONAL COMMISSION
Kimley-Horn and Associates, Inc.

Reference Location

**ARC
20-County
Region**

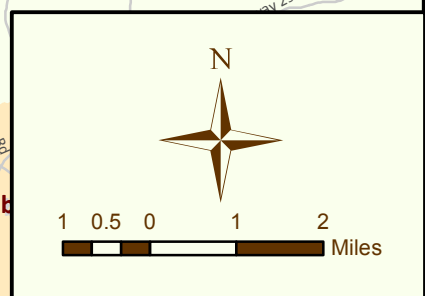


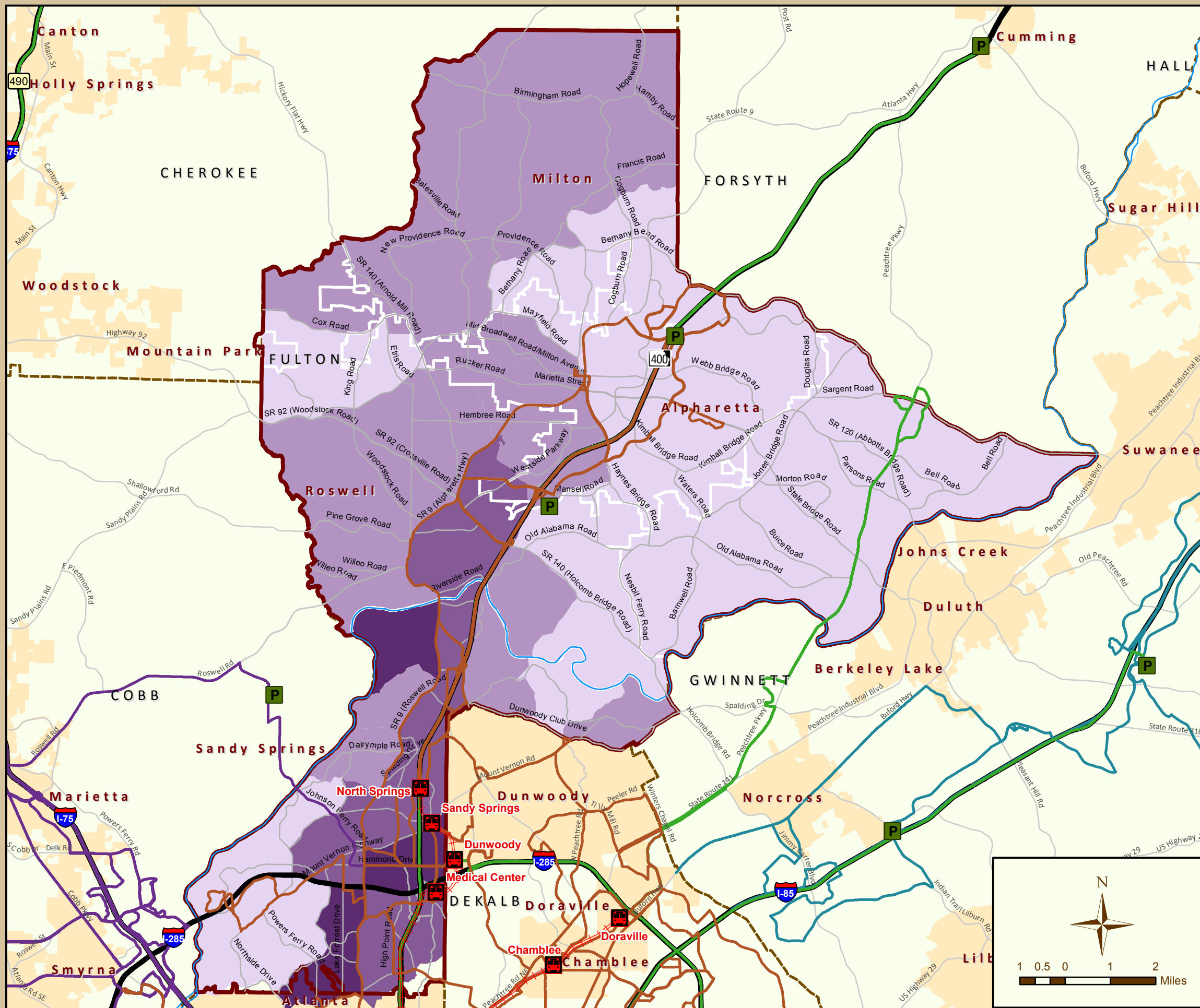
Legend

 < 3%	 Park N Ride Facilities
 3% - 5%	 MARTA Heavy Rail Stations
 5% - 10%	 MARTA Heavy Rail Line
 10% - 15%	 MARTA
North Fulton Average: 4.72%	 CCT
Metro Atlanta Average: 9.40%	 GRTA
	 GCT
	 Study Network
	 Other Major Roads
	 Expressways
	 Chattahoochee River
	 Study Area
	 Counties
	 Other Cities

Source: ARC, 2000 Census

**Figure 8-1
% Households - Poverty Status**






**North Fulton County
Transportation Resource
Implementation Program**






















Reference Location

**ARC
20-County
Region**

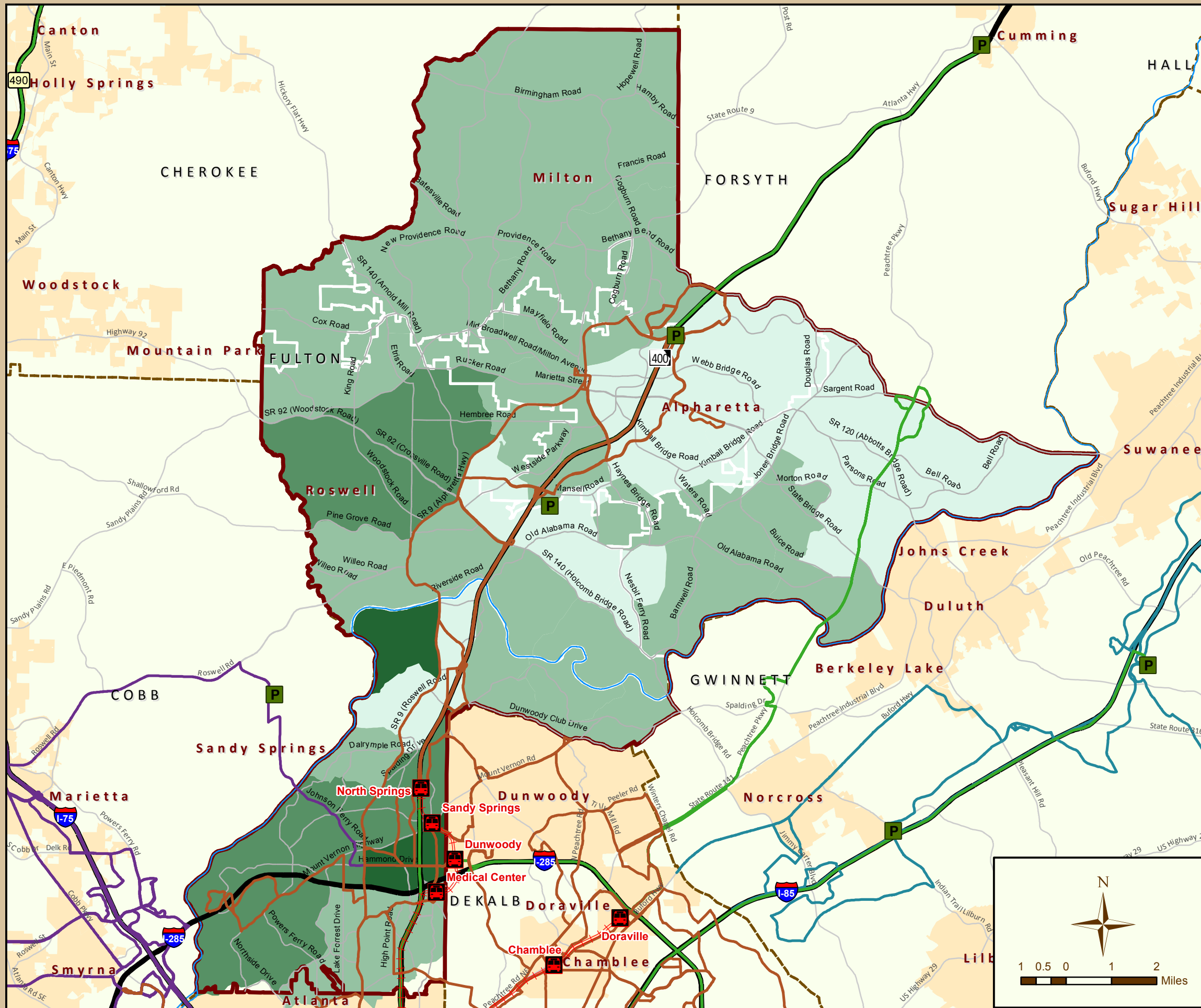


Legend

 < 2%	 Park N Ride Facilities
 2% - 5%	 MARTA Heavy Rail Stations
 5% - 10%	 MARTA Heavy Rail Line
 10% - 18%	 MARTA
North Fulton Average: 3.78%	 CCT
Metro Atlanta Average: 7.34%	 GRTA
	 GCT
	 Study Network
	 Other Major Roads
	 Expressways
	 Chattahoochee River
	 Study Area
	 Counties
	 Other Cities

Source: ARC, 2000 Census

**Figure 8-2
% Households - No Vehicle**




**North Fulton County
Transportation Resource
Implementation Program**






















Reference Location

**ARC
20-County
Region**

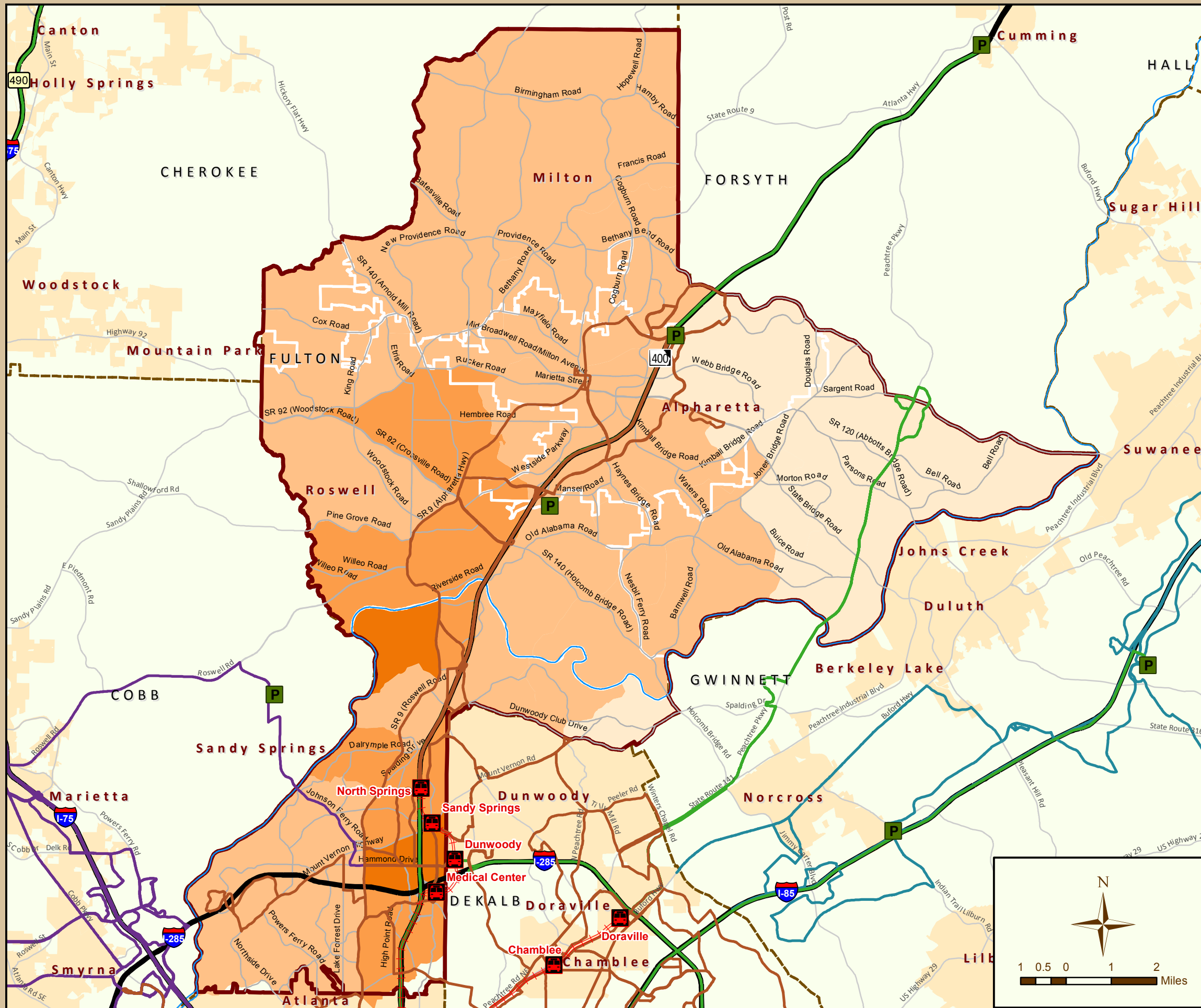


Legend

 < 5%	 Park N Ride Facilities
 5% - 10%	 MARTA Heavy Rail Stations
 10% - 20%	 MARTA Heavy Rail Line
 20% - 33%	 MARTA
North Fulton Average: 6.94%	 CCT
Metro Atlanta Average: 7.56%	 GRTA
	 GCT
	 Study Network
	 Other Major Roads
	 Expressways
	 Chattahoochee River
	 Study Area
	 Counties
	 Other Cities

Source: ARC, 2000 Census

**Figure 8-3
% Population - 65+ Years**




**North Fulton County
Transportation Resource
Implementation Program**




Reference Location

**ARC
20-County
Region**



Legend

< 8%	Park N Ride Facilities
8% - 13%	MARTA Heavy Rail Stations
13% - 18%	MARTA Heavy Rail Line
18% - 23%	MARTA
North Fulton Average: 11.31%	CCT
Metro Atlanta Average: 16.75%	GRTA
	GCT
	Study Network
	Other Major Roads
	Expressways
	Chattahoochee River
	Study Area
	Counties
	Other Cities

Source: ARC, 2000 Census

**Figure 8-4
% Population - Disability Status**

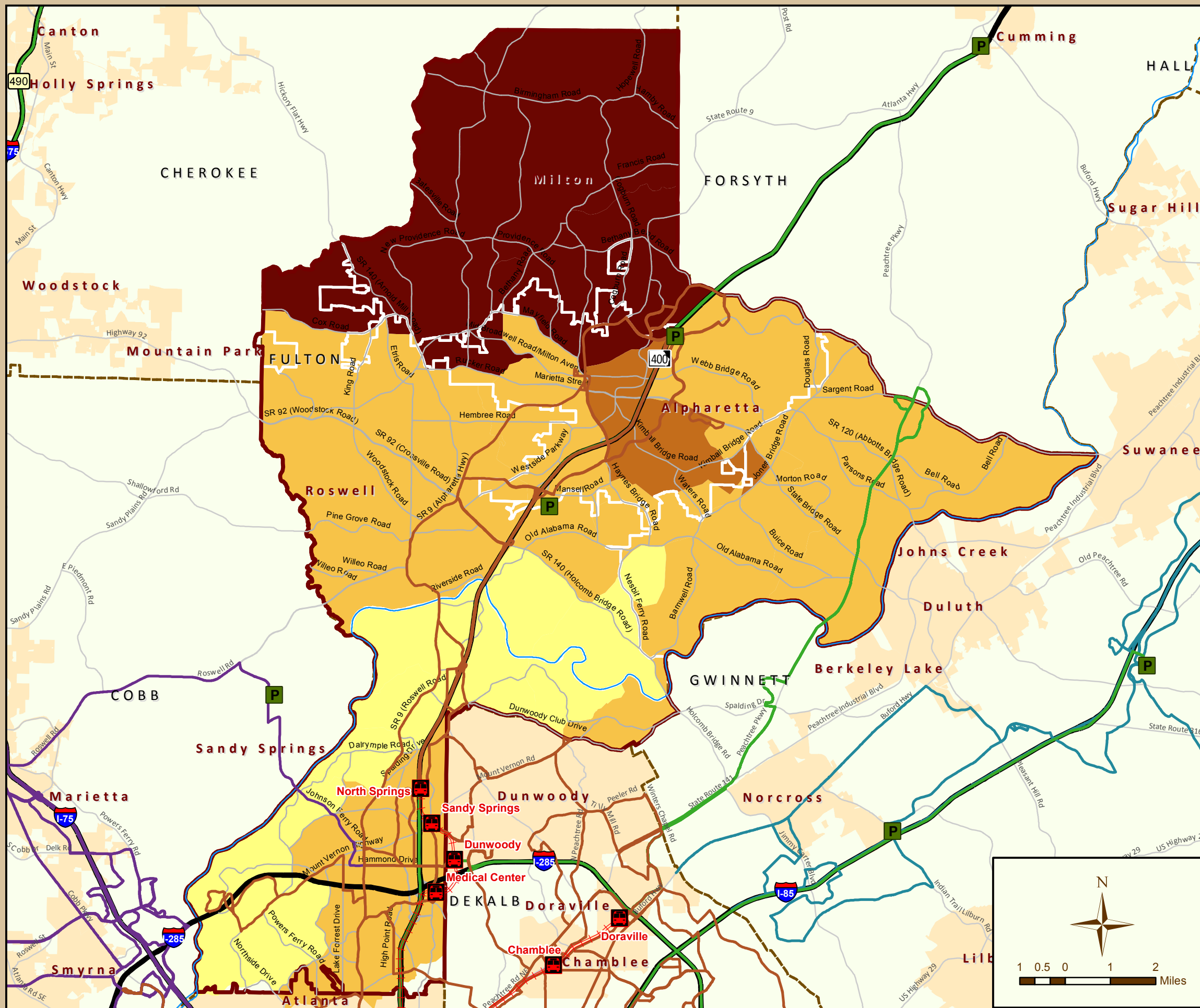


8.3 Recent Population and Employment Growth Trends

Figure 8-5 and Figure 8-6 summarize ARC’s estimated average annual population and employment growth rates for the North Fulton study area over the 2000 to 2008 period. As shown in the figures, growth was experienced outside of the areas previously described as having the highest concentrations of transit dependent populations. Population levels grew the most north of SR 140 (Holcomb Bridge Road) with the highest percentages of growth occurring in the northern communities of Alpharetta and Milton. Similarly, the highest employment growth rates occurred in the northern portion of the study area in Alpharetta and Milton, but there was some employment growth throughout the GA 400, Mansell Road, and Holcomb Bridge Road corridors as well. Because these areas are less densely developed than other areas within North Fulton, Milton and parts of Alpharetta have growth rates that are higher than neighboring jurisdictions.

Based on a review of existing transit conditions and the population trends shown in Figure 8-5, there is limited transit service provided in the high population growth areas. This service consists of park and ride lots and local bus routes which provide access to the North Springs MARTA rail station in Sandy Springs. There are currently no express or limited stop transit services provided from these areas to the major employment and recreational destinations in Downtown Atlanta and the surrounding area.

Similarly, as shown in Figure 8-6, there are several local bus routes that serve the high employment growth areas. These are local routes that provide access to North Fulton from the rest of the Atlanta region through the North Springs MARTA rail station. The routes are currently designed to serve both the residents of North Fulton as well as commuters traveling to North Fulton employment centers from outside the study area. Currently there are no limited stop or express route services to connect the North Springs MARTA rail station to all of the employment centers in North Fulton.




**North Fulton County
Transportation Resource
Implementation Program**


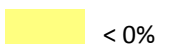



















Reference Location

**ARC
20-County
Region**

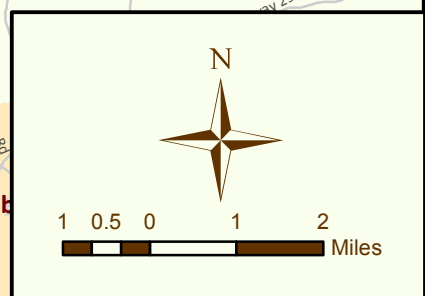


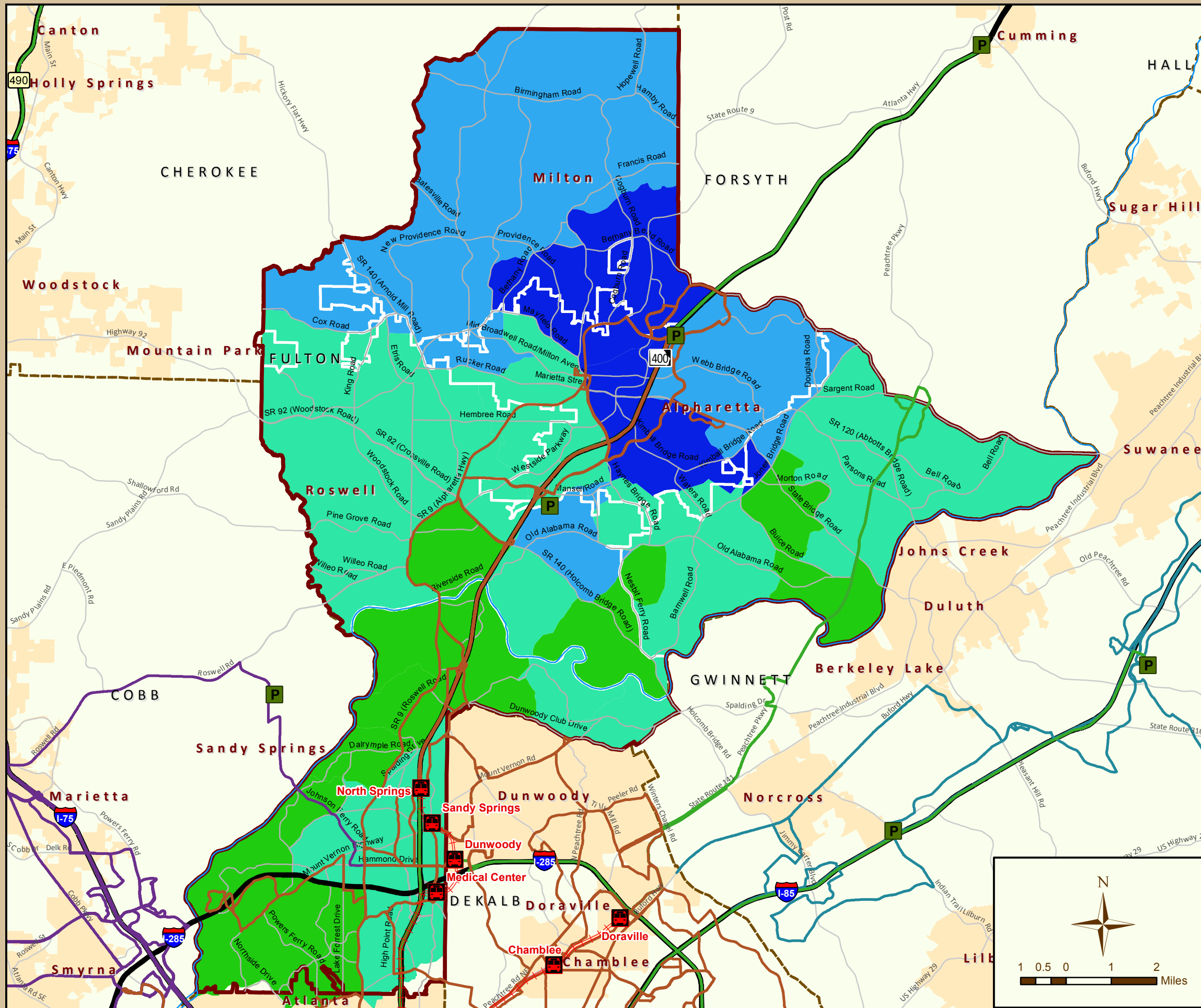
Legend

Yearly Population Growth	 Park N Ride Facilities
 < 0%	 MARTA Heavy Rail Stations
 0% - 2%	 MARTA Heavy Rail Line
 2% - 4%	 MARTA
 4% - 7%	 CCT
Population growth estimated by ARC from 2000 to 2008	 GRTA
	 GCT
	 Study Network
	 Other Major Roads
	 Expressways
	 Chattahoochee River
	 Study Area
	 Counties
	 Other Cities

Source: ARC, 2000 Census

**Figure 8-5
Yearly Population Growth
2000 to 2008**






**North Fulton County
Transportation Resource
Implementation Program**




ATLANTA REGIONAL COMMISSION
Kimley-Horn and Associates, Inc.

Reference Location

**ARC
20-County
Region**



Legend

Yearly Employment Growth	P Park N Ride Facilities
< 0%	MARTA Heavy Rail Stations
0% - 4%	MARTA Heavy Rail Line
4% - 8%	MARTA
8% - 10%	CCT
Employment growth estimated by ARC from 2000 to 2008	GRTA
	GCT
	Study Network
	Other Major Roads
	Expressways
	Chattahoochee River
	Study Area
	Counties
	Other Cities

Source: ARC, 2000 Census

**Figure 8-6
Yearly Employment Growth
2000 to 2008**



8.4 ARC Travel Demand Model

The ARC travel demand model is also a useful tool to determine transit needs. The model was used in three ways to understand some of the basic needs and travel abilities relating to transit: regional and subarea metrics, origin-destination pairs, and transit laborsheds.

Regional and Subarea Metrics

As with determining roadway needs, regional and subarea metrics are useful also for understanding transit needs. The tables below show the 2010 E+C and 2030 E+C metrics for the region and the subarea. The percent boardings for the subarea and the region are very similar in both 2010 and 2030; however, the percent passenger miles differs in that the subarea has a smaller percentage of miles traveled on local and express bus and a larger percentage of miles traveled on heavy rail compared to the region.

Transit ridership is anticipated to increase slightly in both the subarea and the region between 2010 and 2030 (20% for the subarea and 32% for the region). While the absolute increases in transit ridership do not seem to be significant, the percent increases in ridership exceed the population growth anticipated for both the subarea and the region. The subarea is expected to grow from approximately 318,000 people to 358,000 people (11% growth), and the region is expected to grow from approximately 4,999,400 people to 6,817,300 (27% growth).

As projects are evaluated in the Recommendations phase of the plan, the growth in transit ridership will be an important metric for determining high priority projects.

Table 8-2: 2010 E+C Subarea Transit

	Boardings	Passenger Miles	Passenger Hours	% Boardings	% Passenger Miles	% Passenger Hours
Local Bus	20,481	73,543	4,332	56.2%	35.5%	52.4%
Heavy Rail	15,524	130,144	3,642	42.6%	62.7%	44.0%
Express Bus	464	3,745	294	1.3%	1.8%	3.6%
Premium BRT	0	0	0	0.0%	0.0%	0.0%
Total Transit	36,469	207,432	8,268	100.0%	100.0%	100.0%

Source: ARC Travel Demand Model



Table 8-3: 2030 E+C Subarea Transit

	Boardings	Passenger Miles	Passenger Hours	% Boardings	% Passenger Miles	% Passenger Hours
Local Bus	24,146	85,786	5,466	55.1%	33.4%	51.9%
Heavy Rail	19,028	164,993	4,614	43.4%	64.3%	43.8%
Express Bus	681	5,703	453	1.6%	2.2%	4.3%
Premium BRT	0	0	0	0.0%	0.0%	0.0%
Total Transit	43,855	256,482	10,533	100.0%	100.0%	100.0%

Source: ARC Travel Demand Model

Table 8-4: 2010 E+C Regional Transit

	Boardings	Passenger Miles	Passenger Hours	% Boardings	% Passenger Miles	% Passenger Hours
Local Bus	312,690	1,114,701	55,647	54.8%	41.4%	52.4%
Heavy Rail	248,500	1,401,124	43,999	43.6%	52.0%	41.4%
Express Bus	9,073	177,534	6,541	1.6%	6.6%	6.2%
Premium BRT	119	2,064	93	0.0%	0.1%	0.1%
Total Transit	570,382	2,695,423	106,280	100.0%	100.0%	100.0%

Source: ARC Travel Demand Model

Table 8-5: 2030 E+C Regional Transit

	Boardings	Passenger Miles	Passenger Hours	% Boardings	% Passenger Miles	% Passenger Hours
Local Bus	399,148	1,373,680	78,009	53.1%	39.0%	52.4%
Heavy Rail	342,586	1,976,389	62,049	45.6%	56.1%	41.7%
Express Bus	10,149	172,885	8,721	1.3%	4.9%	5.9%
Premium BRT	77	1,299	91	0.0%	0.0%	0.1%
Total Transit	751,960	3,524,253	148,870	100.0%	100.0%	100.0%

Source: ARC Travel Demand Model

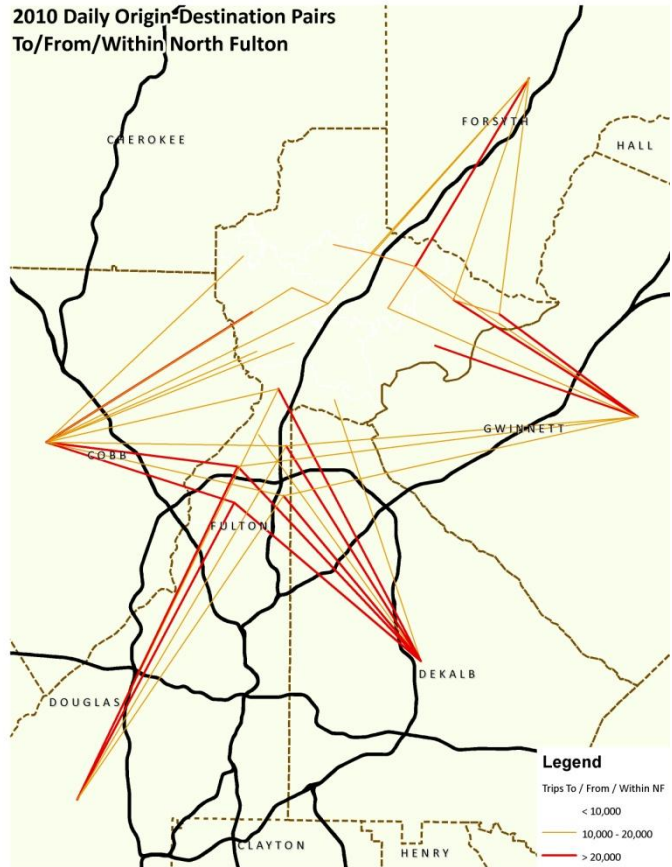


Origin-Destination Pairs

The 2010 travel demand model was used to understand current origin-destination (OD) pairs for people’s daily travel (these pairs are independent of mode and just indicate people’s beginning and ending points of trips). By comparing desired travel patterns to existing service routes (in combination with a number of other variables discussed above), deficiencies in the system begin to become apparent.

Two types of OD maps were created to understand basic travel desires. The first map shown in Figure 8-7 shows the desire lines between other counties outside of North Fulton and groups of TAZs within North Fulton. Additionally, strong OD pairs within North Fulton were also mapped. While trips could originate anywhere within the individual counties (not just at one central point as shown in the map), understanding the general desire to travel from other counties to North Fulton is helpful. County-to-county trips through North Fulton are not displayed on this map, but there are other trips between surrounding counties (Cobb to Gwinnett, etc.) that also impact North Fulton. As the map shows, strong travel desires exist between counties and their adjacent North Fulton municipalities. For example, strong connections exist between Gwinnett and Johns Creek, Cobb and Roswell, Forsyth and the Milton/Alpharetta area, and South Fulton and DeKalb with Sandy Springs. Other strong internal connections exist around the Windward area of Alpharetta and Johns Creek and around the North Point and Perimeter areas individually. As of now, no east-west transit connectivity exists within North Fulton or connecting North Fulton to Cobb and Gwinnett Counties; however, this first OD map indicates that a need for that service truly exist.

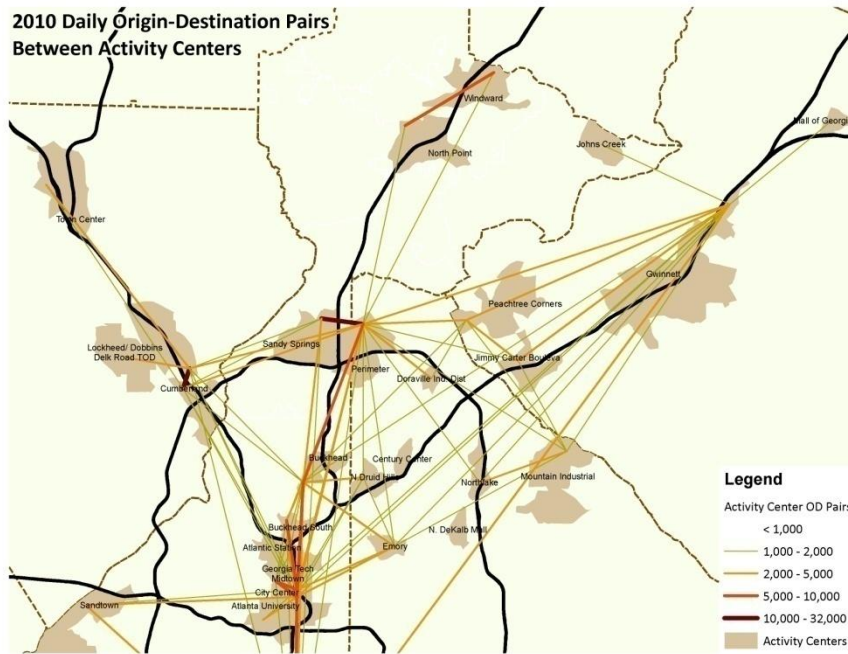
Figure 8-7: 2010 Daily Origin-Destination Pairs To/From/Within North Fulton



Source: ARC Travel Demand Model, Kimley-Horn and Associates, Inc.



Figure 8-8: 2010 Daily Origin-Destination Pairs between Activity Centers



Source: ARC Travel Demand Model, Kimley-Horn and Associates, Inc.

The second OD map, Figure 8-8, shows travel desires between activity centers throughout the region. Because a large number of jobs and other commercial opportunities (as well as some housing) are located within these activity centers, there may be a strong desire to travel between the activity centers. Reviewing the activity centers within North Fulton alone, it is evident that strong connections exist between Sandy Springs and Perimeter as well as between the Windward and North Point activity centers. Opportunities may exist to connect the activity centers

along regional commuter routes or circulators between the activity centers to provide last-mile connectivity between regional routes and final destinations. In addition to some desire to travel from Windward and North Point to Sandy Springs and Perimeter, there are other desires to travel from Sandy Springs/Perimeter to the I-75 and I-85 activity centers and to Buckhead, Midtown, and Downtown.

Laborshed Analysis – Transit

Similar to the laborshed analysis for vehicles, the transit laborsheds show how far people can travel within 15, 30, and 45 minutes by transit. Unlike the vehicular laborsheds, not all workers within the transit laborsheds have the ability to reach the employment centers within the designated time. Travel times for transit were calculated for walking to standard bus service or premium service (commuter bus or rail) or driving to one of those types of transit. The minimum travel time was used for the laborshed maps above; however, only one or two types of these travel patterns may have been able to reach the employment center within 15 to 45 minutes. The table below provides an estimate of the actual number of workers within the 45 minute travel sheds than the maps.

As can be noted in Figure 8-9, no transit travel can occur to/from Perimeter or Windward within 15 minutes; therefore, no brown coloring can be seen on the maps. Unlike the vehicular laborsheds, isolated TAZs of orange color can be seen within the 30-45 minute travel sheds. Because the MARTA heavy rail line is often the fastest form of transit travel, riders can reach the next station (which may be miles away) before they could transfer to a local bus or walk to a closer destination.



Because of the location of the Perimeter employment center and its accessibility to transit (particularly to the MARTA heavy rail line), its transit laborshed is considerably larger than that of Windward, where very few transit opportunities exist. In both the Perimeter and Windward laborsheds, the areas shrink between 2010 and 2030 as a result of increased traffic congestion. This additional congestion particularly affects bus travel in shared lanes, which represents the majority of transit service provided within North Fulton.

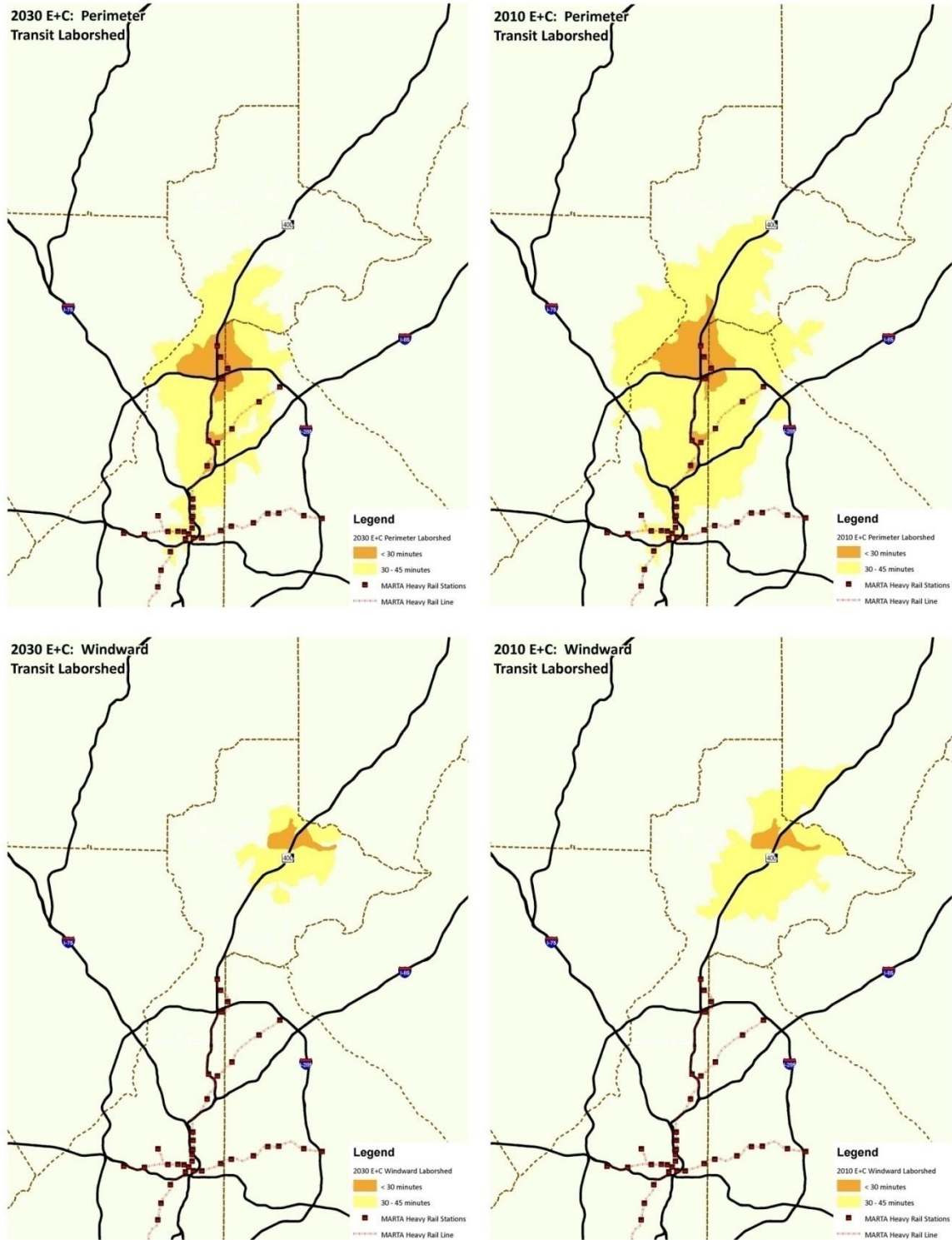
The overall accessibility by transit to these two employment centers is less than by vehicle; however, the transit accessibility is not as adversely affected by increasing congestion. In 2030, the number of workers within the Windward 15-30 minute shed is projected to increase slightly, likely from the increase in population within the laborshed.

Table 8-6: Workers within Laborsheds						
	Perimeter			Windward		
	2010 E+C	2030 E+C	Change	2010 E+C	2030 E+C	Change
< 15 minutes	0	0	-	0	0	-
< 30 minutes	41,083	37,336	-9.12%	3,498	3,894	11.32%
< 45 minutes	382,078	320,608	-16.09%	74,065	35,648	-51.87%

Source: ARC Travel Demand Model



Figure 8-9: Transit Laborshed Maps



Source: ARC Travel Demand Model, GRTA, Kimley-Horn and Associates, Inc.



8.5 Stakeholder Interviews

A series of interviews was conducted in October 2009 with representatives from the cities of Milton, Roswell, Alpharetta, Johns Creek, and Sandy Springs. The purpose of these interviews was to provide each jurisdiction the opportunity to discuss transit needs for their respective jurisdiction and the North Fulton area. The following is a summary of the key needs identified by each jurisdiction.

City of Milton

No immediate transit needs were identified; however, several potential long-term needs were suggested related to local bus, commuter, and demand response (paratransit) service.

Local Bus Service

Future local fixed route service should be focused in areas with the greatest densities. This would include the Deerfield Parkway area and potentially the SR 9 corridor. The City is in the process of completing its comprehensive plan which will include planned density levels. These could be used as a guide for planning local bus extensions as demand warrants.

Commuter Service

Currently there is little demand for daily commuter service from Milton to other regional destinations or within the North Fulton jurisdictions. The City anticipates that in the future this will change, and there will be a need to provide direct transit connections for daily commuting and special events from Milton to regional employment and activity centers.

Demand-Response (Paratransit) Service

In accordance with the ADA requirements, MARTA currently provides paratransit service within a $\frac{3}{4}$ mile radius of Route 143 Windward Park and Ride and Route 185 Alpharetta/Holcomb Bridge Road. The City is aware of a small number of individuals that require paratransit service that live outside of the $\frac{3}{4}$ mile ADA zone; however, the City does not know the exact level of unmet demand for paratransit service. Based on the continued population growth and increased numbers of residents age 65 and older, there will be an increased need for paratransit service beyond the $\frac{3}{4}$ mile MARTA ADA buffer in the future.

City of Alpharetta

The primary transit need identified for Alpharetta was local bus service improvements. Currently the primary users of local bus routes are commuters from the South accessing commercial and office locations within the City. There is a need to enhance these transit services within Alpharetta and other North Fulton jurisdictions. Service enhancement examples mentioned include:

- Improved east-west service (potentially along SR 120) to provide access to key destinations within North Fulton without having to go through Atlanta;



- Enhanced service to ARC's Livable Centers Initiative (LCI) areas in Downtown Alpharetta, the North Point area, and Windward Parkway; and
- Working with the North Fulton Community Improvement District (CID) to coordinate employer shuttle service between the MARTA North Springs Station and the major employment centers.

City of Johns Creek

For the City and the region, City staff suggested the following transit needs:

- Direct, destination-oriented service between the North Fulton communities without having to travel towards Downtown Atlanta ;
- Enhanced regional bus service that provides a travel time advantage compared to driving a personal vehicle; and
- Secured park and ride service to the airport.

City of Roswell

Roswell staff identified transit needs regarding improved local bus service, enhanced regional service, and a new intermodal transit center.

Local Bus Service

There is a need for a detailed transit needs assessment at the City level to determine if the existing MARTA bus routes reflect Roswell's changing demographics. For example, local bus service is no longer provided east of GA 400, however, there is a need for transit service to major employers in this area, such as Kimberly-Clark. Additionally, City staff has identified a growing transit dependent population near the Nesbit Ferry Road/Holcomb Bridge Road area which is currently not served by local bus service.

Regional Bus Service

High speed cross-county service connecting Roswell, Alpharetta, and other communities was identified as a near term need. This could help address congestion on local roads for commuters travelling to Alpharetta and could also provide a direct connection to North Point Mall, which Roswell residents currently cannot access using transit.

Intermodal center

There is a need for a transit center to provide a convenient connection point between north-south and east-west transit services. The City mentioned potential locations in the Holcomb Bridge Road/SR 9/GA 400 area or the SR 9/Canton Street area which would provide access to the City Complex, social services, and the public square for festivals and activities. Further study would be needed to finalize any conclusions on locations.



City of Sandy Springs

Transit needs identified by the City reflect improved local bus service and operational improvements of MARTA's existing services.

Local Bus Service

City staff has identified a growing transit dependent population along Roswell Road just south of I-285. Based on the level of taxi and jitney type operations serving this community, there is a need to evaluate existing local bus routes in this area. Long-term local bus service needs include:

- Circulator service along the Roswell Road corridor to Perimeter;
- Improvements along the Hammond Drive corridor between Roswell Road and Barfield Road including reserving right-of-way for a transit alternative; and
- Implementation of a circulator service when City Hall is relocated.

Operational issues

The following operational improvement needs were identified by the City:

- *Bus stop placement and strategy* - The City identified the need to work with MARTA to resolve bus stop location issues. According to the City, the current bus stop locations along Roswell Road are an impediment to traffic. The City has worked with MARTA in the past to address similar issues but feels there is a need for additional action.
- *Vehicle fleet mix* - The City's perception is that the buses MARTA assigns for service in Sandy Springs are too large. There is a need to evaluate current ridership levels and the bus fleet mix to ensure the right size bus is operating in Sandy Springs.
- *Passenger safety* - There is a need to improve passenger safety at and around bus stops including lighting, sidewalks, and cross walk enhancements.

Infrastructure improvements

Improving bus travel times within Sandy Springs and to regional destinations was identified as a need by City staff. Improvements could include (but are not limited to) signal priority, queue jumping lanes, and other ITS improvements.



9.0 ENVIRONMENTAL NEEDS ASSESSMENT

The environmental approach for this project involves consideration of environmental justice issues as well as conservation issues. An inventory of environmental resources as well as a map of areas targeted for environmental justice consideration has been provided in the *Existing Conditions Report*, and these resources are further defined in this document with respect to identifying existing needs.

9.1 Environmental Justice

Environmental Justice is defined by the Environmental Protection Agency (EPA) as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”³² Due to the local tendency of minority races to exist in higher income levels than perhaps in other parts of the country, environmental justice for this project is more focused on affording equitable consideration to groups based on income rather than race or ethnicity. To ensure that equitable consideration is given to low-income communities, areas in North Fulton containing higher concentrations of low income households will be assessed for their access to transportation facilities.

While North Fulton is a largely affluent area, there are still many households living below the poverty threshold set by the U.S. Census Bureau. Maintaining mobility for these households means ensuring access to jobs, daily needs, and education. Providing a transportation system that preserves this mobility for low income households is important for these families but also for the region. Because the transportation system in North Fulton is overwhelmingly based on serving the personal automobile, which is typically the most expensive form of transportation, access to transportation for these low income households can be a challenge.

To gain a sense of where low income households are located in North Fulton, Figure 8-1 in Section 8.2 of this report shows percentages of households currently living in poverty broken up by census tracts. Because of the size of these tracts, specific neighborhoods cannot be identified from this data, but in general, the tracts with the highest numbers of low income households tend to be located along GA 400.

The expense associated with owning and operating a personal vehicle causes low income communities to have a unique need for access to alternative modes of transportation such as walking, cycling, and transit. Generally, transit routes in North Fulton tend to follow GA 400 and provide service to existing low income communities. The challenge is to ensure that these low income communities are walkable, such that appropriate access to transit exists. In addition to walking and transit, a more robust bike network would be effective at providing a low-cost

³² <http://www.epa.gov/compliance/ej/>



transportation mode if it were to connect these neighborhoods with various employment centers in North Fulton such as Perimeter, North Point Mall, and the greater Windward area.

9.2 Environmental Conservation

Regionally Important Resources

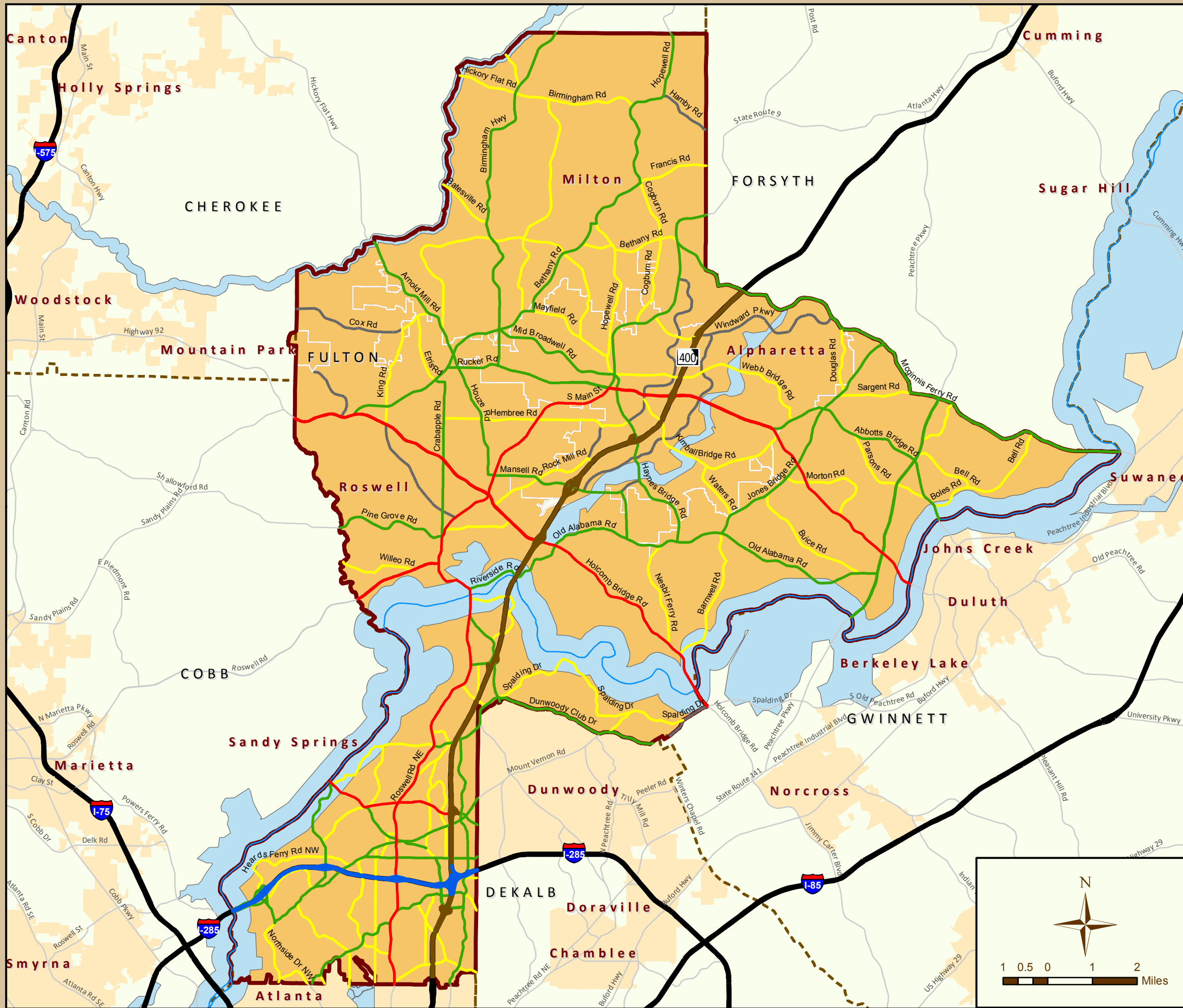
A Regionally Important Resource (RIR) is a natural or historic resource that is of sufficient size or importance to warrant special consideration by the local governments having jurisdiction over that resource. The Georgia Planning Act of 1989 authorizes the Department of Community Affairs (DCA) to establish procedures for identifying RIRs statewide.³³ At the regional level, ARC has been charged with identifying these resources within the 20-county region. ARC is now in the process of incorporating these projects into the Plan 2040 initiative. These valued resources can be land, water, buildings or other landmarks of geographical, environmental or historical significance.

Figure 9-1 shows the RIRs that have been proposed in North Fulton. The RIRs in North Fulton generally follow the Chattahoochee River as well as Big Creek. Any projects that are proposed as part of the North Fulton CTP should be considered for their impacts on these resources. In addition, any opportunities to leverage the transportation plan to further protect these resources should be considered as well. For instance, adding a new section of greenway could serve the dual purpose of protecting valuable resources as well as providing a transportation route for alternative modes of travel.

Managing Impacts of Proposed Projects

Beyond the RIRs and the issue of air quality, there is a need to manage impacts to the many other important historic, cultural and environmental resources in North Fulton. As projects are proposed and incorporated in the recommendations phase, potential impacts to the environment will be evaluated and included with the discussion of each project in order to incorporate into the discussion the potential environmental tradeoffs and challenges associated with each new project.

³³ <http://www.dca.state.ga.us/development/planningqualitygrowth/programs/rir.asp>




**North Fulton County
Transportation Resource
Implementation Program**

















Reference Location

**ARC
20-County
Region**



Legend

 RIR Locations	 Other Major Roads
Study Network	 Expressways
 Interstate	 Chattahoochee River
 Freeway	 Study Area
 Principal Arterial	 Counties
 Minor Arterial	 Other Cities
 Collector	
 Local	

Source: ARC GIS Data - Draft

**Figure 9-1
Regionally Important Resources**



9.3 Air Quality

Current Air Quality Monitoring and Regional Status

Pursuant to the Clean Air Act, the Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six atmospheric pollutants: carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, particulates, and lead. The NAAQS are shown in Table 9-1.

Table 9-1: National Ambient Air Quality Standards (NAAQS)

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour	None	
	35 ppm (40 mg/m ³)	1-hour		
Lead	1.5 µg/m ³	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 µg/m ³)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM ₁₀)	150 µg/m ³	24-hour	Same as Primary	
Particulate Matter (PM _{2.5})	15.0 µg/m ³	Annual (Arithmetic Mean)	Same as Primary	
	35 µg/m ³	24-hour	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour	Same as Primary	
	0.08 ppm (1997 std)	8-hour	Same as Primary	
	0.12 ppm	1-hour (Applies only in limited areas)	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 µg/m ³)	3-hour
	0.14 ppm	24-hour		

(Source: US EPA, <http://www.epa.gov/air/criteria.html>, March 28, 2008)

The NAAQS are designed to protect human health and welfare. As a result, applicable transportation projects cannot violate these standards. Of the six pollutants identified in the NAAQS, motor vehicles directly emit all but ozone. Ozone is a secondary pollutant formed by the reaction of hydrocarbons and oxides of nitrogen in the presence of strong sunlight. Thus, ozone levels are reduced by minimizing emissions of those precursor pollutants.

The NAAQS standard for 8-hour ozone pollution was modified on March 12, 2008. The new 8-hour standard is still being implemented by the EPA. As a result, the previous 1997 standard is required for use in all current air quality analyses. After the EPA reviewed the scientific data used to arrive at this modified 2008 standard, it was concluded that further modification was necessary. As of January 2010, the EPA is considering lowering this standard to between 0.060 and 0.070 ppm.



Currently, Fulton County is not in attainment for two of the pollutants identified in the NAAQS: the 8-hour ozone standard and the annual PM_{2.5} standard, each established in 1997. The Atlanta metropolitan area has a moderate non-attainment level for the 8-hour ozone standard, which is one category more severe than the area's original designation as a marginal level area. The downward classification change was initiated when the Atlanta region was unable to reach attainment by the originally designated year of 2007. New federal guidance establishes the deadline for this area to reach attainment status as June 15, 2010. Fulton County is part of the recommended non-attainment area for the proposed 2008 8-hour ozone standards that are currently under reexamination.

Air Quality Modeling

Changes also are underway with the mechanism used to determine projected emissions levels of NAAQS pollutants and other key air quality levels. Prior to December 2009, Mobile6.2 was the adopted modeling platform for determining air quality emission rates. The Mobile modeling software has been around in some form since the late 1970s. Subsequent editions of this software helped refine and expand upon the original capabilities of the software. However, a more sophisticated modeling process was needed to reflect new scientific knowledge on the approach to mobile source air quality analysis. As a result, the MOVES2010 program was released in December 2009. The MOVES2010 software provides a more accurate method for determining air quality emissions. At this time, a 2-year grace period is in place where many air quality modeling efforts may still be conducted using the Mobile6.2 software. However, it is important to consider the application of the MOVES2010 software prior to initiating a project level or region level air quality conformity analysis.

Air Quality Next Steps

As potential transportation improvement projects are identified through this study and other related efforts, it will be important to consider the effects of air quality on the overall network. This can be done through a variety of forums. Because the region is in non-attainment for 8-hour ozone and PM_{2.5}, a conformity process must be initiated for transportation projects of regional significance to be eligible for inclusion in ARC's Transportation Improvement Program (TIP) or the Long Range Transportation Plan (LRTP). These projects must be modeled using the Atlanta Regional Commission travel demand model and the approved air quality modeling software. Results from this analysis will be compared to air quality pollutant budgets set in the State Implementation Plan (SIP). If the proposed improvements result in air quality pollutant levels in excess of the SIP budgets, it may be necessary to reprioritize or reconsider projects.

Once a project has been included in the TIP and LRTP and proceeds to preliminary design, additional air quality analysis may be required for the NEPA process. Through this process, the microscale effects of the proposed improvement can be modeled and compared to the NAAQS. Depending on the size and scale of the project, microscale carbon monoxide analysis, mobile source air toxics analysis, or particulate matter analysis may be required.



10.0 TRANSPORTATION FOR OLDER ADULTS

Introduction

The demographics in North Fulton, much like the rest of the nation, are changing rapidly. The population is getting older and at an accelerated rate. In 2000, approximately one in ten residents in North Fulton was 60 or older.³⁴ The 2030 projections are not available for North Fulton specifically, however, for the Atlanta Region, by the year 2030, this ratio is expected to double.³⁵ This trend in aging will bring many demands, such as an increased need for access to senior housing, medical services, and a host of other industries that would cater to older adults. Similarly, this growing population of seniors will change the demands on our transportation system.

In a survey of Fulton County residents, most residents 55 and older plan to stay in their current homes for the remainder of their lives. Of those that do choose to move, being close to family is the number one factor that will affect their choice of where to live, so these residents are unlikely to move very far.³⁶ This will present a challenge for our transportation system because older residents tend to have a large range of transportation needs. Meeting this challenge will be important because preserving the mobility of these residents will allow them to be fully engaged in our communities; this will benefit their own lives as well as provide a substantial social benefit to the region.

The Aging Driver

In North Fulton, the primary mode of transportation for older adults is overwhelmingly the personal vehicle. In a survey of Fulton County residents age 55 and older, 84% of residents use their own car for transportation - a trend that is likely to continue. Nationally it is expected that by 2030, one out of every four licensed drivers will be aged 65 and older.³⁷ Many older drivers are reluctant to give up driving, fearing loss of mobility and independence.

Because the natural process of aging typically leads to a decline in physical, cognitive and sensory abilities, future roadway and intersection projects in North Fulton may need to incorporate slightly different design standards in areas where there are higher concentrations of seniors. Older adults, particularly those in suburban or rural areas, are subject to driving longer distances on higher-risk

³⁴ U.S. Census Bureau (2000 Census)

³⁵ The Atlanta Regional Commission projects that by the year 2030, one in five residents will be over the age of 60. www.atlantaregional.com/aging-resources/demographic-data

³⁶ Public survey, Carl Vinson Institute of the University of Georgia, 2006; The survey results showed 63% of older Fulton County residents plan on living in their homes for the remainder of their lives. Most respondents (55%) said that if they did move, they would move to another location in the region. The most commonly cited factor that affects where they choose to live is proximity to family.

³⁷ American Traffic Safety Services Association (ATSSA), Older Drivers and Roadway Safety Report, 2009



road conditions to access health and community services.³⁸ A map of senior related facilities in North Fulton is provided in Figure 10-1.

In 2001, the Federal Highway Administration created the document *Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians* to help address the driving needs of older adults. These guidelines could be useful for roadway design in areas with high concentrations of seniors such as near senior centers, senior housing developments, and medical facilities. The guidelines in this document suggest criteria such as factoring in longer reaction times, clearer signage, larger signals, clearer pavement markings, and speed reductions. These guidelines seek to provide for more comfortable driving mobility for aging drivers. As a policy example, the City of Atlanta recently passed an ordinance to implement many of these guidelines and create “senior friendly zones” in areas where seniors are likely to congregate.

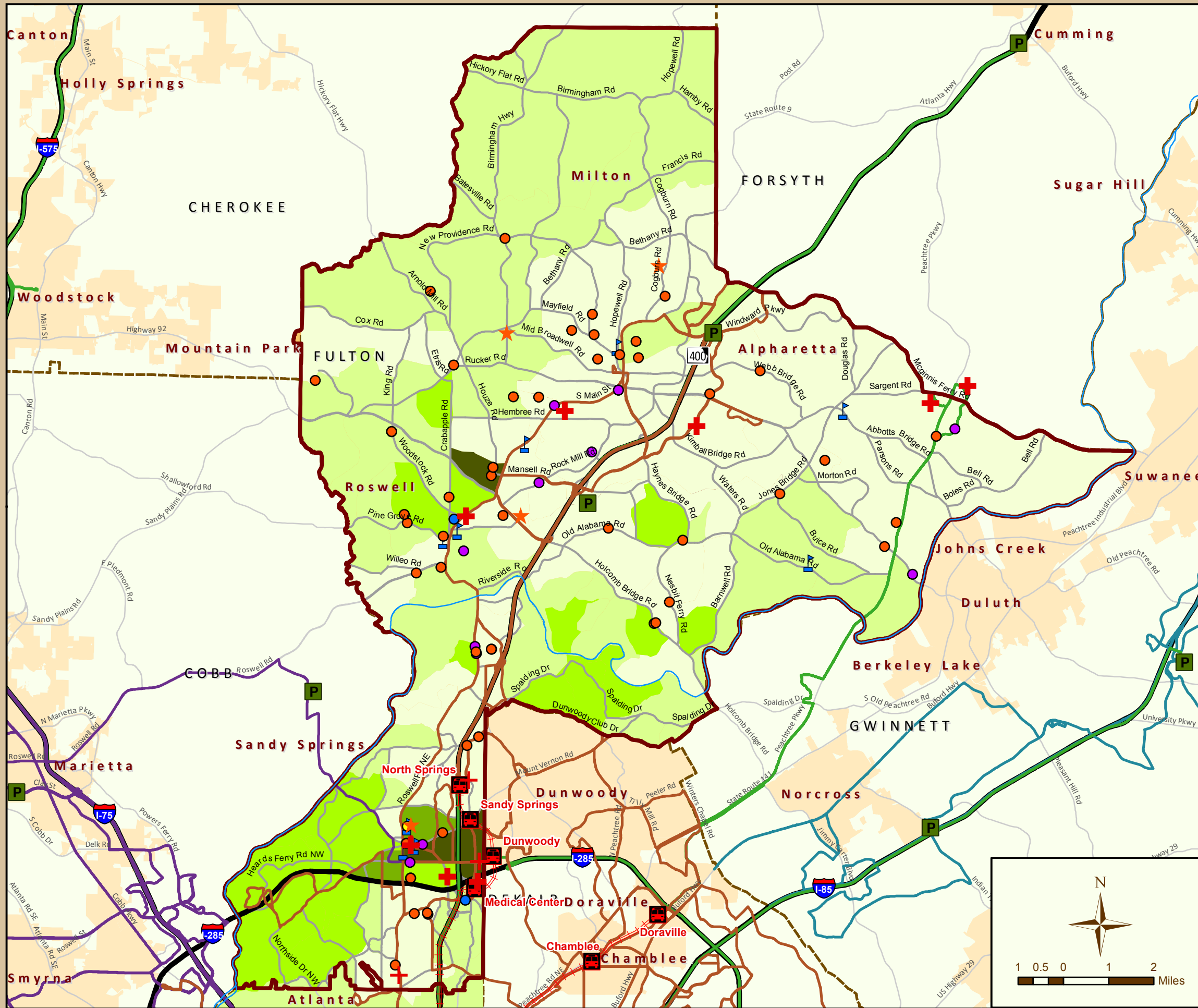
Walkable Communities

Providing walkable communities helps achieve a number of goals in developing places where people can live and age in one location. Walking not only provides a sense of freedom for older adults, but also plays a key role in maintaining a healthy lifestyle. The serious challenge for North Fulton is that by and large, most of North Fulton is not conducive to walking as a mode of transportation. The suburban development patterns throughout the area have left most destinations such as houses, shops, and businesses spread too far apart to make transportation on foot a reasonable option. These same development patterns have also allowed for limited connectivity of roadways and sidewalks. Connectivity is a critical component for achieving walkability because it provides pedestrians access to many route choices. Unless walkability is addressed in the area, access to alternative modes (including access to transit) will continue to be severely limited, thereby forcing the personal vehicle to remain as the primary mode available for aging residents.

Access to Transit

As citizens age and lose their ability to drive, transit can provide a viable transportation option to preserve the freedom and mobility for seniors. Similar to the challenges with walkability, most communities in North Fulton are not effectively served by transit, largely due to the suburban development patterns in the area. Transit services generally see the highest ridership and greatest public benefit in more densely populated areas that tend to be very walkable, with strong connectivity and mixed land uses. Existing concentrations of older residents in relation to existing transit routes in North Fulton can be seen in Figure 8-3 (on page 102).

³⁸ University of Georgia Institute of Gerontology, 2005




**North Fulton County
Transportation Resource
Implementation Program**




ATLANTA REGIONAL COMMISSION
Kimley-Horn and Associates, Inc.

Reference Location

**ARC
20-County
Region**



Legend

Health Centers	Park N Ride Facilities
Mental Health Facilities	MARTA Rail Stations
Senior Centers	MARTA Heavy Rail Line
Nursing Home Facilities	MARTA
Personal Care Homes	CCT
Adult Day Care Facilities	GRTA
Other Housing Options	GCT
Educational Programs	Study Network
Residents Age 55+ 50% - 60%	Other Major Roads
Residents Age 55+ 40% - 50%	Expressways
Residents Age 55+ 30% - 40%	Chattahoochee River
Residents Age 55+ 20% - 30%	Study Area
Residents Age 55+ 0% - 20%	Counties
	Other Cities

Source: ARC GIS Data, US Census Bureau (2000 Census), 2009 ESRI Data

**Figure 10-1
Senior Facilities**



MARTA does provide a paratransit service, branded MARTA Mobility, to those eligible persons with mobility impairments. Service is provided with special lift-equipped vans on a curb-to-curb, shared ride basis. Paratransit passengers must meet certain eligibility requirements and be certified by staff to use MARTA Mobility. This service can be very valuable for residents as they age and see their physical abilities deteriorate over time.

Service from MARTA Mobility is limited to $\frac{3}{4}$ of a mile from any regular MARTA bus route. This service area can be seen in Figure 10-2, where a $\frac{3}{4}$ of a mile buffer has been drawn around MARTA's regular bus routes. It can be seen in the figure that coverage within North Fulton tends to generally follow GA 400, while some areas farther away from GA 400 are underserved. Some municipalities currently receive very limited coverage from this service such as Roswell, Milton, Mountain Park, and Johns Creek.

Lifelong Communities and Next Steps

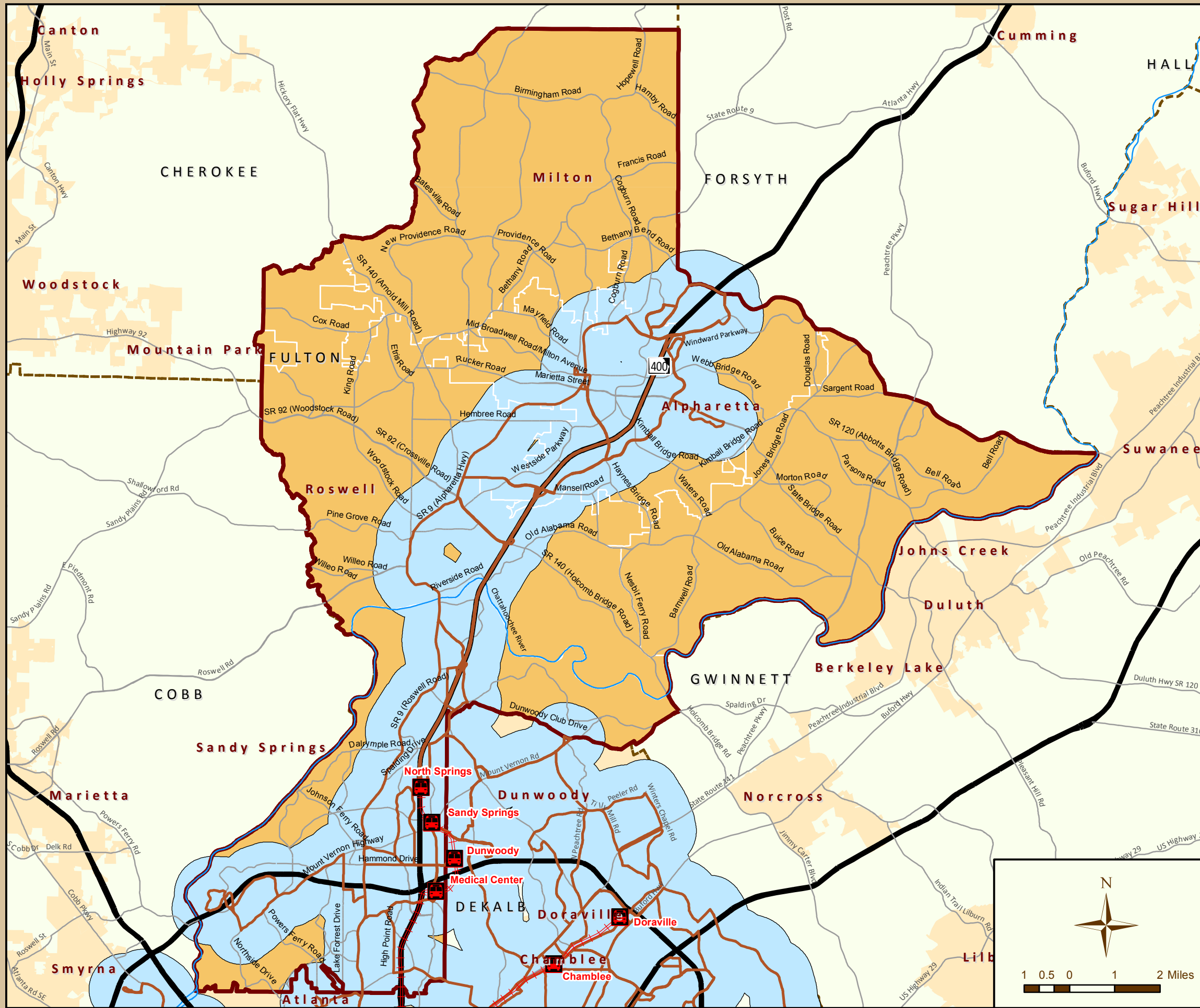
Part of the Atlanta Regional Commission's approach to planning for the growing population of seniors has been to develop the concept of Lifelong Communities. This initiative describes the creation of places where individuals can live throughout their lifetime. A community would be considered a "lifelong community" if it adheres to the following 7 fundamental principles:

- connectivity
- pedestrian access
- transit access
- healthy living
- access to basic needs
- social interaction
- diversity of dwelling types
- respect for existing residents

A worthwhile initiative as part of the North Fulton CTP may be to designate one or more places in North Fulton to specifically implement these principals.³⁹

Many of the transportation improvements that will benefit seniors will also benefit all residents of North Fulton (e.g. improved walkability and access to transit); therefore, the growing population of seniors should add increased priority to these kinds of projects. As part of the North Fulton CTP, recommendations related to walkability and transit service will take into account areas where seniors congregate. Also, any LCIs or other subarea plans should specifically include a senior component as these areas will likely provide multiple transportation options. There may be potential for designating significant senior components in any major activity nodes that are redeveloped in North Fulton. It will be important to incorporate Lifelong Communities principles as part of the planning of these areas.

³⁹ <http://www.atlantaregional.com/aging-resources/lifelong-communities>




**North Fulton County
Transportation Resource
Implementation Program**















ATLANTA REGIONAL COMMISSION
Kimley-Horn and Associates, Inc.

Reference Location

**ARC
20-County
Region**



Legend

-  MARTA Heavy Rail Stations
-  MARTA Heavy Rail Line
-  MARTA Bus Routes
-  Other Major Roads
-  Study Network
-  Expressways
-  Chattahoochee River
-  MARTA Mobility Service Area
-  North Fulton Study Area
-  Counties
-  Other Cities

Source: Atlanta Regional Commission

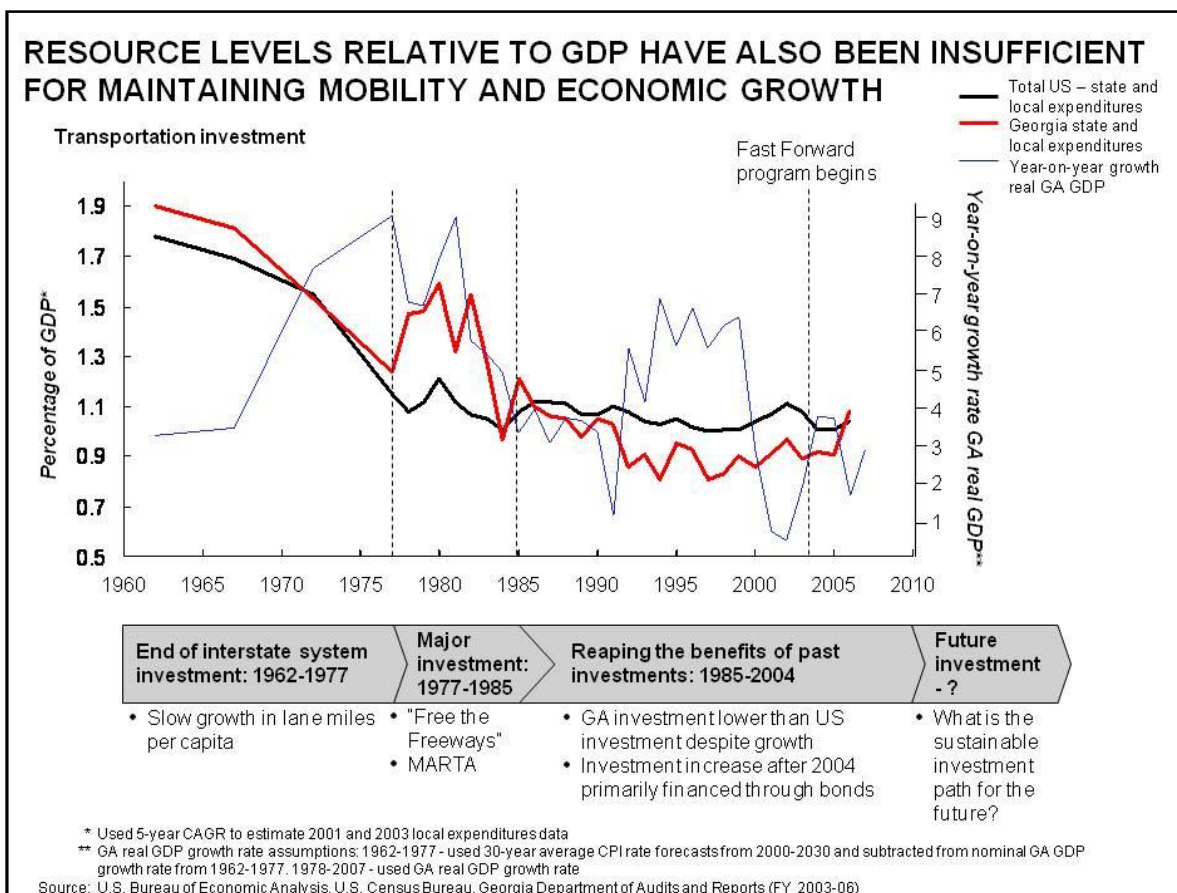
**Figure 10-2
MARTA Mobility Coverage**



11.0 TRANSPORTATION FUNDING

Transportation infrastructure is expensive to construct, operate and maintain - it is one of the most expensive elements of public infrastructure. As such, development of an area’s long-range transportation plan must consider the ability to fund the construction, operation and ongoing maintenance of that infrastructure. There are indicators that suggest that in Georgia, transportation improvements have been underfunded. The 2008 study commissioned by the state of Georgia, *Investing in Tomorrow’s Transportation Today (IT3)*, found that, “Over the last 10-20 years, Georgia has undermanaged and underinvested in its assets. The lack of improvement to these assets has contributed to performance gaps on the transportation system and put Georgia’s future quality of life and economic growth at risk.” As a state, Georgia devotes fewer resources per capita to transportation than any US state except Tennessee.⁴⁰ Georgia’s investment in transportation relative to gross domestic product (GDP) can be seen in Figure 11-1 below.

Figure 11-1: Transportation Spending Relative to GDP as Presented in IT3



Source: Investing in Tomorrow’s Transportation Today (2008) (IT3)

⁴⁰ Draft Statewide Strategic Transportation Plan 2010-2030 (December 2009)



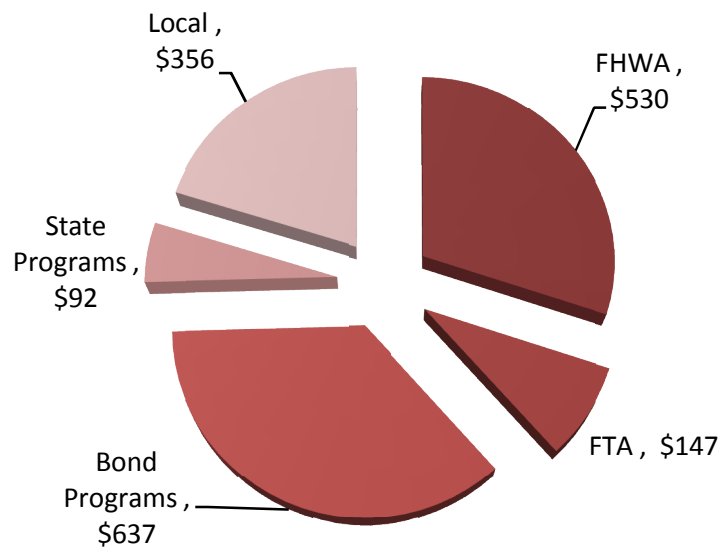
North Fulton has been no exception to the need for more infrastructure funding. The rapid growth in the region has created transportation demands that exceed North Fulton’s ability to keep pace and build needed new infrastructure. This is evidenced by the high levels of vehicular congestion and roadway delay experienced by residents. Because a long range transportation plan must consider the ability to fund the construction, operation, and on-going maintenance of that infrastructure, this section describes some of the funding conditions, issues, and opportunities available to the North Fulton CTP. The following sections describe sources of funding for transportation programs, including some sources that are in place today and other potential sources that could be considered for the future.

11.1 Existing Funding Sources

Transportation infrastructure and mobility programs in North Fulton are constructed, owned and maintained by numerous entities, including GDOT, GRTA, MARTA and each of the six cities. Statewide, roughly \$3 billion in total transportation funding flows through Georgia annually. Anywhere between \$1.1 to \$1.7 billion of this money is generated and allocated specifically within the 18 county Atlanta metropolitan area.

Using the region’s current Transportation Improvement Program (2008 – 2013) as a guide, funding in the region is divided among state and federal sources as illustrated below in Figure 11-2. Note that the Local category includes MARTA and other local sources, and that the Bond Programs is a special category that will likely not continue in future programs. Also, much of the FTA funds support capital projects of transit systems. The local and state sources comprise only about 25% of the funding.

Figure 11-2: Existing Average Annual Funding Sources (in Millions)



Source: ARC’s 2008 – 2013 TIP



Federal and State Funding

Federal funding sources are primarily the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). Funding from the FHWA is mostly channeled through GDOT and ARC while funding from the FTA goes through MARTA and ARC. Specific requirements and procedures must be followed to qualify for the federal funds. The amounts received by the region are based on federal formulas, and are programmed through the metropolitan planning process administered by ARC.

State funds come mainly from the state portion of the motor fuels tax which is currently set at 7.5 cents per gallon plus a 4% sales tax (1% of the sales tax goes to the state's general fund, with the other 3% directed to transportation). This equates to around 13 cents per gallon which generates a total of \$1 billion in annual revenue for the State. These funds are administered by GDOT. Future increases in vehicular efficiencies could potentially decrease consumption of gasoline, thereby reducing this important source of revenue.

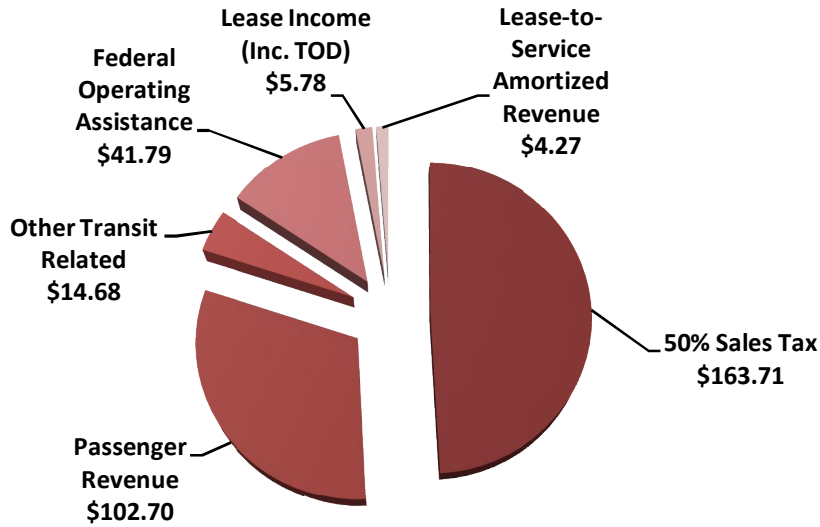
While most state funds related to the gas tax are administered by GDOT for use on state routes, a portion of the state funds are allocated to the Local Maintenance and Improvement Program (which replaced the Local Assistance Road Program and State Aid Program). Senate Bill 200, passed in 2009, commits at least 10% and not more than 20% of the state gas tax to this program, which will be administered by GDOT Local Grants Division and supervised by an appointee of the Commissioner of the DOT. The programs replaced by this new Local Maintenance and Improvement Program did not have any guarantee of funding. It appears that this new program will provide for a more reliable stream of money to assist local governments with local roads.

MARTA Funding

For fiscal year 2009, MARTA operated using \$333 million versus \$382 million in costs, producing a shortfall of almost \$50 million. Despite additional help from federal sources, the projected operating variance for FY2010 is a \$32 million deficit. The vast majority of funding for MARTA is generated by a 1% special local option sales tax that is collected and shared in Fulton County and DeKalb Counties. MARTA is limited in the amount of the 1% revenue that can be used to operate the system – the other portion must be used to pay down debt or make capital improvements. In 2009, this tax provided roughly \$164 million in operating revenue, which is about half of the total operating revenue. The portion of the budget obtained through passenger revenue is near the average of other major transit systems in the United States. Increases in operating costs combined with the decreasing trend in sales tax revenues will most likely increase the shortfall, causing continued cutbacks in service levels and potential negative economic externalities in areas linked to transit. Currently, state funds do not play a role in facilitating MARTA's operation.



Figure 11-3: MARTA Revenue Sources (in Millions)

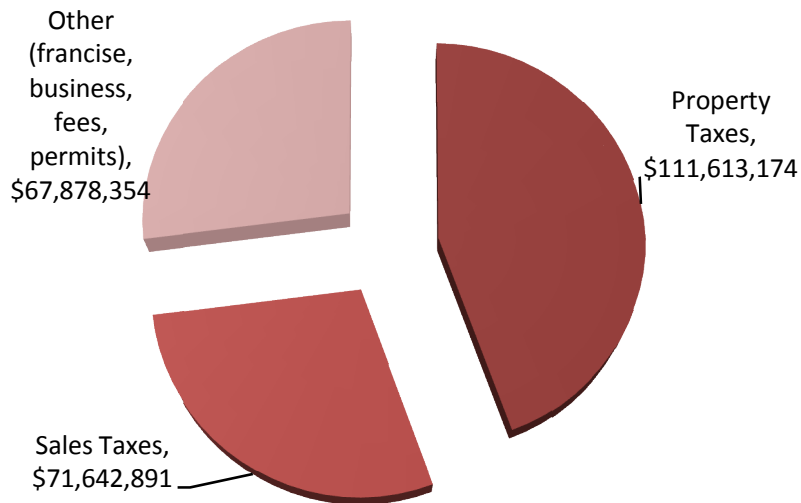


Source: 2010 MARTA Operating Budget

Local Funding

Local transportation funds come mostly from property tax and sales tax. Figure 11-4 illustrates the total city revenues for all North Fulton cities by source: property taxes, sales taxes and other. Property tax, sales tax and other represent approximately 44%, 29% and 27% of total revenues, respectively.

Figure 11-4: North Fulton Cities Revenues by Source

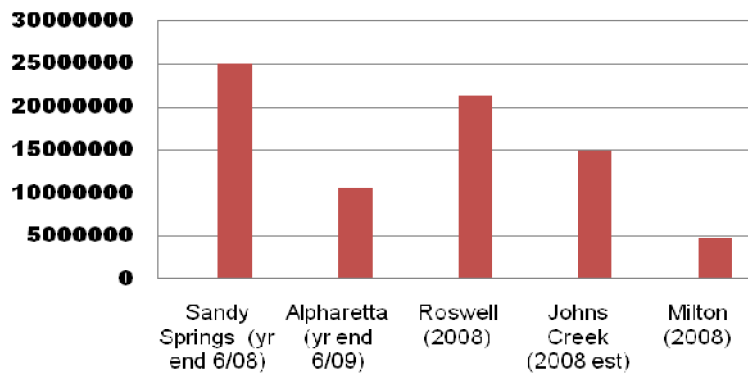


Source: Financial reports of five North Fulton cities



Fulton County currently has a Local Option Sales Tax of 1%, which is collected through the Georgia Department of Revenue and then distributed to the County and each of the cities based on a population-based formula. Sales tax revenues compiled from the annual finance reports of each city give an indication of existing resources as well as the potential for future funding sources generated by a transportation local option sales tax (TSPLOST). Sandy Springs and Roswell generate the highest sales tax revenues at \$24.9 and \$21.3 million, respectively. Once collected, local option sales taxes are then distributed proportionately by population.

Figure 11-5: North Fulton Annual Sales Tax Revenue



Source: Financial reports of five North Fulton cities

The other primary source of local transportation funds comes directly from property taxes. Most cities direct property taxes to the general fund, then allocate a budget to transportation annually. As a result, the funds devoted to transportation can vary from year to year. The city revenues from property taxes, including both real estate and personal property, are summarized in the table below.

Table 11-1: Current Property Tax Revenue

City	Annual Property Tax Revenues
Johns Creek (10)	\$17,000,000
Alpharetta (09)	\$26,400,000
Milton (08)	\$9,873,000
Sandy Springs (09)	\$29,432,000
Roswell (10)	\$19,025,000
Total	\$101,730,000

Source: Financial Reports of Five North Fulton Cities

11.2 Future Transportation Funding

Recent federal, state, regional and local planning efforts consistently describe a level of investment need that far outpaces current funding sources. Planned investments in ARC’s *Envision6* Plan total



approximately \$1 billion in North Fulton through the year 2030. In order to realize that level of investment, an average \$46 million/year must be invested in North Fulton. This does not include significant needs that are currently identified as “unfunded,” such as expansion of the regional transit system.

The following section seeks to explore other potential sources of transportation funding. While this is not a completely exhaustive list of potential funding mechanisms, it presents potential sources that have been used here and elsewhere, and that may be applicable to North Fulton or the Atlanta region.

A summary table of potential funding sources and projections of potential revenue is provided below. These are discussed in detail in the subsequent sections of text.

Table 11-2: Potential Funding Sources and Projections

Potential Funding Sources	Potential Revenue
<i>Property Tax Examples</i>	
Commercial – additional 1%	\$9 Million per year
Residential - \$200 per residency	\$31.2 Million per year
<i>Sales Tax Examples</i>	
TSPLOST (or similar 1% program)	\$77 Million per year, \$1.5 Billion over 20 years
<i>Gas Tax Examples</i>	
Additional \$0.01/gallon	\$3.4 Million per year
Additional \$0.03/gallon	\$10.2 Million per year
Additional \$0.10/gallon	\$34 Million per year
Additional \$0.20/gallon	\$68 Million per year
<i>Other Taxes and Fees</i>	
Ad Valorem Tax (4 mil/ 8 mil increase)	\$4.2 Million per year/\$8.2 Million per year
VMT tax	\$67.4 Million per year
<i>State Programs</i>	
GDOT Gateway	\$50,000 max to local government entity.
State Infrastructure Bank	Variable. CID's only.
LARP	Variable, by congressional district
<i>Federal Programs</i>	
Economic Development Assistance Program	Dept of Commerce grants available in distressed communities. Variable amounts. 50% of project cost.
Tiger Grant Program	\$15 billion in stimulus funding. Total funds have been allocated.
Transportation Enhancement	20% match on a per project basis, allocated by GDOT
Safe Routes to School	GDOT has recently been awarding funding for projects with a maximum of 1 project per congressional district. The maximum amount available for individual projects is \$500,000



Community Improvement Districts

Community Improvement Districts (CIDs) have proven to be very effective mechanisms in Georgia to collect and pool revenue from commercial property owners for purposes of public good, including transportation programs. These self-taxing districts collect an additional property tax on commercial properties within a defined district, and then use those funds for the betterment of that area. Two CIDs currently exist in the NFCTP study area in the North Point/Windward area (North Fulton CID) and in the Perimeter Center area (Fulton Perimeter CID). These two CIDs have been very successful as tools to pool funds, develop and advance projects in the area's best interest and leverage additional funds from state and federal sources. There exists the potential for continued expansion of their boundaries. Benefits to an expanded CID would include:

- Enhanced opportunities for tax revenue due to increased commercial properties contributing to the fund
- Larger area of impact, which allows a greater range of projects to be
- Stable sources for revenue generation over time

A second potential opportunity with regard to CIDs would be creation of an area-wide or "super" CID. The current CID legislation limits CIDs to contiguous commercial properties. However, the possible expansion of the CID definition to more of an area-wide boundary is an available opportunity. An area-wide or "super" CID would perhaps require revision of the enabling legislation, but could potentially provide for a larger sub-regional entity that would still be self-enacted and self-taxing, and would be able to pool significantly more revenue to implement larger and more regionally significant transportation programs.

TSPLOST

Sometimes referred to as a Transportation Special Purpose Local Option Sales Tax (TSPLOST), many potential configurations of a sales tax dedicated to transportation have been discussed in recent years in the Atlanta metropolitan area and in the Georgia legislature. Proposals differ largely in their specifics about creation, duration, administration etc.; but, most proposals share the same basic idea of a sales tax dedicated to transportation. While the sales tax could be any amount, most conversation to date has revolved around an assumption of an additional 1% tax. Based on information obtained from each of the five cities in North Fulton and data obtained from the Georgia Department of Revenue, a 1% sales tax in North Fulton would currently generate approximately \$77 million per year. That equates to over \$1.5 billion over a 20-year timeframe without assuming economic growth (or \$2.3 billion assuming 2% annual growth).

Fees and Taxes

Existing transportation-related taxes toward transportation include the state gas tax, ad valorem tax and title fees. At the current 13 cents per gallon, Georgia has the second lowest gas tax in the United States. The national average is 27.2 cents per gallon (and these state taxes are in addition to the federal gas tax of 18.4 cents per gallon). Local governments in Georgia do not currently have



the authority to alter the amount of the gas tax, which is established by the state. However, several proposals in recent years have been discussed by the state legislature, so this has the potential to change in the near future. As shown in Table 11-2, even a fairly modest increase in the gas tax generates substantial revenues for transportation. Local governments do, however, have the ability to alter their ad valorem taxes and title fees.

Two relatively new transportation tax mechanisms are now in use in communities in the western United States as alternatives to ad valorem tax or title fees. The first is a Vehicle Miles Traveled (VMT) tax, which is assessed based upon the number of miles traveled each year by each vehicle, and is assessed to the vehicle owner. The second is a transportation system user tax, which assesses an annual tax to real property owners based on the use of that property and the inherent transportation demands typical of that use.

Property taxes may also be a vehicle used to raise revenues toward infrastructure subsidy. There are approximately 156,000 homes within the five North Fulton County cities. An increase of \$200 in residential property tax could generate approximately \$31.2 million in additional revenue yearly. Similarly, an increase of 1 mil on commercial property taxes may increase revenues by approximately \$9 million per year. Although public perception and trade-offs needs to be evaluated, it is clear that minimum increases in property taxes could help alleviate funding gaps.

Stimulus, Grant Programs, and other Funding Sources

Several Federal and State level programs exist that provide assistance via grants, loans, or reimbursements to facilitate transportation based projects. Unfortunately, these sources are not reliable in terms of determining accurate or consistent levels of future funding, as many programs have limited time spans and resource amounts. Nevertheless, the following programs may provide financing options or information links to additional opportunities:

State Programs

Georgia Transportation Infrastructure Bank (Georgia State Road & Tollway Authority)

SRTA offers low-interest loans and grants to finance local transportation projects through the Georgia Transportation Infrastructure Bank, established by House Bill 1019 in April 2008. The Georgia Transportation Infrastructure Bank or GTIB is a revolving infrastructure investment fund, much like a bank, that provides loans with attractive terms to state, regional and local government entities to fund much needed local transportation projects. Projects eligible for possible funding include highways, roads, bridges, air transport and airport facilities, rail and transit or bicycle facility projects. Eligible costs include all project phases except for ongoing maintenance. The GTIB will be managed by SRTA, whose code was amended to receive initial funding to offer \$33.1 million in loans and \$10 million in grants.

The current grant program is restricted to transportation projects by formally recognized Community Improvement Districts (CIDs).



For loans, eligible borrowers must fit the following description: municipal corporation, county, community improvement district, or any public operator of transit, including combinations of two or more of these entities, acting jointly to construct, own or operate a qualified project, or any other state authority, board, commission, agency, or department which may construct, own, or operate a qualified project

"Eligible Costs" for both loans and grants are those related to preliminary engineering, traffic and revenue studies, environmental studies, right of way acquisition, legal and financial services associated with the development of the qualified project, construction, construction management, facilities, and other costs necessary for the qualified project.

GDOT GATEway Program (Georgia Transportation Enhancement)

The GATEway program offers an annual maximum of \$50,000 in grant allocation for any organization, local government, or state agency for landscape enhancement of state routes. Projects must involve the local community, display the right of way in an attractive fashion and promote pride in Georgia. The maximum cumulative fund allotment each year shall be \$50,000 within a local government entity. This funding mechanism is fairly restrictive, and does not allow for application toward highway construction, median enhancement, lighting, or other hardscape items. It is for the sole purpose of landscape plant material.

LARP (Local Assistance Road Program) GDOT

This program is limited to resurfacing of existing streets. Funds are allocated according to a formula that is based on population by congressional district and paved road miles, as established by GDOT governing board. The total LARP fund varies according to funding availability.

Federal Programs

Economic Development Assistance Programs

EDA encourages the submission of only those applications that will significantly benefit regions with distressed economies. \$240,000,000 was originally made available via the Economic Development Administration, (Department of Commerce). Such distress may exist in a variety of forms, including high levels of unemployment, low income levels, large concentrations of low-income families significant declines in per capita income, large numbers (or high rates) of business failures, sudden major layoffs or plant closures, trade impacts, military base closures, natural or other major disasters, depletion of natural resources, reduced tax bases, or substantial loss of population because of the lack of employment opportunities. EDA's experience has shown that regional economic development to help alleviate these conditions is affected primarily through investments and decisions made by the private sector. Generally, funds allocated must not exceed 50% of the total project cost.



TIGER Grant Program

This program is the primary vehicle of the American Recovery and Reinvestment Act (ARRA) that supports transportation related projects. As of February 17, 2010, the \$1.5 billion dollars in available funding has been allocated. Though the program was originally slated to remain open until 2012, an overwhelming response of roughly \$60 billion in requests precipitated early termination.

Transportation Enhancement

Federal TE funds were originally enabled by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and have continued through subsequent transportation authorizations. These are administered by GDOT. These funds are awarded by GDOT through a competitive “Call for Projects” process. The State Transportation Board Member serving his/her Congressional District makes the final selections and determines the funding level for each selected project. This program includes a mandatory 20% local match.

Safe Routes to School

The Federal Safe Routes to School (SRTS) program started in 2005 as part of the 5-year transportation bill called SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). The program is designed to encourage more kids to walk and bike to school safely. Projects may be eligible for funding if they seek to address this goal and are within a 2-mile radius of primary and middle schools (grades K-8). Funding covers 100% of the cost of eligible projects, programs and planning.^{41, 42}

11.3 Conclusions and Next Steps

As the North Fulton CTP begins to evaluate future transportation strategies, the costs of those strategies and the ability and public support to pay for them must also be considered. The list of potential funding strategies herein provides a starting point for discussing these options. These options will be vetted against the Project Management Team and the Stakeholder and Policy Committees. Once additional funding strategies have been selected for possible implementation, each option will be associated with specific projects or packages of projects so that a cost-benefit analysis can be performed by local decision makers which will allow them to determine an informed and appropriate course of action.

⁴¹ <http://safety.fhwa.dot.gov/saferoutes/>

⁴² www.saferoutesga.org



12.0 NEXT STEPS

Following the completion of the Needs Assessment Report, a list of all potential regionally significant multimodal projects will be compiled. This list is intended to be exhaustive and significantly larger than the final list of projects likely will be. Following the development of this list, scenario testing within the travel demand model will begin. Projects that can be tested within the model (mostly regional roadway and transit projects) will be organized into different scenarios in order to test various combinations of projects (ideally where the impacts of individual projects can be identified). The metrics discussed above such as LOS maps, regional and subarea metrics, and laborsheds will be used to assess the pros and cons of the individual and groups of projects. The project list will then be narrowed by removing projects whose benefits are marginal. Combinations of remaining projects will be tested together to determine the optimal outcomes relative to transportation improvements. Other projects that cannot be tested within the model will be considered on a more qualitative basis.

Project prioritization methodology developed by ARC for *Envision6* and GDOT statewide project selection criteria will provide insight into developing the prioritization strategies for evaluating projects for the North Fulton CTP. Additionally, the vision, goals, and objectives developed early in the process will provide important guidance for determining the projects most appropriate for the communities of North Fulton.

Throughout the technical assessment of projects, the various committees (Project Management Team, Stakeholder Committee, and Policy Committee) as well as members of the public (through Recommendations charrettes in May 2010) will provide feedback regarding the different sets of projects.

The final aspect will be the full prioritization of projects based on merit and identification of funding sources and mechanisms to develop a fully implementable project list. Some funding sources may be in existence today, while other new or revised sources of funding may also be identified.