GAINESVILLE-HALL MPO

2040 Metropolitan Transportation Plan

AUGUST 2011

Prepared for:
Gainesville-Hall Metropolitan Planning Organization

Prepared by:
Wilbur Smith Associates

A Resolution by the Gainesville-Hall Metropolitan Planning Organization Policy Committee Adopting the 2040 Metropolitan Transportation Plan, associated FY 2012-2017 Transportation Improvement Program, and Related Conformity Determination Report

WHEREAS, the Gainesville-Hall Metropolitan Planning Organization (GHMPO) is the designated Metropolitan Planning Organization (MPO) for transportation planning within the Gainesville Metropolitan Area Boundary which includes all of Hall County; and

WHEREAS, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and the Clean Air Act (CAA) Amendments of 1990 require the MPO to develop and adopt a Metropolitan Transportation Plan (MTP) and a short range Transportation Improvement Program (TIP) that conform with the applicable Sate Implementation Plan (SIP) for air quality and metropolitan planning requirements; and

WHEREAS, the 2040 MTP and the FY 2012-2017 TIP have been developed in conformance with GHMPO's Participation Plan and through appropriate technical and review process; and

WHEREAS, a new Conformity Determination Report was developed by the Atlanta Regional Commission (ARC) in conjunction with the GHMPO with a public comment and review period; and

WHEREAS, the Conformity Determination Report demonstrates that the 2040 MTP and the FY 2012-2017 TIP conform to the requirements for the 20 county Atlanta ozone nonattainment area under the 8 hour standard and the 20 plus county Atlanta particulate matter (PM 2.5) nonattainment area using a methodology that meets all transportation conformity requirements as developed through the Interagency Consultation process.

NOW, THERE, BE IT RESOLVED that the Gainesville-Hall Metropolitan Planning Organization adopts the 2040 MTP, FY 2012-2017 TIP and Conformity Determination Report.

Kris Yardley
Acting Chairman
GHMPO Policy Committee

Aug. 9, 2011
Date

Table of Contents

List of Tables

List of Figures

Acknowledgements

The GHMPO 2040 Metropolitan Transportation Plan was developed in collaboration with the following entities:

GHMPO Policy Committee

Voting Members:

- Lamar Scroggs, Mayor, City of Oakwood, Chairperson
- Bill Andrew, City of Flowery Branch, representing City of Flowery Branch Mayor, Mike Miller, Vice Chairperson
- Matthew Fowler, GDOT, representing GDOT Commissioner Vance Smith
- Ruth Bruner, Mayor, City of Gainesville
- Alan Wayne, Hall County, representing Hall County Chairman, Tom Oliver

Non Voting Members:

- Carlos Gonzalez, Transportation Planner, Federal Highway Administration
- David Schilling, Transportation Program Specialist, Federal Transit Administration
- Randy Knighton, Director, GHMPO
- Ken Cochran, Chairperson, Citizens Advisory Committee
- Larry Sparks, Chairperson, Technical Coordinating Committee
- Todd McDuffie, District Engineer, GDOT District 1
- Steve Kish, Director, GDOT Planning and Intermodal Development
- Phillippa Lewis Moss, Director, Gainesville-Hall Community Service Center

GHMPO Technical Coordinating Committee:

Voting members:

- Larry Sparks, Planning Director, City of Oakwood, Chairperson
- Kevin McInturff, County Engineer, Hall County, Vice Chairperson
- James Riker, Planning Director, City of Flowery Branch
- Rusty Ligon, Planning Director, City of Gainesville
- David Dockery, Public Works Director, City of Gainesville
- Randy Knighton, Director, GHMPO
- Srikanth Yamala, Transportation Planning Manager, GHMPO
- Robert Mahoney, District Pre-Construction Engineer, GDOT
- Dave Cox, Transportation Planner, GDOT

- Stephanie Harmon, Transportation Planner, Georgia Mountains Regional Commission
- Phillippa Lewis Moss, Director, Gainesville-Hall County Community Service Center
- Ken Rearden, Public Works Director, Hall County
- Richard Ticehurst, Operations General Manager, Hall Area Transit

Non-Voting members

- Carlos Gonzalez, Transportation Planner , Federal Highway Administration
- David Schilling, Transportation Program Specialist, Federal Transit Authority
- Charles Mensinger, Vice-Chairperson, Citizens Advisory Committee
- Joe Burnett, President, Main Street Gainesville
- Tyronda Edwards, Transit Planner, GDOT
- Kit Dunlap, President, Greater Hall Chamber of Commerce
- Chad Bolton, Northeast Georgia Medical Center
- Gerald Lanich, Police Chief, City of Flowery Branch
- Steve Cronic, Sheriff, Hall County
- Brian P. Kelly, Police Chief, City of Gainesville
- Randall Moon, Police Chief, City of Oakwood
- Merianne Dyer, Superintendent, Gainesville City Schools
- Will Schofield, Superintendent, Hall County Schools
- Scott Puckett, Traffic Engineer, Hall County

GHMPO Citizen Advisory Committee:

- Ken Cochran, Hall County, Chairperson
- Charles Mensinger, City of Oakwood, Vice Chairperson
- Ron Petrie, City of Flowery Branch
- Berlinda Lipscomb, City of Gainesville
- Ed Myers, City of Gainesville
- Linda Carruth, City of Gainesville
- Diana Dokken, City of Gainesville
- Will White, City of Gainesville
- Ethan Hopkins, Hall County
- Brent Hoffman, Hall County
- Danny Sanderson, Hall County
- Doug Smith, Jr., Hall County
- Larry Poole, Hall County

- James Nix, Hall County
- Charles Mensinger, City of Oakwood

GHMPO Staff

- Randy Knighton, Director
- Srikanth Yamala, Transportation Planning Manager
- David Fee, Transportation Planner

Hall County Staff

- Mark Lane, GIS Manager

Georgia DOT Office of Planning Staff

- Tom McQueen
- Andrew Heath
- Phillip Peevy
- Habte Kassa

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

1. Planning Context

1.1 Metropolitan Planning Organization

A Metropolitan Planning Organization (MPO) is a federally mandated entity responsible for coordinating transportation planning, policies, and programming in urbanized areas with populations of 50,000 or more. MPOs are required to ensure that federally funded transportation projects and programs are based on a continuing, cooperative, and comprehensive (3-C) planning process.

1.2 Legislative Mandates

On August 10, 2005, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law, and on March 4, 2011, President Obama signed the Surface Transportation Act of 2011, which extends surface transportation programs under SAFETEA-LU through the end of the federal FY 2011 (September 30, 2011). SAFETEA-LU approves funding for surface transportation projects and also represents the largest surface transportation venture in the country to date. While SAFETEA-LU authorizes funding for many transportation funding categories and specific projects, it also continues the concepts identified by its predecessors Intermodal Surface Transportation Efficiency Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) regarding the cooperative, continuing, and comprehensive regional planning process. SAFETEA-LU establishes requirements that MPOs must follow when developing long-range plans. The GHMPO 2040 Metropolitan Transportation Plan (MTP) addresses and meets all SAFETEA-LU planning requirements, as provided by the Federal Transit and Federal Highway Administrations.

1.3 GHMPO History and Structure

The Gainesville-Hall area was officially designated as an urbanized area, based on the 2000 Census population. In February 2003, the Hall County Planning Department was designated, by the Governor of Georgia, as host agency for the Gainesville-Hall Metropolitan Planning Organization (GHMPO) to ensure that existing and future expenditures for transportation projects and programs are based on a continuing, cooperative and comprehensive (3-C) planning process.

The GHMPO has established three committees: the Policy Committee (PC) comprised of elected officials and the Georgia Department of Transportation (GDOT) Commissioner's representative; the Technical Advisory Committee (TCC), made up of

local government and GDOT staff; and the Citizens Advisory Committee (CAC), which include citizens appointed by the four member local governments. Membership lists of these committees are included at the beginning of this document.

The first Long Range Transportation Plan (LRTP) for GHMPO was adopted in December 2004. The document began as a portion of a Multi-County Study initiated by the Georgia Department of Transportation (GDOT) and identified transportation projects to address existing and projected needs in response to changes in population, development and traffic through 2030. To meet new SAFETEA-LU requirements, the GHMPO 2030 LRTP was updated and adopted by the Policy Committee in August 2007. During the development of the first and second GHMPO LRTP, public participation was an integral part of the planning process. Information gathered at these meetings ensured local transportation needs and concerns were addressed in the long range plan.

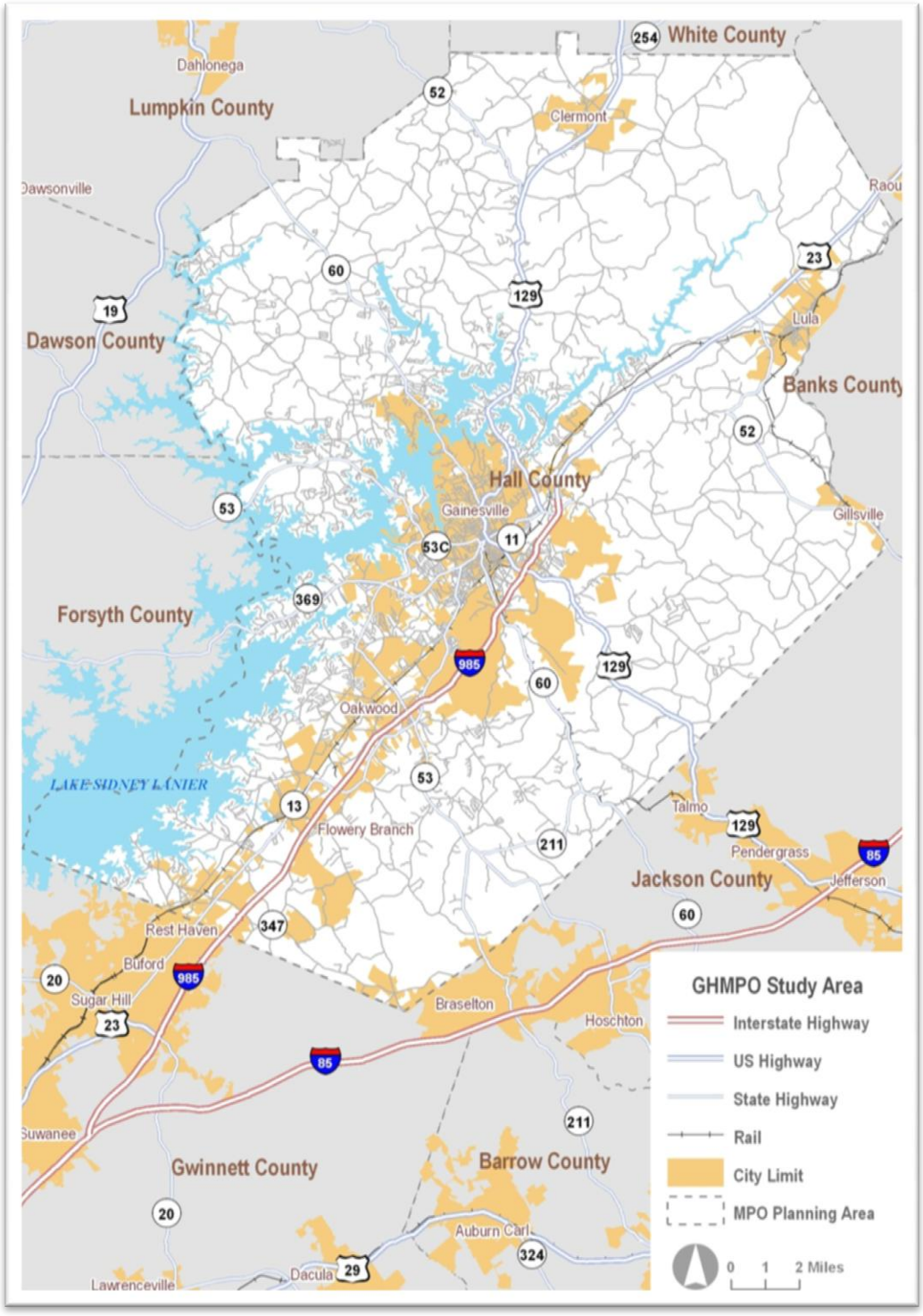
1.4 Study Area

Figure 1-1 shows the GHMPO area, which includes Hall County in its entirety. Hall County is home to six cities - Clermont, Flowery Branch, Gillsville, Lula, Oakwood, and the county seat, Gainesville, and the Cities of Buford and Braselton have annexed into Hall County.

Hall County is one of the Georgia's most rapidly growing counties. Situated along Lake Lanier in the outskirts of metropolitan Atlanta, Hall County is served by Interstate 985 allowing convenient access to the major metropolitan region's interstate system. Hall County encompasses approximately 394 square miles in northeast Georgia.

Hall County includes the Gainesville urbanized area, as well as a small portion of the metropolitan Atlanta urbanized area along its southern edge (approximately 2.7 percent of the Hall County land area). At the same time, a small portion of the Gainesville urbanized area reaches west into adjoining Forsyth County, which is part of the Atlanta MPO administered by the Atlanta Regional Commission (ARC). By agreement, there is a coordinated process where the ARC assumes the planning for the Forsyth portion of the Gainesville urban area, while GHMPO plans for the portion of the Atlanta urban area in Hall County.

Figure 1-1: Study Area



Source: GHMPO and Hall County GIS Department.

1.5 Air Quality

Hall County has been designated by the Environmental Protection Agency (EPA) as part of a 20 County, 8 hour ozone and 22 County fine particulate matter (PM 2.5) air quality non-attainment area, requiring conformance with the State Implementation Plan (SIP) for air quality to secure federal transportation funding. Therefore, the area's transportation challenges must be met not only in the context of local constraints, such as funding and the growth of congestion, but also within the constraints of regional air quality planning.

1.6 The Metropolitan Transportation Plan

Since the GHMPO area is designated as a nonattainment area, SAFETEA-LU requires that long-range plans be updated every four years. The MTP is a transportation planning tool used to identify existing issues and project future demand of a metropolitan area's transportation system. The MTP includes analysis of short-term strategies and a long-term planning outlook of 29 years, into the year 2040, for the GHMPO area. During the 2040 MTP planning process, transportation goals and objectives were reviewed and updated to ensure appropriate projects, programs, and policies were identified to assist in meeting future transportation demand and addressing transportation issues in the study area.

This MTP analyzes the transportation network as a whole by examining roadways, transit, bicycle, and pedestrian travel within the GHMPO area. Based on the technical analysis and input from the public participation process and the three MPO committees, the MTP identifies future projects, programs, and policies that improve mobility, connectivity, and accessibility in the GHMPO area. The MTP also identifies reasonably available funding sources to construct and implement the projects, programs, and policies in the study area.

1.6.1. Planning Process

The MTP planning process examines mobility, accessibility, connectivity of the multimodal transportation systems, as well as environmental conditions, economic development, and safety in the study area. The MTP evaluates all transportation modes including roadways, transit, pedestrian and bicycle infrastructure to ensure a safe and efficient multimodal transportation system is preserved, modernized, and expanded to serve future demand. The GHMPO 2040 MTP is a cooperative plan that included participation from a number of federal, state, local, private, and public agencies and individuals.

1.7 Other Related Plans and Studies

As with most planning documents, the GHMPO 2040 MTP builds upon and incorporates the ideas, issues, and recommendations of past and current planning studies and plans. One of the most critical planning efforts the 2040 MTP must review and incorporate is local land use plans. Integrating land use planning and transportation planning is critical to ensure the multimodal transportation system serves existing and planned residential, commercial, and industrial developments. The 2040 MTP recognizes the importance of the land use-transportation connection and identifies supporting goals, projects, programs, and policies that will ultimately provide improved mobility, accessibility, and connectivity within the study area.

The following plans and studies served as valuable inputs into the development of the 2040 MTP:

- **GHMPO Public Participation Plan (2007)** - This plan is designed to ensure timely and meaningful input into the metropolitan transportation planning process. The plan outlines the participation process for Citizen Advisory Committee, non-English speaking communities, consultation process, visualizations resources, and public notice/review period guidelines. This Plan fulfills requirements outlined in the Final Rule for Statewide and Metropolitan Transportation Planning as published in the Federal Register on February 14, 2007 by the Federal Highway Administration and Federal Transit Administration.
- **Limited English Proficiency (LEP) - Plan (2010)** – This plan identifies a process for individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English to participate in the transportation planning process in the GHMPO area.
- **GHMPO 2030 Long Range Transportation Plan (2007)** – The GHMPO Policy Committee adopted the SAFETEA-LU compliant 2030 LRTP in August 2007. The committee's action culminated a year and a half effort to update the previous version of the plan. The plan development process included an assessment of transportation needs, based both on citizen input and technical analysis, and identification of policies and improvement projects to address needs. During the planning process, the MPO developed project evaluation criteria, which outlines the criteria used in prioritizing projects for inclusion in the Long Range Transportation Plan and Transportation Improvement

Program. The list of multimodal improvements included new projects and projects that were identified in the previous plan.

- **GHMPO Bicycle and Pedestrian Plan (2006)** - The plan includes an overall vision as well as specific projects/actions and supporting policies for the development of a countywide pedestrian and bicycle system. The plan was developed in 2005 by the GHMPO with staff participation and community input from Hall County; the cities of Gainesville, Oakwood, Flowery Branch, Lula, Clermont, and Gillsville; the Georgia Department of Transportation; and the Georgia Mountains Regional Development Center.

- **VISION 2030 (2006)** – VISION 2030 grew out of a special leadership summit held in March 2005, in which more than 100 diverse community leaders learned about community visioning, heard from the leader of a community visioning effort in Greenville, S.C., and voted overwhelmingly to begin a similar process for Gainesville-Hall County. The goals of the year-long process were to engage hundreds of citizens in describing the community they'd like to live, work and raise families in; draft a "common vision" for Gainesville-Hall County that captures the major elements of these vision meetings; convene a number of planning groups to draft recommendations for achieving the common vision – and ensure that average citizens are represented on these groups; bring together citizens to review and critique the work of the planning groups; and make every document and decision available for public comment, through open meetings, public communications and an easily accessible web site. The end product is a set of long-term goals and plans for Gainesville-Hall County.

- **Hall County Comprehensive Plan and City of Gainesville Comprehensive Plan (2005, ongoing)** - Hall County began the process of preparing a major update to its Comprehensive Plan in the fall of 2002, in collaboration with the City of Gainesville. The Plan was originally prepared in 1994 and was subject to a minor update in the year 2000. The process of conducting this major update unfolded over an 18-month period. The planning process involved extensive community outreach and involvement, along with in-depth analysis of a wide variety of land use, economic, demographic, environmental, and public service forces and trends that have shaped the community and which continue to set the stage for the future.

The planning process was conducted in conformance with the rules of the Minimum Standards and Procedures for Local Comprehensive Planning, which was promulgated by the Georgia Department of Community Affairs under the Georgia Planning Act of 1989. These minimum planning standards establish procedural and substantive requirements for local comprehensive planning. The full documentation of compliance with those standards is contained in a separate document. This report provides a summary of that plan as it relates to unincorporated Hall County.

Hall County is currently updating their Comprehensive Plan and the socio-economic data (population, employment, household, etc.) projections developed during the 2040 MTP will be incorporated into the Comprehensive Plan update.

- **Flowery Branch Comprehensive Plan (2005)** - This plan guides the physical development (and redevelopment) of the City by describing how, why, when, and where to build, rebuild, or preserve aspects of the community. The plan also covers a long-range planning horizon of 20 years (i.e., to the year 2025) and it is "comprehensive" in that it covers the entire City limits, plus it encompasses all the functions that make a community work and considers the interrelatedness of functions. The Comprehensive Plan is based on the foundation that if the City knows where it wants to go, it possesses better prospects of getting there.
- **Oakwood Comprehensive Plan (2004, partial update 2009)** – This plan is intended to guide and help direct future development in Oakwood. The plan identifies a community vision and articulates a framework for the arrangement of land use and public services designed to encourage orderly physical development and contribute to the economic and social welfare of the community.
- **City of Flowery Branch Downtown Transportation Study (2010)** – The purpose of this study was to identify a series of transportation improvements to address the vehicular and pedestrian needs of the City's historic downtown area. The improvements were developed based on a combination of engineering evaluation, community input, and City staff insight.
- **Hall County Crash Profiles (2008)** – The Hall County Crash Profile describes crash locations and statistics, including total crash numbers, crash rates, severity, injuries and fatalities, hotspots, and comparison with neighboring

counties. The information reported in this profile is intended to be used for evaluating the safety of transportation facilities and identifying priorities for improvement.

- **Hall Area Transit, Transit Development Plan (2009)** – Hall Area Transit (HAT) has served the City of Gainesville and Hall County since 1983. HAT provides public transportation to the urban and rural portions of Gainesville and Hall County. Services include scheduled fixed route service and paratransit service within the City of Gainesville and a demand-responsive van service in the outlying areas of the County. The Transit Development Plan contains a Five Year Plan to implement new or expanded transit service in the region.
- **Human Services Transportation Plan (2009)** – GHMPO developed this plan to coordinate human services transportation, a critical need in Hall County and its jurisdictions. The goal of the plan is to ensure all people, especially those with disabilities or low incomes, children and the elderly have equitable access to appropriate transportation options by offering coordination strategies. This plan was developed in conjunction with a diverse of group of stakeholders including transportation providers such as Hall Area Transit (HAT), private senior transportation service providers, and state government agencies such as the Department of Health and Human Services.

1.8 MTP Overview

The 2040 MTP is a culmination of extensive pubic and partner participation, population and employment projections, travel demand model updates, technical analysis, revenue projections, multimodal needs assessment, planning level cost estimation, and financial planning. The 18-month planning process resulted in recommendations for multimodal transportation projects, programs, and policies for the GHMPO area. The GHMPO 2040 MTP contains the following chapters and appendices:

- Chapter 1 – Planning Context
- Chapter 2 – Study Area Characteristics
- Chapter 3 – Public and Partner Participation
- Chapter 4 – Goals, Objectives, and Performance Measures
- Chapter 5 – Multimodal Transportation Needs
- Chapter 6 – Multimodal Transportation Improvements
- Chapter 7 – Air Quality
- Chapter 8 – Safety and Security

- Chapter 9 – Financial Plan
- Chapter 10 – Fiscally Constrained Plan
- Chapter 11 – Environmental Mitigation
- Appendix A – Socio-economic Data: 2008 to 2040 by Jurisdiction
- Appendix B – Socio-economic Allocations by Traffic Analysis Zones
- Appendix C – The Travel Demand Model for the GHMPO MPO
- Appendix D – Public Participation Summary Report

2. Study Area Characteristics

In industry, the GHMPO area is informally known as the Poultry Capital of the World and generates approximately over $720 million in poultry-related products and services annually. In terms of recreation, it includes 540 miles of shoreline along the western Hall County boundary on Lake Lanier. These and other characteristics affect the employment, activities, and transportation of GHMPO's residents.

2.1 General Area Characteristics

The growth and distribution of the GHMPO area population and employment will continue to have a significant impact on future transportation needs. Increases in population and employment will continue to place a heavy demand on the study area's transportation system. The amount and distribution of growth provide insights into the type, size and location of new transportation facilities required to meet present and future travel demand, including new highway projects and emphasis on other modes.

The last ten years have brought significant changes to the GHMPO area and the future is expected to bring even more. In order to effectively manage, operate, and plan the GHMPO transportation system, it is essential to understand how the area is growing and developing, how travel characteristics are changing, and how the transportation system is performing.

To ensure proper planning is carried out, the 2040 MTP defines a vision for the region and develops goals and objectives that strategically assist in attaining that vision. In order to adequately plan for the future, existing and past conditions and trends must be examined. Pertinent questions such as the following need to be researched and answered:

- How many people live in the GHMPO area, and how many new residents can we expect in the future?
- Where are people living, and in what types of communities?
- How many jobs are in the region, and where are those jobs located?
- What is the extent of the existing highway system and how is it used?
- How do area residents travel to work in the GHMPO area?
- What is the extent of the existing public transportation system and how is it used?
- What is the extent of the existing bicycle and pedestrian system and how it is used?
- How do needed goods move in and out of the region?

Understanding the past and present will provide strategic guidance toward developing a long-range multimodal transportation plan that will accommodate future growth, improve safety and security, and provide mobility choices for all residents in the GHMPO area.

2.2 Data

Part of the MTP planning process includes obtaining and analyzing data to assist in the development of the 2040 MTP. A variety of data and planning studies were collected and reviewed from federal, state, and local agencies to ensure the latest available information was used. Various economic, social, and land development considerations that impact travel in the GHMPO area were examined and these considerations influenced the planning environment or context within which the GHMPO 2040 MTP was developed. Understanding the local economic, social, and land development characteristics and addressing them in the MTP results in a plan that reflects the community vision.

Collecting the most up-to-date data is critical during the MTP process. Since the 2010 U.S. Census data will not be available for the GHMPO 2040 MTP update, information in this section will be based on the 2000 Census and the Census Transportation Planning Products (CTPP), as well as Federal Highway Statistics. The CTPP data provide specific socio-economic data by county, which means that the CTPP has data for Hall County,

which is representative of the GHMPO area. These CTPP profiles include data from both the 2005–2008 American Community Survey (ACS) and the 2000 Census. They are designed to give transportation planners an effective way to examine trends by including those two time points; additionally, the change in trends is connected to a basic yes/no assessment of statistical significance (by number and by percent), which helps highlight the most important trends.

2.3 Population

During the development of the 2040 MTP, base year (2008) and future year (2040) population estimates were developed by the consultant team. The estimates were reviewed and approved by each city and county planning directors and GHMPO staff, and were presented to each of the three MPO committees. Detailed information on the process of developing the 2008 and 2040 population is provided in **Appendix A** – Socio-economic Allocations by TAZ.

The 2000 Census recorded the Hall County population at 139,277 people. **Table 2-1** shows the base year (2008) and future year (2040) population estimates for Hall County (GHMPO area). The 2008 population totals 184,824. Since 2000, Hall County has grown by 45,500, which is a 32.7 percent increase. By 2040, Hall County is projected to grow to a population of 561,812, which is a 204 percent increase from 2008. This tremendous growth will have direct impacts to the multimodal transportation system and thus it guided and directed the projects, programs, and policies identified during the development of the 2040 MTP.

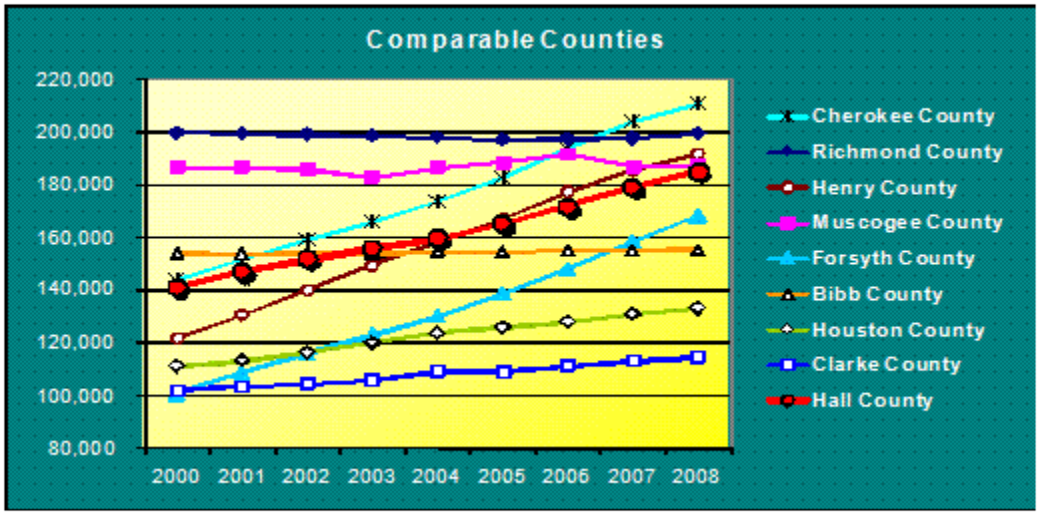
Table 2-1: Base Year and Future Year Population

	Population		
	2008	2040	% Change
Hall County Total	184,824	561,812	204%
Braselton*	1,010	996	-1%
Buford*	402	729	81%
Clermont	782	5,202	565%
Flowery Branch	3,990	13,477	238%
Gainesville	35,665	173,831	387%
Gillsville*	183	444	143%
Lula*	2,260	8,155	261%
Oakwood	4,390	13,253	202%
Rest Haven*	41	69	68%
Unincorporated Area	136,101	345,656	154%

*Source: GHMPO Socio-economic Data: 2008 to 2040 by Jurisdiction, Ross+Associates. * Portion of city in Hall County.*

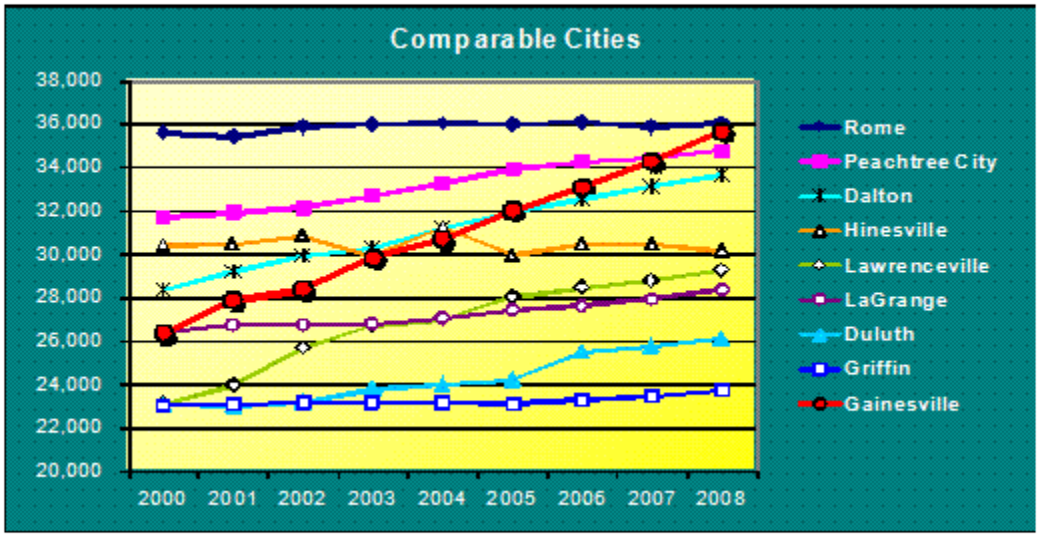
Hall County and City of Gainesville, as a whole have enjoyed an unbroken trend of population increase over the last decade. As shown in **Figure 2-1** and **Figure 2-2**, Hall county and Gainesville have grown at a faster pace compared to other similar sized counties and cities in the State of Georgia.

Figure 2-1: County Population Comparison – 2000 to 2008



Source: GHMPO Socio-economic Data: 2008 to 2040 by Jurisdiction, Ross+Associates.

Figure 2-2: City Population Comparison – 2000 to 2008

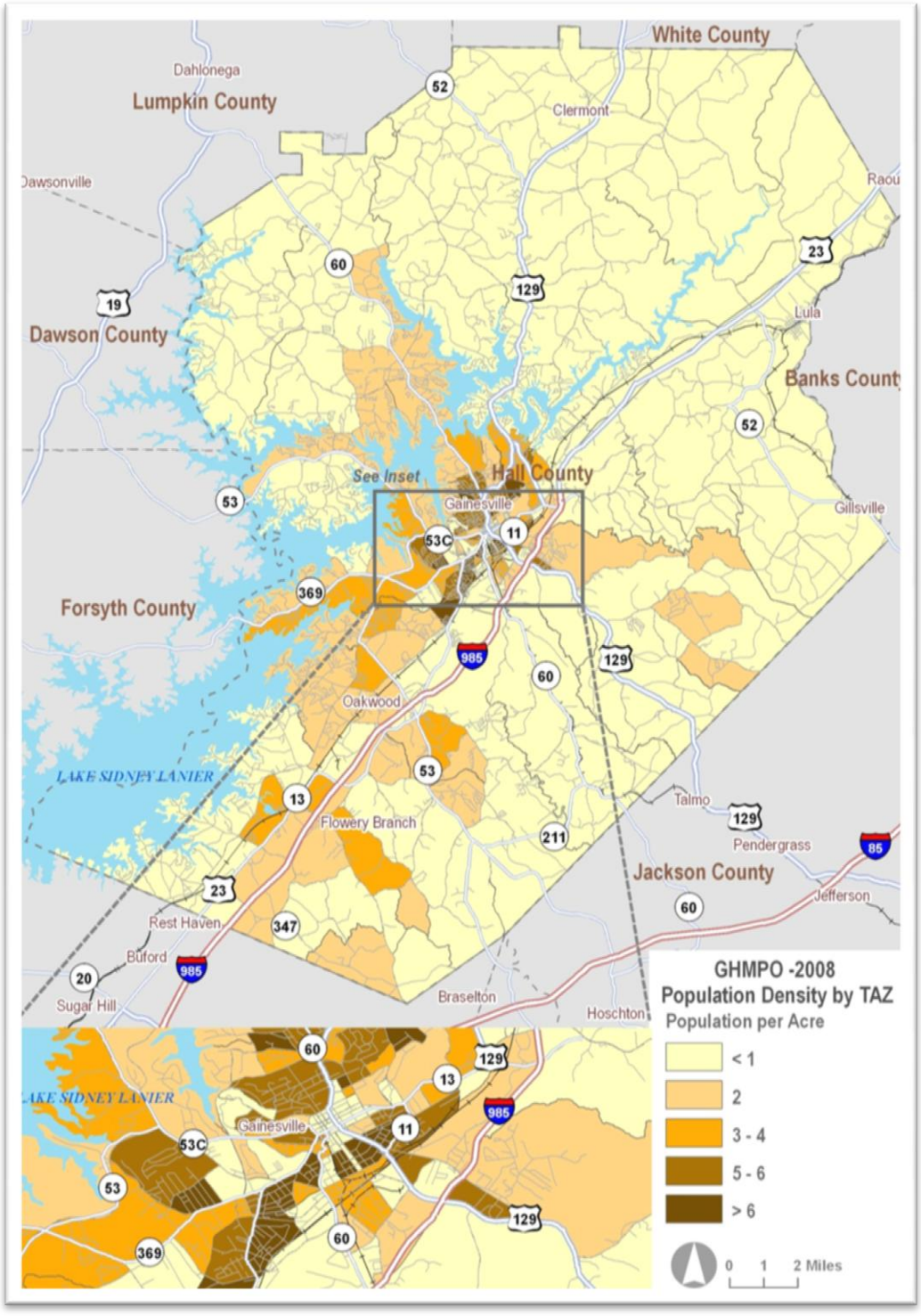


Source: GHMPO Socio-economic Data: 2008 to 2040 by Jurisdiction, Ross+Associates.

Figure 2-3 displays the population concentrations in the Hall County in terms of number of people per acre for each Traffic Analysis Zone (TAZ). TAZs are a special area delineated by the MPO and approved by GDOT for tabulating traffic-related data in the travel demand model. Analyzing the distribution of people in a region is necessary in order to understand how transportation improvements can affect different numbers of people. Smarter infrastructure investments can be made by pinpointing transportation improvements in more densely populated areas that serve more people. This is especially true for public transit, as the efficiency and effectiveness of public transit is largely dependent on the number of people it can serve. As of the year 2008, the urbanized areas in the region, mainly Gainesville, had population densities that consisted of more than six residents per acre. Most of the TAZs outside the urban centers had densities lower than one person per acre. The most densely populated areas of Hall County are the along Interstate 985 in the southwestern portion of the County, closer to the Atlanta region.

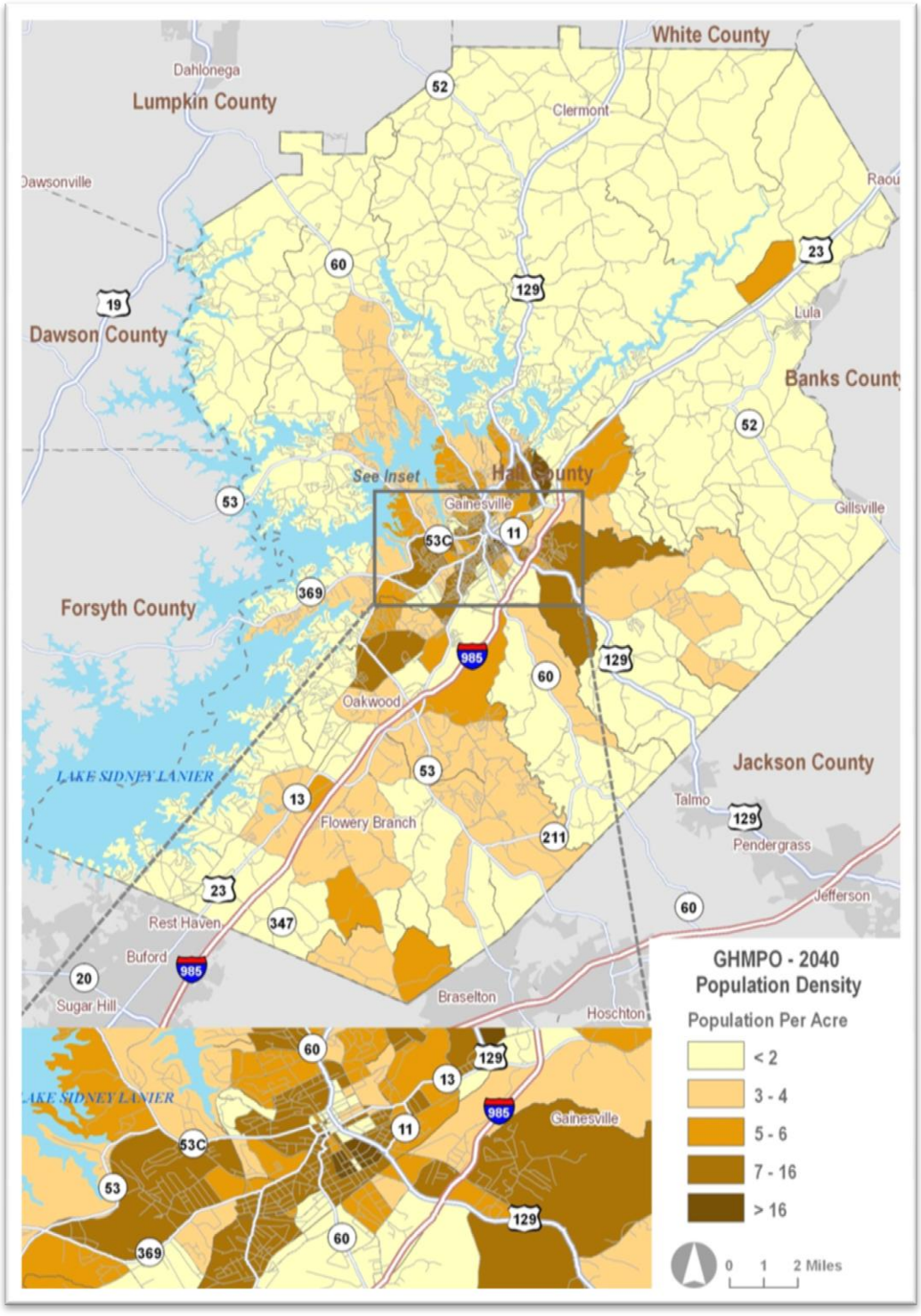
As mentioned above, by 2040, Hall County is projected to grow to a population of 561,812. The location and distribution of this growth will impact future transportation demands of the region. In an effort to predict this impact, future population for year 2040 was distributed to the internal Traffic Analysis Zones (TAZs) within the Hall County's travel demand model, displayed in **Figure 2-4**.

Figure 2-3: 2008 Population Densities by TAZ



Source: Socioeconomic Allocations by Traffic Analysis Zones. Ross+Associates.

Figure 2-4: 2040 Population Densities by TAZ



Source: Socioeconomic Allocations by Traffic Analysis Zones. Ross+Associates.

2.4 Employment

During the development of the 2040 MTP, base year (2008) and future year (2040) employment estimates were developed by the consultant team. The estimates were reviewed and approved by each city and county planning directors and MPO staff, and were presented to each of the three MPO committees. Detailed information on the process of developing the 2008 and 2040 employment is provided in **Appendix A** – Socio-economic Allocations by TAZ.

The 2000 Census recorded the Hall County employment at 66,664 people. **Table 2-2** shows the 2008 and 2040 employment estimates for Hall County. The 2008 employment totals 97,869. Between 2000 and 2008, Hall County employment grew by 31,225, which is a 46.8 percent increase. By 2040, Hall County's employment is projected to be 306,493, which is a 213 percent increase from 2008. As with the population growth, the tremendous employment growth will also have direct impacts to the multimodal transportation system and this projected growth guided and directed the projects, programs, and policies identified during the development of the 2040 MTP.

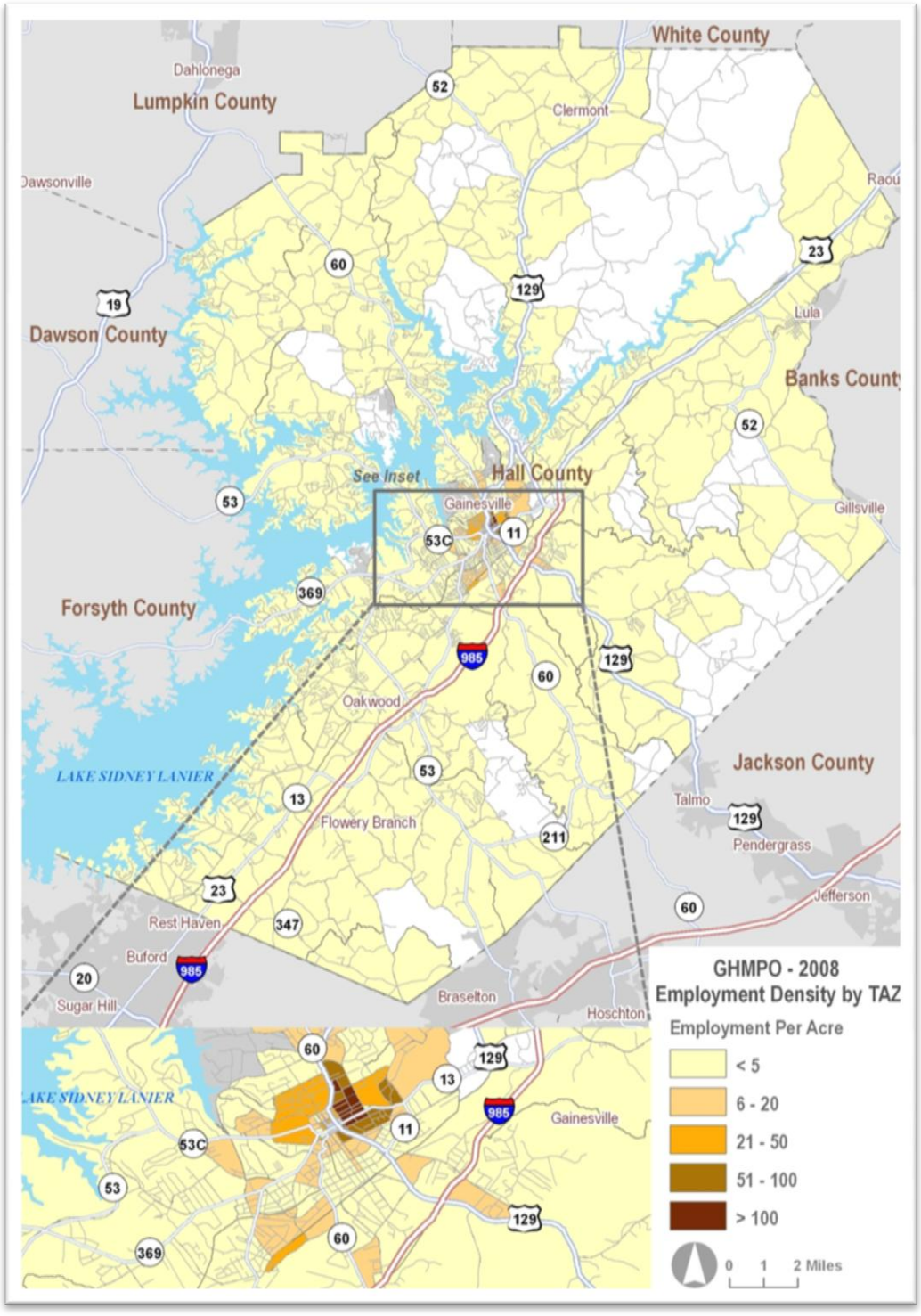
Table 2-2: Base Year and Future Year Employment

	Employment		
	2008	2040	% Change
Hall County Total	97,869	306,493	213%
Braselton*	307	529	72%
Buford*	717	1,972	175%
Clermont	224	2,641	1079%
Flowery Branch	1,716	10,285	499%
Gainesville	50,046	94,012	88%
Gillsville*	64	273	327%
Lula*	746	4,779	541%
Oakwood	4,329	12,913	198%
Rest Haven*	13	39	200%
Unincorporated Area	39,707	179,050	351%

*Source: GHMPO Socio-economic Data: 2008 to 2040 by Jurisdiction, Ross+Associates. * Portion of city in Hall County.*

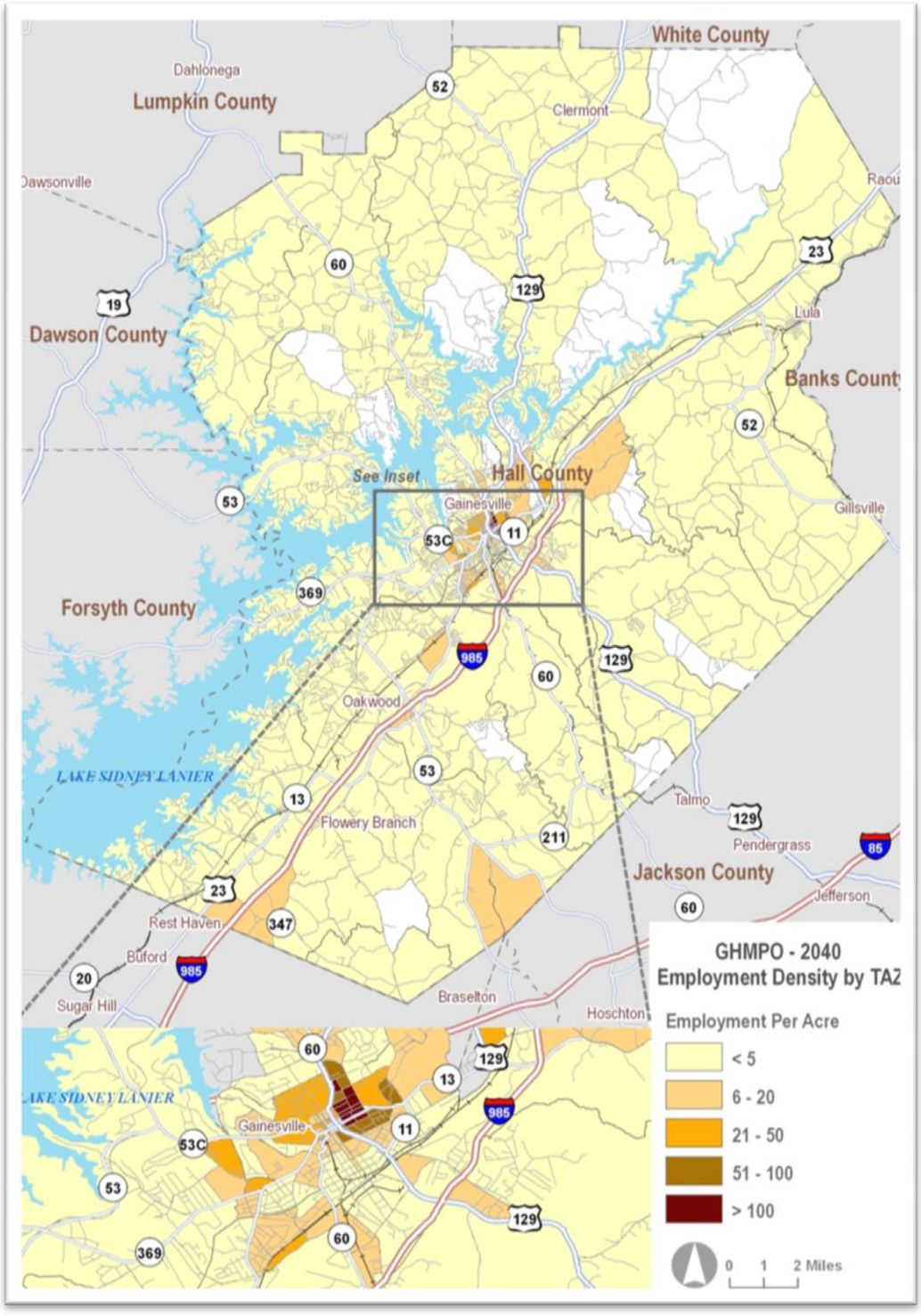
Figure 2-5 shows the employment density per acre for Hall County. Identifying concentrations of employment, and thus travel destinations, is useful in evaluating transportation improvement options. Employment within the Hall County is relatively dispersed; however, the downtown area of Gainesville has very high concentrations of employment. Similar to population future employment for year 2040 was distributed to the TAZs within the Hall County's travel demand model, displayed in **Figure 2-6**.

Figure 2-5: 2008 Employment Densities by TAZ



Source: Socioeconomic Allocations by Traffic Analysis Zones. Ross+Associates.

Figure 2-6: 2040 Employment Densities by TAZ

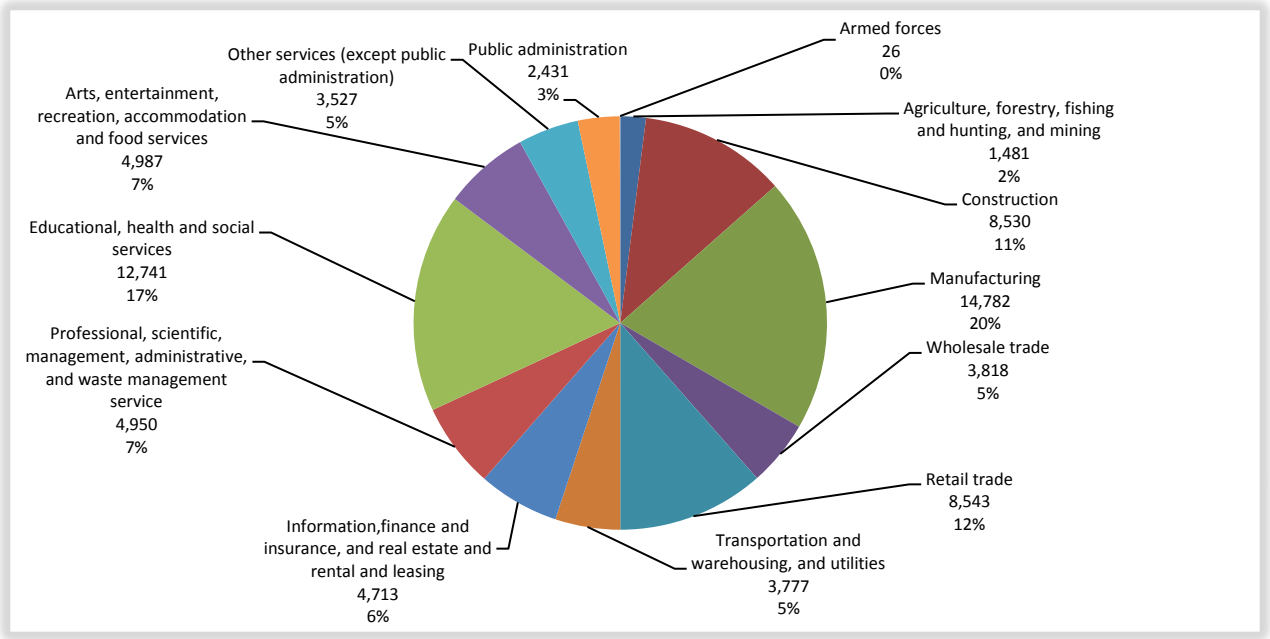


Source: Socioeconomic Allocations by Traffic Analysis Zones. Ross+Associates.

2.5 Labor Force

While the changes in the overall employment of the labor force in the GHMPO area is one important set of data, it is equally important to examine the makeup of that labor force. The most recent data available, the 2005–2008 ACS data, describe the composition of the GHMPO employed labor force in **Figure 2-7**.

Figure 2-7: GHMPO Area Composition of Employed Labor Force



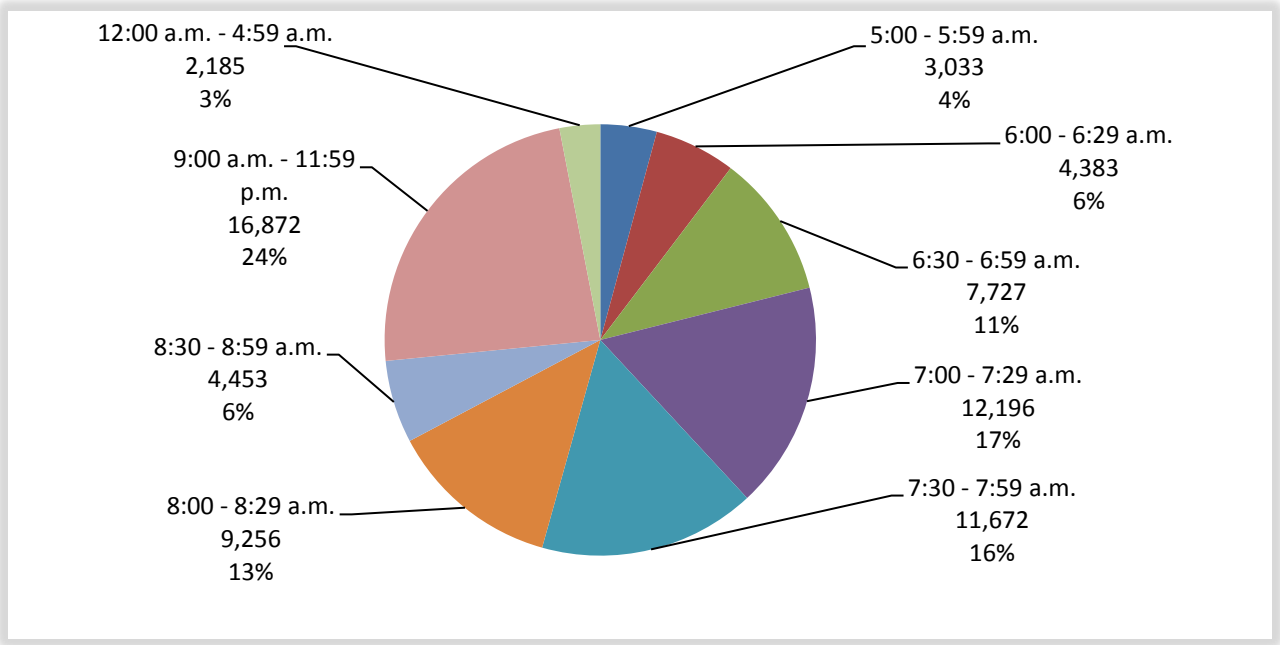
Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

As the data shows, the largest share of the employed labor force in the GHMPO area is in manufacturing, at 20 percent. After that category, other large shares of the employed labor force fall into more infrastructure-oriented employment categories such as educational, health, and social services (17 percent); retail trade (12 percent); and construction (11 percent).

2.6 Commuting Patterns

An effective way to examine commuting patterns in the GHMPO area is to look at times that individuals living in the GHMPO area arrive at work. These arrival times suggest approximately when the GHMPO transportation system is carrying the greatest volume. This understanding lays the groundwork for understanding other facets of the populations' commute to work, such as their chosen mode, duration of commute, and system characteristics. **Figure 2-8** shows the share of the population arriving at work at different times according to the 2005–2008 ACS data.

Figure 2-8: GHMPO Area Arrival Times at Work



Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

According to the ACS data, over 50 percent of GHMPO residents arrive at work between the hours of 6:30 am and 8:30 am, with another 30 percent arriving before noon. The data also shows that the half hour with the largest share of work arrivals is from 7:00–7:29 am, suggesting a pattern of early morning commutes in the GHMPO area.

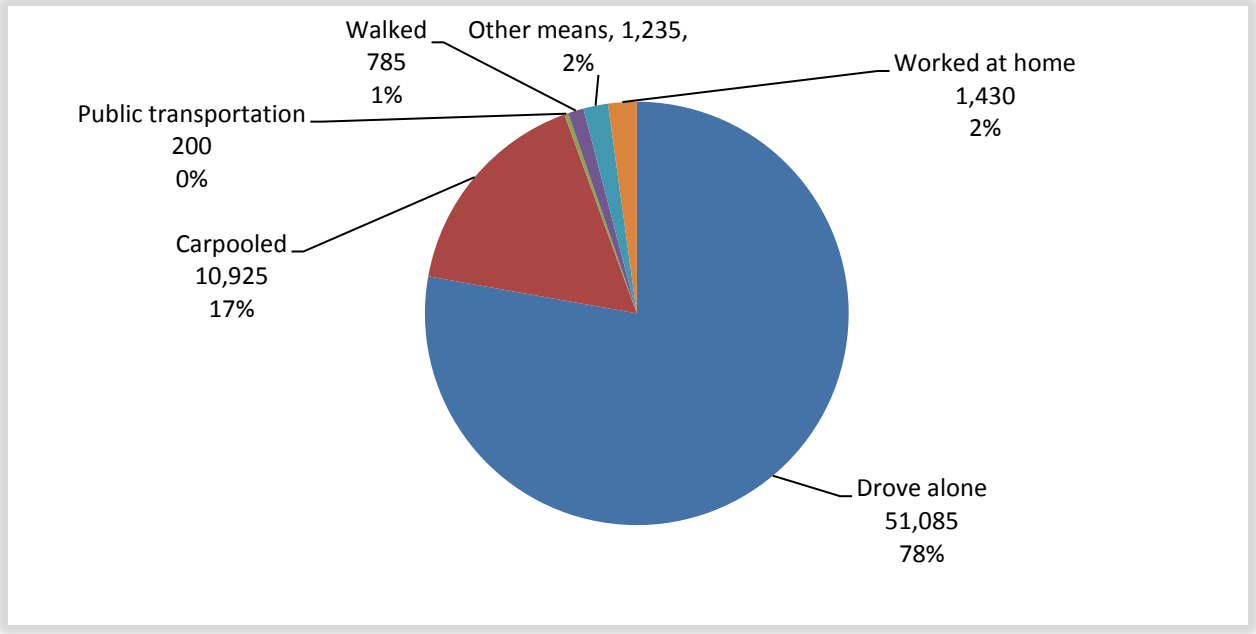
2.7 Mode to Work

In addition to recognizing when GHMPO residents are arriving at work, it is important to identify predominate modes of travel. Knowing how area residents commute expands the ability of GHMPO to develop a multimodal transportation system. Even though the dominant mode of area travel is the personal automobile, economic and environmental concerns may drive many area residents and businesses to rethink their transportation patterns. Planning adequately for changing needs is a direct and important result of this shift.

The commute data in this section is based on the CTPP, which includes data from the 2005–2008 ACS and the 2000 Census. The CTPP provides information for two time periods, which are accordingly displayed as **Figure 2-9** and **Figure 2-10**. As the data show, there is a one percentage point increase in area residents working from home and driving but a three percentage point decrease in those who carpool between 2000 data and ACS data (2008). While the number of people who carpool could have changed due to any number of factors, one possibility is that the decrease is connected to the rapid increase of the GHMPO population. Since the population increase could be due to new people moving in, the carpooling decrease could be due to those new people not yet having established connections for carpooling with each other as well as the locations to which they have moved.

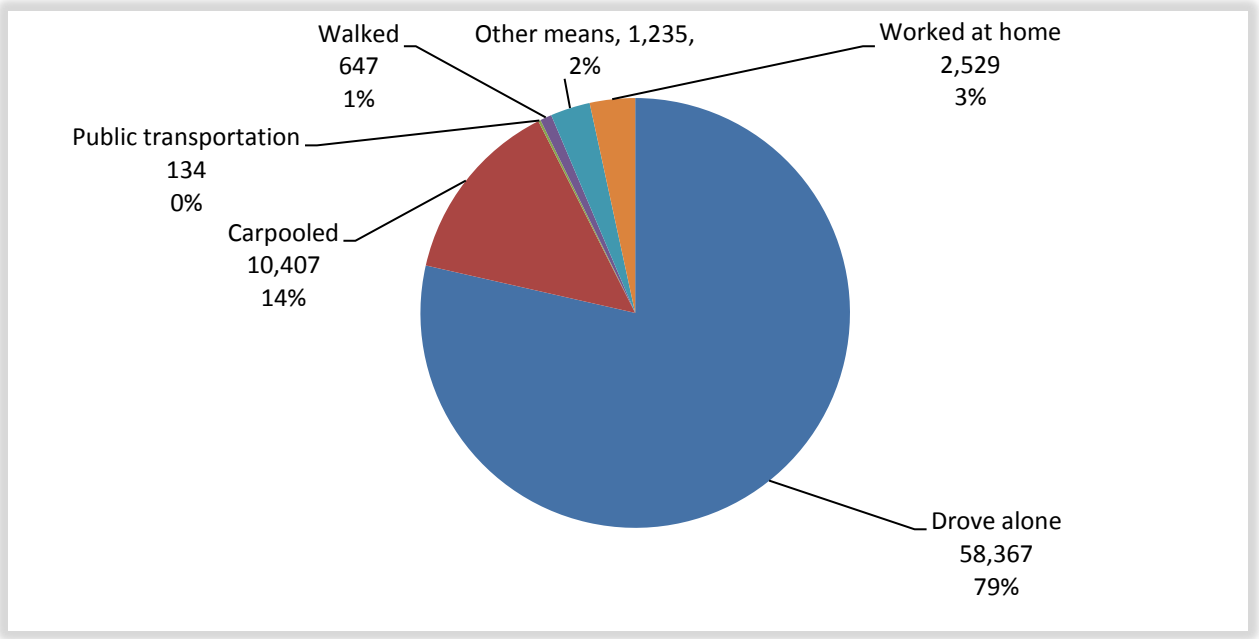
For this reason, emphasizing carpooling could be one way for GHMPO to better balance its multimodal transportation system. And because the personal automobile is a popular mode of transportation—as evidenced by the fact that in both measurement years, over three quarters of residents drove alone to work—carpooling could be billed as the next logical step.

Figure 2-9: GHMPO Mode to Work, 2000 Census Data



Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

Figure 2-10: GHMPO Mode to Work, 2005–2008 ACS Data



Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

Table 2-3 provides a mode to work comparison between the 2000 Census and the 2005–2008 ACS. Since the 2000 Census, driving alone, working at home, and using other means of transportation besides walking, carpooling, and public transportation all increased. These increases, furthermore, are each categorized as significant by statistical tests, meaning that the changes are not merely due to random fluctuation. However, the changes could still be due simply to an increase in population and not necessarily an underlying transportation factor.

Table 2-3: GHMPO Mode to Work, 2000 Census vs. 2005–2008 ACS

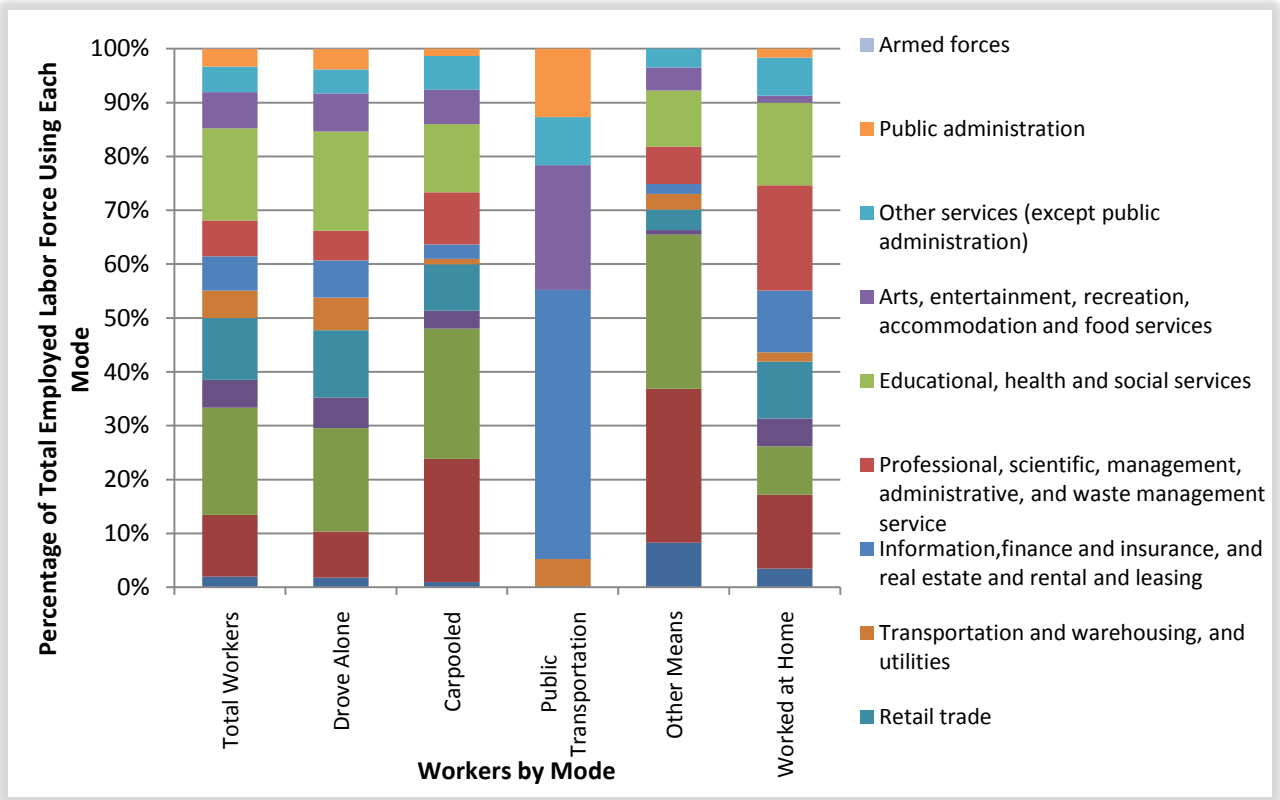
Mode to Work	2000 Census		2005–2008 ACS		Percent Difference
	Number	Percent	Number	Percent	
Total workers	65,650	100.0	74,306	100.0	13.2%
Drove alone	51,085	77.8	58,367	78.5	14.3%
Carpooled	10,925	16.6	10,407	14.0	-4.6%
Public transportation	200	0.3	134	0.2	-33.0%
Walked	785	1.0	647	0.9	-17.6%
Other means	1,235	1.9	2,222	3.0	8.0%
Worked at Home	1,430	2.2	2,259	3.4	58.0%

Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

To visually represent the data from Table 2-3, **Figure 2-11** categorizes the employed labor force by mode of transportation to work. The stacked sections correspond to the

type of employment. Recalling from Figure 2-7 that manufacturing and construction are two of the largest industries in the GHMPO area, it is little surprise that their shares across the columns are among the largest. (The first column, for Total Workers, is to be used for comparison against all other columns.) However, it is interesting to note that those two industries show a significant share of the categories carpooling and other means in getting to work, but that virtually nobody employed in those industries uses public transportation. On the contrary, the more white collar of jobs—information, finance and insurance, and real estate rental and leasing, for example, or public administration and other services—make up the largest portions of those who use public transportation.

Figure 2-11: GHMPO Mode to Work, 2000 Census vs. 2005–2008 ACS



Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

A segment of population group that tends to rely more on transportation modes other than the single occupancy vehicle are low-income people or people below poverty level. **Figures 2-12** thru **2-15** illustrate how mode to work significantly changes between people above poverty and below poverty**.** In 2008, only 55 percent of persons below poverty level in Hall County drove alone compared to 80 percent of people above poverty drove alone. People below the poverty level are much more likely to carpool, walk, or take public transit. The trend also suggests that there is also an overall increase in people who drove alone from 2000 to 2008. There has been an increase in people below poverty who drove alone rose from 48 percent in 2000 to 55 percent in 2008, while people who carpooled reduced from 40 percent in 2000 to 28 percent in 2008.

2.8 Travel Time to Work

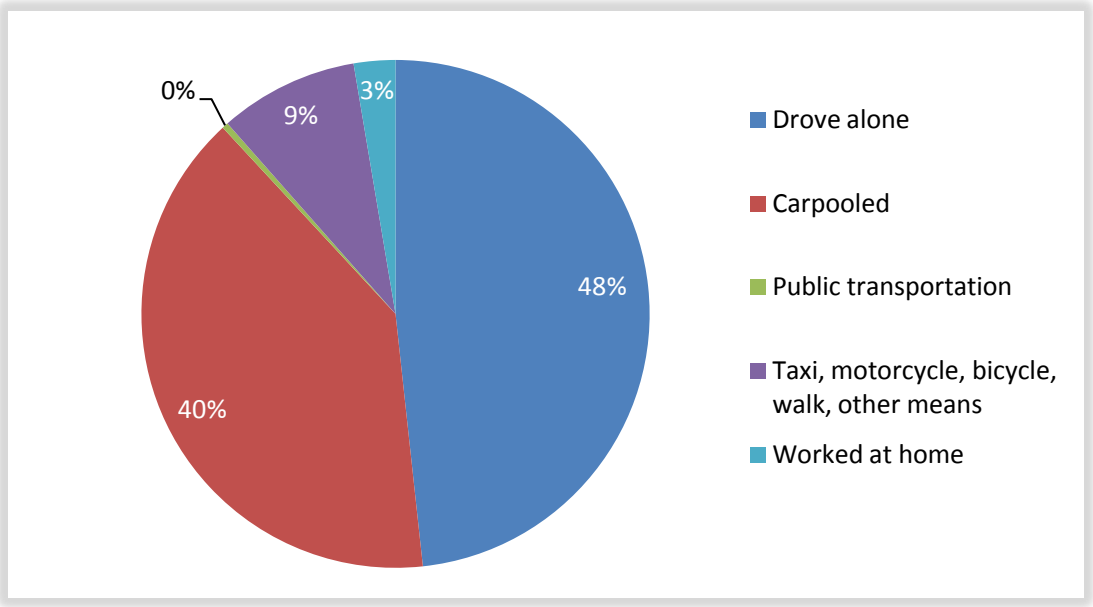
Regardless what other causes undergird mode choices of GHMPO residents in getting to work, the time it takes to work is an important consideration for many people. And while personal automobiles may often be perceived as the most direct method of travel, transportation concerns such as congestion and air quality are most often associated with automobile usage and traffic volume. Examining travel time to work can provide information on those concerns as well as on traffic congestion and sprawl.

On a national scale, American workers are spending more time than ever getting to work. In 2000, the national average travel time to work was 25 minutes and 30 seconds, an increase of over two minutes compared to 1990. Ten million workers nationwide now travel 60 minutes or more to their jobs and 6.7 million of them are workers in large metropolitan statistical areas (MSAs).

In the GHMPO area, average travel time to work is slightly above the national mean, at 25.7 minutes, or approximately 25 minutes and 42 seconds. The importance of this difference is best illustrated by comparing the number of GHMPO residents falling within various intervals of travel time to work between the 2000 Census and 2005–2008 ACS data, as in **Figure 2-16**.

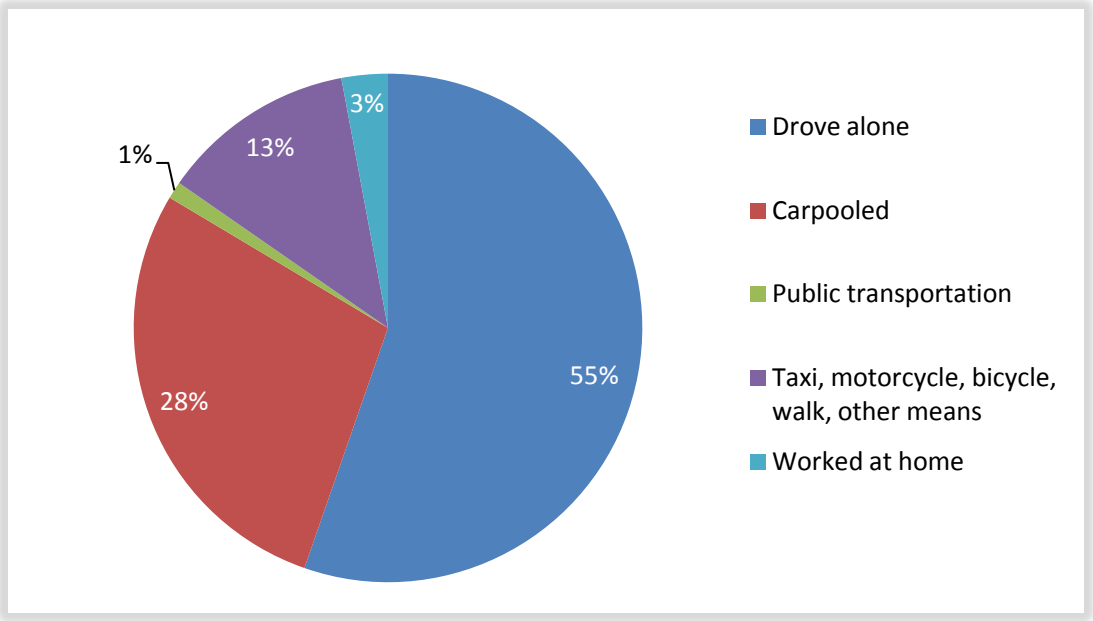
While every interval demonstrated an increase in travel time to work except for the 20 to 24 minute interval, only some have been calculated to be statistically significant—that is, sufficiently increased to be more likely due to some underlying cause beyond chance variation: 25 to 29 minutes, 30 to 34 minutes, and 45 to 59 minutes. This trend toward increasing travel time to work can provide a valuable context for evaluating the existing conditions of the GHMPO transportation system.

Figure 2-12: Below Poverty Mode to Work, 2000 Census



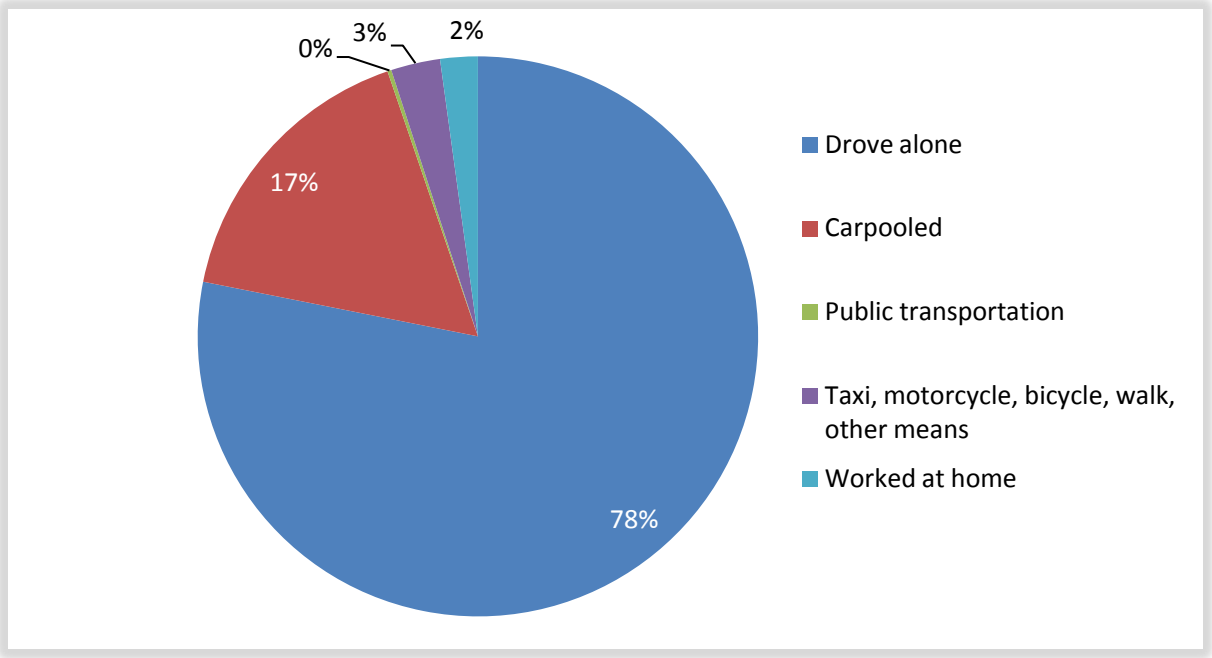
Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

Figure 2-13: Below Poverty Mode to Work, 2005–2008 ACS



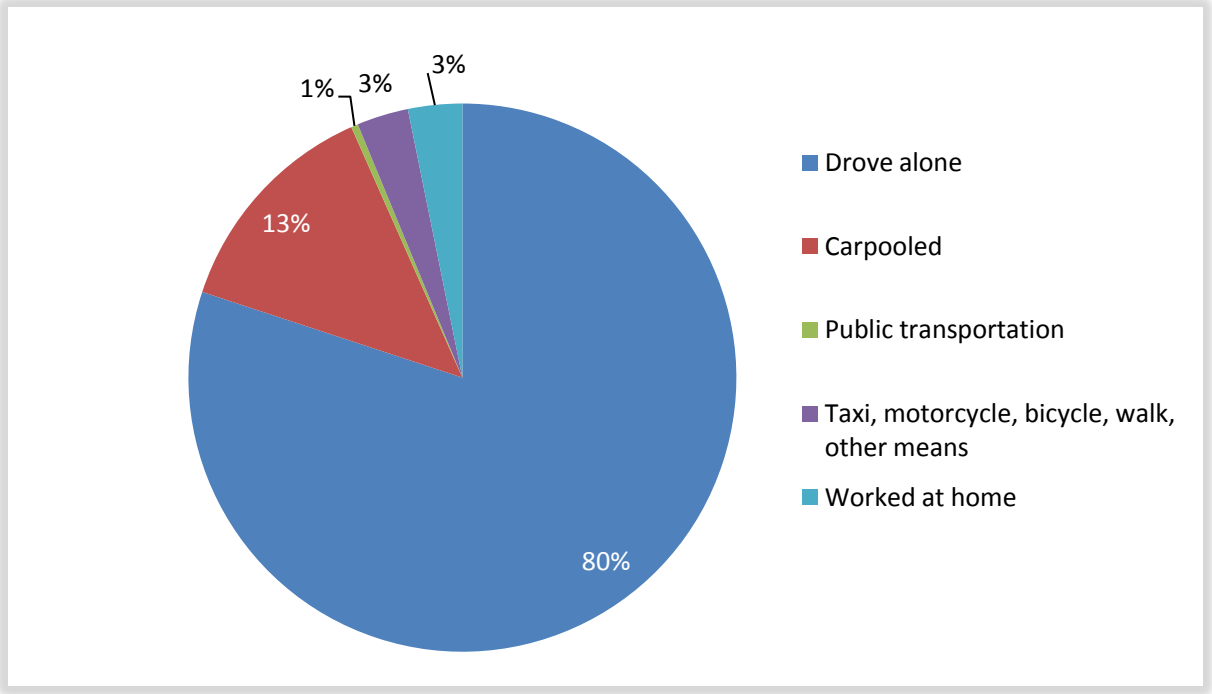
Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

Figure 2-14: Above Poverty Mode to Work, 2000 Census



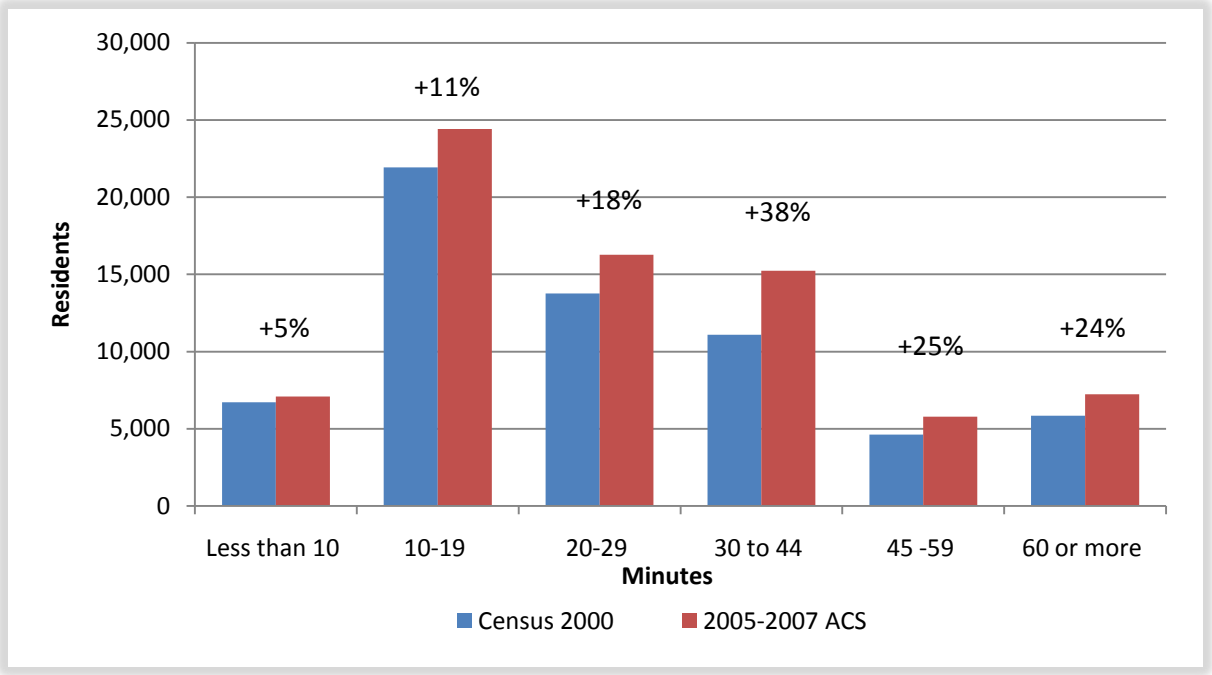
Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

Figure 2-15: Above Poverty Mode to Work, 2005–2008 ACS



Source: CTPP2000 Table 1-002 and 2005–2008 ACS Table C08301.

Figure 2-16: Travel Time to Work



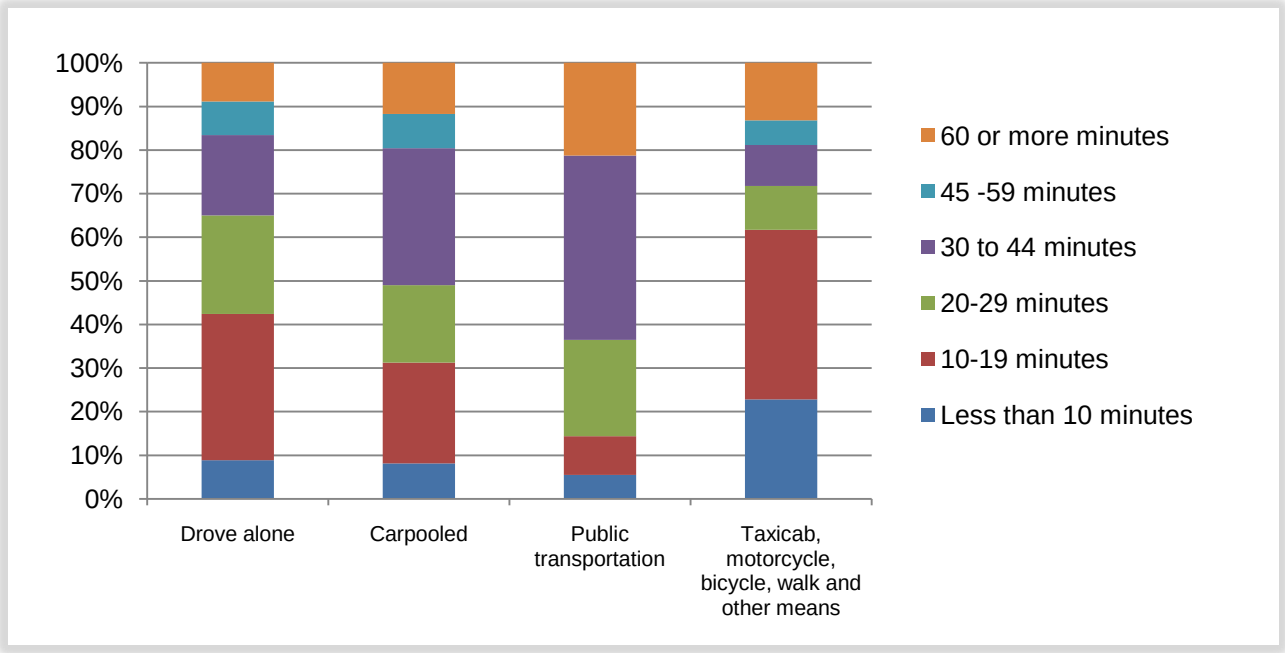
Source: CTPP2000 Table 1-118 and 2005–2008 ACS Table C08136.

An important element of the increased travel time, however, is its correlation with mode choices. **Figure 2-17** examines percentage shares of travel time to work by mode of transportation, using the 2005–2008 ACS data. As this figure demonstrates, there seems to be a correlation between alternative modes of travel and the more extreme of travel times. Nearly 70 percent of public transportation users, for example, have commutes that range from thirty minutes to more than sixty minutes, while nearly one-fourth of those commuting by other means have a less than ten minute commute. This correlation may indicate that some GHMPO transportation system users are basing their mode choices on the length of their commute.

2.9 Highways

The Dwight D. Eisenhower National System of Interstate and Defense Highways, commonly called the Interstate Highway System, serves a national purpose in moving people and goods through the United States. The GHMPO area is served by one interstate highway, I-985/SR 365. I-985 provides a limited-access connection between Gainesville and the Atlanta metropolitan area. The extension of the interstate northeast as SR 365 provides a 4-lane route into the north Georgia Mountains. GDOT recently installed Intelligent Transportation Systems (ITS) such as variable message signs and video cameras along I-985 in Hall County.

Figure 2-17: Travel Time to Work, 2005–2008 ACS



Source: CTPP2000 Table 1-118 and 2005–2008 ACS Table C08136.

Access to other cities in close proximity to the GHMPO area is provided by such arterials as the following: U.S. 129 (Athens Highway/Cleveland Highway), SR 60 (Thompson Bridge Road/Candler Road), SR 369 (Browns Bridge Road), and SR 53 (Winder Highway/Dawsonville Highway). These are the heaviest traveled routes in the GHMPO area. Between these roads and the remainder of the GHMPO roadway network, total daily vehicle miles traveled (DVMT) per capita is 24.8 miles.

2.9.1. National Highway System

The National Highway System (NHS) was developed by the U.S. Department of Transportation (U.S. DOT) in cooperation with the states, local officials, and MPOs and it includes the following subsystem of roadways important to the nation's economy, defense, and mobility:

- Interstate: The Eisenhower Interstate System of highways, mentioned above, retains its separate identity within the NHS.
- Other Principal Arterials: These are highways in rural and urban areas which provide access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility.
- Strategic Highway Network (STRAHNET): This is a network of highways which are important to the United States' strategic defense policy and which provide defense access, continuity and emergency capabilities for defense purposes.
- Major Strategic Highway Network Connectors: These are highways which provide access between major military installations and highways which are part of the Strategic Highway Network.
- Intermodal Connectors: These highways provide access between major intermodal facilities and the other four subsystems making up the National Highway System.

In Hall County, the following are classified as NHS highways:

- I-985/SR 365
- US 129
- US 23

2.9.2. Intermodal Connectors

Intermodal connectors are the freight linkages between the private intermodal transfer points or terminals and the public carriers or transportation routes. Therefore, these connectors are the interface between private and private or private and public infrastructure elements.[1] The NHS intermodal connectors are crucial public roadways that serve the following major facilities:

1 National Surface Transportation Policy and Revenue Study Commission. Commission Briefing Paper 3J-01 Current Financing and Future Needs of Other Components of the Surface Transportation System. TranSystems, Mach 2007.

- Public Transit Stations
- Ports
- Airports
- Truck/Rail Terminals
- Intercity Bus Stations
- Amtrak Stations
- Pipeline/Truck Terminals
- Ferry Terminals
- Multimodal Passenger Sites

Intermodal connectors were designated in cooperation with State Departments of Transportation (DOTs) and MPOs based on criteria developed by FHWA and U.S. DOT. NHS connectors are typically short, averaging less than two miles in length. They are usually local, county, or city streets and generally have lower design standards than mainline NHS routes, which are primarily Interstates and arterials. Intermodal connectors serve heavy truck volumes moving between intermodal freight terminals and mainline NHS routes, primarily in major metropolitan areas.

These connectors typically provide this service in older, industrialized, and other mixed land use areas where there are often physical constraints or undesirable community impacts.

2.9.3. Major Bridges

Lake Lanier and its many amenities serve as a major traffic generator for residential, tourism, and recreation trips in the GHMPO area. There are five bridges that provide necessary mobility and connectivity for travelers and residents.

These five bridges and the arterials that serve them are the following:

- Browns Bridge Road (SR 369);
- Dawsonville Highway (SR 53);
- Thompson Bridge Road (SR 60);
- Cleveland Highway (SR 11/US 129); and
- Clarks Bridge Road (SR 284).

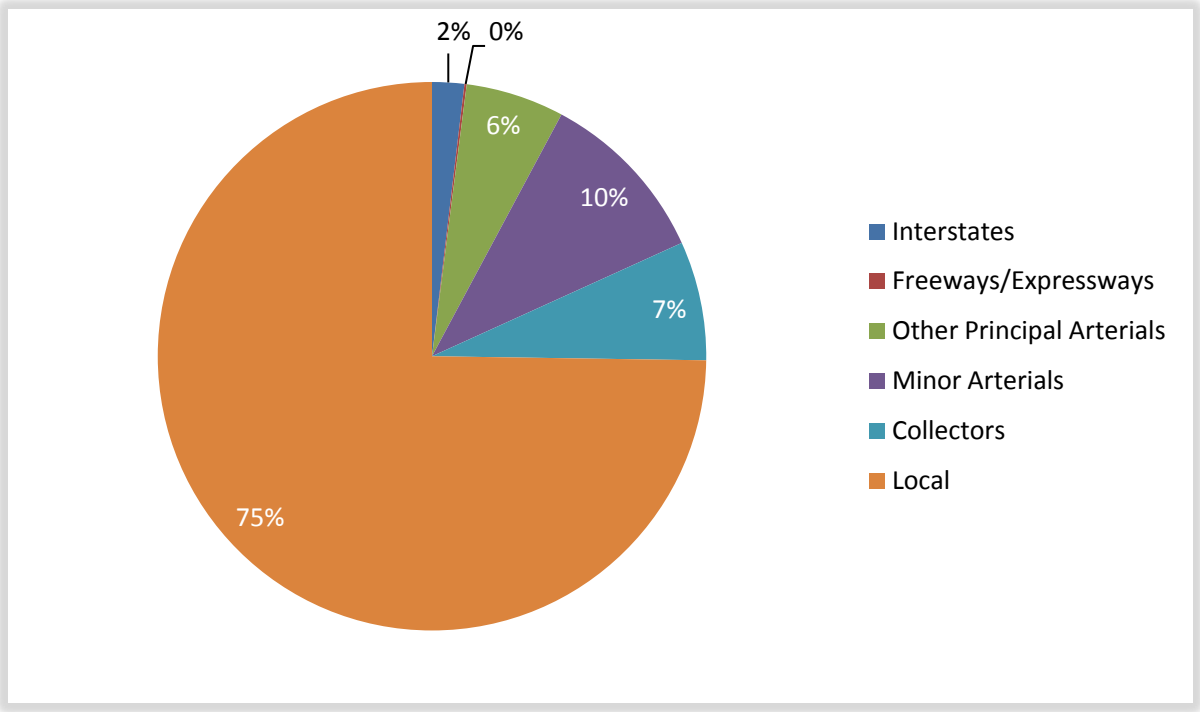
As a center for employment and commercial, medical, and educational facilities and services, the GHMPO area is a regional transportation hub for neighboring counties such as Jackson, Banks, Lumpkin, White, and Habersham, to which these bridges help it connect.

2.9.4. Functional Classification System

Roadway classification is a necessary step toward assessing and evaluating the effectiveness of the roadway network. Individual roads depend on surrounding and intersecting roads to create a functioning network. Based on 2008 Federal Highway Statistics, the GHMPO area has 741 highway miles and a total of 2,953,000 daily vehicle miles traveled (DVMT). These statistics are specifically for the Gainesville MSA. As previously noted the Gainesville MSA does not precisely overlap Hall County; as Hall County is what forms the border for GHMPO, the measurements cited in this section do not exactly reflect the state of GHMPO. However, for ease of reference, these Gainesville MSA data are treated as though they are representative of GHMPO.

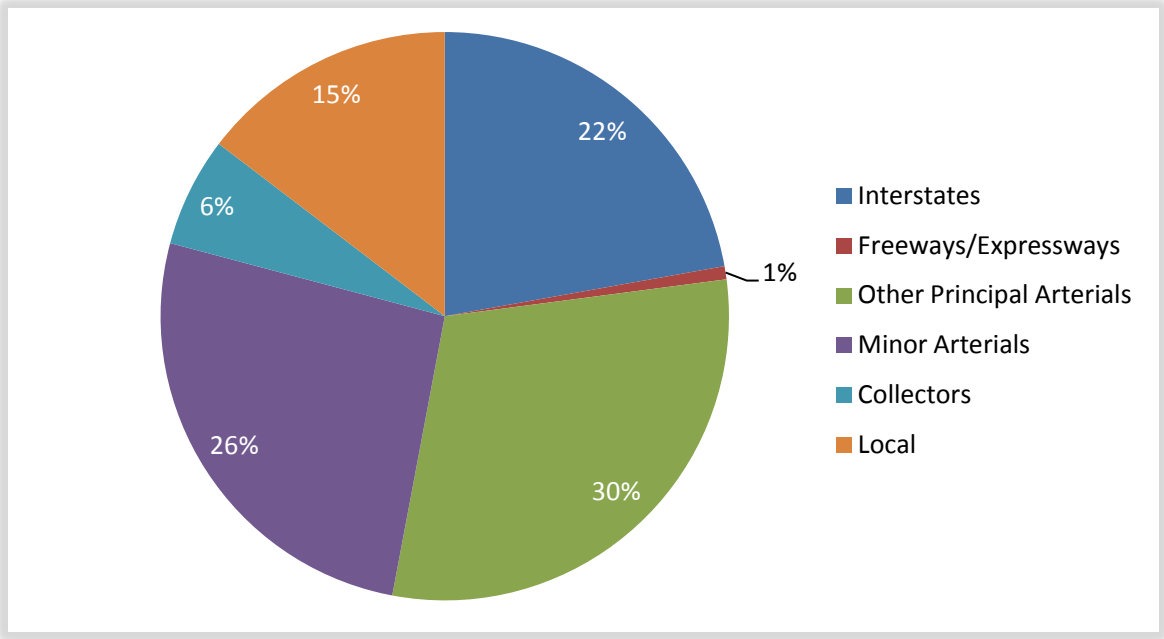
Toward this end, the statistics cited throughout this section are based on the Federal Functional Classification System. This system is used by GDOT to classify roads in the study area by categorizing a road section based on attributes common to its role and function in the network. The following provides a summary of the functional classification roadway miles and DVMT in the GHMPO area portrayed in **Figure 2-18** and **Figure 2-19**:

Figure 2-18: Highway Miles by Functional Classification



Source: FHWA Highway Statistics 2008.

Figure 2-19: GHMPO Daily Vehicle Miles of Travel by Functional Class



Source: FHWA Highway Statistics 2008.

- **Interstates and Expressways** – These are defined as significant highways featuring limited access and continuous, high-speed movements for a wide variety of traffic types. Interstates and Expressways account for 15 miles in the GHMPO area, which is 2 percent of the total highway system. While the actual Interstate and Expressway total miles within the GHMPO area are small, Interstates and Expressways account for 22.9 percent of the DVMT in the GHMPO area.

- **Arterials** – Classified as major or minor, these roads connect activity centers and carry large volumes of traffic at moderate speeds. The arterial system in the GHMPO area totals approximately 120 miles, consisting of 43 miles of Other Principal Arterials and 77 miles of Minor Arterials in the GHMPO area. Arterials comprise approximately 16.2 percent of the GHMPO highway system but account for 56.2 percent of the DVMT.

- **Collectors** – Collectors typically allow access to activity centers from residential areas. Collectors can also be categorized as major and minor, depending on their setting being either urbanized or rural. Their purpose is to collect traffic from streets in residential and commercial areas and distribute it to the arterial system. The collector system in the GHMPO area consists of 52

total miles, which is 7 percent of the GHMPO highway system, and it carries 6.2 percent of the system's DVMT.

- **Local Streets** – These streets feed the collector system from low volume residential and commercial areas. Local streets are usually found in subdivisions and rural areas. Local streets account for 554 miles, which is 74.8 percent of the GHMPO highway system, but they only carry 14.6 percent of the DVMT in the GHMPO area.

2.10 Airports

Besides the personal automobile, the GHMPO transportation system facilitates other modes of travel as well. The Lee Gilmer Airport (GVL) provides private general aviation air service, including fuel sales and aircraft storage. The airport is located on the south side of the City of Gainesville, with access provided by Queen City Parkway/ SR 60 and Aviation Boulevard. The airport's main runway is 5,500 feet long by 100 feet wide (Runway 5/23). The airport also offers a 4,000-foot by 100-foot runway during daylight hours (Runway 11/29). As of 2006, with 106 based aircraft (including corporate jets), the airport averages approximately 100 operations per day.

GVL is considered a Level III/Business airport of regional impact by GDOT. This is defined as being capable of accommodating commercial aircraft or a variety of business and corporate jet aircraft. GVL meets requirements for its Level III classification by way of its runway length and its precision instrument landing tools. GVL currently has an

instrument landing system (ILS), built as a result of federal funding for this improvement, on Runway 5/23. Runway 11/29 does not have an ILS in place. [2]

While GVL is a growing facility that offers significant economic development opportunities, passenger and most freight aviation transportation available to Hall citizens and businesses will be offered at Hartsfield-Jackson Atlanta International Airport.

2.11 Freight System

The GHMPO area's proximity to the Atlanta metropolitan area means that its transportation network assists with the freight burdens passing through the area. As noted, GHMPO itself is not a primary destination for airborne freight, but other modes of freight transportation are present.

2.11.1. Truck Transportation

Primarily, the GHMPO area has two major freight-bearing routes. E. E. Butler Parkway serves significant truck traffic between the industrial areas in the eastern portion of the City of Gainesville and I-985, with traffic volumes highest near I-985 and decreasing slightly approaching downtown Gainesville. U.S. 129, the other common route for freight traffic, traverses north out of Gainesville into White County and provides access to the tourist destination of Helen.

[2] AirNav, LLC. http://www.airnav.com/airport/KGVL.

2.11.2. Freight Rail

Two major active freight rail lines run in a north-south direction through Hall County. The Norfolk Southern Atlanta/Greenville line parallels I-985/SR 365 and passes through Flowery Branch, Oakwood, Gainesville, and Lula. The CSX line runs south from Gainesville to Athens.

2.12 Existing Public Transportation Services

2.12.1. Background - Hall Area Transit

Hall Area Transit (HAT) has served the City of Gainesville and Hall County since 1983. As the public transit service provider for the county, HAT's mission is to provide efficient, effective, and affordable public transportation, allowing riders to access employment, retail shops, recreational facilities, medical offices, social service agencies, government offices, and other key destinations.

HAT provides public transportation to the urban and rural portions of Gainesville and Hall County. Services include scheduled fixed route service and paratransit service within the City of Gainesville and a demand-responsive van service in the outlying areas of the county. The urban fixed route service, known as the Red Rabbit, operates Monday through Friday from 6:30 am to 6:00 pm and consists of seven fixed routes:

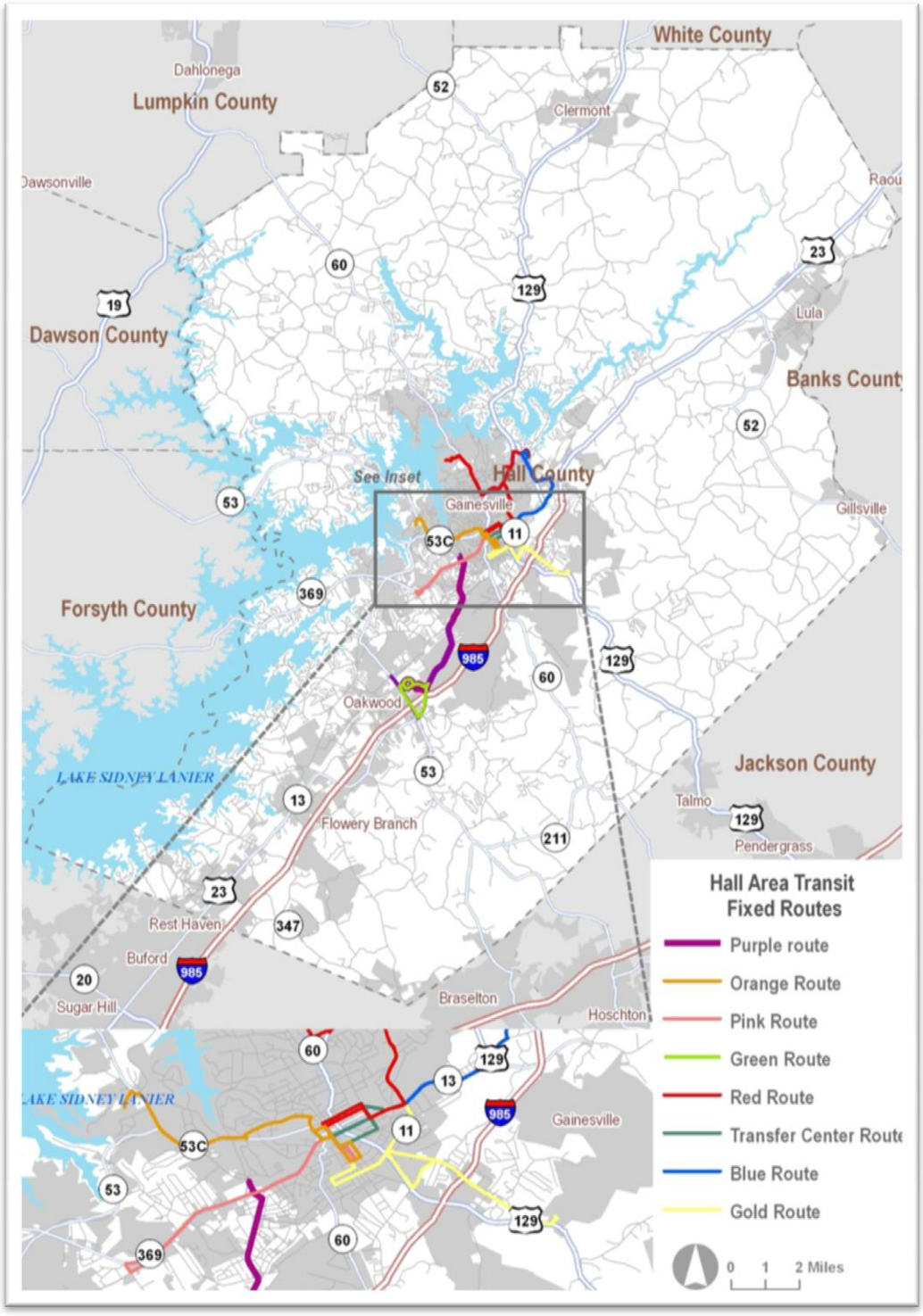
- Route 1: Midtown-Health Department
- Route 2: Midtown-Lanier Medical Park

- Route 3: Midtown-Clark's Bridge/Thompson Bridge
- Route 4: Library-Otila Drive
- Route 5: Midtown-Memorial Park
- Route 6: Colonial Mall-Atlanta Highway-Gainesville State College
- Route 7: Gainesville State College-Blackshear Place Library

The Transit System Map in **Figure 2-20** illustrates HAT's current coverage area for the Red Rabbit service. In September 2010, HAT began operating Route 7: Gainesville State College-Blackshear Place Library, which provides service between the Thurman Tanner Park and Ride Lot at SR 13 and I-985 and Gainesville State College.

HAT's demand-responsive service "Dial-A-Ride" also operates Monday through Friday from 6:30 am to 6:00 pm. The Dial-A-Ride service provides service within the rural portions of Hall County as well as complementary paratransit service for the Red Rabbit within a three-quarter-mile distance of the fixed routes to persons with disabilities who because of their disability are unable to access or use the Red Rabbit services, in compliance with the Americans with Disabilities Act (ADA) of 1990. The Dial-A-Ride service is provided on a curb-to-curb, shared-ride basis using vans equipped with special lifts. Dial-A-Ride trips are scheduled by contacting HAT 48 hours in advance to reserve service.

Figure 2-20: Existing Red Rabbit Transit System Map



Source: Hall Area Transit.

Higher population / employment density can facilitate the use of transit, walking and biking reducing the demand on the highway system and resulting in a more cost-effective multimodal transportation system. In particular developing the transit routes along the dense areas of any region can improve the efficiency of the transit system and reduce traffic congestion. **Figures 2-21** and **2-22** displays the existing HAT system overlaid on 2008 population and employment density maps, respectively. From these figures it is evident that the areas with high concentration of people and employment are well connected through the fixed route service.

2.13 Service Characteristics

2.13.1. Red Rabbit Service

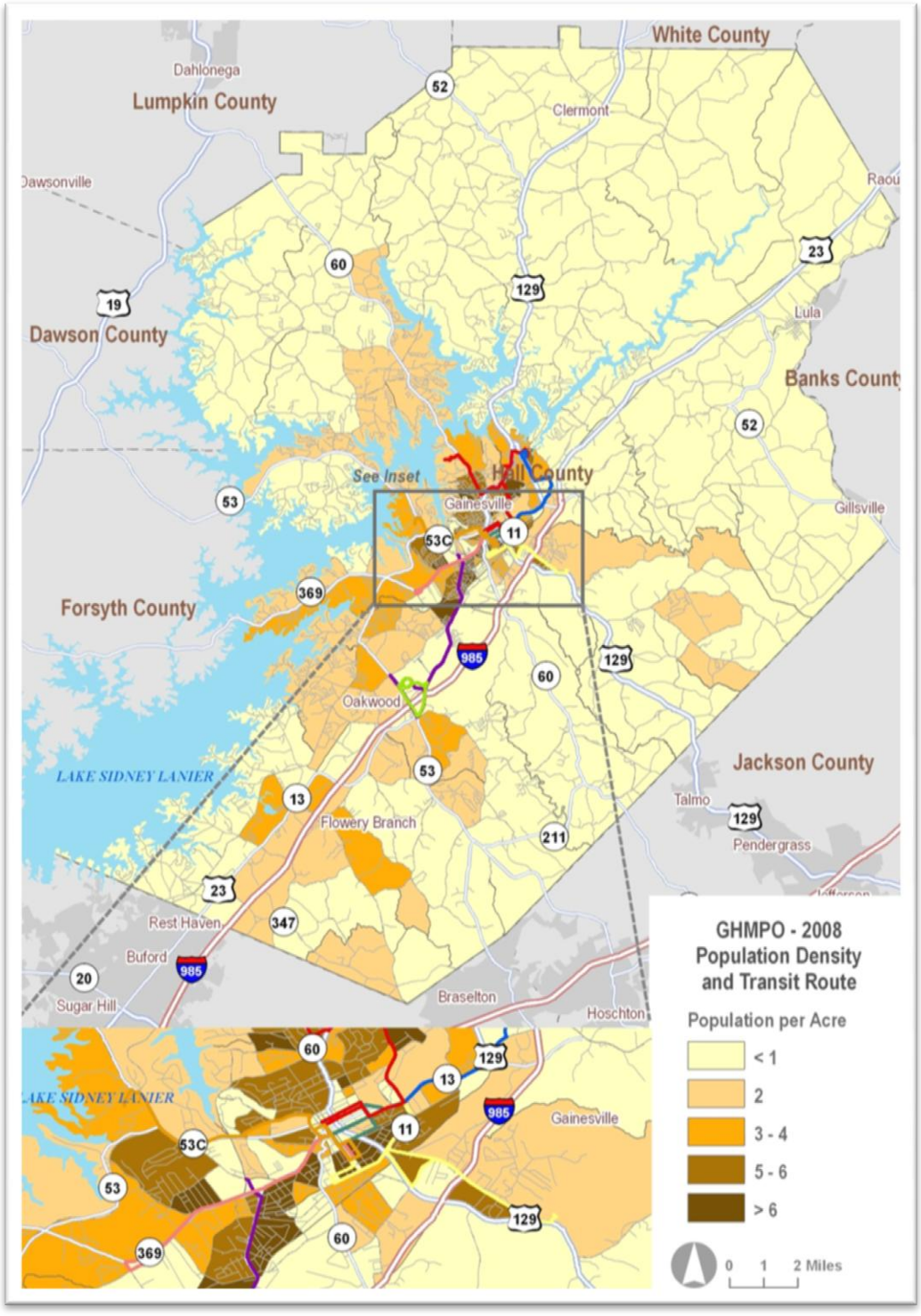
Hall Area Transit has provided fixed route bus service in Hall County since January 2001. AS noted above, the HAT Red Rabbit service currently operates seven fixed bus routes which operate within the City of Gainesville and in the Atlanta Highway corridor to Gainesville State College. The Red Rabbit routes operate Monday through Friday between 6:30 am and 6:00 pm. There is no service on weekends or county holidays. Regular fares on the Red Rabbit are $1.00 per one-way trip. Persons age 60 and over, students, children under age 18, and persons carrying a Medicaid card have a reduced fare of $0.50. Transfers between routes are free and remain valid within 50 minutes from the time of issuance. **Table 2-4** provides a summary of service characteristics of the routes.

The Red Rabbit routes provide service with nine 15-passenger vehicles and two spares. All HAT fixed route vehicles are accessible under the requirements of the Americans with Disabilities Act (ADA), and all vehicles are equipped with wheelchair lifts.

2.13.2. Demand-Responsive Service

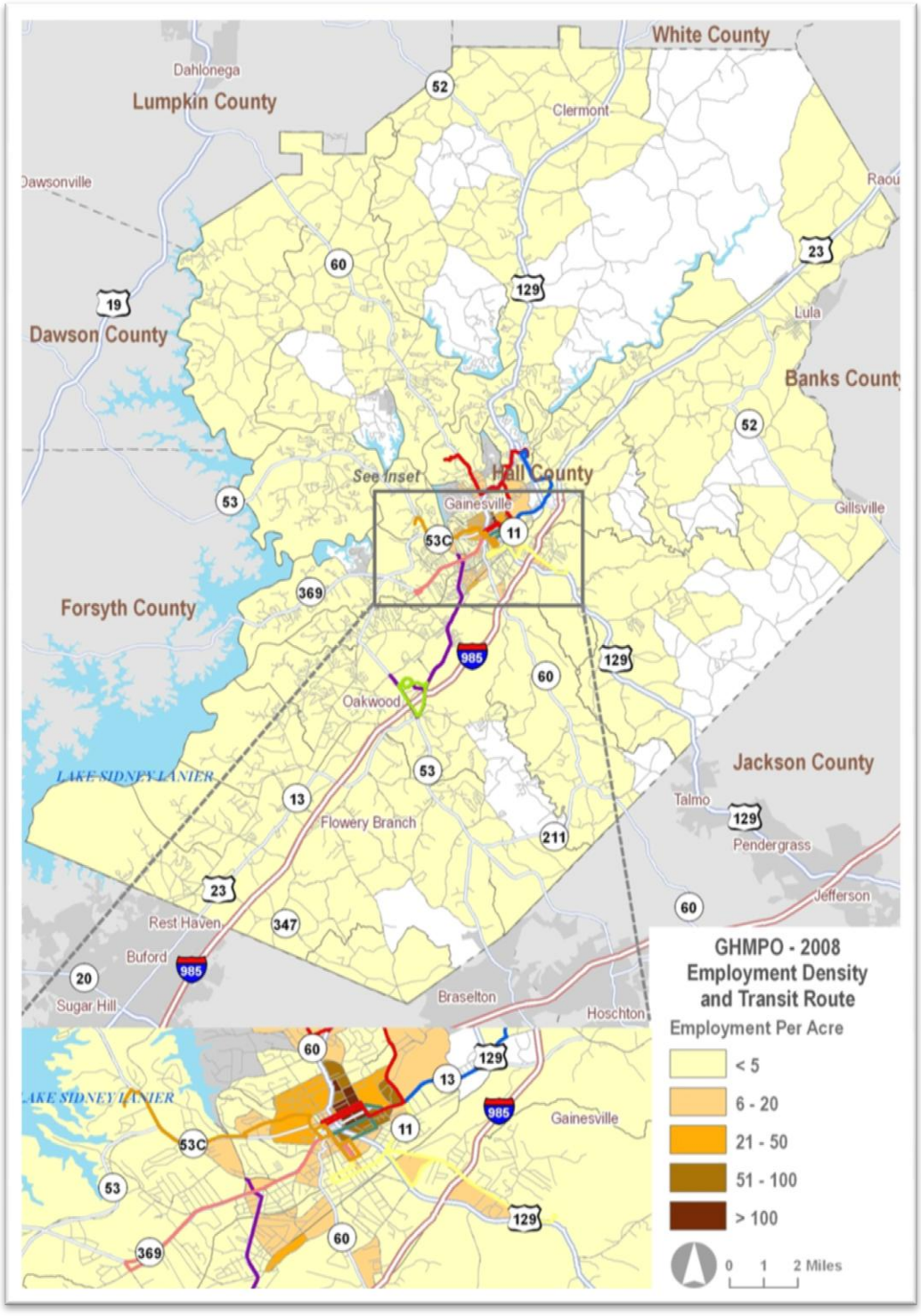
There are two components to the demand-responsive service offered by HAT. These include the ADA-complementary paratransit service required for the service area within a three-quarter-mile distance from Red Rabbit transit stops, and the demand-responsive van service offered by HAT to all persons residing and working in Hall County outside of the Red Rabbit service area. The countywide service provided by HAT is called "Dial-A-Ride" and the ADA-complementary service is called "Mobility Plus."

Figure 2-21: 2008 Population Density and HAT Routes



Source: Hall Area Transit, GHMPO Socio-economic Allocations by Traffic Analysis Zones.

Figure 2-22: 2008 Employment Density and HAT Routes



Source: Hall Area Transit, GHMPO Socio-economic Allocations by Traffic Analysis Zones.

Table 2-4: Red Rabbit Route Characteristics

Red Rabbit Route	Primary Corridors Served	Major Time Points/Destinations Served	Service Frequency/ Hours of Operation
Route 1: Midtown-Health Department	High Street MLK Boulevard Athens Street Main Street Jesse Jewell Parkway	Route 1 North HAT Office Greyhound Bus Station Hospital Brenau University Library Route 1 South HAT Office INK/Brenau/AVITA Health Department Lenox Park Harrison Square Good News	Route 1 North 60 minutes 7:02 am to 5:02 pm Route 1 South 60 minutes 6:30 am to 5:30 pm
Route 2: Midtown-Lanier Medical Park	Jesse Jewell Parkway College Avenue Limestone Parkway Beverly Road White Sulphur Road	HAT Office Carol Lundy Center Guilford Clinic Lanier Park Hospital Aquatic Center Community Service Center	30 minutes 6:30 am to 5:30 pm
Route 3: Midtown-Clark's Bridge/ Thompson Bridge	Main Street Jesse Jewell Parkway South Enota Drive Linwood Rive Thompson Bridge Road, Oak Tree Drive Park Hill Drive Clark's Bridge Road	Transfer Center Jesse Jewell Medical Arts Building Frances Meadows Aquatic Center Windcliff Apartments Enota/Publix Linwood Apartments Sherwood Plaza/Wendy's	60 minutes 6:30 am to 4:30 pm

Red Rabbit Route	Primary Corridors Served	Major Time Points/Destinations Served	Service Frequency/ Hours of Operation
Route 4: Library-Otila Drive	Otila Drive Dawsonville Highway Rainey Street Oak Street Main Street West Academy Street	Library Atlanta Union Mission Pearl Nix Parkway Home Depot Lake Forest/Otila Drive Kohl's Colonial Mall	30 minutes 7:00 am to 5:30 pm
Route 5: Midtown-Memorial Park	Main Street Jesse Jewell Parkway Pearl Nix Parkway Dawsonville Highway Shallowford Road Browns Bridge Road	HAT Office Alta Vista Cemetery Wal-Mart, Lowes Memorial Park Pearl Nix Parkway Dorsey Street	60 minutes 7:00 am to 5:00 pm Note: In September 2010, one additional bus will be added to this route to reduce service frequency from 60 to 30 minutes.
Route 6: Colonial Mall-Atlanta Highway-Gainesville State College	Atlanta Highway Pearl Nix Parkway Shallowford Road	Gainesville State College Chicopee Church Shoe Show Wal-Mart Mama Ruth's Yuriria Supermarket Department of Labor	60 minutes 6:45 am to 4:45 pm
Route 7: Gainesville State College-Blackshear Place Library	Atlanta Highway Mundy Mill Road Mathis Drive Landrum Education Drive	Thurman Tanner Park/Ride Lot Gainesville State College Lanier Technical College Wal-Mart Goodwill Oakwood Package Store Blackshear Place Library	Service to begin operation in September 2010

Source: Hall Area Transit.

For Dial-A-Ride service, HAT maintains a distance-based fare structure as follows: up to two miles, $2.00; two to four miles, $3.00; four to seven miles, $4.00; seven to nine miles, $5.00; nine to eleven miles, $6.00; and eleven to thirteen miles, $7.00. Dial-A-Ride and Mobility Plus services are shared ride, curb-to-curb operations.

HAT presently uses two vehicles to accommodate the ADA-complementary paratransit service. Each vehicle supports up to 10 ambulatory passengers with accommodations for two wheelchairs. Nine vehicles support the rural demand-responsive service area in Hall County.

2.13.3. HAT Ridership and Operations

Annual HAT operating data for 2007 through 2009 show total passenger trips, mileage, and hours as well service performance measures commonly reported by transit agencies nationwide for service efficiency, cost effectiveness, and service effectiveness. Service operating statistics are summarized in **Table 2-5**. Total passenger trips for the Red Rabbit service have increased significantly from 2007 to 2009 by nearly 64 percent to 109,820 passenger trips in 2009. During the same period, the total miles and hours operated by the system have declined slightly. The Dial-A-Ride service has experienced a variation in total ridership from 2007 through 2009, but the ridership appears relatively stable. Total service miles and hours have also decreased for the Dial-A-Ride service. The total annual operating cost for HAT has remained around $1.1 million over the last three years, though costs in 2008 were somewhat higher.

Table 2-5: HAT Dial-A-Ride and Red Rabbit Annual Passengers, Miles, Hours, and Operating Cost

Operating Statistic	Dial-A-Ride (Demand Response)			Red Rabbit (Fixed Route)		
	2007	2008	2009	2007	2008	2009
Passenger Trips	26,420	30,309	26,964	67,053	106,279	109,820
Miles	189,666	195,188	105,744	175,633	177,712	174,452
Hours	12,163	13,794	9,703	11,787	11,455	11,233
Operating Cost	$491,439	$550,201	$512,001	$598,384	$648,852	$570,625

Source: Hall Area Transit.

By providing more passenger service while reducing the service miles and hours operated, HAT has achieved greater service effectiveness, as shown in **Table 2-6**. Both the Dial-A-Ride and Red Rabbit services have increased their service effectiveness.

Table 2-6: Service Effectiveness Measures

Service Effectiveness Measures	Dial-A-Ride (Demand Response)			Red Rabbit (Fixed Route)		
	2007	2008	2009	2007	2008	2009
Passenger Trips per Mile	0.14	0.16	0.25	0.38	0.60	0.63
Passenger Trips per Hour	2.2	2.2	2.8	5.7	9.3	9.8

Source: Hall Area Transit.

Transit service efficiency considers the service cost per hour and cost per mile, while cost effectiveness considers cost per passenger trip. Results for HAT are shown in **Table 2-7**. For both the Dial-A-Ride and Red Rabbit service, the cost per hour and cost per mile have varied. The cost per passenger trip has remained fairly consistent for the Dial-A-Ride service between $18.00 and $19.00 a trip. The cost per passenger trip for the Red Rabbit service declined from $8.92 to $5.20, indicating an increase in cost effectiveness between 2007 and 2009.

Table 2-7: Service Efficiency and Cost Effectiveness Measures

Service Efficiency and Cost Effectiveness Measures	Dial-A-Ride (Demand Response)			Red Rabbit (Fixed Route)		
	2007	2008	2009	2007	2008	2009
Operating Cost per Hour	$40.40	$39.89	$52.77	$50.76	$56.64	$50.80
Operating Cost per Mile	$2.59	$2.82	$4.84	$3.41	$3.65	$3.27
Operating Cost per Passenger Trip	$18.60	$18.15	$18.99	$8.92	$6.11	$5.20

Source: Hall Area Transit.

2.13.4. Express Bus Service

The service area for the Georgia Regional Transportation Authority (GRTA), operator of Xpress commuter bus services in the Atlanta metropolitan area, does not currently include Hall County. However, given the county's inclusion within the 20-county Atlanta nonattainment area for ozone and the 22-county nonattainment area for fine particulate matter, GRTA is likely to consider expanding commuter bus service to Hall County as part of its long-range service planning if capital and operations funds are available.

2.13.5. Transit and Commuter Facilities

HAT maintains the Red Rabbit Transfer Station at High and Pine Streets, a predominantly industrial area, at the southern end of downtown Gainesville. A small number of parking spaces are available at this location, although park-and-ride

utilization is low. HAT has a transfer point at a shelter on Prior Street at the Community Service Center. The Service Center parking lot provides a storage site for HAT vehicles.

There are currently 22 shelters in place at stops along HAT Red Rabbit bus routes. Shelters include a posted schedule and route map to help riders identify the next scheduled time of arrival.

The rising costs of inter-county and long-distance commuting, particularly to the Athens and Atlanta metropolitan areas are making park and ride lots an attractive option for alternative transportation in Hall County. Park and ride lots support ridesharing activities while providing a potential future location for express bus services. GDOT operates one park and ride lot in Oakwood, at the intersection of SR 53 (Winder Highway) and Wallis Road, just south of the I-985 northbound off-ramp at Exit 16. The lot has 126 parking spaces. The 493-space Thurman Tanner Park and Ride Lot was recently constructed at SR 13 (Atlanta Highway) and I-985 as part of the I-985 interchange project. HAT will begin new service between the park and ride lot and Gainesville State College in September 2010. In addition, many Atlanta-bound Hall County commuters use the park and ride lot in Gwinnett County at SR 20 (Buford Drive) just west of the I-985 southbound on-ramp. Served by GRTA Xpress Route 101, the Buford park-and-ride has 335 spaces and is located approximately three miles south of Hall County.

2.13.6. Other Transportation Service Providers

Gainesville is the only Georgia city outside of Atlanta and Savannah to have both national intercity passenger rail and bus services. The Gainesville-Hall area is served by a number of private taxicab services as well.

Amtrak Passenger Rail Service – National intercity rail service is offered daily by Amtrak. The Gainesville Amtrak station is on the Amtrak Crescent line which provides service from New Orleans to New York. The passenger station is located on the north side of the Norfolk Southern tracks on Industrial Boulevard. Station hours are from 7:00 am to 8:30 am (service to New Orleans) and from 8:00 pm to 9:30 pm (service to New York City). Ticket purchases are available by telephone or online. According to the Amtrak Fact Sheet for Georgia, passenger traffic (boardings and alightings) was 5,541 in fiscal year (FY) 2008 and 5,056 in FY 2009. Amtrak is undertaking improvements to the Gainesville station for compliance with the Americans with Disabilities Act (ADA) under a American Recovery and Reinvestment Act of 2009 (ARRA) "Mobility First" grant by July 26, 2010.

Greyhound Bus Service – National intercity bus service is provided by Greyhound Lines from a passenger station on Martin Luther King Jr. Boulevard. The station is open from 7:30 am to 5:00 pm Monday through Friday and from 7:30 am to noon on Saturday. Currently, the station is served by two buses per day from Gainesville to Atlanta at 8:10 am and 8:25 pm.

Taxicabs – The GHMPO area has a number of private taxicab operators providing service within the City of Gainesville and Hall County, as shown in **Table 2-8**. According to the City of Gainesville, eight taxicab companies are currently licensed for operation within city boundaries. An additional four taxicab companies are providing taxicab services in Hall County. A number of the taxicabs provide service for the growing Spanish-speaking population. Taxicabs offer variable distance-based rates for services to destinations throughout Hall County. Several offer flat-fee rates to major shopping sites in Gwinnett and Banks/Jackson Counties, as well as shuttle service to Hartsfield-Jackson Atlanta International Airport (HJAIA) and other destinations in Atlanta and Athens. A similar number of taxi services based just outside of Hall County (in Buford, Winder, etc.) serve a number of Hall County's incorporated areas.

Table 2-8: Taxicab Operators in GHMPO Area

Gainesville	Hall County
Aztec	Leltri-Sol
Del Norte	Fiesta Cab Company
El Dorado	Mr. Taxi Service
El Palmar	Veracruz Taxi
Fiesta	
Latin American	
Los Potros	
Uni	

Source: City of Gainesville Administrative Services Division, Hall County Business License Department.

Airport Shuttles – One airport shuttle is registered at HJAIA that provides shared-ride services between HJAIA and Gainesville, AAA Airport Express. One-way trip rates currently are $45 per person.

2.13.7. Human Service Transportation Providers

In addition to HAT and the taxicab services, several private agencies provide transportation services to individual segments of the population, as identified in the *GHMPO Human Services Transportation Plan* (February 2009). **Table 2-9** lists each provider and the populations they serve.

Many of these providers offer service to the northeast Georgia area as well as the Gainesville-Hall area. Generally speaking, the majority of private transportation services are available between 8:00 am and 5:00 pm, while some have longer service hours and a few provide 24-hour service.

Table 2-9: Human Service Transportation Providers and Population Served

Provider	Primary Service/Segment Served
Medtran Medical Transport	Transportation for persons with disabilities, seniors
Family Medical Transport	Family ambulance; seniors
Southeast Tran	Medicaid and doctor appointments; seniors
Veterans Community Outreach Foundation	Veterans
Village Nursing Care	Care, errands, and medical transportation; seniors
Community Service Center	Various human service programs
Disability Resource Center	Non-profit center serving northeast Georgia; persons with disabilities
Legacy Link	Designated Area Agency on Aging in northeast Georgia; seniors

Source: GHMPO Human Service Transportation Plan.

2.13.8. Passenger Rail

AS noted earlier, Amtrak provides daily passenger service along this line with a Gainesville station stop in each direction. The Georgia Rail Passenger Program (GRPP) envisions future commuter rail service between Atlanta and Gainesville. This commuter rail line would have seven stations beginning at Lenox and going to Norcross, Duluth, Suwanee, Sugar Hill, Oakwood, and Gainesville. The GDOT study projects that there would be more than 7,000 daily passenger trips and a substantial part of the operating costs could potentially be recovered from the fare box (estimated recovery about 60 percent).

The same rail line would serve as part of an intercity rail program also envisioned by GDOT. The Intercity Rail Passenger Plan explores the possibility of intercity rail passenger services between Atlanta and Greenville, South Carolina, going through Gainesville. The service is projected to attract 128,000 passengers annually by 2020. Neither of these rail programs are reflected in the 2040 MTP, due to financial constraints.

2.14 Bicycle and Pedestrian Systems

In 2006, GHMPO completed a nineteen-month planning process to plan for bicycle and pedestrian facilities to serve area citizens. This planning process was the outcome of comments received during the development of the initial 2030 LRTP in 2004, where citizens expressed concern about the need for such facilities throughout the county. An extensive outreach program with two public meetings, three task force meetings, fieldwork, and a meeting with local government staff and officials was completed during the development of the plan. The plan demonstrates how to integrate bicycle and pedestrian facilities into the GHMPO planning process, identifies proposed projects and design standards for new facilities, and locates potential funding sources. The

GHMPO Policy Committee adopted the Bicycle and Pedestrian Plan on March 14, 2006, and the document is located on the GHMPO website at http://www.ghmpo.org.

2.14.1. Sidewalks

Downtown Gainesville contains an excellent sidewalk system, which connects government and office buildings, downtown merchants, and major parking areas; however, the location of sidewalks outside of the downtown area is sporadic.

2.14.2. Multi-use Trails

Currently, the Central Hall Recreation and Multi-Use Trail has been identified as a $3.9 million project in the GHMPO 2040 MTP. This multi-use trail has been proposed to be constructed in nine phases or segments, of which design has begun on at least the first. When it is completed, the Central Hall Recreation and Multi-Use Trail will stretch almost 16 miles along its course.[3]

2.14.3. Complete Streets

Complete Streets refers to a concept by which streets are designed to accommodate all users in a balanced fashion and not be geared merely toward moving as many cars as quickly as possible. By enhancing the safety and efficiency of the roadway for pedestrians and cyclists, those modes become much more viable alternatives. Federal attitudes support this concept, as demonstrated by the passage in July of 2009 of the federal Complete Streets Act of 2009. In June 2011, the Safe and Complete Streets Act of 2011 was introduced in the Senate, which is designed to create safer streets with every project built.

Not only do Complete Streets principles pertain to new construction, but retrofit measures can help rebalance streets toward alternative modes. Measures such as road and lane diets, addition of dedicated bike and pedestrian facilities, crosswalk enhancement, and traffic calming can be examined as part of the GHMPO 2040 update to ensure a seamless, gap-free non-motorized mobility network.

[3] Hall County Parks and Leisure. 2010.
http://www.hallcounty.org/files/pdfs/engineering/central_hall_trail_11_17.pdf

3. Public and Partner Participation

The 2040 MTP was developed through a continuous, comprehensive, and cooperative transportation planning process. Over a nineteen-month period, from February 2009 to August 2011, a wide variety of local residents and MPO committee members throughout the area were engaged in the planning process.

Public participation and outreach was a vital element of the 2040 MTP development process. Local stakeholders, such as local governments, businesses, community and special interests groups, and local residents provided input and feedback throughout the planning process through numerous public and MPO meetings. Public participation and stakeholder input opportunities were formally integrated at key MTP milestones. Stakeholder and public feedback were considered in the identification of issues, needs, and improvement strategies for the GHMPO area.

The basis for the public participation efforts centers on meeting the guidelines established in the MTP Public Participation Plan, which was guided by the GHMPO Public Participation Plan. The Public Participation Plan is designed to ensure timely and meaningful input into the metropolitan transportation planning process. The Plan outlines the process to involve all interested parties in the GHMPO transportation planning process and the development and amendment of major transportation studies undertaken by GHMPO. The overall objective is to provide a process that is proactive, provides complete information, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement.

During the development of the 2040 MTP, the GHMPO adopted the Limited English Proficiency (LEP) Plan in 2010. The LEP identifies a process for individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English to participate in the transportation planning process in the GHMPO area. All three MTP public meetings provided Spanish translators to assist in communicating and collecting MTP information to anyone who requested this service.

Appendix C provides comprehensive information related to the public participation efforts conducted during the development of the 2040 MTP. The following sections in this chapter provide a summary of the Public Participation meetings, and MPO committee meetings.

3.1 Public Participation Meetings

During the 2040 MTP process, three rounds of public participation meetings were conducted to gather public input at key milestones. The first public meeting was held on July 14, 2010 at the Georgia Mountain Center in Gainesville. The purposes of the first public meeting was to discuss and identify 2040 MTP goals and objectives and encourage local residents to get involved in the planning process. The second public meeting was held on March 8, 2011 at the Georgia Mountain Center in Gainesville. The purpose of the second public meeting was to solicit multimodal transportation needs and potential improvements to address these deficiencies. The third public meeting was held on June 14, 2011 at the Georgia Mountain Center in Gainesville. The purpose of the third public meeting was to receive input and comments on the draft 2040 MTP. Information from each of the three public meetings played a significant role in guiding the development of the MTP and meeting notes from all public meetings are provided in **Appendix C**, which is under a separate cover.

The public meetings featured several ways for participants to provide comments and ask questions: in a group setting, one-on-one, and in writing. By offering a variety of ways to engage with local residents, the meetings' format helped elicit comments from people who might have been uncomfortable sharing their ideas in a group setting.

Randy Knighton, Hall County Planning Director, presenting at Public Meeting #2

3.2 MPO Meetings

During the 2040 MTP process, the Citizen Advisory Committee, Technical Coordinating Committee, and the Policy Committee were briefed on major milestones to received input and buy-in from local residents, planning directors, and elected officials.

Policy Committee members getting briefed on the 2040 MTP in March 2011

4. Goals, Objectives and Performance Measures

Regional coordination, collaboration, and consensus-building must be the foundation when developing a feasible Metropolitan Transportation Plan that will improve mobility, connectivity, and accessibility for all users. The 2040 MTP is the document for connecting the region's multimodal transportation goals to an official, coordinated action plan that identifies financially constrained projects, programs, and policies. Thus, one of the first tasks in updating the MTP requires reviewing and updating goals that reflect local values and desires.

Updating goals at the beginning of the MTP provides a clear direction throughout the entire planning process. Outlining reasonable goals that improve safety, traffic operations, accessibility, connectivity, mobility, and livability for all residents is the foundational piece of developing a feasible MTP. MTP goals must be comprehensive in that they must address local values and needs and the goals must also focus on meeting state and federal requirements.

4.1 SAFETEA-LU

As noted earlier, On August 10, 2005, the federal surface transportation bill SAFETEA-LU – was signed into law and it was extended to September 30, 2011 by President Obama in March 2011. A new surface transportation bill may be approved by Congress in 2012. However, until a new bill is signed into law, MPO's must still meet all SAFETEA-LU requirements. Under the previous authorizing legislations, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century of 1998 (TEA-2 1), Congress demonstrated support for metropolitan transportation planning by emphasizing seven planning factors that MPOs must consider when developing long range transportation plans.

In 2005, SAFETEA-LU, added emphasis in two areas: security and the environment. Transportation security is now a standalone factor, signaling an increase in importance from prior legislation. The factor relating to the environment is expanded, to promote consistency of the long-range transportation plan with planned growth and development. SAFETEA-LU states that *the Metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the following eight factors:*

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;

2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users;
4. Increase the accessibility and mobility options available to people and for freight;
5. Protect and enhance the environment, promote energy conservation, and improve quality of life;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation; and
8. Emphasize the preservation of the existing transportation system.

The 2040 MTP was prepared in accordance with the SAFETEA-LU, Section 302 23 C.F.R. Parts 450 and 500 and 49 C.F.R. Part 613. Federal policy in developing long range transportation plans also extends to Title VI of the Civil Rights Act, the Americans with Disabilities Act, and the President's Executive Order 12898 on Environmental Justice - all of which will be addressed in the GHMPO 2040 MTP.

The goals and performance measures identified and adopted in the GHMPO 2030 Long Range Transportation Plan are shown in **Table 4-1**. These goals and performance measures were designed to meet the GHMPO's transportation needs while simultaneously incorporating sensitivity to the transportation efforts of the region's multiple planning partners. The GHMPO 2030 LRTP goals and performance measures supported the objectives outlined in the County's Comprehensive Plan, as well as the eight federal planning factors.

Developing the 2040 MTP provides an opportunity to review the goals used in the last metropolitan planning process and update them to ensure the goals improve safety and security, preserve the existing system, support economic vitality, increase accessibility and mobility, protect the natural and built environment, enhance the integration of modes, and is consistent with and supports local land use plans. Developing meaningful and attainable goals and objectives will provide a MTP in the GHMPO area that will benefit local residents, businesses, tourists and commerce.

Table 4-1: GHMPO 2030 LRTP Goals and Performance Measures

Goal		Performance Measure	Planning Factors Supported
1	Provide an integrated multi-modal and intermodal transportation system that includes more options to provide the desired level of accessibility and mobility of people and goods in a safe and secure manner.	• Peak period volume to capacity (v/c) ratio • Modal split • Average trip time	1, 2,3,4,6
2	Develop a transportation system that is safe, efficient, conserves energy, and promotes the attainment of air quality standards, and take steps to ensure the maintenance of that system.	• Accident rates • Number of wetlands and historic areas protected from encroachment from transportation projects	1, 2,3, 5, 7, 8
3	Integrate transportation planning with land use decisions and other comprehensive planning tools to support economic development goals and enhance the area's quality of life.	• Ongoing monitoring of development approval process to measure plan compliance and support of GHMPO goals • Burdens on and benefits to environmental justice communities	1, 5

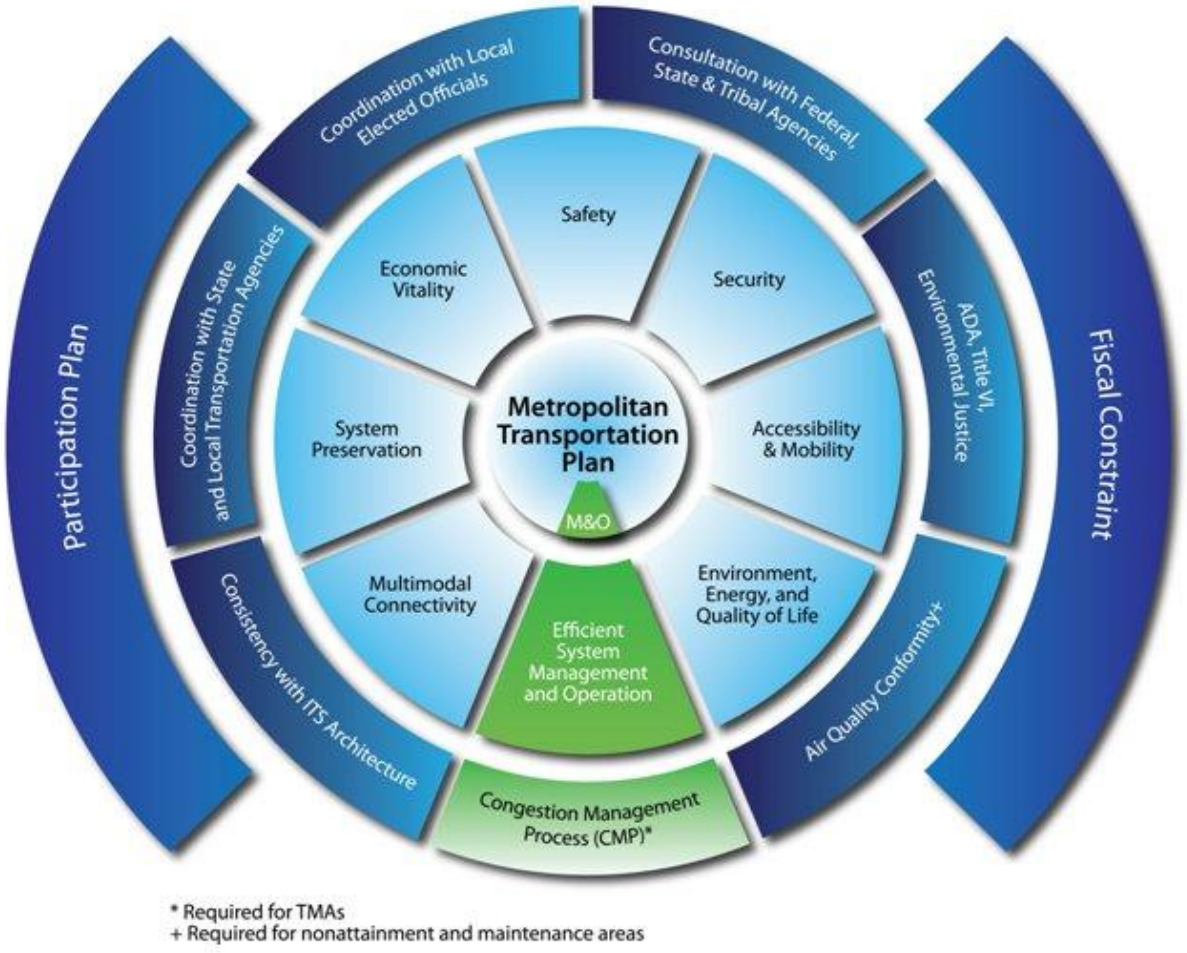
Source: GHMPO 2030 Long Range Transportation Plan.

4.2 Policy Framework

Developing a sound policy framework serves as the foundation of the 2040 MTP, and it will direct the development of goals, objectives, strategies to achieve them, and key measures to identify existing benchmarks that can be routinely tracked. This section describes how the 2040 MTP policy framework was developed to address federal requirements and existing and future challenges.

Figure 4-1 shows the numerous planning federal requirements that must be addressed by GHMPO during the development of the 2040 MTP. The illustration shows the eight federal planning factors that must be considered in developing the MTP and surrounding these factors are other planning requirements, such as consultation with federal and state partners, air quality conformity, congestion management process, etc.

Figure 4-1: Federal Planning Requirements



Source: Federal Highway Administration

4.3 Challenges and Opportunities

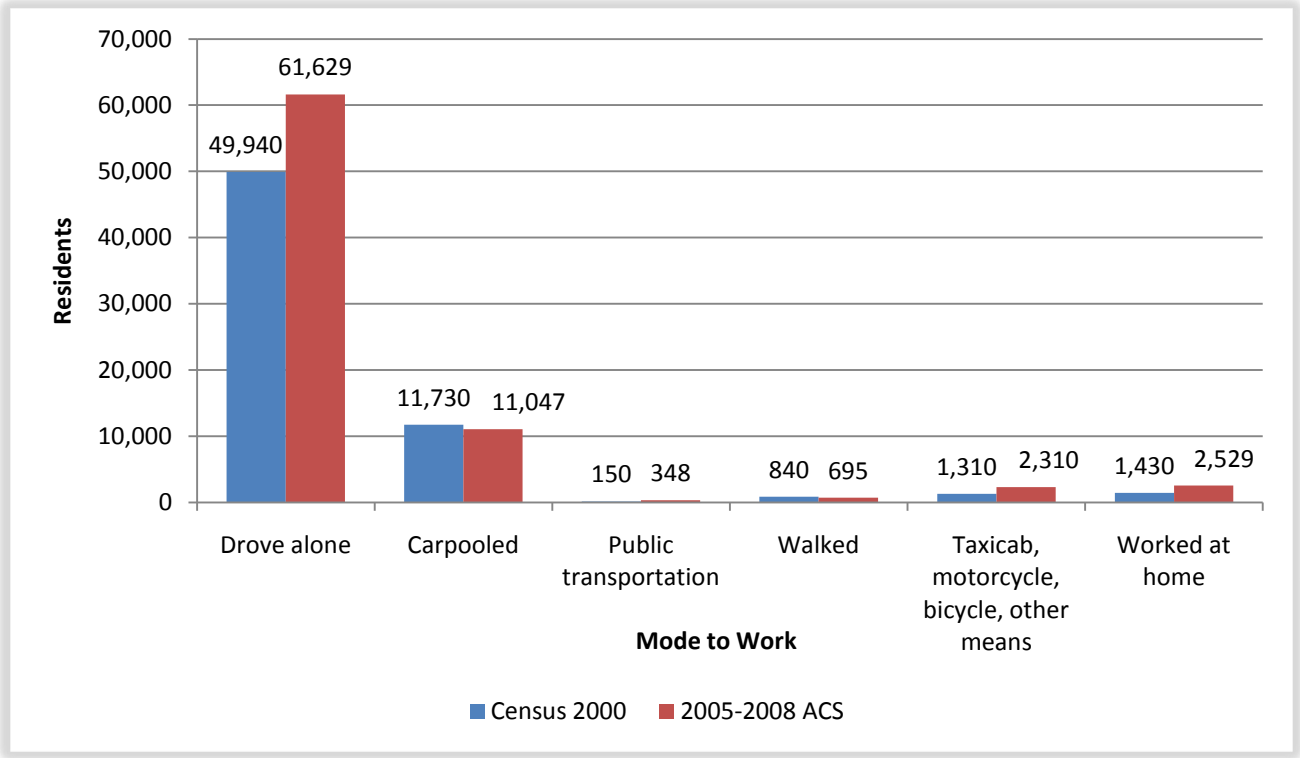
The current challenges the GHMPO area are confronted with are drastically different than the challenges of previous planning cycles. The U.S. economy continues to struggle toward recovery and this has a direct impact on Georgia and Hall County. There are growing concerns about fossil fuel availability and cost, air quality and greenhouse gas emission, and protecting natural resources. While the challenges are great, the 2040 MTP identifies goals and objectives that improve accessibility, mobility, and connectivity to create thriving and livable places, which will result in a sustainable future.

4.3.1. Challenges

The GHMPO area is known for its natural beauty, affordable housing, quality of life, and small town character. While Hall County has much going for it, our nation, state, and county are dealing with numerous challenges that are more complex than we have seen in many years. Hall County, as well as Georgia and the entire U.S., are experiencing the impacts of a severe recession, the cost of preserving aging transportation infrastructure, growing population demands, and diminishing financial resources. These challenges relate directly to the GHMPO, and it is critical that specific goals and objectives are identified in the 2040 MTP to ensure these challenges can be addressed to ensure this area remains a vibrant area to live, work, and play.

Currently, the GHMPO area is a low-density geographic area, which results in the need to expand and maintain a large highway system. Due to the low population densities, it is difficult to develop viable alternative transportation services in portions of the county. As shown in **Figure 4-2**, 78.5 percent of Hall County residents drove alone to work, which limits investments in alternative mobility services and negatively impacts air quality.

Figure 4-2: Mode to Work



Source: U.S. Census Bureau.

Funding transportation projects, programs, and policies requires large investments of public dollars. The majority of the dollars that fund multimodal transportation projects, programs, and policies are from federal gas tax revenues, which are deposited into the Federal Highway Trust Fund (HTF). Due to the recent recession and the subsequent decline in vehicle miles traveled (VMT) and the increased fuel efficiency of automobiles, the Federal HTF is not able to keep pace with the growing demand to expand, modernize, and preserve the transportation infrastructure system. These realities require GHMPO to think about what multimodal transportation services will be required to sustain and grow the region and at the same time provide improved accessibility, mobility, and connectivity in Hall County and to the surrounding Atlanta urbanized area.

As we look to the future, a clear and focused direction was developed that will guide and direct the GHMPO on these evolving challenges. Addressing these challenges requires broad coordination between federal, state, regional, and local agencies, as well as extensive participation with local planning directors and residents. Recognizing our challenges and confronting them with realistic goals and objectives will place the GHMPO on a path to overcome these constraints in an achievable manner.

4.3.2. Opportunities

While the challenges are great, the 2040 MTP is an opportunity to work with a variety of stakeholders to develop an integrated MTP that will meet the existing and future multimodal transportation demands of a growing metropolitan area.

The next sections outline the 2040 MTP goals and objectives, as well as potential performance measures to evaluate the existing system and monitor future progress. The 2040 MTP goals, objectives and performance measures were developed, based on consultation with GHMPO staff, MPO Committee members, and local residents.

4.4 Goals

As noted earlier, reviewing and updating goals at the beginning of the MTP planning process built a solid foundation to develop a MTP that improves multimodal mobility, connectivity and accessibility for all users. This review process sought wide-ranging perspectives of all system users, was transparent, and strove to articulate local values and aspirations. The MTP goals are comprehensive and address the eight planning factors identified in SAFETEA-LU, but they also provide a strategic direction to develop feasible projects, programs, and policies that are aligned with local values. The 2040 MTP goals were developed by:

- Using the multimodal transportation goals and objectives included in the 2030 LRTP (adopted August 2007) as a starting point.
- The study team then developed an updated draft set of 2040 goals. The draft set was established to reflect input received during the public participation process, and positioned the GHMPO on potential new federal requirements.
- The goals were finalized through an open process that involved soliciting input from many stakeholders. The draft goals were presented to the stakeholder groups and their feedback was incorporated into the final goals and objectives. The stakeholder groups that were involved in comment and revision of the draft goals and objectives included:
    - GHMPO Citizens Coordinating Committee
    - GHMPO Technical Coordinating Committee
    - GHMPO Policy Committee
    - The general public

Based on this coordination, the **Table 4-2** shows the GHMPO 2040 MTP goals and the subsequent federal planning factor it addresses. The first three goals were carried over from the GHMPO 2030 LRTP and the other three goals were developed during the 2040 MTP planning process as noted above. The multimodal transportation projects, programs, and policies identified during the 2040 MTP process were reviewed against these goals to ensure the Plan is consistent and supports these locally-driven desires.

Table 4-2: MTP Goals and Federal Planning Factors

2040 MTP Goals	Related Planning Factor
Goal 1 - Provide an integrated multimodal and intermodal transportation system that includes more options to provide the desired level of accessibility and mobility of people and goods in a safe and secure manner.	Planning Factors 1, 2,3,4,6
Goal 2 - Develop a transportation system that is safe, efficient, conserves energy, and promotes the attainment of air quality standards, and take steps to ensure the maintenance of that system.	Planning Factors 1, 2,3, 5, 7, 8
Goal 3 - Integrate transportation planning with land use decisions and other comprehensive planning tools to support economic development goals and enhance the area's quality of life.	Planning Factors 1, 5
Goal 4 – Develop a financially feasible plan that will advance the region's economic competitiveness based upon sustainable development.	Planning Factors 1, 5, and 8
Goal 5 – Develop a transportation system that will enhance economic and social values, protect the natural environment, and minimize adverse impacts.	Planning Factors 1, 5, and 6
Goal 6 – Establish a more balanced and livable transportation system that will increase modal choices by prioritizing transit, pedestrian, and bicycle travel throughout the region.	Planning Factors 2, 4, 6, and 8

Source: GHMPO.

The goals developed for the 2040 MTP are interrelated concept that support preserving, modernizing, and expanding the multimodal transportation system throughout the entire GHMPO area. As noted, the goals are the foundation of the 2040 MTP and **Figure 4-3** illustrates how objectives, strategies, performance measures lead to selecting actions (projects, programs, and policies) that will be identified in the 2040 MTP.

Figure 4-3: Planning Process

4.5 Objectives

Once the MTP goals were updated, objectives supporting the goals were developed. The following provides each objective related to the six 2040 MTP goals.

Goal 1 - Provide an integrated multimodal and intermodal transportation system that includes more options to provide the desired level of accessibility and mobility of people and goods in a safe and secure manner.

- **Objective 1** – Establish and utilize measurable criteria to evaluate how well the multimodal transportation system is operating.
- **Objective 2** – Ensure that the existing roadway system provides an acceptable balance between land access and travel mobility.
- **Objective 3** – Encourage jurisdictions to consider establishing appropriate guidelines for determining where property access may or may not be allowed along the roadway system (access management), and coordinate traffic signals along congested corridors using advanced technologies.
- **Objective 4** – Improve east-west regional connectivity in an environmentally sensitive manner.

Goal 2 - Develop a transportation system that is safe, efficient, conserves energy, and promotes the attainment of air quality standards, and take steps to ensure the maintenance of that system.

- **Objective 1** - Reduce the incidence of crashes on the system, particularly at high-crash locations.
- **Objective 2** – Develop a financially feasible plan that reduces vehicles miles of travel (VMT), vehicle hours of delay, and greenhouse gas emission to improve air quality in the Atlanta non-attainment area.
- **Objective 3** – Preserve the existing roadway, bicycle, and pedestrian system assets by identifying adequate funding in the financial element of the plan.
- **Objective 4** – Promote transportation projects, programs and/or policies that encourage reducing energy consumption.

Goal 3 - Integrate transportation planning with land use decisions and other comprehensive planning tools to support economic development goals and enhance the area's quality of life.

- **Objective 1** - Coordinate transportation planning activities with appropriate federal, state, and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.
- **Objective 2** – Promote orderly development in the region by providing transportation services to those areas where growth is planned.
- **Objective 3** – Discourage development in conservation or preservation areas by limiting access to those areas.
- **Objective 4** - Engage stakeholders and the public in the decision-making stage of the transportation planning process.

Goal 4 – Develop a financially feasible plan that will advance the region's economic competitiveness based upon sustainable development.

- **Objective 1** – Develop an integrated plan that is based on sound revenue projections.
- **Objective 2** – Develop a plan that includes public participation from business owners, Chamber of Commerce, and other business groups.
- **Objective 3** – Develop a plan that will support existing businesses and industries transportation needs.
- **Objective 4** – Develop a plan that will encourage and support businesses development.

Goal 5 – Develop a transportation system that will enhance social values, protect the natural environment, and minimize adverse impacts.

- **Objective 1** – Engage local residents in the decision-making process of the plan.
- **Objective 2** – Engage federal, state, regional, and local resource agencies in the decision-making process of the plan.
- **Objective 3** – Develop projects, programs, and policies that will not negatively impact precious natural resources.
- **Objective 4** – Develop a plan that includes public participation from all groups, with special emphasis in reaching low income, persons with disabilities and senior citizens.

Goal 6 – Establish a more balanced and livable transportation system that will increase modal choices by prioritizing transit, pedestrian, and bicycle travel throughout the region.

- **Objective 1** – Identify and implement appropriate programs intended to reduce or shift vehicular travel patterns, such as ridesharing and park-and-ride lots connected to the Hall Area Transit, to reduce the need to expand roadway capacity.
- **Objective 2** - Identify bicycle and pedestrian service improvements, and funding sources that would improve mobility and accessibility.
- **Objective 3** - Identify transit facility, service improvements, and funding sources that would make HAT operations more effective in improving mobility options for all residents.
- **Objective 4** – Provide mobility-challenged populations, such as low income, persons with disabilities and senior citizens, with more feasible travel options.

4.6 Performance Measures

Based on recent national discussions, it appears the next surface transportation act may include MPO requirements to develop a performance-based plan and develop a process that would monitor the transportation system annually. The purpose of identifying performance measures is twofold. First, performance measures provide local residents and elected officials with tools that will efficiently communicate transportation system performance. Second, performance can be measured over time to understand how the system is being improved, based on implemented projects, programs, and policies.

Keys to developing a performance-based plan include selecting appropriate measures that can provide meaningful information on how the multimodal transportation is performing over time and against stated goals and objectives. The performance measures selected require adequate data to assess and analyze the metrics. Thus, selecting appropriate data is also a critical step in developing a performance-based plan. The purpose of the 2040 MTP is to provide guidance on potential performance measures that would be useful to GHMPO area in subsequent MTP updates.

To date, federal requirements do not mandate specific performance measures that must be used during the MTP planning process. However, as noted earlier future surface transportation acts may incorporate performance measures and this section was developed to assist GHMPO in developing measures and collecting data. Identifying appropriate performance measures is up to each MPO. Although a wide range of performance measures are available, performance measures discussed in this section recognize the availability of data and the cost of collecting and analyzing the data.

4.6.1. Volume to Capacity Ratio

Measuring roadway congestion intensity along a corridor can be accomplished by examining volume-to-capacity (V/C) ratios. This measure is popular because data on traffic volumes are relatively easy to obtain and the measures (traffic volumes and roadway capacities) exist in the GHMPO travel demand model. V/C ratio is defined as the ratio of demand flow rate to capacity for a traffic facility.

4.6.2. Level of Service

Level of Service (LOS) is defined as a qualitative measure from A (best) to F (worst) describing operational conditions within a traffic stream, generally described in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS along a corridor may be based on a number of parameters, including:

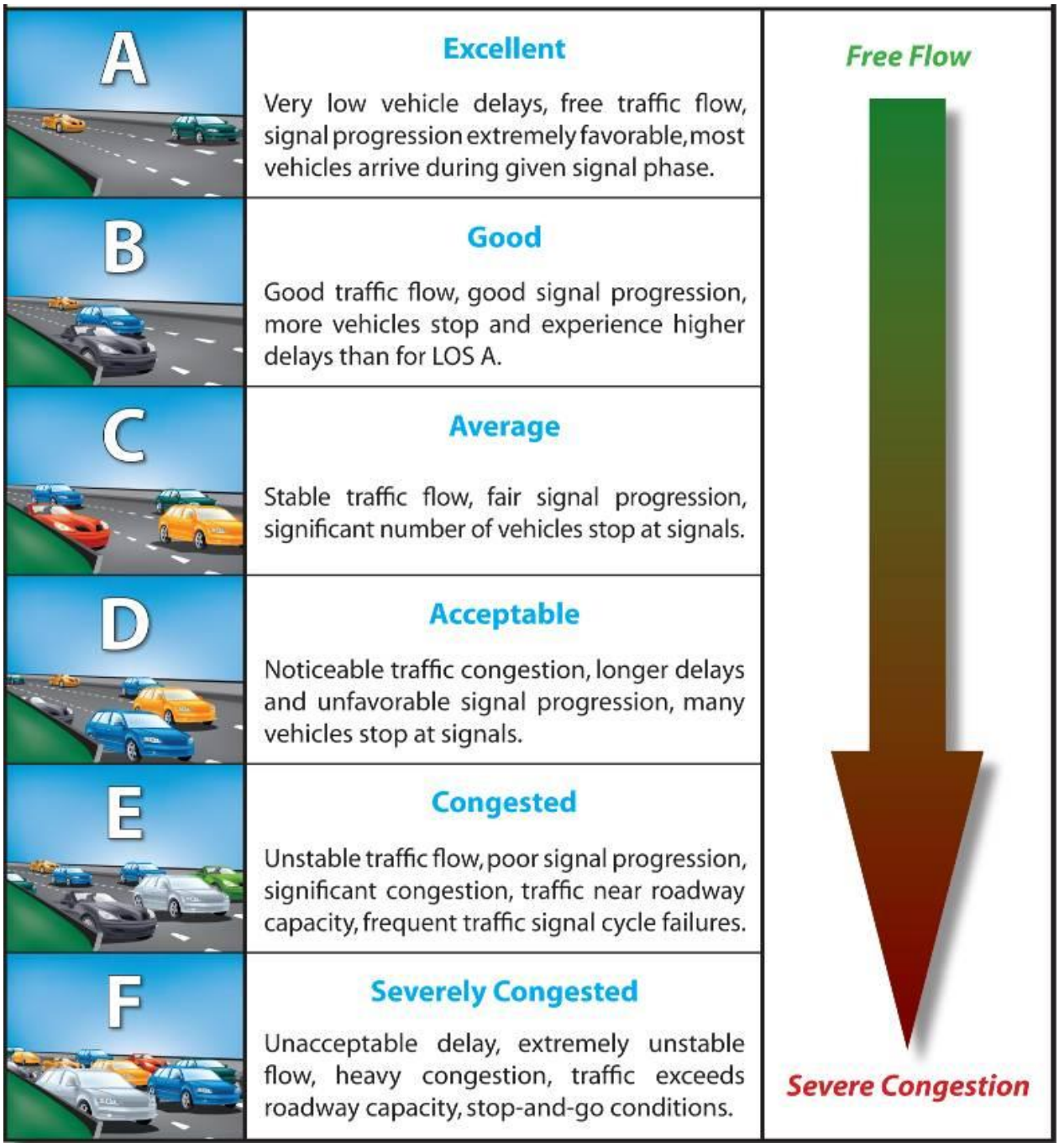
- V/C ratios – from travel demand models
- Density – on freeway mainline segments, using Highway Capacity Manual (HCM) methodologies
- Travel Speed – urban streets, using HCM methodologies

Figure 4-4 illustrates the level of service definitions between LOS A and LOS F.

4.6.3. Intersection Level of Service

Travel demand models do not measure congestion at intersections. Obtaining level of service at intersections requires collecting traffic volumes at each intersection, including turning movement counts. Level of service for unsignalized and signalized intersections is based on control delay. Control delay is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. In general, control delay is the difference between the travel time actually experienced to the travel time experienced under ideal conditions in the absence of traffic control, geometric delay, incidents, and other vehicles.

Figure 4-4: Level of Service Definitions



4.6.4. Congestion Duration and Extent Measures

Congestion duration and extent measures identify the length of time over which a roadway is congested, the portion of the transportation system that experiences congestion, or the total amount of delay time experienced by drivers. Measures include the following:

- Hours of delay – total regional hours of delay experienced by drivers (average time delayed per driver times volume of traffic)
- Lane miles at LOS F
- Hours per day at LOS F (for specific facilities)

These three congestion duration and extent measures are suitable because the GHMPO travel demand model should be able to produce the information needed to determine measures. While these three measures produce useful information on the duration and extent of the congestion, hours of delay and hours per day at LOS F are centered on the regional transportation system and not specific corridors.

The travel demand model can produce hours of delay based on capacity improvements to the highway system. This overall measure may not provide adequate information on individual corridor capacity improvements, but it can provide useful information on the hours of delay based on several capacity improvements that occur throughout the region. The travel demand model can produce data on the number of lane miles operating at LOS F and segmenting corridor lanes miles can be achieved by examining corridor segments in the travel demand model.

4.6.5. Transit Travel Condition Measures

Transit travel condition measures provide information on the conditions experienced by public transit users. Aspects of transit travel conditions include vehicle ridership vs. load capacity and on-time performance reliability. Thus, transit travel condition measures in the GHMPO area could include the following:

- Transit ridership vs. load capacity along congested corridors
- Transit vehicle route reliability (on-time)

Two of the main factors in deciding a mode of travel include the availability and the reliability of the mode. Because automobiles provide both availability and reliability, most trips are completed using cars. Examining transit ridership vs. load capacities along congested corridor will assist in identifying potential route extensions and modifications that may encourage more transit "choice" ridership. If public

transportation is not available along a congested corridor, this may be a potential corridor to review alternative improvements to improve congestion.

4.6.6. Accessibility Measures

Accessibility measures identify how connected a region is to employment sites, retail centers, activity centers, and other land uses that produce or attract a high percentage of local/regional travel demand. Measuring accessibility is typically completed at the regional level and involves calculating a percent of the population that can access employment sites, retail centers, activity centers, etc. within a specific amount of time.

Based on the availability of data, the following accessibility measures could include the following:

- Percent of labor force within 20 minutes drive of employment centers
- Percent of population within 15 minutes of selected activities (retail, hospitals, elementary schools) using all modes
- Percent of population within a 5 miles of a park and ride lot
- Percent of population within ¼ mile walking distance to selected activities (retail, hospitals, elementary schools)
- Percent of population within a ½ mile of a public transportation stop

4.6.7. Crash Measures

Crash measures identify if there is a high concentration of crashes at a particular location along a corridor or at a particular turning movement at an intersection or cross street. Crashes certainly impact travel conditions and can be the cause of nonrecurring congestion along corridors and intersections. Identifying "hot spot" crash locations and examining the location in the field can assist in identifying potential projects to improve the safety and function of the roadway corridor or intersection. Common improvements could include improving sight distance, adding turn lanes, adding traffic signals, implementing street calming devices, etc.

Crash measures in the GHMPO area could include the following:

- Number of crashes along a specified corridor
- Number of crashes at a particular intersection
- Type of crashes along a specified corridor
- Type of crashes at a particular intersection
- Number of crashes per million vehicles entering a spot location
- Number of crashes per million vehicle-miles over a section of roadway

4.6.8. General Measures

The following are general measures that are reported by the U.S. Census Bureau and the Federal Highway Administration and are useful to collect and monitor during the overall MPO planning process:

- Average commute time
- Percent of commuters driving alone to work
- Percent of commuters using public transit to work
- Percent of commuters walking to work
- Percent of commuters bicycling to work

5. Multimodal Transportation Needs

5.1 Roadway Needs

Moving people and goods through the GHMPO area is the essential purpose of the roadway network. An effective roadway network supports the essential elements of a community, i.e., economic development, quality of life, and community connections. Vital for users of alternative modes, such as public transportation, bicycling, and walking, an effective roadway network serves as the foundation of the region's transportation system. A requirement of the MTP process is to review, update, and validate the roadway system to ensure safe and efficient existing and future transportation conditions for the region. **Figure 5-1** shows the study area roadways by functional classification.

5.1.1. Travel Demand Forecast Model

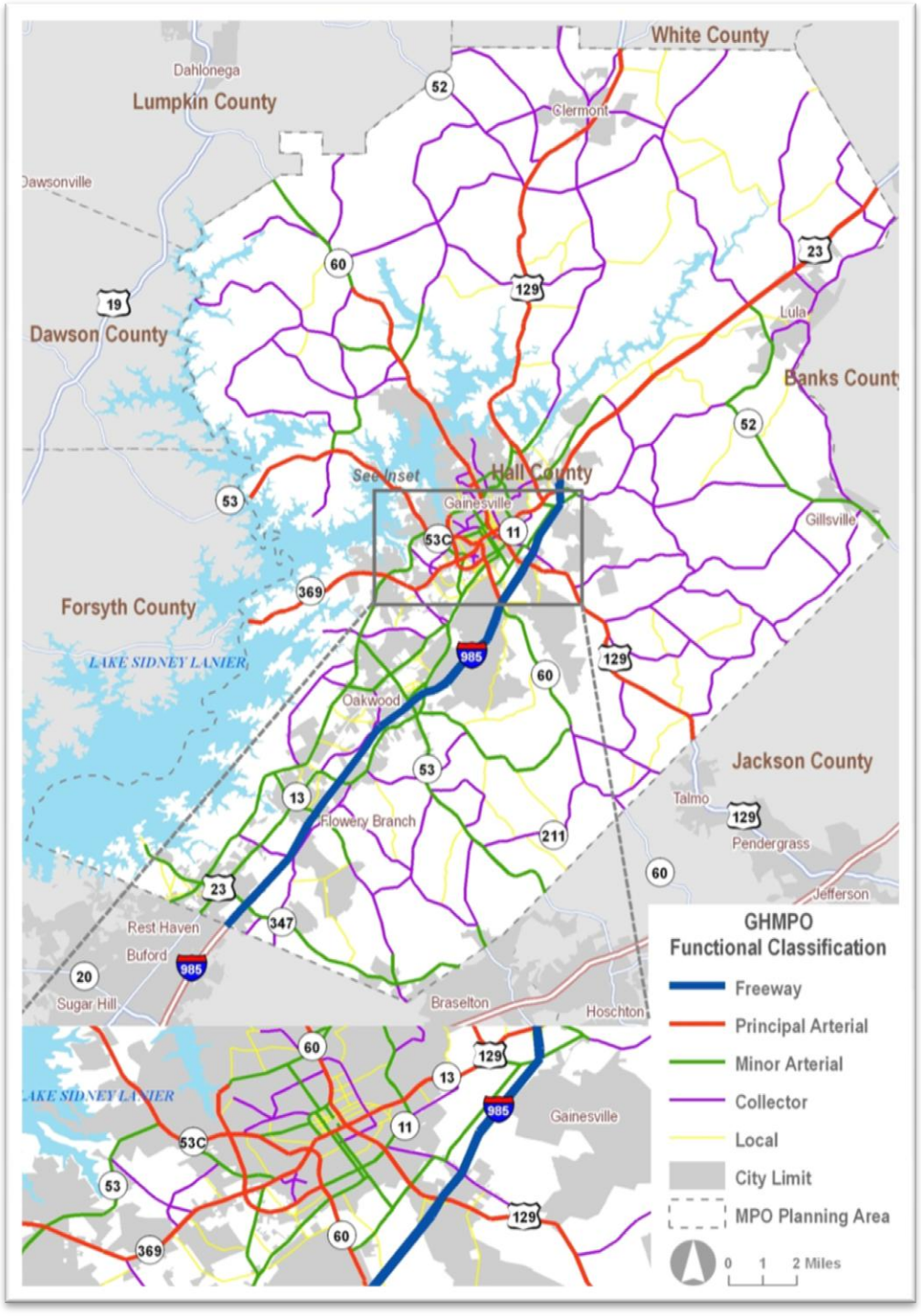
To predict future travel demand, MPOs apply mathematical computer models that estimate future travel demand and patterns. The Georgia Department of Transportation Office of Planning develops and maintains the GHMPO's travel demand model based on:

- Trip purpose;
- Land use; and
- Mode of transportation.

The travel demand model calculates the relationships between several basic data inputs to determine appropriate future travel demand. Data inputs include:

- Socio-economic (SE) data – population, households, and employment by type;
- Geography – appropriately defined Traffic Analysis Zones (TAZs); and
- Roadway network – number of lanes, speeds, capacities, facility types, distances, and traffic volume counts.

Figure 5-1: Functional Classification



Source: Georgia Department of Transportation, Office of Planning.

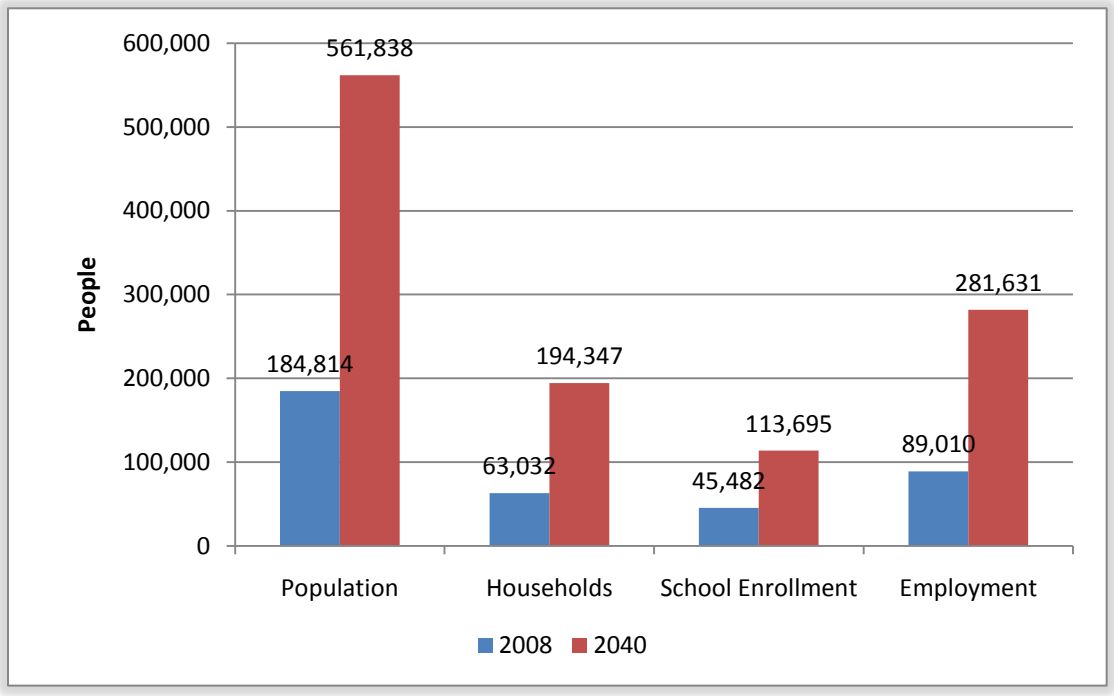
The travel demand model runs trip generation and distribution software using the inputted SE data. Model software applies the data to the defined geography and network to prepare maps illustrating the impact of increasing population, households, and employment to the roadway network.

5.1.2. Model Refinement

By nature, model inputs constantly change. To maintain an accurate, reliable, and complete travel demand model, updates and refinements are needed. An excellent opportunity to refine the model is during the 2040 MTP process.

Georgia DOT updated the GHMPO travel demand model, based on the new base year (2008) and future year (2040) socio-economic data developed during the 2040 MTP process. Estimates of 2008 population, households, and employment were entered as input to reflect growth since the last update in 2005. **Figure 5-2** shows a comparison of levels of population, households, school enrollment, and employment for base year 2008 and horizon year 2040. As noted earlier, households, population, and employment are projected to dramatically increase over the next 29 years. This tremendous growth will directly impact the operations and safety of the GHMPO roadway system.

Figure 5-2. Base Year vs. Future Year Socio-economic Comparison



Source: GHMPO Socio-economic Data: 2008 to 2040 by Jurisdiction, Ross+Associates.

Travel demand models are based on geographic units known as Traffic Analysis Zones (TAZs). To generate sufficiently detailed analysis, TAZs should be relatively small to enable the model to apply travel demand as accurately as possible. Small TAZs also allow analysis to drill down to the local level. Generally, traffic analysis zones decrease in size where levels of roadway density and human activity increase.

The 2005 GHMPO travel demand model included 278 TAZs and during the 2040 MTP update, the TAZs were refined to include 281 TAZs. The model refinement also included adding an additional 30 external stations to accommodate trips to and from the GHMPO area. These refinements provided greater details on how the GHMPO roadway system will be impacted by the projected future growth. Upon completion of refinements the base year model was calibrated and validated to 2008 conditions by GDOT.

5.1.3. Base Year Roadway Conditions

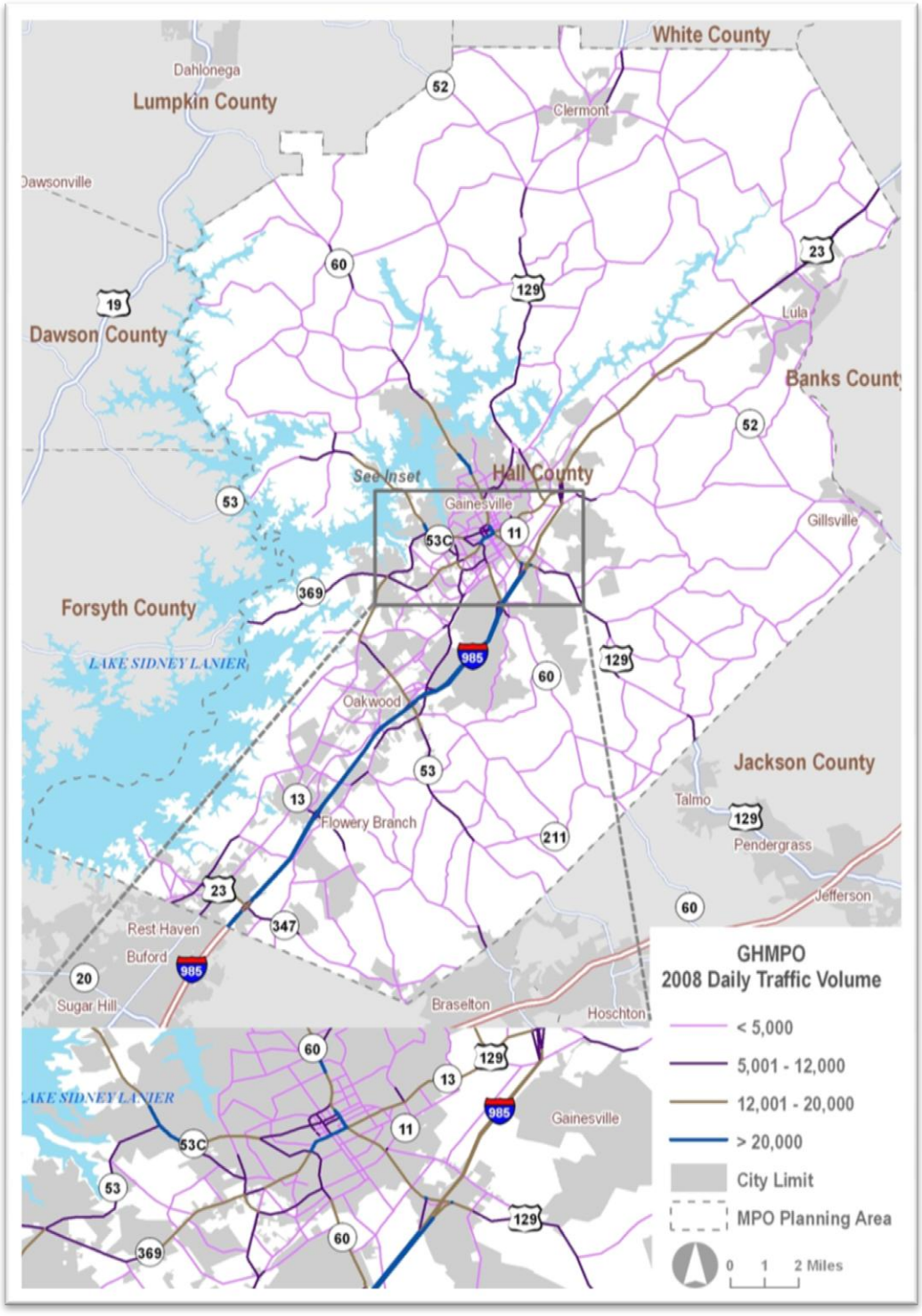
The base year 2008 roadway traffic volumes are shown in **Figure 5-3**. There are currently numerous major roadways in the area that carry significant amount of traffic on a daily basis and many travelers experience severe congestion on these roadways. Roadways in the GHMPO area that carry over 20,000 vehicles per day are as follows:

- I-985;
- Jesse Jewel Parkway/SR 369;
- E.E. Butler Parkway/SR 60/SR 11; and
- Dawsonville Highway/SR 53.

Roadways in the GHMPO area that carry between 12,000 and 20,000 vehicles per day are as follows:

- Lanier Islands Parkway/SR 347;
- Mundy Mill Road/SR 53;
- McEver Road/SR 53;
- Dawsonville Highway/SR 53;
- Thompson Bridge Road/SR 60;
- Queen City Parkway/SR 60;
- Athens Highway/US 129;
- Limestone Parkway/US 129; and
- Cornelia Highway/SR 365.

Figure 5-3. Base Year Roadway Traffic Volumes



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

The base year model utilizes 2008 socio-economic data and the 2008 roadway network to evaluate transportation levels of service. Level of service (LOS) is a qualitative measure that describes operational roadway conditions by measuring speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six types of LOS are used ranging from A through F, with LOS A representing the best operating conditions and LOS F representing the worst. LOS E generally is considered to identify roadway segments operating at or near capacity. Each LOS represents a range of operating conditions and the traveler's perception of those conditions.

Criteria defining level of service are based upon the relationship between a roadway's volume and capacity. Generally, as the ratio of a roadway's volume to capacity increases, its level of service rating worsens. **Table 5-1** shows levels of service by volume-to-capacity ratios and as shown earlier, **Figure 5-4** provides definitions for each LOS.

Table 5-1. Level of Service Definitions

Level of Service	Volume-to-Capacity Ratio
LOS A, B, and C	V/C Ratio < = 0.70
LOS D	V/C Ratio > 0.70 and < = 0.85
LOS E	V/C Ratio > 0.85 and < = 1.00
LOS F	V/C Ratio > 1.00

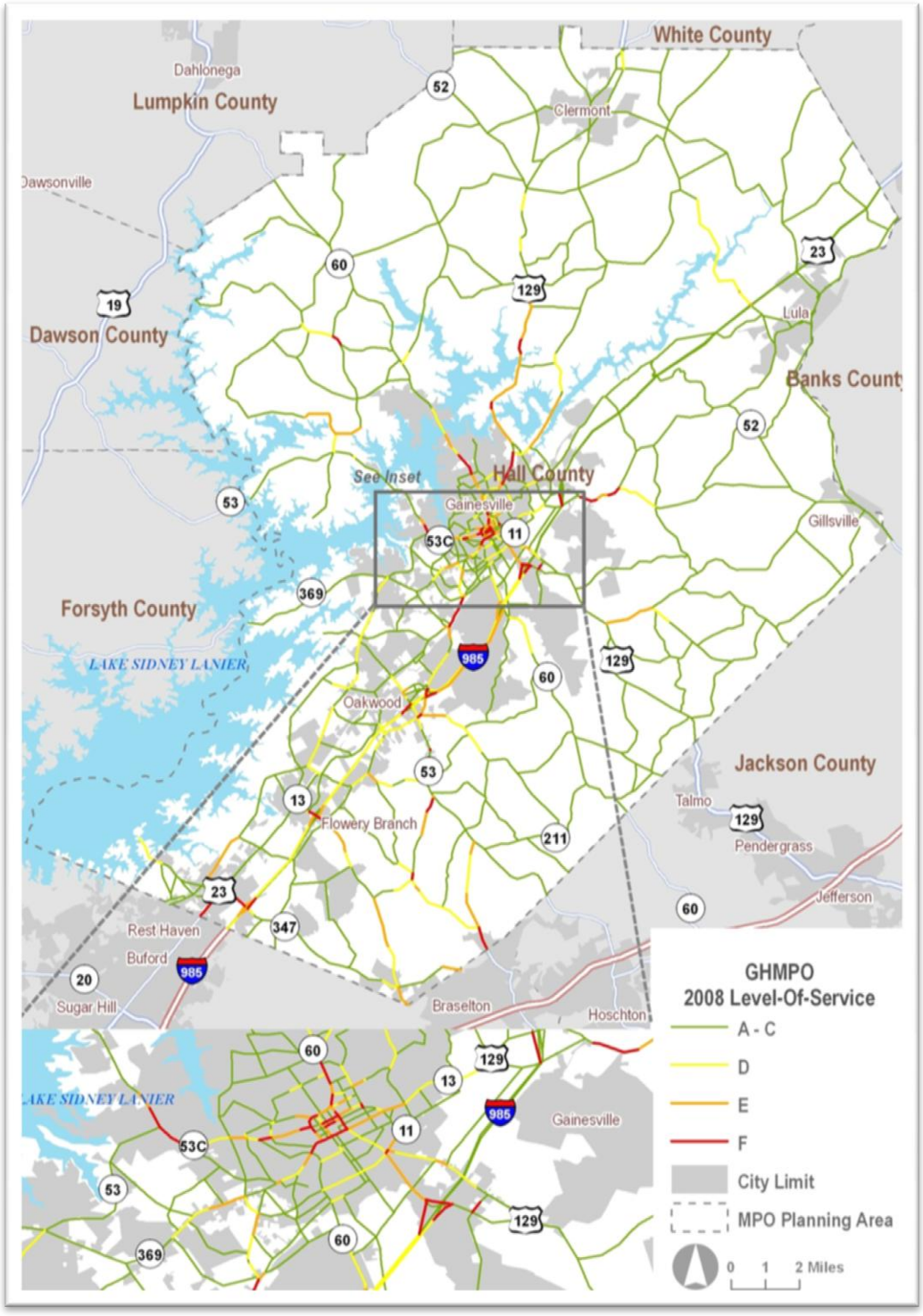
Source: Georgia Department of Transportation – Office of Planning

Figure 5-4 shows the 2008 24-hour level of service for GHMPO area roadways. There are concentrations of unacceptable LOS or congestion on portions of the following roadways:

- Atlanta Highway/SR 13 south of Lanier Islands Parkway;
- Lanier Islands Parkway /SR 347 west of I-985;
- Spout Springs Road at I-985;
- Dawsonville Highway/SR 53;
- Jesse Jewel Parkway/SR 369;
- E.E. Butler Parkway/SR 60/SR 11; and
- Cleveland Highway/US 129.

Overall, the major traffic congestion is concentrated in downtown Gainesville and access points to I-985 in Oakwood, Flowery Branch, and from Lake Lanier Islands.

Figure 5-4. Base Year Roadway Level of Service



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

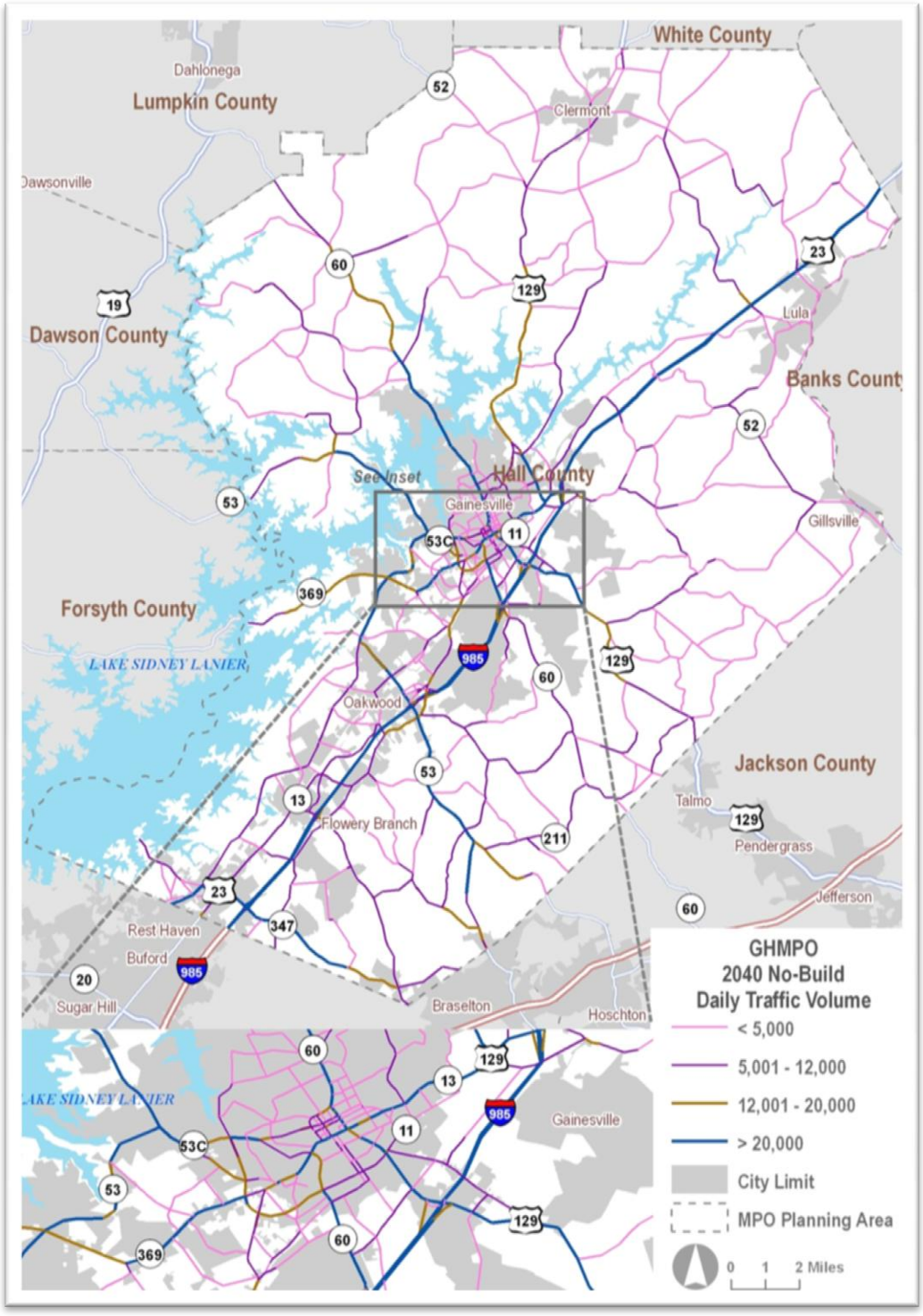
5.1.4. No-Build Roadway Conditions

To determine the impact of the projected growth on the existing GHMPO's transportation system and subsequent roadway needs, a future no-build scenario was evaluated in the travel demand model. This scenario used the base year transportation system and overlaid the 2040 socio-economic data into the new TAZ structure to determine how the projected growth will impact the system. This is a useful exercise to evaluate the existing capacity projects that are identified in the 2030 LRTP as well as identify potential new needs that arise due to updated population and employment growth.

Based on this scenario, many roadways in the GHMPO area will experience significant traffic volume increases, which will great impact safety, operations, and quality of life for all residents. As shown in **Figure 5-5**, the following roadways in the GHMPO area carry over 20,000 vehicles per day under the 2040 no-build scenario, which is significantly more than the base year:

- I-985;
- Jesse Jewel Parkway/SR 369;
- E.E. Butler Parkway/SR 60/SR 11;
- Dawsonville Highway/SR 53;
- Atlanta Highway/SR 13 south of Lanier Islands Parkway;
- Friendship Road/SR 347;
- Mundy Mill Road/SR 53
- Thompson Bridge Road/SR 60;
- Queen City Parkway/SR 60;
- Athens Highway/US 129; and
- Limestone Parkway/US 129.

Figure 5-5. 2040 No-Build Traffic Volumes



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

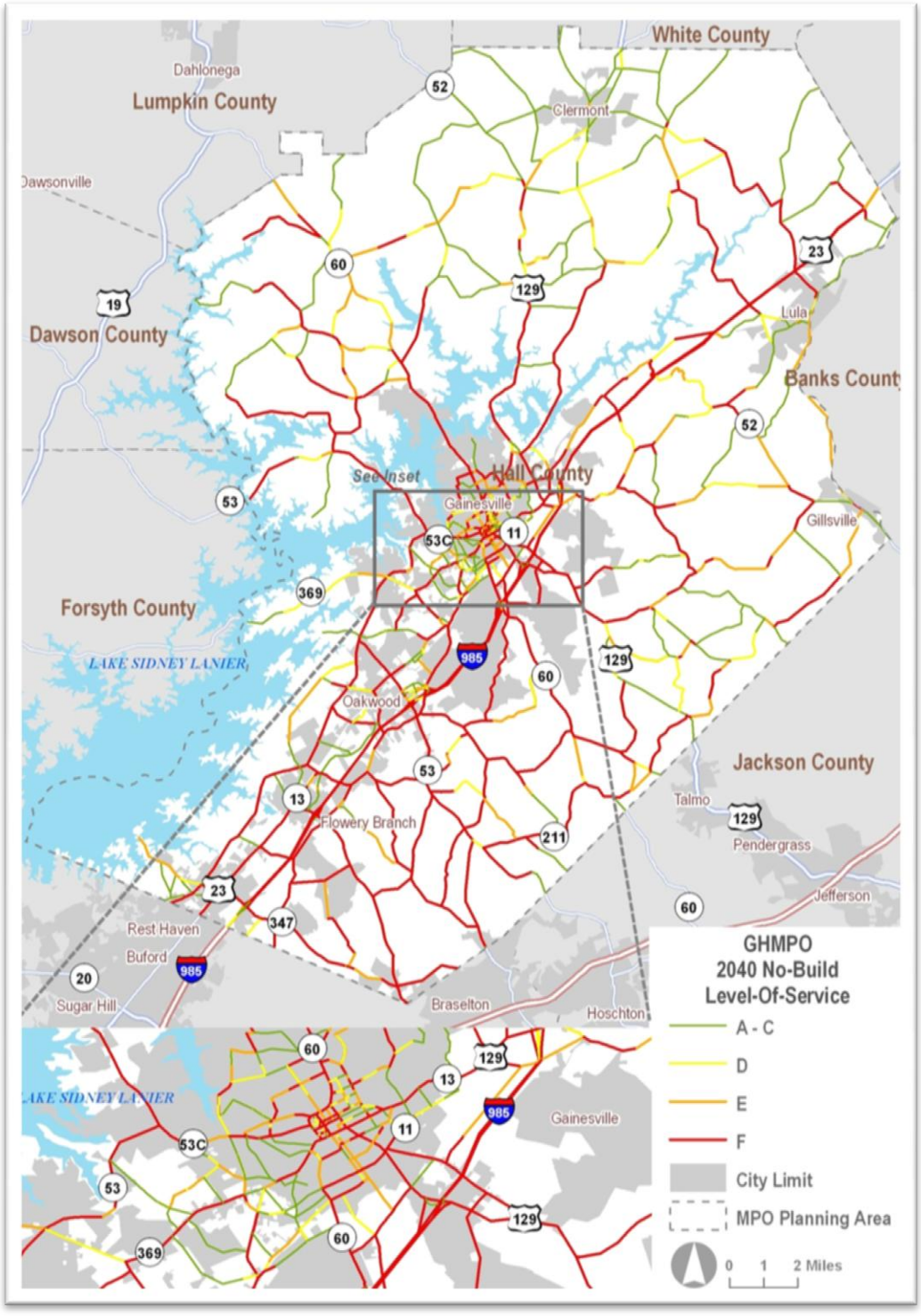
- Cornelia Highway/SR 365;
- Winder Highway/SR 53; and
- Old Winder Highway/SR 211.

Figure 5-6 shows the 2040 24-hour level of service for GHMPO area roadways under the no-build scenario. Without any new capacity projects, unacceptable LOS will be widespread throughout the entire GHMPO area and the roadway system will be gridlocked.

5.1.5. Existing + Committed Roadway Conditions

A scenario that helps identify future roadway needs is the existing plus committed (E+C) network scenario. The E+C network is similar to the no-build network except that it includes the funded capacity expansion projects (committed network) in addition to the current roadway system (existing network). Committed capacity expansion projects are shown in **Table 5-2** (widening existing roadways, extending existing roadways, or constructing roadways on new alignment) are projects that are beyond the planning phase and in the preliminary engineering (PE) and/or right-of-way (ROW) phases and have a specific committed federal, state, or local funding source identified to construct the project. The committed network also includes projects that have already moved into the construction phase, but have not yet been completed.

Figure 5-6. 2040 No-Build Level of Service



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Table 5-2: E+C Roadway Projects

GHMPO No.	GDOT No.	Project Name
GH-007	162430	Friendship Road/SR 347 between I-985 and SR 211
GH-008	122150	Athens Highway/US 129 between SR 332 at Talmo, Jackson County line and SR 323
GH-014	170735	Lanier Islands Parkway/SR 347 between I-985 and McEver Road
GH-016	0003626	Sardis Road Connector between Thompson Bridge Road/SR 60 and Sardis Road
GH-078	0007319	Lanier Islands Parkway/SR 347 between McEver Road and Lake Lanier Islands
GH-038	132610	Thompson Bridge Road/SR 60 between SR 136 at Lumpkin County line
GH-021	132950	Atlanta Highway/SR 13 between Gwinnett County line Lanier Islands Parkway/SR 347

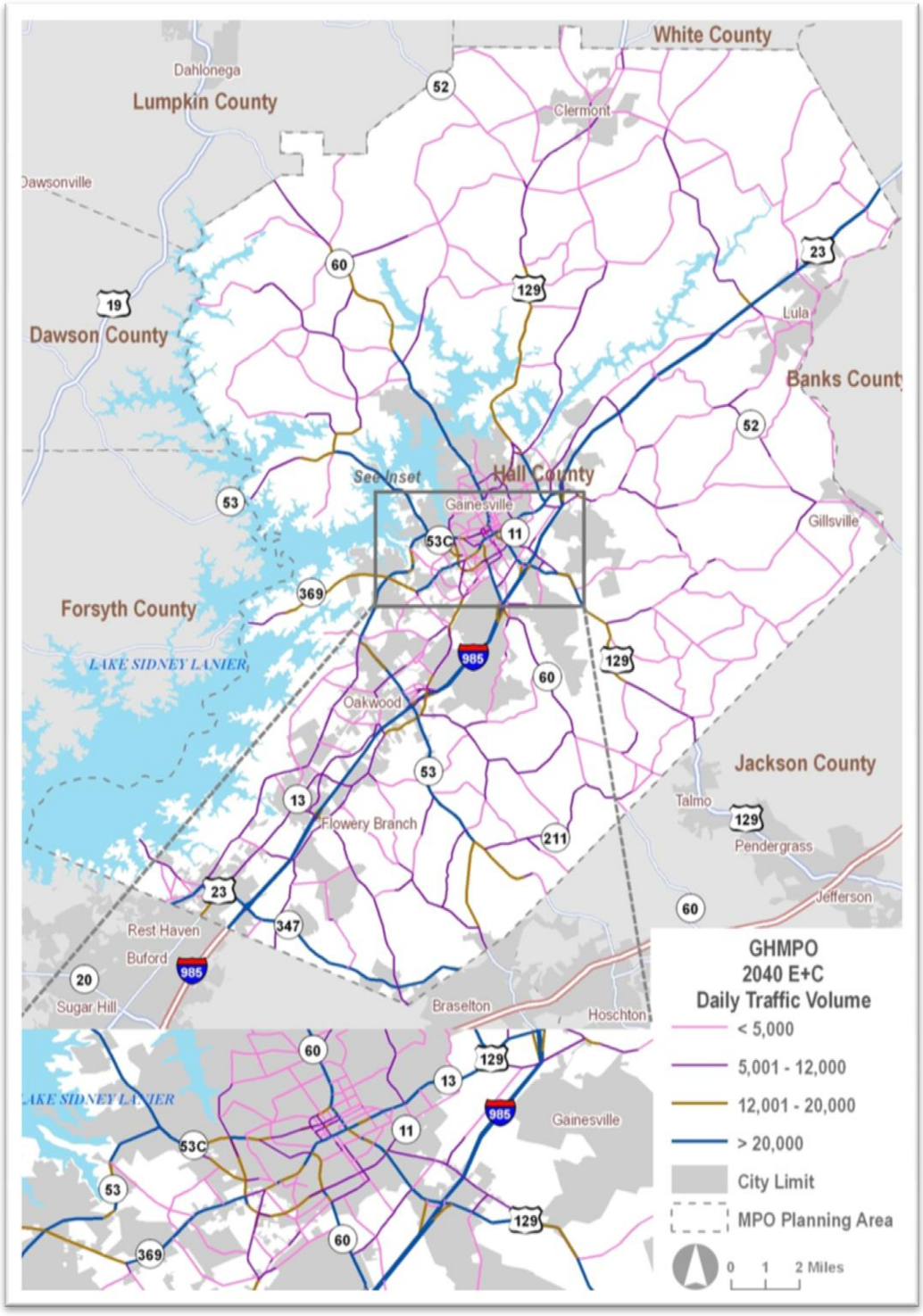
Source: GHMPO.

This scenario used the base year transportation system plus the committed capacity projects and overlaid the 2040 socio-economic data into the new TAZ structure to determine how the projected growth will impact the system. **Figure 5-7** shows the traffic volumes under the 2040 E+C scenario and **Figure 5-8** shows LOS. Similar to the no-build scenario, roadways with unacceptable LOS permeate the majority of the GHMPO area with the exception of the extreme northern network under the E+C scenario. Due to the projected increases in population and employment, roadways in Gainesville, Oakwood, and Flowery Branch are impacted with dramatic congestion. Without any additional roadway capacity projects beyond those already committed, unacceptable levels of service will be widespread throughout the entire GHMPO area.

5.1.6. Financially Unconstrained Roadway Conditions

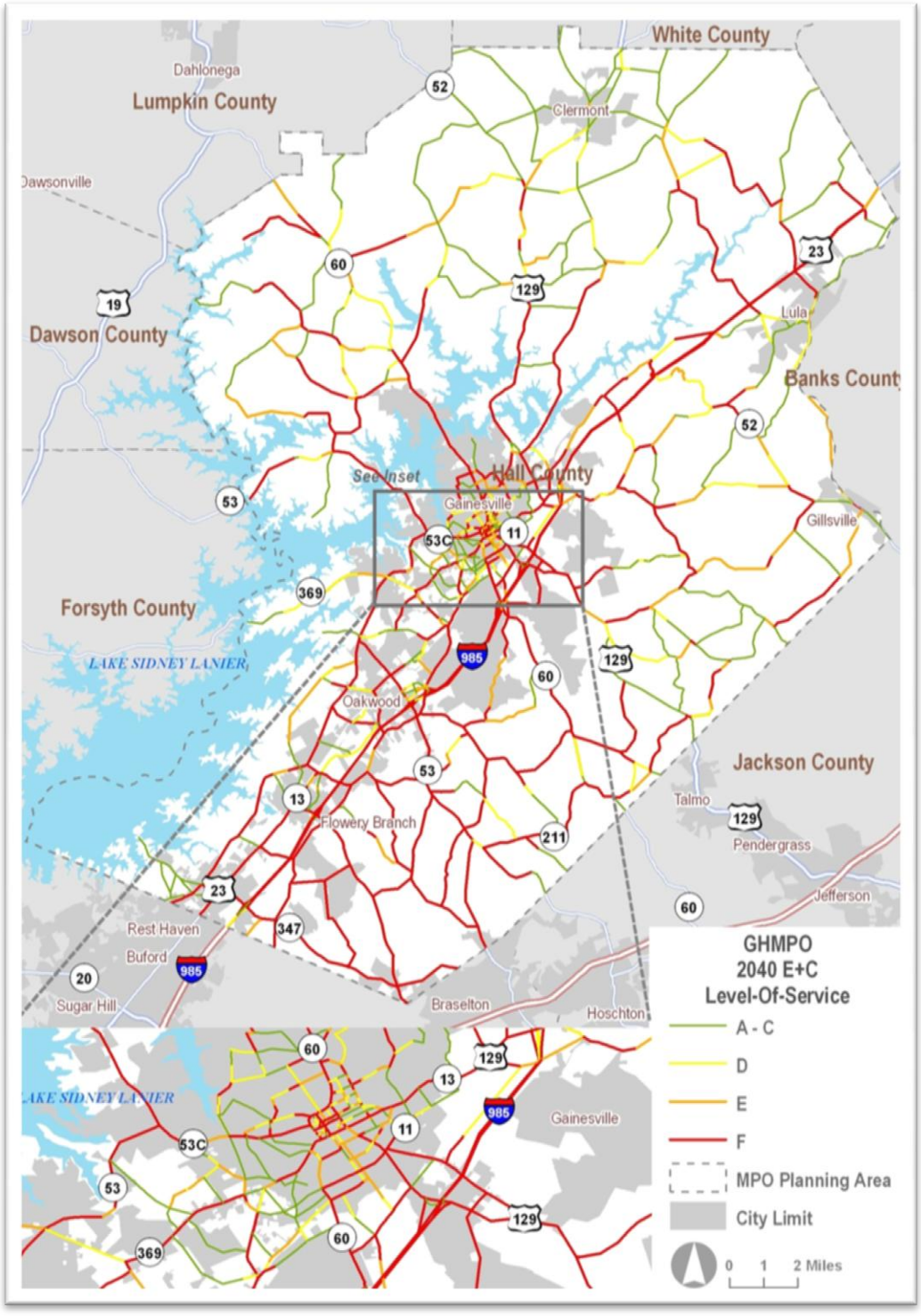
An additional scenario that helps demonstrate the impact of additional projects on roadway needs is the financially unconstrained roadway project scenario. This scenario includes the E+C network plus unfunded projects determined necessary to meet future needs, based on recommendations from public participation process, project requests from jurisdictions in the GHMPO area, and projects identified in the 2030 LRTP. This scenario assists in reviewing projects currently identified in the 2030 LRTP, which in turn provided the foundation to develop the 2040 MTP financially constrained program of projects. **Table 5-3** lists the new roadway projects that are included in this scenario and **Figure 5-9** shows the subsequent traffic volumes and **Figure 5-10** shows the level of service for the financially unconstrained roadway project scenario.

Figure 5-7: 2040 E+C Roadway Traffic Volumes



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Figure 5-8: 2040 E+C Roadway LOS

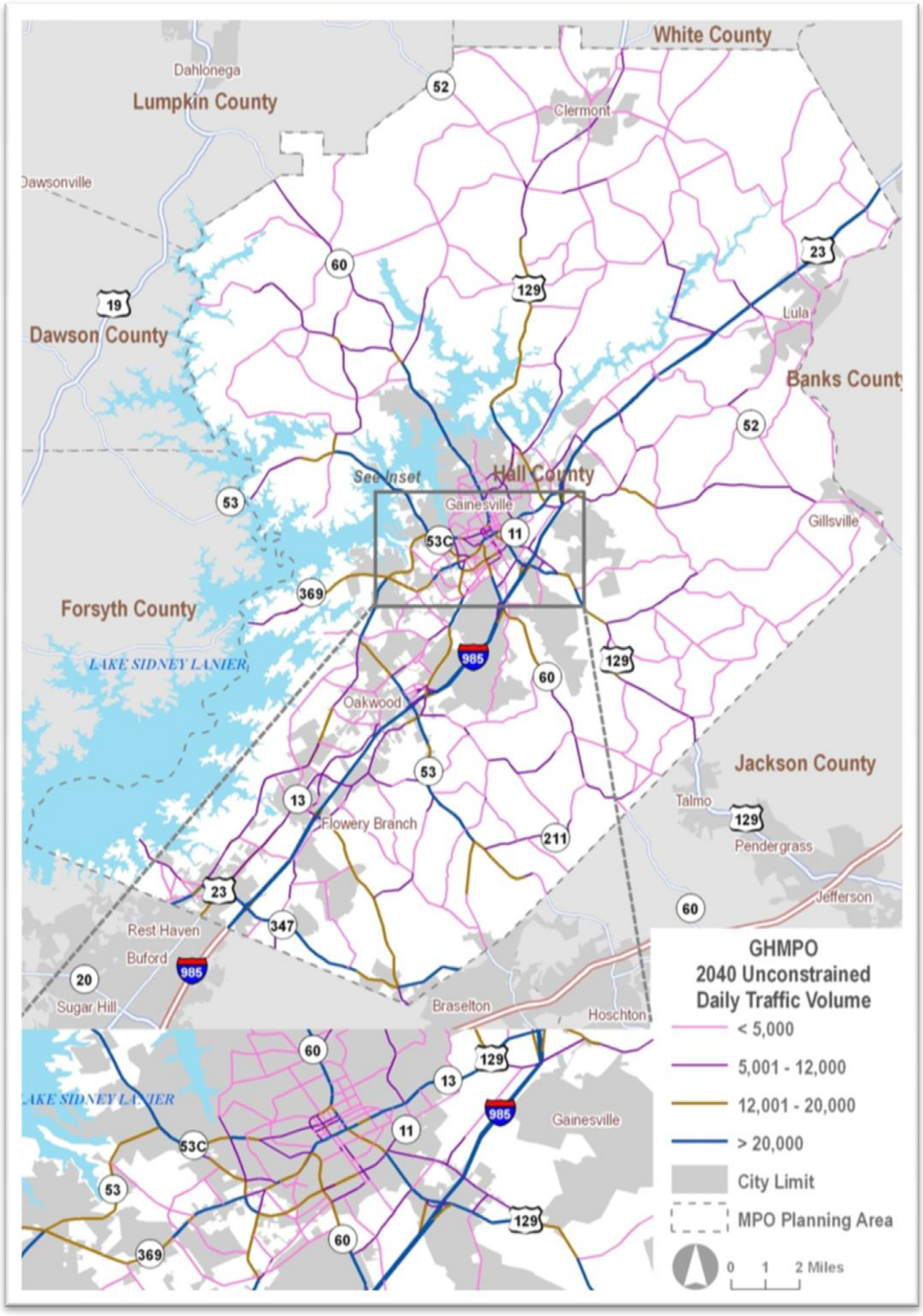


Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Table 5-3: Financially Unconstrained Roadway Projects

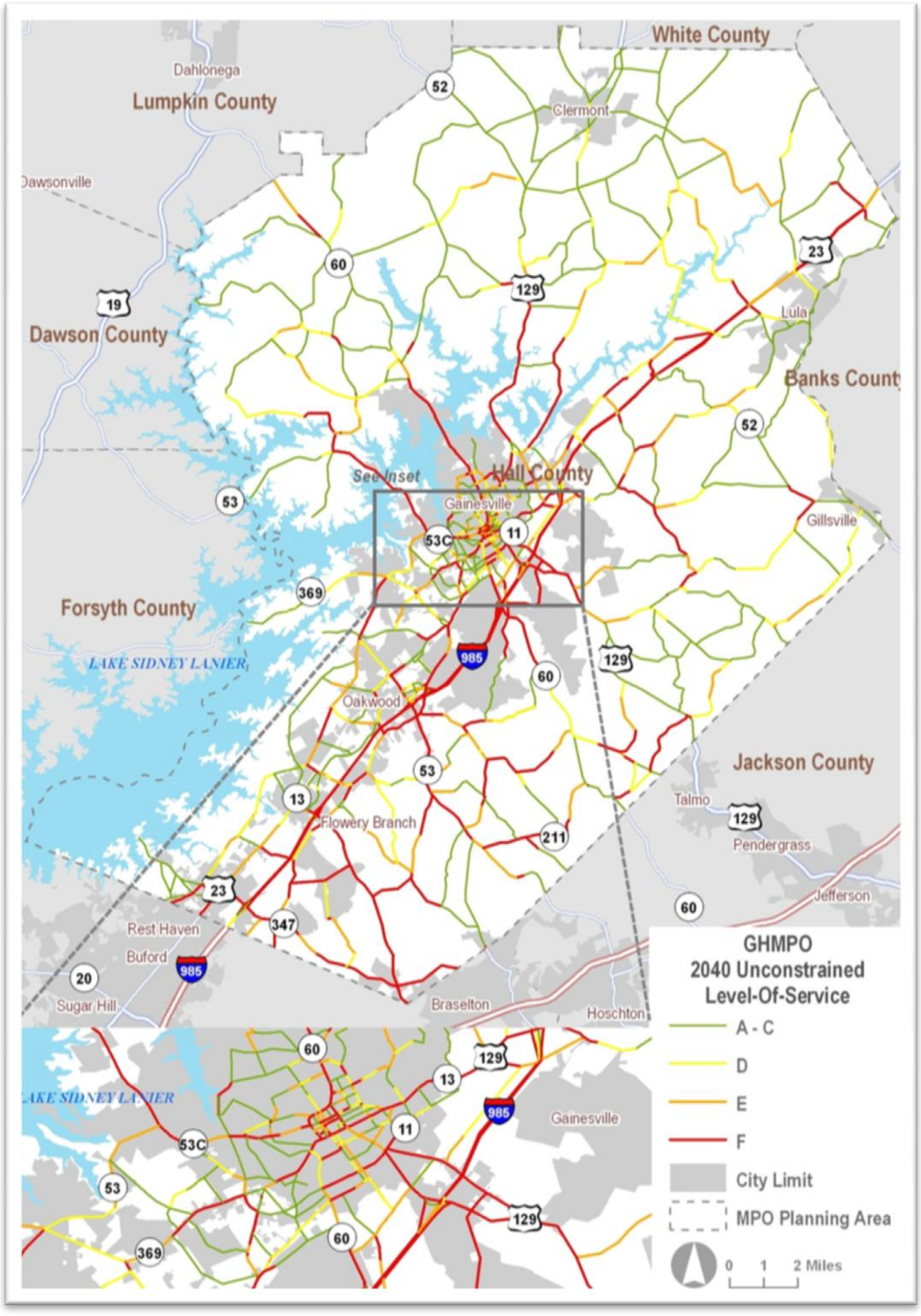
GHMPO No.	GDOT No.	Financially Unconstrained Project
GH-015	425	I-985 – New Interchange North of SR 13 Near Martin Road
GH-017	3701	SR 13/Atlanta Highway & Memorial Park Drive Widening – Frontage Road to Browns Bridge Road
GH-018	122010	SR 369/Brown's Bridge Road – Forsyth Co. Line to SR 53/McEver Road
GH-019	132250	SR 52/Lula Road – 1 mile north of SR 365 to south of Julian Wiley Road
GH-020	122060	US 129/Cleveland Hwy – Limestone Parkway to Nopone Road
GH-022		MLK Boulevard from Queen City Parkway to E.E. Butler
GH-023	9679	Spout Springs Road – Hog Mountain Road to Gwinnett Co. Line
GH-024		Martin Road – Falcon Pkwy to SR 53/Winder Hwy
GH-025	7233	SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment
GH-033	1822	SR 13/Atlanta Highway - Radford Road to SR 53/Winder Hwy
GH-035	150290	US 129/Cleveland Hwy - N of Nopone/J Hood Road to SR 284/Clarks Bridge Road
GH-036	122240	US 129 - SR 284/Clarks Bridge Road to White Co. Line
GH-039		South Enota Drive from Park Hill Drive to Downey Boulevard
GH-040	132860	SR 53/Winder Hwy from I-85 in Jackson Co. to SR 211/Tanners Mill Road
GH-041	133280	Old Cornelia Hwy – Exist. 4-lane E of I-985 to Joe Chandler Road
GH-046	141820	SR 323/Gillsville Hwy - US 129/Athens Hwy to E of SR 82/Holly Springs Road
GH-065	1095	Relocation of Lights Ferry Rd from Gainesville St to SR 13
GH-066		Northern Connector - Connection Between SR 60/Thompson Bridge Road and SR 365
GH-067		Ridge Road between Queen City Parkway and Old Cornelia Highway
GH-071		SR 365 between Exit 24 and Habersham County Line, includes 3 New Diamond Interchanges
GH-072		SR 53/Dawsonville Hwy between Duckett Mill Road and Forsyth County line
GH-079		McEver Road between Jim Crow Road and SR 53
GH-080		SR 13/Atlanta Highway between SR 347 and Radford Road
GH-081		SR 60 between I-985 and Jackson County line
GH-082		Joe Chandler Road between SR 52 and Old Cornelia Highway/SR 365
GH-083		Howard Road Extension from SR 365 to Old Cornelia Highway

Figure 5-9: Financially Unconstrained Roadway Traffic Volumes



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Figure 5-10: Financially Unconstrained Roadway LOS



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

A comparison between **Figure 5-6** (2040 no-LOS) and **Figure 5-10** (2040 unconstrained network LOS) demonstrates the LOS improvements resulting from the additional unconstrained network projects. Prior to implementation of the unconstrained network nearly all of the roadway segments in northwest Hall County were anticipated to operate at an unacceptable level of service. Upon application of the financially unconstrained network, most segments in northwest portion of the GHMPO area operate at an acceptable LOS. Other areas showing distinct improvement in LOS over the 2040 No-Build model results include:

- McEver Road in southwest Hall;
- SR 60 between Gainesville and Jackson County;
- SR 323 between Gainesville and Gillsville;
- Northeast Hall, with the exception of Interstate 985; and
- Old Winder Highway and Union Church Road between SR 53 and Cash Road.

5.2 Highway Scenario Comparisons

Comparing vehicle miles of travel (VMT), vehicle hours of travel (VHT), and daily hours of delay between the four different roadway scenarios outlined in the previous section is helpful to understand how improvements impact travel conditions in the GHMPO area.

The number of vehicle miles of travel is an indicator of the travel levels on the roadway system by motor vehicles. VMT is estimated for the given time period and it is based upon traffic volume counts and roadway length. As the population and employment grow in the GHMPO area, VMT is projected to grow. The population growth is not the only factor attributing to the rise in travel in GHMPO area. Other factors could include economic growth, affordable auto travel costs, tourism, limited public transit, no express bus service, and sprawl.

Vehicle hours traveled (VHT) is the total vehicle hours expended traveling on the network for a specified time period (in this case, daily), and measures the relationship between roadway travel time and traffic volumes. As auto travel increases, the hours wasted on congested roadways, the fuel used by the vehicles, and the total overall costs of auto travel will increase between 2008 and 2040.

Vehicle hours of delay is a comparison of the difference in vehicle speed during congested time periods versus uncongested time periods and describes the relationship of this difference in time to daily traffic volumes. This measure of delay provides

additional insight on whether corridor capacity is adequate to meet demands on the network.

5.2.1. Vehicle Miles Traveled by Level of Service

The total VMT for each of the four scenarios are shown in **Table 5-4** and **Table 5-5** shows the percent of VMT by LOS, while **Figure 5-11** graphically displays the amount of VMT by level of service. Due to the projected growth in households, population and employment, it is no surprise that VMT increases by 2040 under the no-build, E+C, and unconstrained scenarios. VMT is reduced by 9.5 percent between the E+C scenario and the financially unconstrained scenario, which is a good step in developing the financially constrained program of projects. The percent of the VMT by LOS under the financially unconstrained scenario is lower than the E+C scenario, which is also another good step in identifying projects that will help reduce VMT under the financially constrained plan. However, 59 percent of the roadways in the GHMPO area will operate at LOS F by 2040 under the unconstrained scenario compared to only 7 percent in the base year. This suggests that additional investments in public transit, express bus, car pooling, commuter rail, etc. will be needed to further improve mobility options in the GHMPO area.

Table 5-4: Vehicle Miles of Travel by Roadway Scenario

Scenario	Total VMT
Base Year	4,008,307
No-Build	9,709,060
E+C	9,706,275
Unconstrained	8,786,560

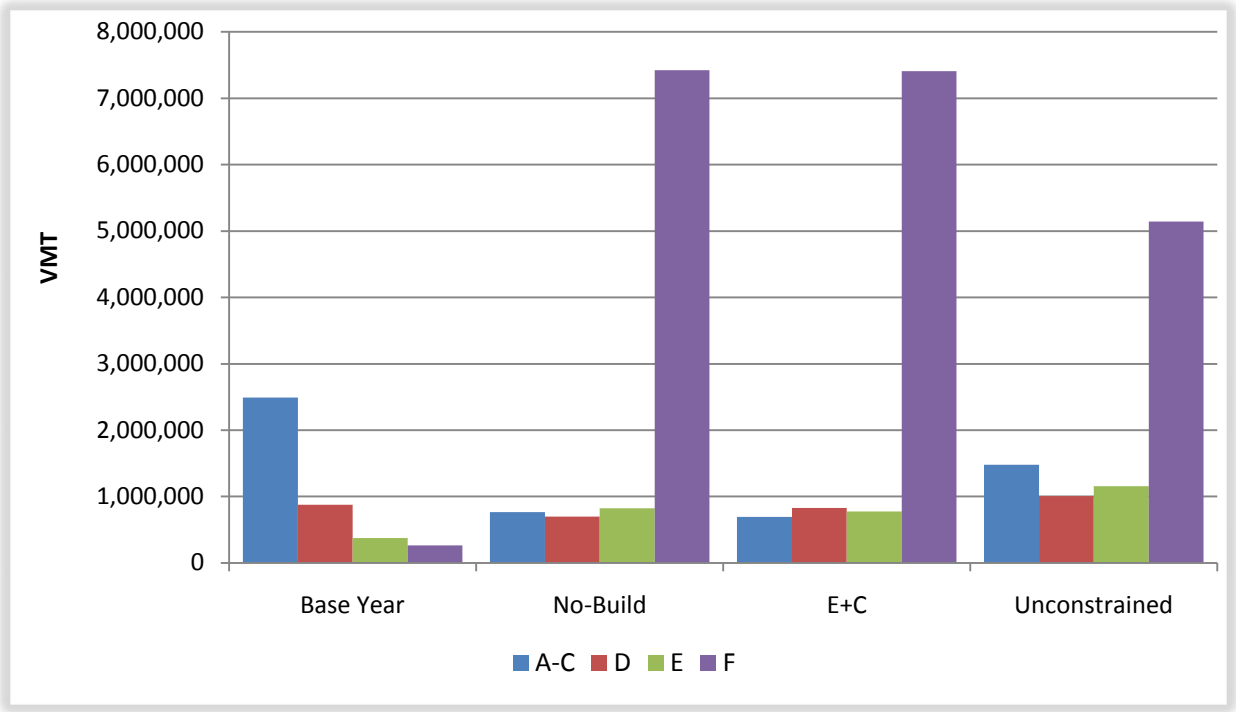
Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Table 5-5: Percent of Vehicle Miles of Travel by LOS

Scenario	LOS A, B, C	LOS D	LOS E	LOS F
Base Year	62%	22%	9%	7%
No-Build	8%	7%	9%	76%
E+C	7%	9%	8%	76%
Unconstrained	17%	11%	13%	59%

Source: GHMPO Travel Demand Model. Georgia Department of Transportation

Figure 5-11: VMT by LOS



Source: GHMPO Travel Demand Model. Georgia Department of Transportation

5.2.2. Vehicle Hours Traveled by Level of Service

Comparing the vehicle hours traveled is very similar to the VMT discussion in the last section. The total VHT for each of the four scenarios are shown in **Table 5-6** and **Table 5-7** shows the percent of VHT by LOS, while **Figure 5-12** graphically displays the amount of VHT by level of service. The base year VHT totaled 149,896 and if no improvement are made on the GHMPO roadway system VHT will increase to 3.6 million. Comparing the no-build to the E+C scenario, VHT is reduced by 1.6 million or 44 percent. VHT is further reduced by 1 million or 53 percent between the financially unconstrained scenario and the E+C scenario, which will helpful in developing the financially constrained list of projects. Under the financially unconstrained scenario, 80

percent of the hours traveled will be at LOS F, which further confirms that additional mobility options must be implemented to reduce congestion in the GHMPO area.

Table 5-6: Vehicle Hours Traveled by Roadway Scenario

Scenario	Total VHT
Base Year	149,896
No-Build	3,606,413
E+C	2,006,937
Unconstrained	942,264

Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Table 5-7: Vehicle Hours Traveled by LOS

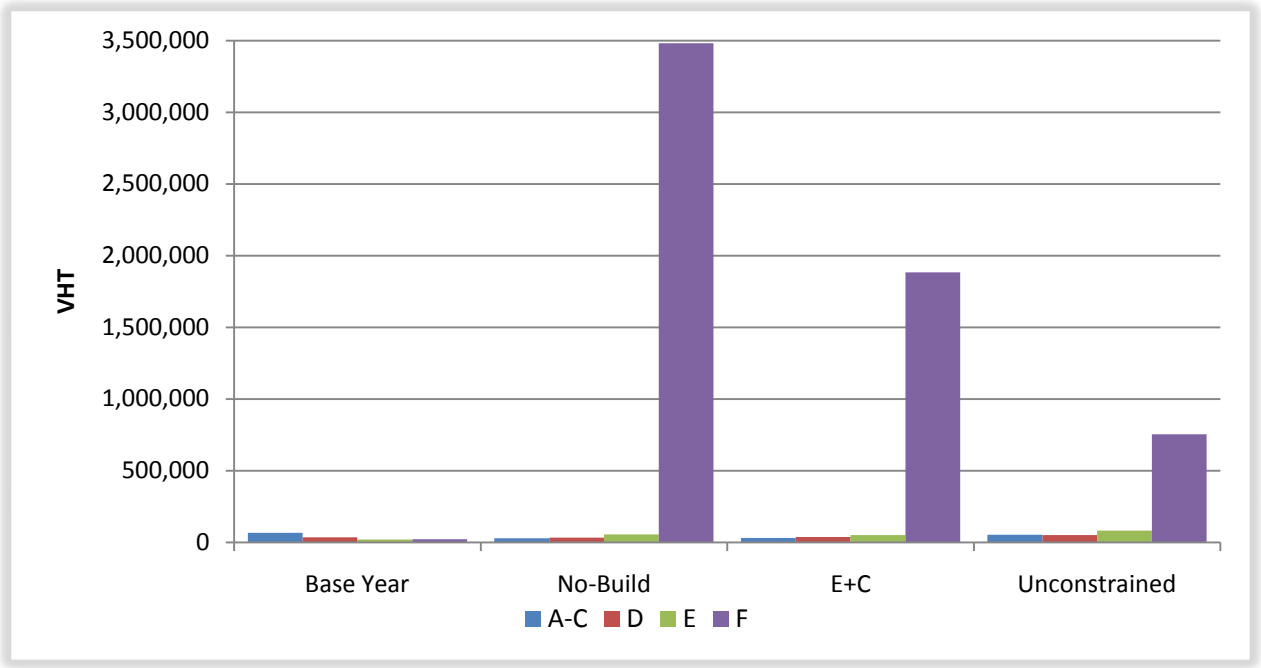
Scenario	LOS A, B, C	LOS D	LOS E	LOS F
Base Year	45%	24%	15%	16%
No-Build	1%	1%	2%	96%
E+C	2%	2%	2%	94%
Unconstrained	6%	5%	9%	80%

Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

5.2.3. Hours of Delay

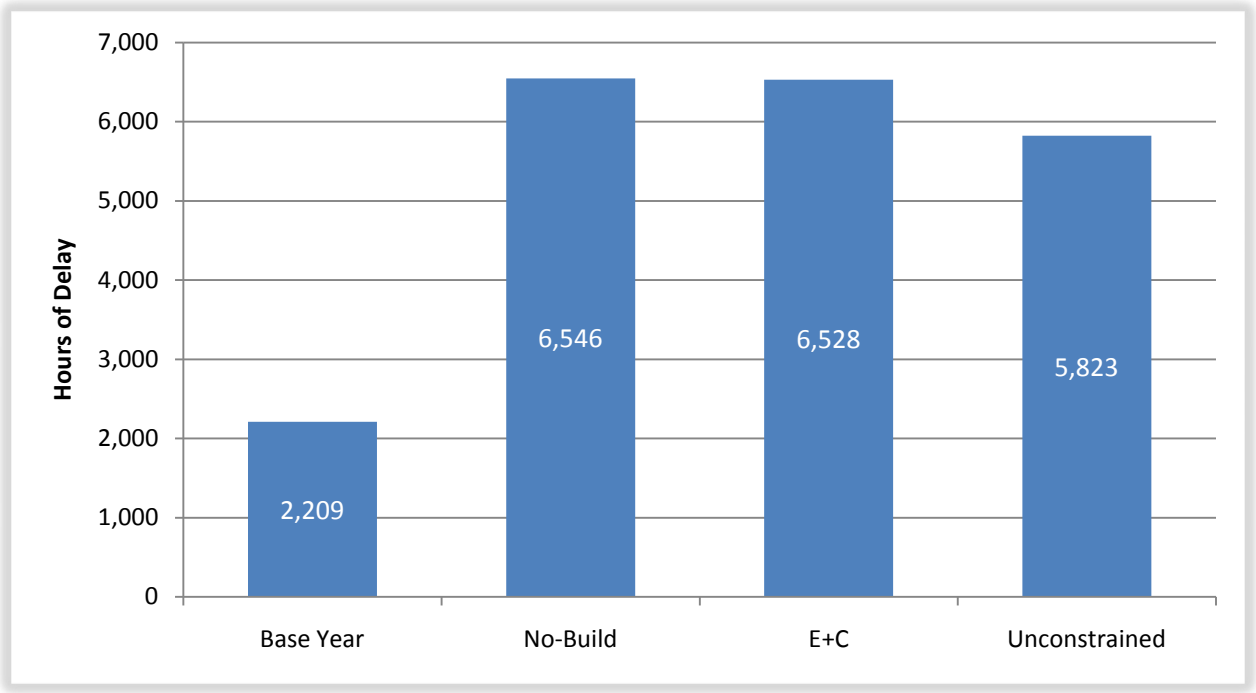
The total hours of delay for each of the four scenarios are displayed in **Figure 5-13**. The total base year hours of delay was 2,209 hours and if nothing is done over the next 29 years the total delay would total 6,546 hours, which is an increase of 196 percent. There is a negligible decrease in hours of delay between the no-build and E+C scenarios, however there is a noticeable decrease of 705 hours of delay between the E+C scenario and the financially unconstrained scenario. Even though there is a decrease in the delay, it is evident the constructing all the financially unconstrained roadway projects will still not address most of the severe congestion in the GHMPO area and thus additional mobility options must be implemented to further reduce the total hours of delay.

Figure 5-12: VHT by LOS



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Figure 5-13: Hours of Delay



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

5.3 Bike and Pedestrian Needs

Recently the nation has seen a shift toward people considering walking and biking as a viable form of transportation and not just a recreational activity. Many factors have contributed to this movement: higher and more volatile fuel prices; the economic recession; and a social awareness of the importance of sustainability and health. All of these factors have contributed to people seeking alternative forms of transportation to achieve daily mobility tasks and not simply as recreational activities. For these reasons, the 2040 MTP considers non-motorized mobility facilities as "real" mobility alternatives to cars and improving public transit ridership.

5.3.1. Federal Requirements

Under SAFETEA-LU, the Federal Government set a goal that 15 percent or more of all travel be accomplished by non-motorized transportation, while reducing the number of users of this mode injured or killed by a simultaneous 10 percent. The goal is to balance the ability of the system to provide a true travel alternative to the personal motor vehicle while implementing a system that is safe as well as convenient. SAFETEA-LU requires that all MTPs consider biking and walking as viable, equal mobility alternatives to driving and not simply as recreational activities. Based on this support, projects identified within this effort are eligible for several avenues of Federal funding, in the range of an 80 percent to 95 percent match to local contributions. The most likely funding sources include sources such as Surface Transportation Program (STP), Safe Routes to School (SRTS, detailed later in this document), Congestion Mitigation and Air Quality Improvement (CMAQ), and Transportation Enhancement Activities (TEA), although a multitude of other sources exist. The needs outlined herein all qualify for one or more of these avenues of funding.

It is anticipated that Congress will fully consider a new surface transportation bill sometime 2012. In addition to this pending legislation, evidence of the Administration's commitment to sustainability and alternative modes of travel can be found in the Complete Streets Act of 2009 and in the Interagency Partnership for Sustainable Communities formed by the Environmental Protection Agency (EPA), U.S. Department of Transportation (U.S. DOT), and Housing and Urban Development (HUD). This interagency partnership is committed to provide travel choices that minimize the impact on both the built and natural environments through thoughtful community design and provision of non-motorized mobility networks. The partnership set forth a set of guiding principles to ensure more sustainable communities as listed below:

- **Provide more transportation choices**. Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.
- **Promote equitable, affordable housing**. Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- **Enhance economic competitiveness**. Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.
- **Support existing communities**. Target federal funding toward existing communities—through strategies like transit oriented, mixed-use development, and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- **Coordinate and leverage federal policies and investment**. Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.
- **Value communities and neighborhoods**. Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

5.3.2. GHMPO Bicycle and Pedestrian Plan

The GHMPO Bicycle and Pedestrian Plan included an overall vision and specific projects, actions, and supporting policies for the development of a countywide pedestrian and bicycle system. The plan was developed in 2005/2006 by the GHMPO with staff participation and community input from Hall County; the cities of Gainesville, Oakwood, Flowery Branch, Lula, Clermont, and Gillsville; the Georgia Department of Transportation; and the Georgia Mountains Regional Development Center.

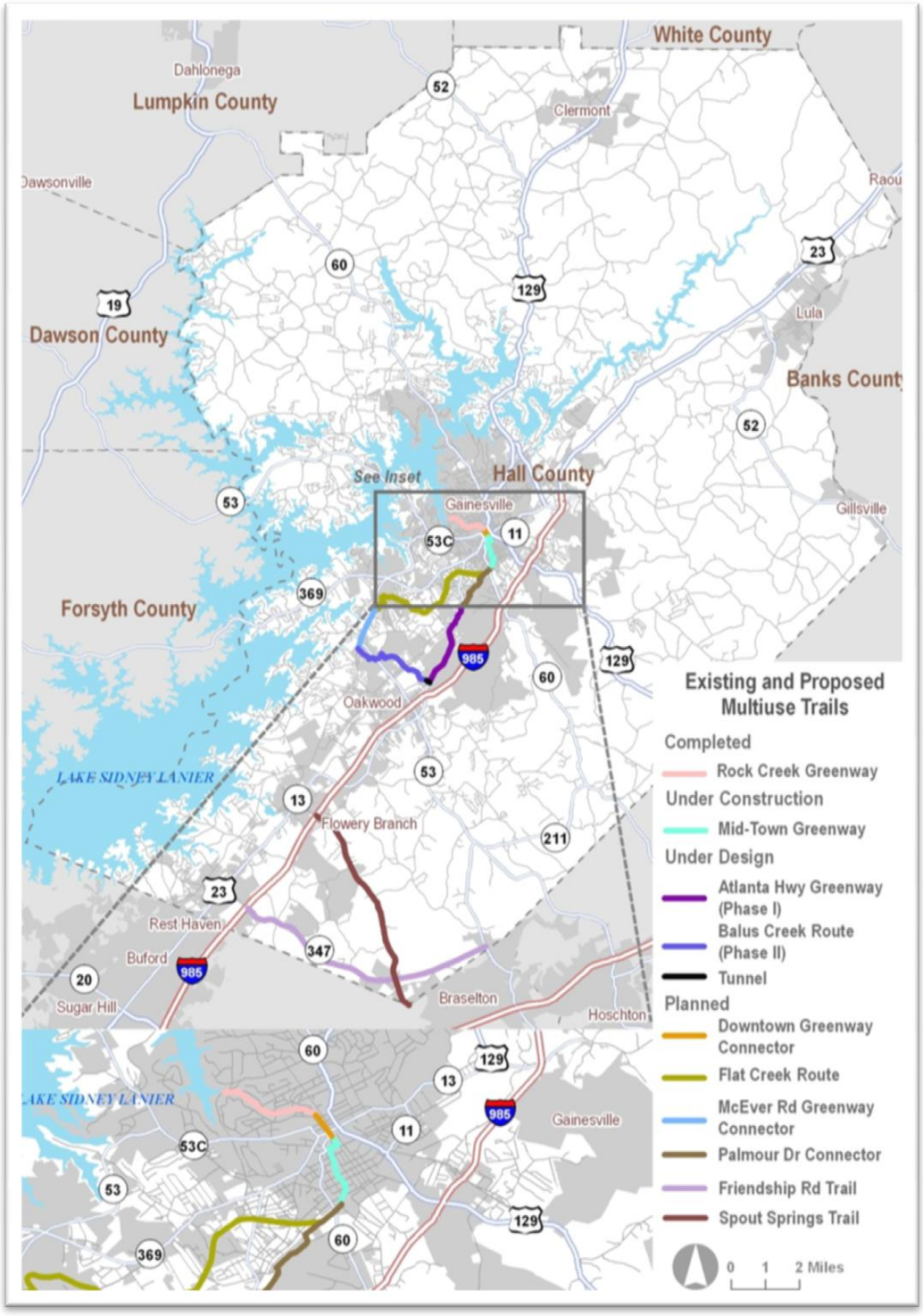
Over the next few years, GHMPO should update the Bicycle and Pedestrian Plan to ensure the work being completed by Hall County, Gainesville, and Georgia DOT are connected to improved mobility options for residents and tourists.

Rock Creek Greenway, Gainesville

5.3.3. Future Needs and Connections

In order to make bicycle and pedestrian transportation an integral and choice mode of transportation in the GHMPO area, bicycle networks and pedestrian systems must be planned and constructed. Hall County in collaboration with the City of Gainesville and GHMPO are developing the Central Hall Recreation and Multi-Use Trail. Today, the Rock Creek Greenway is the only segment that is open. However, construction is currently underway on the Mid-Town Greenway, and engineering is completed on the Atlanta Highway Greenway (Phase I), Balus Creek Route (Phase II), and the multi-use tunnel at the Department of Labor. As shown in **Figure 5-14**, the Central Hall Recreation and Multi-Use Trail will stretch almost 16 miles when it is completed.

Figure 5-14: Existing and Proposed Multi-use Trails



Source: GHMPO, Hall County GIS Department, and City of Gainesville.

As part of the Friendship Road/SR 347 widening project, GDOT is constructing a 10 foot multi-use trail on both side of the roadway between SR 211 and I-985 and a sidewalk between I-985 and McEver Road/SR 53. Also, the Spout Springs Road widening project will provide a multi-use trail on both sides of the roadway between I-985 and the Gwinnett County line. Providing future connections to these new bicycle and pedestrian system from residential communities and commercial centers will enhance mobility for local residents and potentially could reduce SOV travel in the GHMPO area. Also, providing additional connections and linkages from nearby major and secondary roadways to and from all these bicycle and pedestrian improvements will be critical to improving mobility in the GHMPO area.

Worn path along Jesse Jewel Parkway

The following provides the bicycle and pedestrian needs in the GHMPO area that will improve safety, mobility, and connectivity, which is a goal of the MTP. These needs are based on field reviews and public comments:

- Provide continuous and linked sidewalks on major roadways, multi-use trails, and bicycle facilities that connect the major and secondary roadways;
- Improve mobility options to the special needs populations, including the elderly, people with disabilities, students and lower income residents, who often cannot drive a car to meet their daily needs;

- Complete and enhance a the multi-use trail system and bicycle facilities; and,
- Improve safety for pedestrians and cyclists crossing major intersections.

5.4 Public Transportation Needs

Since the 2030 LRTP update was adopted in August 2007, Hall Area Transit and the GHMPO completed additional plans to more thoroughly address public transportation issues. In 2008, HAT completed a Transit Development Plan (TDP) which focused on developing a five year action plan for the Red Rabbit fixed- route service. In 2009, GHMPO completed a Human Services Transportation Plan that identified issues and opportunities related to the coordination of human services transportation. The existing public transportation needs identified in these plans are summarized in the 2040 MTP. In addition to local plans, regional and statewide plans were also reviewed to provide additional information on transit needs. Finally, to effectively identify future transit needs, commute travel patterns and socio-economic data (population and employment) were assessed to provide insight as to where potential new demand or transit services may be needed.

Operating transit is complex and focuses on providing daily service. Transit service planning typically focuses on a shorter-term basis, usually a five-year period. Beyond five-years, transit planning is considered long-range. The following provides an overview of the GHMPO short-term transit needs.

The HAT TDP provided a thorough examination and assessment of the existing HAT operations and it also evaluated potential needs through a review of travel characteristics, land use, socio-economic data evaluation, and peer system review.

5.4.1. Transit Development Plan Evaluation

Many factors were evaluated and reported in the TDP *Data Collection, Review, and Analysis Report*. The socio-economic data evaluation identified existing populations more likely to need or want transit, which included low-income, minority, youth, elderly, and disabled persons, and households lacking private vehicles. The evaluation found the greatest concentrations of these populations and households were within the City of Gainesville. The report found that many population areas with a propensity to need or use transit are served by existing HAT Red Rabbit fixed routes.

The TDP provided a discussion of barriers to transit in Hall County in the categories of service coverage and customer accessibility, multimodal travel, the physical environment, and sustainable financing. Related to service coverage, it was found that the limited geographic extent of the Red Rabbit fixed-route service did not provide desired access to several educational institutions and many of the County's major recreational areas. In addition, several of the major thoroughfares, including McEver Road, Industrial Boulevard, and Green Street, are not served by existing Red Rabbit routes.

Improving pedestrian accessibility to Red Rabbit bus stops was identified as a need along many of the Red Rabbit routes. In many instances, sidewalks are unavailable, and some bus stops do not meet Americans with Disabilities Act (ADA) accessibility guidelines. Key Red Rabbit service-area corridors exhibiting such impediments were identified as follows:

- Athens Street/Athens Highway;
- Beverly Road;
- Browns Bridge Road;
- Clarks Bridge Road;
- Downey Boulevard;
- E.E. Butler Parkway;
- Jesse Jewell Parkway (Downtown, East);
- Limestone Parkway;
- Martin Luther King Jr. Boulevard;
- Memorial Park Drive;
- Morningside Drive;

- Park Hill Drive;
- Shallowford Road;
- South Enota Drive;
- Thompson Bridge Road;
- West Ridge Road; and
- White Sulphur Road.

The Red Rabbit operates from approximately 7:00 am to 6:00 pm Monday through Friday. The limited Red Rabbit service span was identified as a barrier for those wanting to use the service to travel to work. Service is unavailable for travel for those who work on early morning, evening, or the late-shifts as well as on the weekends.

The TDP considered the connectivity of Red Rabbit service to other modes and that Red Rabbit service improvements could be made to facilitate complete trips. For example, by equipping HAT vehicles with bicycle racks, more patrons could use the HAT service for longer trips and get to their final destination via bicycle. Additionally, HAT routes should connect or provide service hours to connect to the GHMPO service area's other transportation facilities, including the Buford Park and Ride Lot in Gwinnett County and the Greyhound bus or the Amtrak stations in Gainesville.

Physical environment barriers to using transit identified within the GHMPO service area included large block lengths, lack of pedestrian street crossings, and deep building setbacks. In the evaluation of future residential and employment land use, the TDP found that areas where growth is anticipated do not appear to have transit-supportive densities.

As the GHMPO service area continues to grow, another need identified by the TDP is securing a sustainable source of funding. The service may face funding constraints, largely due to the lack of statewide financial support.

5.4.2. Service Modifications and New Service Needs

To meet the changing needs of the HAT system, service modifications, new service, and other recommendations were identified in the *TDP New Services Recommendations Report*. The five-year implementation time table began in 2008. **Table 5-8** summarizes the recommendations identified along with implementation status. Recommendations that have not yet been implemented remain unmet needs for system improvement.

Table 5-8: HAT TDP Implementation Status

Recommendations		
Red Rabbit Service Modifications	**Priority**	**Status**
Relocate the HAT system Transfer Facility from High Street/Pine Street to the new HAT Headquarters building on Main Street	Year 1	Complete
Blue Route: Extend the Blue Route north on Limestone Parkway to Ridgecrest Apartments and connect with Green Route. Eliminate service on Limestone Parkway between Beverly Road and Jesse Jewell Parkway. Terminate at new HAT Transfer Center.	Year 1	Not implemented to date
Orange Route: Originate at Lake Forest Apartments and terminates at new HAT Transfer Center via Dawsonville Highway and Rainey Street. Service on Shallowford Road and Pearl Nix Parkway transferred to Purple Route. Service on John Morrow Boulevard eliminated. Operate on 30 minute frequency.	Year 1	Complete
Gold Route: Originate at Lenox Park and terminate at the new HAT Transfer Center. Operates on same routing as the eastern half of the current Gold Route. Operate on 60 minute frequency.	Year 1	Complete
Pink Route: Originate at Memorial Park Drive and terminate at the new HAT Transfer Center. Operate on 60 minute frequency.	Year 1	Complete
Red Route: Originate at Linwood Apartments and terminate at new HAT Transfer Center. Service on Queen City Parkway eliminated. Operate on 60 minute frequency.	Year 1	Not changed to Red/Green
Green Route: Originate at Ridgecrest Apartments and connect with Blue Route. Terminate at the new HAT Transfer Center. Operate on 60 minute frequency.	Year 1	See Red Route
Purple Route: Initiate new Red Rabbit service on Atlanta Highway from Lakeshore Mall to Memorial Park Drive.	Year 1	Complete
Flex Route: Establish new Flex Route Service on 60 minute frequency on Highway 129 from termination point on Gold Route to Jackson County boundary	Year 2	Not implemented to date
Purple Route: Extend Purple Route to Gainesville State College.	Year 3	Complete
Purple Route: Extend Purple Route to Flowery Branch	Year 4	TBD
Commuter Route: Establish commuter service from Exit 16 to downtown Atlanta	Year 5	TBD
Purple Route: Expand complementary paratransit service in the Atlanta Highway corridor	Year 1 and on-going	Expanded as required for ADA
Other Recommendations	**Priority**	**Status**
Develop comprehensive marketing plan to reach out to new patrons and create strategies for public awareness and services offered	Year 1	Complete and on-going
Repaint buses with a red paint scheme rather than blue to match the brand Red Rabbit	Year 1	Complete
Promote Red Rabbit service and expand promotional themes used previously, including the "Dump the Pump" and "Discover the Red Rabbit"	Year 1	On-going
Distribute Red Rabbit informational materials (route maps and schedules)	Year 1	On-going
Redesign Red Rabbit route map and schedule to make it more customer-friendly	Year 1	Complete
Update bus stop signs to reflect new vehicle paint scheme	Year 2	TBD
Develop web links from GHMPO service area organizations and institutions to HAT website and create a dedicated web site for HAT	Year 1	Incomplete
Develop English and Spanish informational and promotional materials	Year 1	Complete
Consider implementation of Intelligent Transportation System (ITS) applications such as traveler information/display systems, passenger security systems, transit vehicle monitoring and maintenance, and transit signal priority	Year 5	TBD
Develop multimodal terminal near Amtrak rail station on Industrial Drive to serve HAT local bus, Amtrak rail service, Greyhound intercity bus service, pedestrians, bicyclists, and parking	Year 5/6	TBD

Source: HAT Transit Development Plan.

5.4.3. Human Services Transportation Plan

Federal Transit Law, as amended by SAFETEA-LU, requires that projects selected for funding under the Elderly Individuals and Individuals with Disabilities (Section 5310), Job Access and Reverse Commute (JARC), and New Freedom programs be derived from a locally developed, coordinated public transit-human services transportation plan and that the plan be developed through a process that includes representatives of public, private, and non-profit transportation and human services providers and participation by members of the public. The *GHMPO Human Services Transportation Plan* was adopted in 2009. This plan was the first to assess human service transportation needs and identify both public and private transportation providers specifically within the GHMPO service area.

5.4.4. Identified Gaps, Needs, and Challenges Summary

A number of human service transportation service gaps, needs, and challenges were identified in the plan:

- Existing providers do not adequately provide service to all those needing service. Some areas within the GHMPO service area have little to no service.
- Little to no service is available for off-peak travel times. Longer hours of service are needed for public transit and complementary paratransit service.
- Many of the human service facilities and work destinations are not served by the public transportation.
- Little information is available to the public for services that are available. Some agency providers are unaware of public transportation services operating in the GHMPO service area.
- Demand for services, particularly from the growing senior population, is anticipated to grow.
- Workforce development for under- and unemployed persons requires transportation assistance and services.
- In some portions of the GHMPO service area there is duplication of demand response services. Many providers limit passengers to their own client base but could share programs and resources with similar clients.

- Facilities are inadequate to provide convenient transfers between demand response and fixed-route transit service. Route scheduling for demand response service does not integrate fixed-route bus scheduling.

5.4.5. Recommendations

Recommendations identified in the *GHMPO Human Services Transportation Plan* promote improved coordination between transportation service providers within the GHMPO service area. A summary of recommendations and implementation status are shown in **Table 5-9**. Recommendations that have not yet been implemented remain unmet needs for improved coordination.

Table 5-9: Human Service Transportation Plan Implementation Status

Recommendations	Status
Create a Human Services Transportation Coordinating Council (HSTCC) with GHMPO service area transportation provider representatives (to include HAT, Georgia DNR, Legacy Link, Village Nursing Care, Disability Resource Center, Gainesville Senior Center, Southeastrans, and others). Activities that the HSTCC could undertake include: regularly updating the Human Services Transportation Plan and integrate the plan with other regional and statewide plans, integrating public and human services transportation into local decision-making processes, and executing a regional public information campaign to increase awareness and garner more support for services.	Conducting quarterly meetings
Develop a comprehensive mobility management policy and means to better coordinate services and resources. Note: Mobility management is an innovative approach for managing and delivering coordinated transportation services to transit customers, including older adults, people with disabilities, and individuals with lower incomes.	No action to date
Coordinate with Georgia Department of Human Services to identify eligible projects for Federal Transit Administration (FTA) Section 5310 (Specialized Transportation, Elderly and Disabled) grants	Utilize 5311 funds; reviewing 5310 and 5317 – New Freedom

Source: GHMPO Human Service Transportation Plan.

In 2010, the Georgia legislature passed House Bill 277 (*Transportation Investment Act of 2010)* and it was subsequently signed into law by the Governor. This law includes a statewide initiative to promote coordinated transportation services and the Georgia Coordinating Committee for Rural and Human Services Transportation was created as part of the Governor's Development Council. Committee duties include a report on how to better coordinate public transportation services across the state. The outcome of the Committee's work will likely have an impact on Hall County services and should promote additional coordination. The prior *Human Services Transportation Plan* was completed by the Georgia Department of Human Resources, Region 2 in 2006.

5.5 Other Studies and Initiatives

With federal support and grants, renewed interest in transit and transit-related initiatives has emerged. Recent activities include promotion of livability through a joint effort between the U.S. DOT, EPA, and HUD. Specific actions undertaken by FTA include expanding eligibility of federal transit funds for bicycle and pedestrian improvements and providing information to support community transit-oriented development. Expanding intercity rail options has also received support, with the U.S. DOT recently awarding the State of Georgia $4.1 million to develop a Charlotte, North Carolina to Atlanta Corridor Plan for high speed rail, which would potentially traverse through Gainesville. The following provides background information and needs that have been identified by other studies that may impact the GHMPO area over the life of the 2040 MTP.

5.5.1. GDOT Commuter Rail

Commuter rail generally operates during the morning and afternoon peak periods and it provides transportation for workers living in outlying communities to large employment centers. Commuter rail successfully operates in cities around the U.S., such as Dallas, Seattle, Washington, D.C., New York City, Chicago, and San Francisco.

GDOT completed commuter rail studies in 2001 and 2005, which identified priority routes to implement. The current commuter rail plan identified seven corridors, which included a route between Atlanta and Gainesville. To date, only the Atlanta to Lovejoy corridor has been proposed for a first phase of implementation, which would eventually link to Macon.

The Atlanta-Gainesville corridor is 53 miles long and includes stations in the following locations:

- Gainesville;
- Oakwood;
- Flowery Branch;
- Buford;
- Suwanee;
- Duluth;
- Norcross;
- Doraville;
- Lenox;

- Atlantic Station; and
- Atlanta.

No time frame has been identified for implementing the Atlanta-Gainesville route. Currently, the Georgia Rail Passenger Program (GRPP) implementation schedule shows implementation for the Gainesville service in year 11 out of an 18-year schedule.

As noted in a *2005 Fact Sheet* from the GRPP, the Atlanta-Gainesville line is included in the Southeast High Speed Rail Corridor to Charlotte, NC. Service along this corridor would be three trains daily.

5.5.2. GDOT High Speed Rail

As noted earlier, Amtrak intercity passenger rail service operates daily with a stop in Gainesville on the Amtrak Crescent line which provides service between New Orleans and New York. There is interest at the federal and state government level in improving intercity rail service between major cities nation-wide. Gainesville has been identified as a potential station location on a high speed intercity regional rail corridor between Atlanta and Charlotte, NC. High speed rail trains operate at speeds of at least 110 miles per hour. As noted earlier, federal funding to develop an Atlanta to Charlotte high speed rail corridor plan has been provided to GDOT.

5.5.3. SR 365 Corridor Study

GDOT completed a study of the SR 365 Corridor in March 2009.[4] The purpose of the study was to evaluate existing and future transportation conditions and travel demand along the corridor and evaluate implementing additional limited-access along the corridor. Currently, SR 365 is a four-lane, median divided rural highway. The corridor study examined the highway from Jesse Jewell Parkway in Hall County to Mount Airy Highway in Habersham County. The study identified and prioritized projects for implementation that address safety, mobility, and economic development. The study recommendations include the following:

- Reconstruct SR 365 as a six-lane, grade separated, limited access freeway for mobility
- Construct frontage or local roads for local access adjacent to the highway.

This reconstruction would take place in phases beginning in Hall County.

[4] Georgia Department of Transportation. (March 20, 2009). *SR 365 Corridor Study: Final Report*. Prepared by ARCADIS.

The study evaluated various travel demand management (TDM) strategies. One of the primary strategies included developing park-and-ride facilities at or near major intersections. The study's Action Plan recommended the preparation of a TDM plan to identify and assess the potential for new park-and-ride facility locations. The report indicated that addition of park-and-ride facilities could facilitate ridesharing through carpooling, vanpooling, or future transit service.

5.6 Commuter and Intercity Bus

The only intercity bus service operating in the GHMPO area is the Greyhound service between Gainesville and Atlanta. There are currently no commuter bus operations from the GHMPO area. During the HAT TDP, the need for increased commuter bus and intercity bus service was identified by stakeholders, local residents, and supported by the technical assessment in the development of the HAT TDP. Changes in travel trends observed from U.S. Census data and other regional plans are provided in the following section.

5.6.1. Commuter Travel Trends

To evaluate macro changes in commuter travel trends, an assessment of U.S. Census journey to work and local employment dynamics data was undertaken. The purpose of this evaluation was to show how major demographic shifts and growth have impacted potential transit needs within the area. This review was for trend-analysis only and does not directly relate to the socio-economic forecasting effort for this plan, which considered different years and methods.

The following data were reviewed for this assessment.

- 1990 and 2000 journey to work county-to-county travel data – This data links where people live to where they live and includes information for workers age 16 years and older. The data is reported by county.
- 2002 and 2008 local employment dynamics data – This data is collected by the U.S. Census from state labor departments and provides information on labor and commute sheds for user-defined areas. For purposes of this analysis, data for all jobs was selected for the City of Gainesville and Hall County.

Tables 5-10 and **5-11** provide a comparison of county data between 1990 and 2000 for those living in Hall County and where they commute and those commuting to Hall County from other counties to work. For those living in Hall County, it is notable that between 1990 and 2000, the growth in total jobs was over 17,200 (36 percent). However,

a smaller share of residents was working in the county in 2000 (71.4 percent) as compared to 1990 (78.1 percent). Significant total growth in Hall residents working in Gwinnett County occurred (nearly 3,600 more commuters). The greatest percent increase for residents commuting out of county was to Clarke County (269 percent). The top three destinations for work outside of Hall County in 2000 were Gwinnett, Fulton, and DeKalb Counties.

Table 5-10: 1990 and 2000 Commute Trends for Hall County: Where Residents Work

Live in Hall County, Work in:	1990		2000		Change 1990-2000	
	Total Workers	Percent of Workers	Total Workers	Percent of Workers	Total Increase	Percent of Increase
Hall	37,607	78.1%	46,680	71.4%	**9,073**	**24.1%**
Gwinnett	3,632	7.5%	7,189	11.0%	**3,557**	**97.9%**
Fulton	1,418	2.9%	2,244	3.4%	**826**	**58.3%**
De Kalb	1,395	2.9%	1,716	2.6%	**321**	**23.0%**
Forsyth	580	1.2%	1,577	2.4%	**997**	**171.9%**
Jackson	606	1.3%	1,205	1.8%	**599**	**98.8%**
Clarke	186	0.4%	687	1.1%	**501**	**269.4%**
Lumpkin	310	0.6%	645	1.0%	**335**	**108.1%**
Habersham	462	1.0%	464	0.7%	**2**	**0.4%**
White	244	0.5%	431	0.7%	**187**	**76.6%**
Cobb	250	0.5%	389	0.6%	**139**	**55.6%**
Other	1,473	3.1%	2,175	3.3%		
Total	**48,163**	**21.9%**	**65,402**	**100.0%**	**17,239**	**35.8%**

Source: U.S. Census Journey to Work, County to County Worker Flow Files.

As shown in Table 5-6, between 1990 and 2000, the number of jobs in Hall County increased by nearly 36 percent to 65,652. A large proportion of these jobs were held by those who are also residents of Hall County (71.1 percent in 2000), but the total share in 2000 was a decline from 1990, indicating more persons were commuting into the county from adjacent areas. The greatest total growth of in-commuting was from Gwinnett County (1,751 workers), while the greatest percentage growth was from Clarke County (nearly 496 percent). The greatest number of workers commuting into Hall County in 2000 was from Gwinnett, Jackson, and White Counties.

The Census local employment dynamics data was selected for both the City of Gainesville and Hall County for the years 2002 and 2008. Note that although this data reports similar information to the Census journey to work data, it is not directly comparable. The journey to work data was generated by the decennial census long-form questionnaire, while the local employment dynamics data is generated from labor statistics reported to the Census Bureau by state labor departments.

Table 5-11: 1990 and 2000 Commute Trends for Hall County: Where Workers Live

Work in Hall County, Live in:	1990		2000		Change 1990-2000	
	Total Workers	Percent of Workers	Total Workers	Percent of Workers	Total Increase	Percent of Increase
Hall	37,607	77.9%	46,680	71.1%	**9,073**	**24.1%**
Gwinnett	1,264	2.6%	3,015	4.6%	**1,751**	**138.5%**
Jackson	1,526	3.2%	2,367	3.6%	**841**	**55.1%**
White	1,003	2.1%	2,124	3.2%	**1,121**	**111.8%**
Habersham	923	1.9%	1,979	3.0%	**1,056**	**114.4%**
Lumpkin	1,302	2.7%	1,661	2.5%	**359**	**27.6%**
Banks	953	2.0%	1,492	2.3%	**539**	**56.6%**
Forsyth	914	1.9%	1,263	1.9%	**349**	**38.2%**
Clarke	118	0.2%	703	1.1%	**585**	**495.8%**
Barrow	202	0.4%	692	1.1%	**490**	**242.6%**
Dawson	437	0.9%	479	0.7%	**42**	**9.6%**
Fulton	329	0.7%	367	0.6%	**38**	**11.6%**
Other	1,714	3.5%	2,830	4.3%		
Total	**48,292**	**100.0%**	**65,652**	**100.0%**	**17,360**	**35.9%**

Source: U.S. Census Journey to Work, County to County Worker Flow Files.

Tables 5-12 through **5-13** show comparison data for commuters in 2002 and 2008 for those living and working in the City of Gainesville and Hall County. As shown in **Tables 5-12** and **5-13**, the 2002 and 2008 data suggests that the trend for traveling to outside the county for jobs continued even though the total number of jobs within the county increased. For residents of Gainesville and Hall County, the percent of workers remaining within Hall County to work decreased between 2002 and 2008 by 11.5 percent and 3.7 percent, respectively. A greater number and percent of residents are commuting to Gwinnett, Fulton, and Forsyth Counties for jobs.

As shown in **Tables 5-14** and **5-15**, for those working within Hall County, the trend for greater in-commuting from adjacent counties continued. A smaller proportion of jobs are being filled by residents of the county. For jobs within the City of Gainesville and Hall County, a greater share of workers is commuting to the City from Gwinnett, Jackson, and Forsyth Counties.

Table 5-12: 2002 and 2008 Commute Trends for the City of Gainesville: Where Residents Work

Live in the City of Gainesville, Work in:	2002		2008		Change 2002-2002	
	Total Workers	Percent of Workers	Total Workers	Percent of Workers	Total Increase	Percent of Increase
Hall	6,641	56.6%	5,876	48.9%	**-765**	**-11.5%**
Gwinnett	974	8.3%	1,153	9.6%	**179**	**18.4%**
Fulton	805	6.9%	845	7.0%	**40**	**5.0%**
Forsyth	517	4.4%	701	5.8%	**184**	**35.6%**
DeKalb	438	3.7%	453	3.8%	**15**	**3.4%**
Jackson	374	3.2%	450	3.7%	**76**	**20.3%**
Cobb	361	3.1%	420	3.5%	**59**	**16.3%**
Clarke	144	1.2%	164	1.4%	**20**	**13.9%**
Whitfield	89	0.8%	110	0.9%	**21**	**23.6%**
Clayton	93	0.8%	110	0.9%	**17**	**18.3%**
Other	1,293	11.0%	1,727	14.4%		
Total	**11,729**	**100.0%**	**12,009**	**100.0%**	**280**	**2.4%**

Source: U.S. Census Local Employment Dynamics.

Table 5-13: 2002 and 2008 Commute Trends for Hall County: Where Residents Work

Live in Hall County, Work in:	2002		2008		Change 2002-2002	
	Total Workers	Percent of Workers	Total Workers	Total Workers	Total Increase	Percent of Increase
Hall	34,913	52.8%	33,629	46.2%	**-1,284**	**-3.7%**
Gwinnett	8,018	12.1%	10,290	14.1%	**2,272**	**28.3%**
Fulton	4,972	7.5%	5,472	7.5%	**500**	**10.1%**
Forsyth	2,622	4.0%	3,523	4.8%	**901**	**34.4%**
DeKalb	2,363	3.6%	2,513	3.5%	**150**	**6.3%**
Cobb	2,037	3.1%	2,226	3.1%	**189**	**9.3%**
Jackson	1,855	2.8%	2,198	3.0%	**343**	**18.5%**
Clarke	817	1.2%	942	1.3%	**125**	**15.3%**
Habersham	1,048	1.6%	777	1.1%	**-271**	**-25.9%**
Clayton	525	0.8%	701	1.0%	**176**	**33.5%**
Other	6,937	10.5%	10,457	14.4%		
Total	**66,107**	**100.0%**	**72,728**	**100.0%**	**6,621**	**10.0%**

Source: U.S. Census Local Employment Dynamics.

Table 5-14: 2002 and 2008 Commute Trends for the Gainesville: Where Workers Live

Work in the City of Gainesville, Live in:	2002		2008		Change 2002-2002	
	Total Workers	Percent of Workers	Total Workers	Total Workers	Total Increase	Percent of Increase
Hall	17,610	56.3%	18,983	48.1%	**1,373**	**7.8%**
Gwinnett	1,710	5.5%	2,984	7.6%	**1,274**	**74.5%**
Jackson	1,000	3.2%	1,381	3.5%	**381**	**38.1%**
Forsyth	880	2.8%	1,258	3.2%	**378**	**43.0%**
Habersham	973	3.1%	1,109	2.8%	**136**	**14.0%**
White	791	2.5%	1,033	2.6%	**242**	**30.6%**
Lumpkin	729	2.3%	904	2.3%	**175**	**24.0%**
Fulton	590	1.9%	891	2.3%	**301**	**51.0%**
DeKalb	562	1.8%	759	1.9%	**197**	**35.1%**
Clarke	372	1.2%	667	1.7%	**295**	**79.3%**
Other	6,086	19.4%	9,523	24.1%		
Total	**31,303**	**100.0%**	**39,492**	**100.0%**	**8,189**	**26.2%**

Source: U.S. Census Local Employment Dynamics.

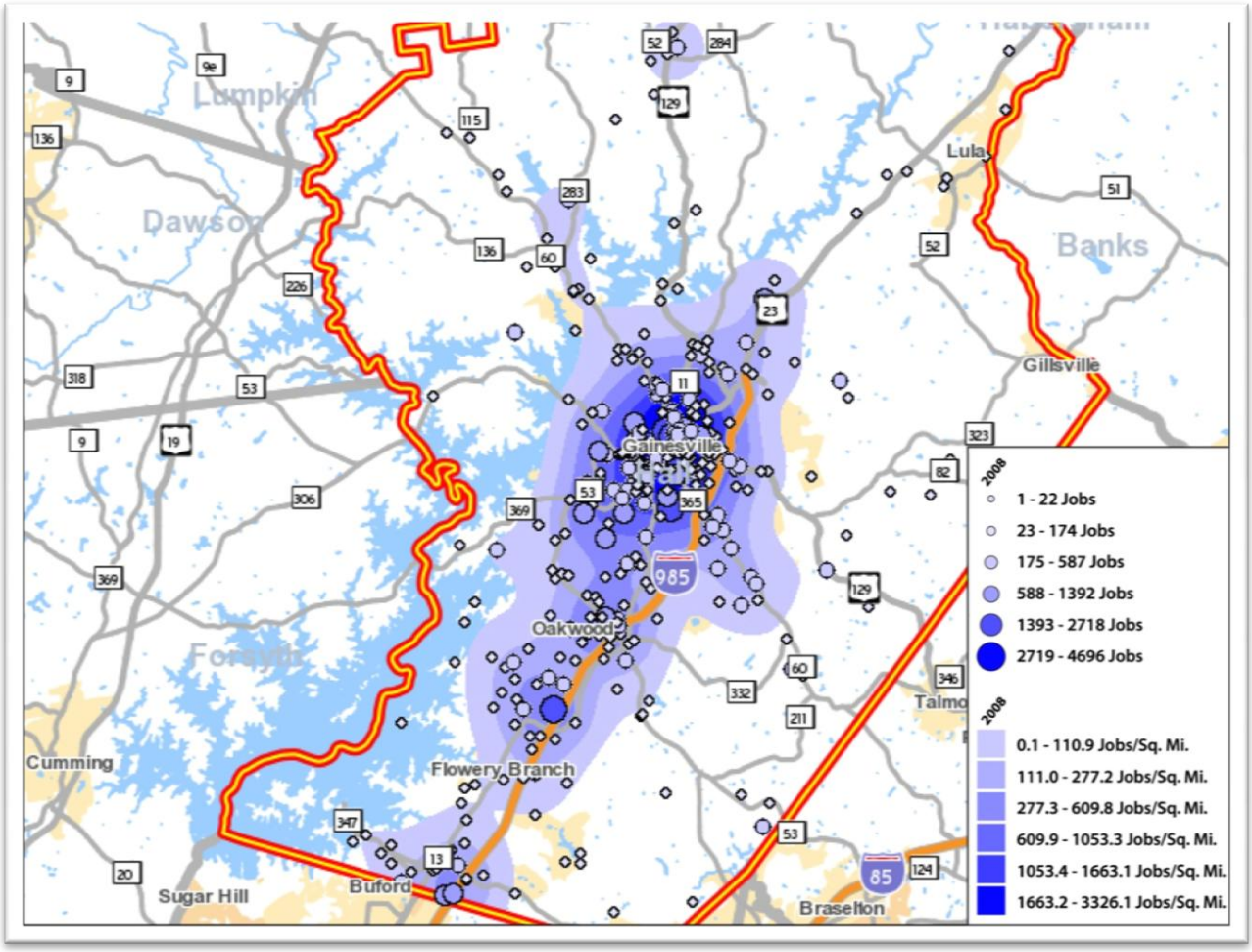
Table 5-15: 2002 and 2008 Commute Trends for Hall County: Where Workers Live

Work in Hall County, Live in:	2002		2008		Change 2002-2002	
	Total Workers	Percent of Workers	Total Workers	Total Workers	Total Increase	Percent of Increase
Hall	34,913	56.1%	33,629	47.2%	**-1,284**	**-3.7%**
Gwinnett	4,480	7.2%	6,491	9.1%	**2,011**	**44.9%**
Jackson	1,990	3.2%	2,592	3.6%	**602**	**30.3%**
Forsyth	1,726	2.8%	2,280	3.2%	**554**	**32.1%**
Fulton	1,113	1.8%	1,828	2.6%	**715**	**64.2%**
Habersham	1,753	2.8%	1,824	2.6%	**71**	**4.1%**
White	1,379	2.2%	1,721	2.4%	**342**	**24.8%**
DeKalb	1,027	1.6%	1,521	2.1%	**494**	**48.1%**
Lumpkin	1,392	2.2%	1,457	2.0%	**65**	**4.7%**
Barrow	812	1.3%	1,314	1.8%	**502**	**61.8%**
Other	11,677	18.8%	16,549	23.2%		
Total	**62,262**	**100.0%**	**71,206**	**100.0%**	**8,944**	**14.4%**

Source: U.S. Census Local Employment Dynamics.

The Census web portal (www.census.gov) provides the ability to map current employment data through an online program called "OnTheMap." **Figure 5-15** shows the job distribution and concentration with Hall County for 2008 from this program. As is shown, the greatest concentration of jobs is located in and around the City of Gainesville, but smaller job concentrations are located along the I-985 corridor in Oakwood, Flowery Branch, and Buford.

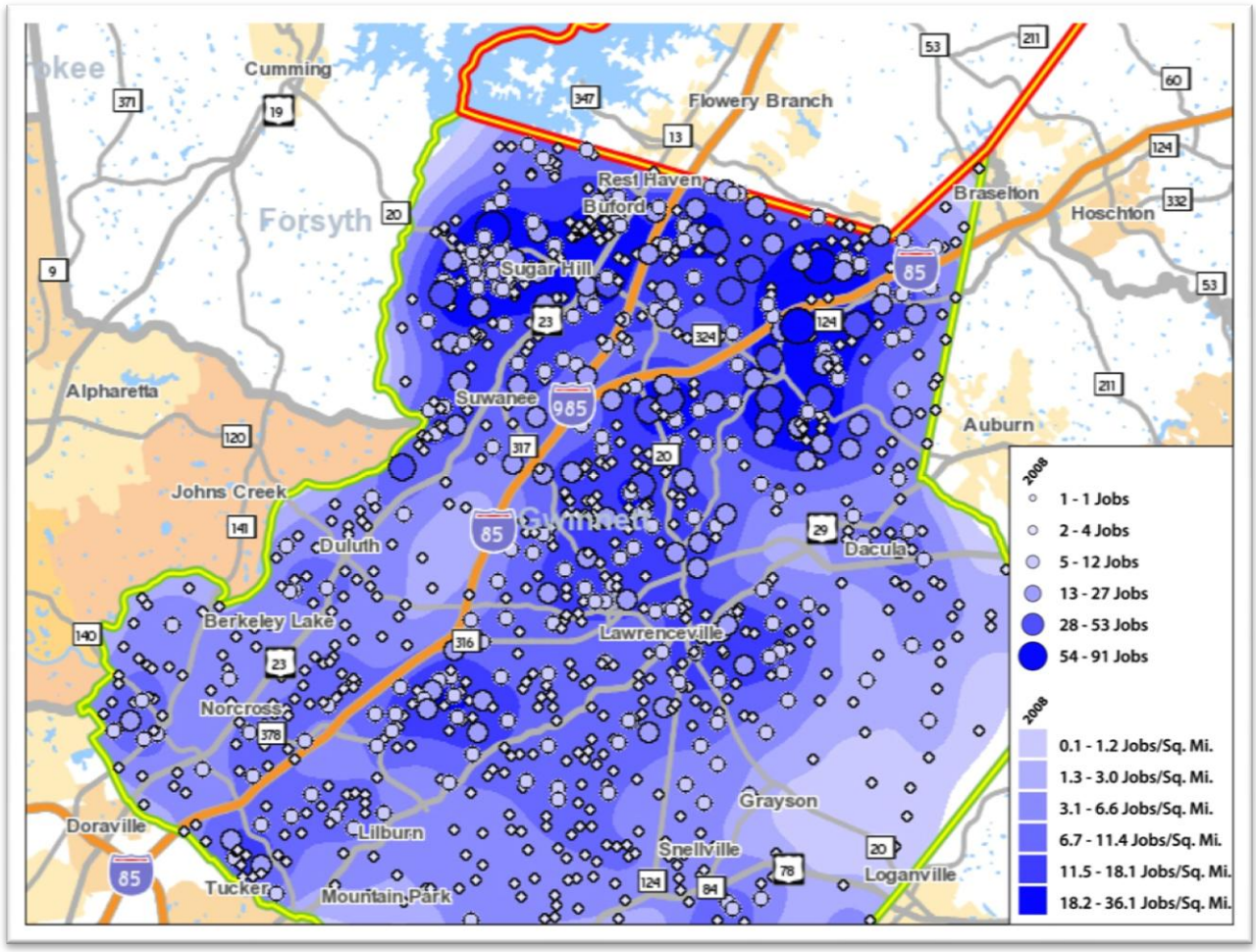
Figure 5-15: 2008 Hall County Employment Concentrations



Source: U.S. Census Local Employment Dynamics, OnTheMap.

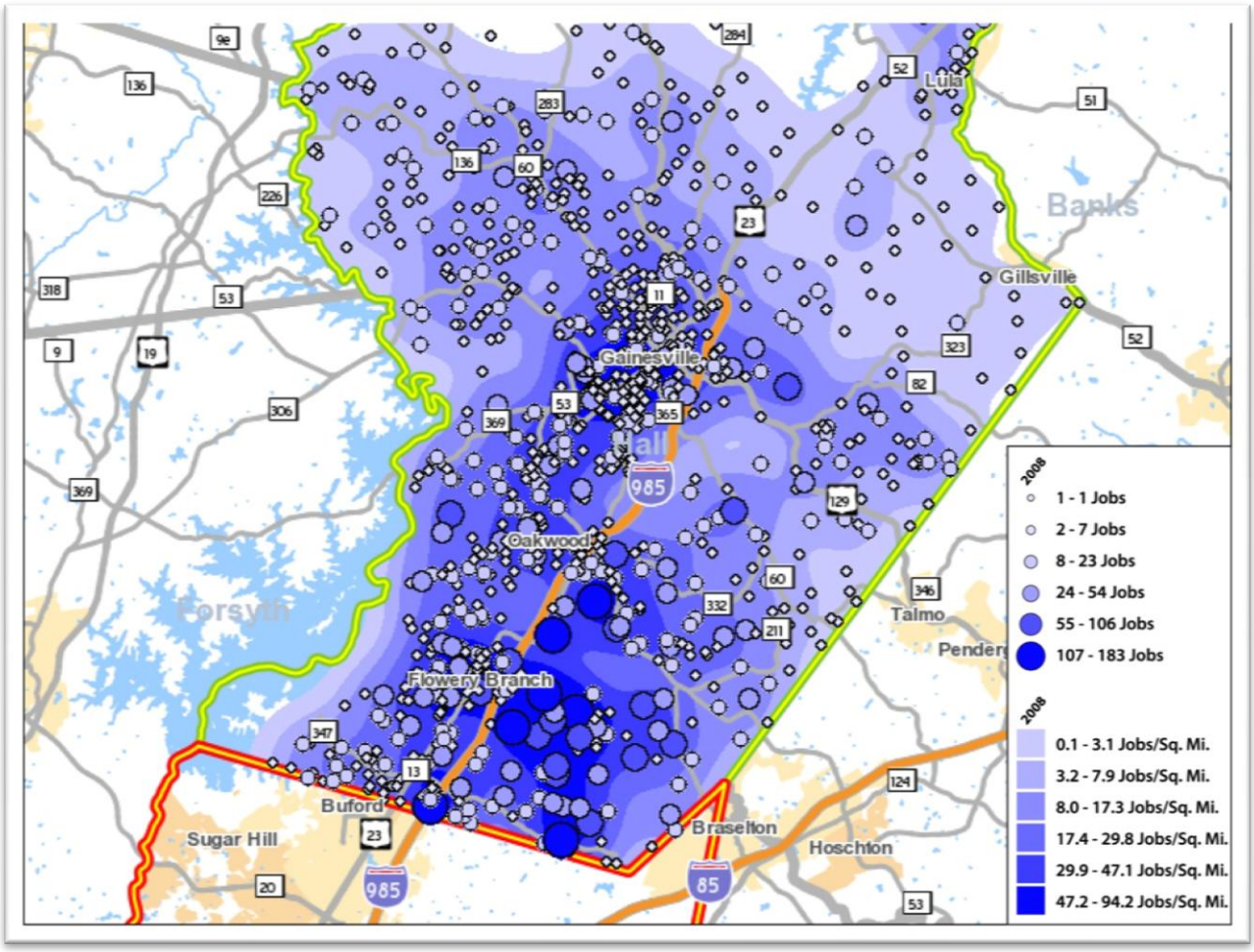
As indicated in the discussion of commute patterns, the greatest growth in commuting between counties is between Hall and Gwinnett Counties. **Figures 5-16** and **5-17** show resident concentrations for those working in Hall County and living in Gwinnett County and those working in Gwinnett County and living in Hall County, respectively. The illustrations show that the greatest concentrations of workers commuting out of county are in the southern Hall County and northern Gwinnett County. Within Hall County, the greatest number of residents commuting out of Hall County to Gwinnett County lives within Oakwood and Flowery Branch areas, south of SR 53. In Gwinnett County, the greatest number of residents commuting out of Gwinnett County to Hall County is north of the I-985 and I-85 interchange, including the areas of Sugar Hill and Buford.

Figure 5-16: 2008 Concentrations of Residents who live in Gwinnett County and work in Hall County



Source: U.S. Census Local Employment Dynamics, OnTheMap.

Figure 5-17: 2008 Concentrations of Residents who live in Hall County and work in Gwinnett County



Source: U.S. Census Local Employment Dynamics, OnTheMap.

In summary, if recent trends continue, more workers will be commuting into Hall County each day for work, while more Hall County residents will be leaving the county for work. The growth in out-of-county commutes suggests a need for examining for providing commuter options, which could include commuter bus service or promotion of vanpooling or carpooling, formally or informally.

As noted in the TDP, average commute times for Hall County residents has continued to grow. The local employment data showed that for 2008, over 19,000 Hall County residents commuted to Gwinnett, Fulton, or Forsyth Counties for work. Likewise, over 11,000 commuters were commuting into Hall County from Gwinnett, Jackson, and Forsyth Counties. More modal options to support commuting among the region will be needed to support economic development and optimize the existing transportation network while minimizing environmental impacts.

5.6.2. Regional Service Potential

The Georgia Regional Transportation Authority (GRTA) *2007 Xpress Expansion Plan* proposed expanding Xpress service during the five year period from 2009 to 2013. The plan included a new commuter route between midtown Atlanta and a park and ride lot at Exit 16 on I-985 in Hall County. However, the current negative financial situation GRTA is experiencing with regard to funding for transit operations may delay the implementation of Xpress service to Hall County.

5.7 Future Needs

5.7.1. Meeting 2040 MTP Goals

Transit is one of the multiple modes that must be integrated into the transportation system and provides a means to help meet the 2040 MTP goals. **Table 5-16** provides a summary of the 2040 MTP goals and identifies transit-related objectives or actions to help achieve the goals and performance measures that can be used to assess progress toward the goals.

Table 5-16: MTP Goals and Transit Objectives

2040 MTP Goals	Transit Objectives / Actions	Transit Performance Measurements
1 - Provide an integrated multimodal and intermodal transportation system that includes more options to provide the desired level of accessibility and mobility of people and goods in a safe and secure manner.	a) Promote awareness of existing HAT service to increase ridership b) Increase transit services to new markets such as commuter service	Transit ridership per revenue hour
2 - Develop a transportation system that is safe, efficient, conserves energy, and promotes the attainment of air quality standards, and take steps to ensure the maintenance of that system.	a) Maintain and preserve existing transit capital stock b) Improve transit amenities to support transit usage and ADA accessibility through construction of sidewalks, crosswalks, shelters, curb ramps, etc.	
3 - Integrate transportation planning with land use decisions and other comprehensive planning tools to support economic development goals and enhance the GHMPO service area's quality of life.	a) Support existing and proposed transit services through complementary land use planning b) Coordinate human service and public transportation services to reduce duplication and maximize efficiencies	
4 – Develop a financially feasible plan that will advance the region's economic competitiveness based upon sustainable development.	a) Identify long-range transit funding sources	Transit cost per revenue hour
5 – Develop a transportation system that will enhance economic and social values, protect the natural environment, and minimize adverse impacts.	a) Increase transit options available	
6 – Establish a more balanced and livable transportation system that will increase modal choices by prioritizing transit, pedestrian, and bicycle travel throughout the region	a) Increase transit options available b) Improve multimodal connections between transit, bicycle, pedestrian and vehicles through adding bicycle racks on buses and at bus stations, maintaining sidewalks on all bus routes, and increasing park and ride opportunities	Person throughput (Persons per vehicle)

Source: GHMPO.

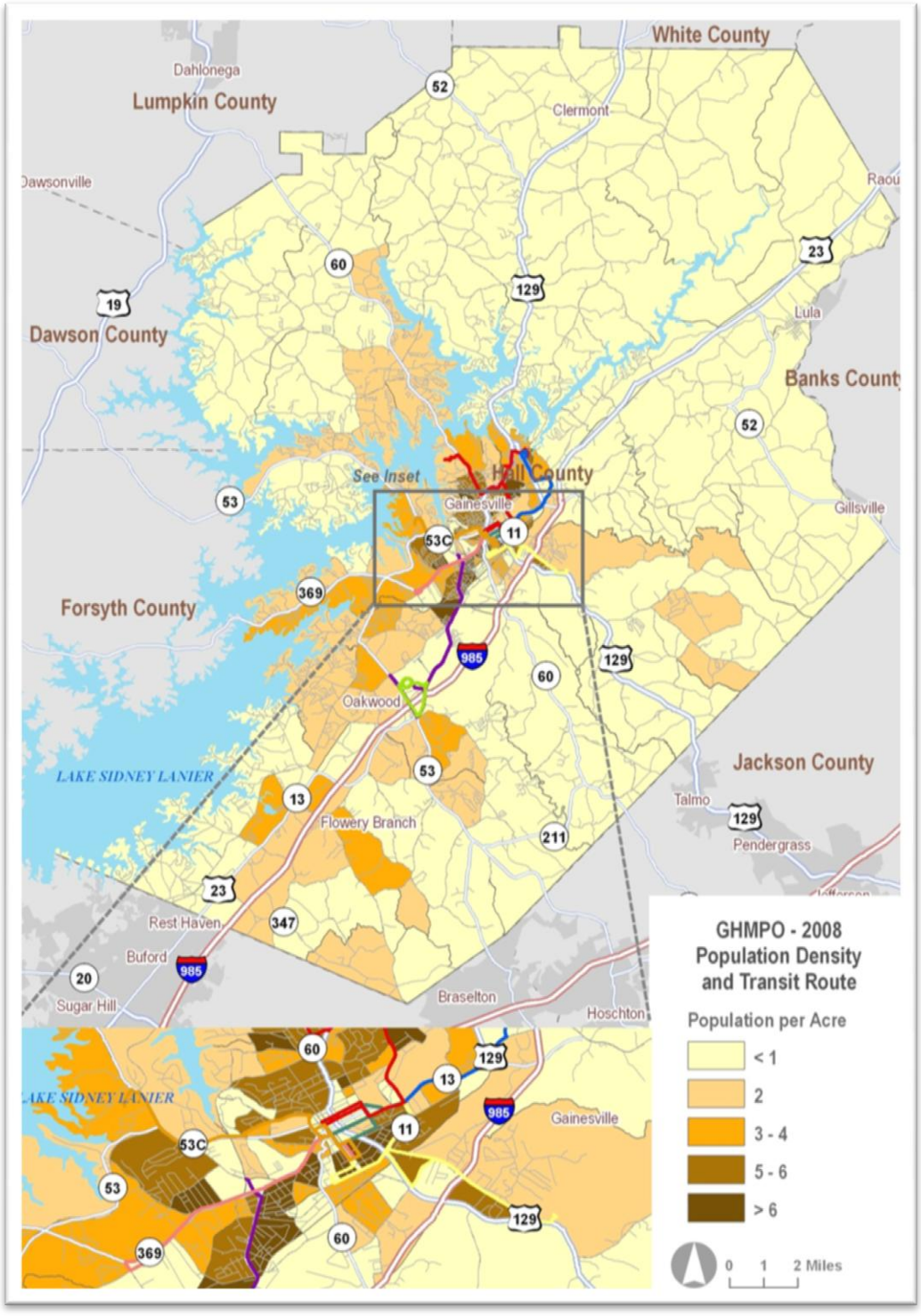
5.7.2. Socio-economic Trends and Transit

When the HAT TDP was developed, population and employment data examined was for base year 2005 and future year 2030. For the 2040 MTP, the base year is 2008 and the future year is 2040. To update information provided in the HAT TDP, the current HAT route structure was mapped with population and employment densities for 2008 and 2040.

At a planning-level, population and employment density thresholds have been identified to assist in identification of transit needs. The thresholds indicate that as development intensity increases (for example, an increase in the population per acre), the greater the need and feasibility of providing more intensive transit services. However, the density thresholds are not the only factors to consider in determining transit service needs. Other factors that may be considered to determine long-term transit needs include economic development and job support, accessibility, land use and development patterns, fuel costs, income, age, or disability status, to name a few. Still, over the life of the 2040 MTP, the thresholds do provide a snapshot of potential need based on changes in population and employment.

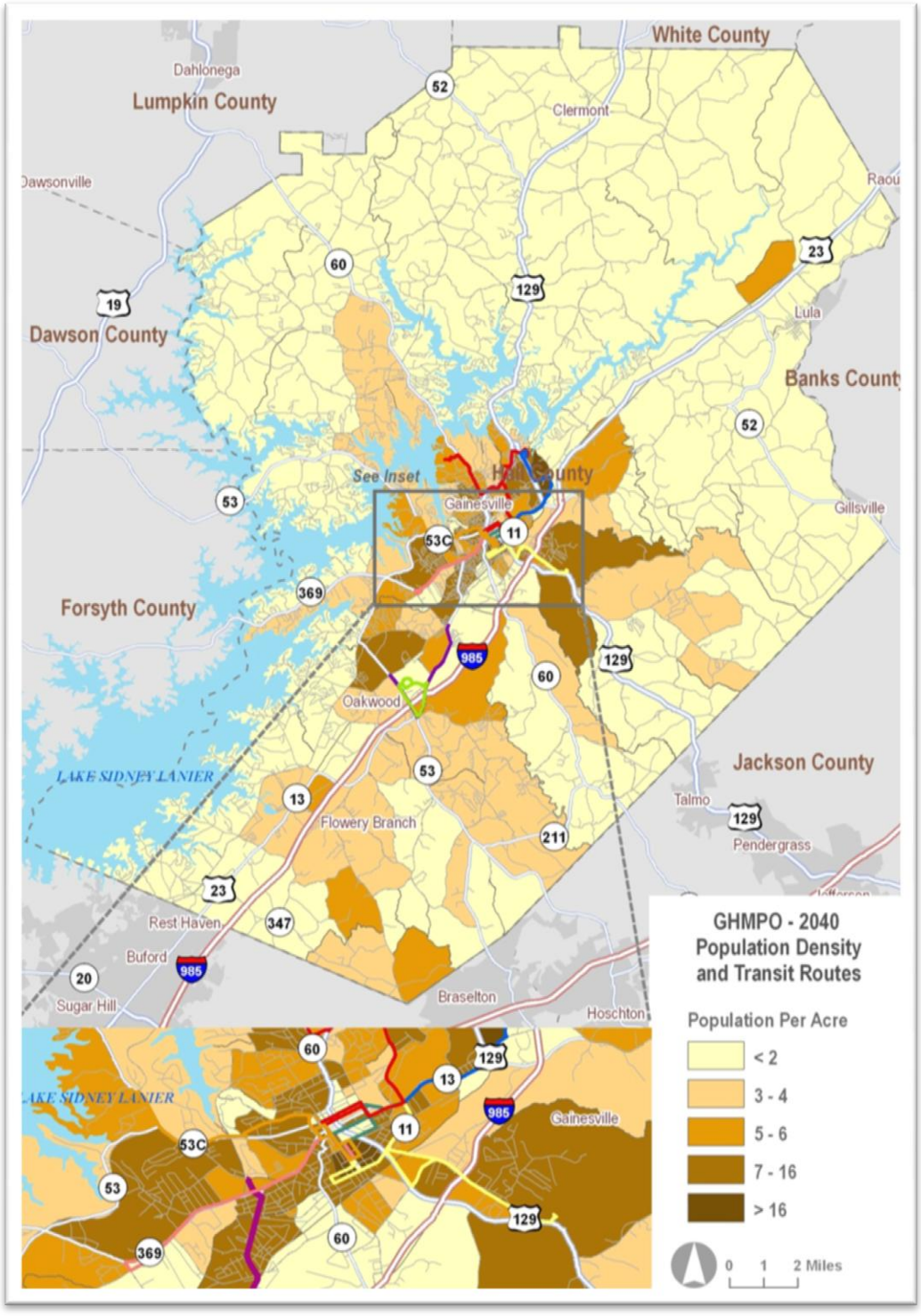
Figures 5-18 and **5-19** illustrate existing 2008 and anticipated 2040 population densities overlaid with the existing HAT routes, while **Figures 5-20** and **5-21** compare 2008 and 2040 employment data. Anticipated growth in population within the GHMPO planning area is concentrated in existing population centers such as Gainesville, Oakwood and Flowery Branch. In addition, population increases are forecast along major travel corridors including I-985, Thompson Bridge Road/ SR 60, Athens Highway/US 129 and west of Cornelia Highway/US 23 near Lula. Existing employment concentrations are within heart of Gainesville. This employment pattern is forecast to continue. Some employment growth is expected northeast of Gainesville near the junction of Jesse Jewell Parkway and US 129 in the vicinity in the NE Georgia Medical Center and in south Hall County, north of Braselton along Winder Highway/SR 53 corridor.

Figure 5-18: 2008 Population Density and HAT Routes



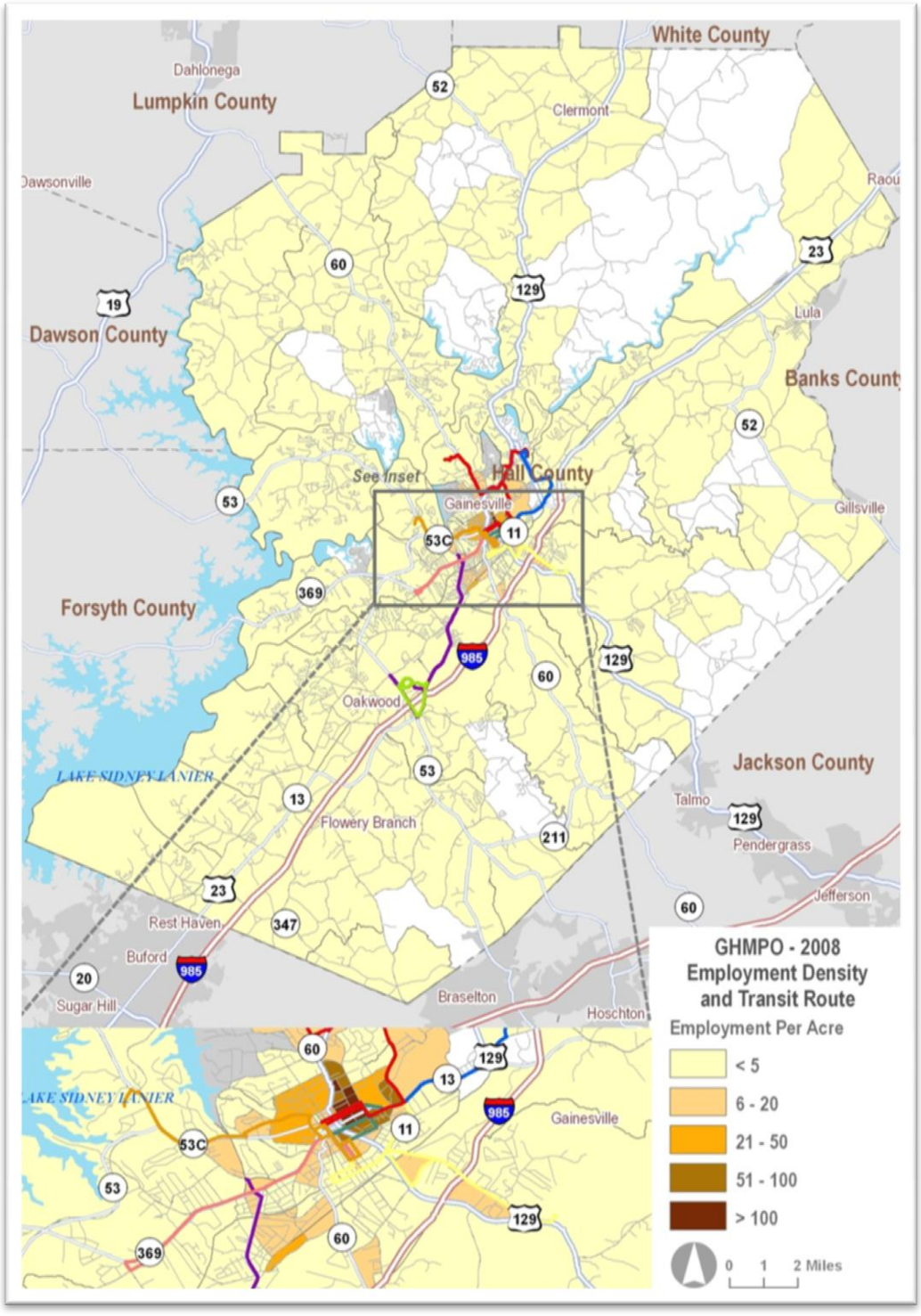
Source: Hall Area Transit and GHMPO Socio-economic Allocations by Traffic Analysis Zones.

Figure 5-19: 2040 Population Density and HAT Routes



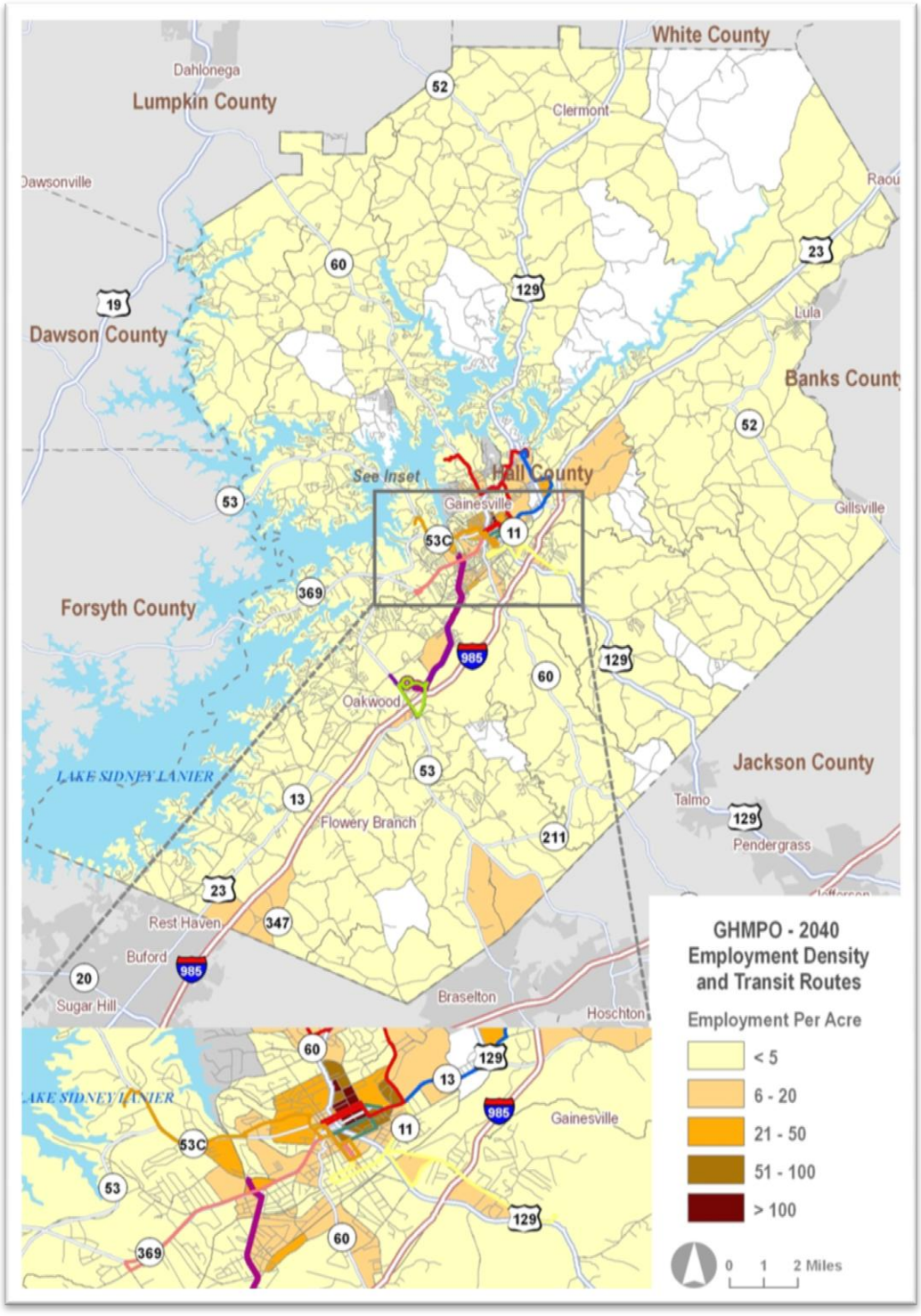
Source: Hall Area Transit and GHMPO Socio-economic Allocations by Traffic Analysis Zones.

Figure 5-20: 2008 Employment Density and HAT Routes



Source: Hall Area Transit and GHMPO Socio-economic Allocations by Traffic Analysis Zones.

Figure 5-21: 2040 Employment Density and HAT Routes



Source: Hall Area Transit and GHMPO Socio-economic Allocations by Traffic Analysis Zones.

5.8 Preparing for Change

Gainesville and Hall County serve as the Northeast Georgia capital of employment, shopping, healthcare and recreation. The fast growing region requires sufficient transportation infrastructure to continue its improving vitality and quality of life.

By 2040, GHMPO's region will be approaching 600,000 in population because of its employment opportunities, proximity to the Atlanta metropolitan area, and the community vision that emphasizes effective transportation systems to ensure continued leadership in economic development. New growth requires identifying feasible multimodal transportation improvements to ensure the area transportation network is developed to address and accommodate continuing growth while addressing existing needs.

Viable mobility options, such as public transportation, car pooling, park and ride lots, and other demand management strategies must implemented because GHMPO cannot build its way out of the forecast growth due to financial and environmental constraints. Context sensitivity and flexible, creative design are needed to shape solutions that maintain connectivity and efficiency. Collaboration with public and private partners is needed to ensure the projects, programs, and policies identified in the 2040 MTP support, promote, and sustain a balanced and acceptable multimodal transportation system.

6. Multimodal Transportation Improvements

Due to federal and state funding uncertainties, the GHMPO has chosen a conservative approach to evaluating and designating selected projects for funding in its "fiscally constrained" 2040 MTP. The following sections provide information about the projects, programs, and policies included in the 2040 MTP.

As noted earlier, the GHMPO area is projected to grow to a population of 561,812 by 2040, which is a 204 percent increase from 2008. This tremendous growth will have direct impacts to the multimodal transportation system and the 2040 MTP must identify multimodal improvements that will improve the safety, operations, connectivity, and mobility in the GHMPO area.

6.1 Policies for Balancing Regional Transportation Investments

The 2040 MTP process resulted in a variety of specific multimodal transportation projects. Since GHMPO must update its Plan every four years, most of the 2030 LRTP projects were re-evaluated and included in the 2040 MTP. Some of these projects are major investments that will require significant investment, such as the widening Friendship Road/ SR 347 from I-985 to SR 211 (GH-007, PI# 162430). Some are low cost "quick fixes" that could be implemented quickly, such as the traffic signal upgrades on SR 11, SR 13, SR 53, SR 60 (GH-054, PI# 0007353).

Historically, roadway improvements have dominated federal and regional transportation programs for many MPOs across the nation. Based on the public participation meetings and MPO committee meetings conducted during the 2040 MTP, local residents, planning directors, and elected officials noted that the time is right to improve regional and local modal connections that will enhance connectivity and mobility options.

6.1.1. Modal, Geographic, and Project Policies

The 2040 MTP identifies multimodal projects and lump sum funding that will improve mobility, reduce congestion, and in turn improve air quality in the GHMPO area. These concepts are summarized by the following policy statements:

- **Modal Policy:** The GHMPO recognizes that the automobile is the central mode of transportation in Hall County, however to improve mobility options the 2040 MTP promotes all transportation modes, including bicycle, pedestrian, and transit, because these modes are required to address the Plan goals and objectives.

- **Project Type Policy:** While the MPO understands the importance of major system expansion efforts, investing in projects that address the following will strengthen the GHMPO multimodal transportation system:
  - System Preservation: GHMPO, in coordination with GDOT, will make the investments necessary to maintain its current assets in a state of good repair (e.g., roadway repair, resurfacing, and reconstruction).
  - System Expansion: The 2040 MTP identifies projects that increase the capacity of the GHMPO transportation system in order to meet current and future demands (e.g., new roadways, roadway widening, and transit services).
  - System Efficiency/Safety: The MTP invests in projects that make current transportation assets operate more effectively, efficiently, and safely (e.g., intersection improvements, ITS solutions).
  - System Quality: The MTP invests in projects that offer additional transportation options and improve the appearance of existing facilities (e.g., pedestrian and bicycle facilities, transit passenger amenities, street/landscaping, and wayfinding).

6.1.2. Land Use and Transportation Coordination Policy

Goal 3 of the 2040 MTP is "integrate transportation planning with land use decisions and other comprehensive planning tools to support economic development goals and enhance the area's quality of life." Ensuring that multimodal transportation improvements identified in the 2040 MTP support local land uses will improve traffic operations, mobility, and safety. GHMPO is not responsible for land use planning, however GHMPO staff coordinates and participates in the development of County and City Comprehensive Plans to ensure the MPO projects, programs, and policies continue to support local land development. Another crucial aspect in ensuring the multimodal projects identified in the 2040 MTP can be implemented is for Hall County and Cities to protect right-of-way along planned capacity adding corridors. While this is difficult to enforce at the local level, local jurisdictions should encourage right-of-way preservation during the permitting process.

6.1.3. Context Sensitive Solution Policy

Goal 5 of the 2040 MTP is "develop a transportation system that will enhance economic and social values, protect the natural environment, and minimize adverse impacts is to develop a transportation system that will enhance economic and social values, protect

the natural environment, and minimize adverse impacts." One of the advantages of developing a project using Context Sensitive Solutions (CSS) is that the process can speed up and ease the review and approval processes. Rather than waiting until the end of the project for review and approvals by state and local agencies, these entities are involved as stakeholders in the process from the very beginning.[5] CSS identifies community concerns early in the design phase and in the end it helps avoid conflict and community opposition at the approval stage of a project. While most of the widening and new location roadway projects identified in the 2040 MTP would benefit by incorporating CSS, the following projects are well suited for CSS:

- Sardis Road Connector – SR 60/Thompson Bridge to Sardis/Chestatee Road (GH-016, PI# 0003626)
- SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment (GH-025, PI# 0007233)
- SR 13/Atlanta Highway - Radford Road to SR 53/Winder Highway (GH-033, PI# 0001822)
- Northern Connector - Connection Between SR 60/Thompson Bridge Road and SR 365 (GH-066)
- US 129/Cleveland Highway – Limestone Parkway to Nopone Road (GH-020, PI# 122060)

6.2 Highway Improvements

6.2.1. Addressing Congestion under Numerous Constraints

Roadways are the most critical and substantial element of the GHMPO transportation system and this system provides the key foundation to developing a comprehensive, multimodal transportation system. Roadways and their additional components, such as sidewalks, bike lanes, and transit stops are used by nearly everyone in the GHMPO area and these facilities facilitate movement for a variety of modes of travel, including walking, bicycling, driving, and transit, as well as the movement of freight by commercial vehicles.

As the GHMPO plans for and evaluates the transportation infrastructure needs to the year 2040, it is clear that continued growth and development pressures and increasing travel demands will be placed on the existing roadway system. Roadway construction and other operational improvements are needed to address congested corridors, improve connectivity, and enhance mobility options. While critical to developing a

[5] Context Sensitive Solutions.Org

multimodal transportation system, implementing transit, bicycle, and pedestrian improvements, will not substantially eliminate the need for additional roadway capacity improvements or new roadway facilities because certain roadways would still remain congested or new connections will need to be constructed to improve connectivity.

However, there are many constraints to constructing new facilities and adding capacity to the existing roadway system, such as the following:

- Natural barriers, such as Lake Lanier;
- Man-made barriers, such as buildings and utilities;
- Adequate federal, state, and local funding resources are simply not available; to implement solutions to resolve all existing and future congestion; and
- Air quality non-attainment regulations impose greater scrutiny on all capacity adding and new facility projects.

Therefore, apart from enhancing infrastructure for alternative modes of transportation, promoting a variety of traveling options, and strategically adding capacity to critical roadway corridors, other strategies must be implemented to address future transportation needs and congestion rather than just adding capacity or new facilities to address all congested corridors. While the 2040 MTP identifies critical roadway capacity and a few new location roadway projects, additional strategies to address congestion and air quality include maintenance and system preservation, travel demand management, transportation system management, considerations for land use and urban design, and access management all of which are supported in the 2040 MTP through projects, programs, or policies.

Since transportation funding is limited, the most effective use of limited transportation resources to address the MTP goals and more specifically, congestion and air quality issues is to direct future efforts toward the following:

- Preserve and maintain existing facilities;
- Promote alternative programs and modes of transportation through travel demand management;
- Utilize transportation system management strategies to improve mobility, accessibility, and operational efficiency;
- Adopt land use and urban design elements that are more appropriate for a multimodal transportation environment;
- Implementing access management strategies along congested corridors;

- Widen key roadway corridors to improve congestion, when other options have been exhausted; and
- Construct new location roadways to improve connectivity and reduce vehicle miles of travel.

6.2.2. Strategic Roadway Capacity Improvements

The 2040 MTP invests in a variety of projects that preserve the existing system, expand the system's capacity, enhance its efficiency and safety, and improve its overall quality. Improving the bicycle system, pedestrian network, and transit system will enhance mobility, but it cannot solve all the congestion issues and strategic roadway capacity improvements are needed. Based on the existing and future conditions, expanded roadways and new facilities are still needed to address congestion and safety, which will in turn improve safety, connectivity, mobility, and promote economic development. Thus, the 2040 MTP identifies improvements that increase safety, enhance regional connectivity, add capacity to critical roadway corridors, and improve traffic flow and system efficiency, all of which will support the local economy. Based on the 2040 population and employment projections, and the impacts to the roadway system, as well as input from the public and MPO committee members, the following provides some of the strategic roadways in the GHMPO area that will require capacity improvements in the 2040 MTP:

- SR 347/Friendship Road From I-985 to SR 211 (GH-007, PI# 162430);
- SR 347/Lanier Islands Parkway – I-985 to McEver Road (GH-014, PI# 170735);
- US 129/Athens Highway from SR 323/Gillsville Highway to SR 332/Talmo in Jackson County (GH-008, PI# 122150);
- Spout Springs Road - Hog Mountain Road to Gwinnett County line (GH-023, PI# 0009679);
- SR 13/Atlanta Highway - Radford Road to SR 53/Winder Highway (GH-033, 0001822);
- SR 211/Old Winder Highway – SR 53/Winder Highway to SR 347 on new alignment (GH-025, PI# 0007233);
- US 129/Cleveland Hwy – North of Nopone/J Hood Road to SR 284/Clarks Bridge Road (GH-035, PI# 150290);
- SR 52/Lula Road – 1 mile north of SR 365 to south of Julian Wiley Road (GH-019, PI# 132250); and
- SR 369/Brown's Bridge Road – Forsyth County line to SR 53/McEver Road (GH-018, PI# 122010).

In order to improve roadway connectivity in the GHMPO area, especially east-west connectivity, new roadway facilities will need to be constructed. Due to funding and air quality constraints, the new facility improvements are strategic connections that improve safety, reduce congestion, and enhance connectivity, thereby reducing VMT and GHG emissions. Based on input from the public and MPO committee members, the following are the strategic new facilities improvements in the 2040 MTP:

- Howard Road Extension from SR 365 to Old Cornelia Highway;
- Relocation of Lights Ferry Rd from Gainesville Street to SR 13; and
- Northern Connector - Connection between SR 60/Thompson Bridge Road and SR 365.

6.2.3. Intersection Improvements

Intersection improvements are a key piece to improving the existing GHMPO transportation system. Addressing key intersections improves safety, traffic operations, freight movements, and air quality. Intersection improvements can typically be completed in the short-term and the costs are much lower than traditional capacity improvements.

The 2040 MTP identifies several intersection improvements, which were coordinated with the public and MPO committee members. The following provides a list of recommended intersection improvements:

- Traffic signal retiming- SR11/11 Business/SR 60 and SR 369 at 21 locations in Hall County (GH-077, PI# 0008663);
- Traffic Signal Upgrades - SR 11, SR 13, SR 53, SR 60 (GH-054, PI# 0007353);
- Intersection Improvement at Jesse Jewel Pkwy and John Morrow Parkway (GH-069); and
- McEver Road from SR 347/ Lanier Islands Parkway to Jim Crow Road (GH-084, PI# 0001821).

6.2.4. Bridge Improvements

Like roadways, bridges require scheduled maintenance and inspection to ensure they can continue to safely carry increasing traffic volumes and higher numbers of loaded trucks. The SAFETEA-LU Technical Corrections Act, enacted June 6, 2008, changed the Federal Highway Bridge Replacement and Rehabilitation Program to the Highway Bridge Program and placed greater emphasis on the importance of proper, timely bridge preservation. Highway Bridge Program funds can now be used for replacement,

rehabilitation, painting, systematic preventive maintenance, seismic retrofitting, and applying anti-icing or deicing treatments to eligible highway bridge projects.

GDOT conducts structural assessments and determine condition ratings for bridges in the GHMPO area. Bridges that are deemed in need of improvement fall into the following two categories:

- Structurally deficient – bridge load capacity is significantly decreased due to deterioration.
- Functionally obsolete – bridge, while not physically deficient, no longer meets current design standards.

For example, a bridge with no sidewalks on a section of roadway with sidewalks is categorized as functionally obsolete. A bridge sufficiency rating is another method of identifying bridge improvements. The sufficiency rating is a computed numerical value that is used to determine eligibility of a bridge for Federal funding. The sufficiency rating formula result varies from 0 to 100. The formula includes factors for structural condition, bridge geometry, and traffic considerations. A bridge with a sufficiency rating of 80 or less is eligible for Federal bridge rehabilitation funding. A bridge with a sufficiency rating of 50 or less is eligible for Federal bridge replacement funding.

These bridge condition ratings provide methods that enable GDOT to make decisions about where and how to spend federal bridge funds to replace or rehabilitate bridges, which are coordinated with GHMPO staff and subsequently included in the TIP.

The 2040 MTP identifies several roadway widening projects that impact an existing bridge or bridges. The impacted bridges will need to be either replaced to accommodate the added capacity on the roadway or an additional bridge may be constructed to accommodate one of the directions of travel while the old bridge is used for the other direction. If a roadway project requires a new bridge structure, the cost of the widening and bridge work is included in the planning level cost estimate.

The following bridge improvements are included in the 2040 MTP:

- US 129/Cleveland Hwy at East Fork Little River (Bells Mill Bridge) (GH-030, PI# 122066);
- US 129/Cleveland Hwy at Chattahoochee River (GH-029, PI# 122064);
- SR 52 at Candler Creek (GH-026, PI# 132995);
- SR 53/Dawsonville Hwy westbound at Chattahoochee River (GH-085, PI# 0010212);

- SR 284/Clarks Bridge Road at Chattahoochee River (GH-050, PI# 142291);
- SR 53/Dawsonville Highway at Chestatee River (GH-063, PI#0007021); and
- SR 369/Browns Bridge Road at Chattahoochee River (GH-057, PI# 122012).

6.2.5. Operations and Management Improvements

Enhancing the efficiency of the GHMPO transportation system can be achieved by implementing operational and management (O&M) improvements. O&M improvements are designed to allow more effective management of the supply and use of existing roadway facilities. O&M improvements can increase effective capacity by optimizing traffic operations without constructing additional general purpose lanes.

Due to the importance of preserving the existing transportation systems, SAFETEA-LU, 23 CFR 450 emphasizes that O&M improvements are the preferred method to manage congestion. O&M improvements are typically low cost, require minimal right-of-way, and can be constructed or implemented quicker than other congestion management strategies.

O&M improvements include a variety of categories, such as Access Management, Transportation Systems Management, and Intelligent Transportation Systems. Each of these categories consists of a number of specific strategies that address different types of congestion. Typical strategies include signal re-timing, signal coordination, and geometric improvements all of which are currently being completed by jurisdictions in the GHMPO area.

Access Management is defined by FHWA as "the proactive management of vehicular access points to land parcels adjacent to all manner of roadways." Thus, access management strategies control the entrance and exit of vehicles on the roadway to remove potential conflict points between vehicles. Access management strategies include the following:[6]

- **Access Spacing**: Increasing the distance between traffic signals improves the flow of traffic on major arterials, reduces congestion, and improves air quality for heavily traveled corridors.
- **Driveway Spacing**: Driveways spaced further apart improve traffic flow, and reduce merging conflict points along roadways.

[6] U.S. DOT, Federal Highway Administration, Office of Operations

- **Safe Turning Lanes**: Dedicated left and right-turn, indirect left-turns and U-turns, and roundabouts keep through traffic flowing.
- **Median Treatments**: Two-way left-turn lanes (TWLTL) and non-traversable, raised medians are examples of some of the most effective means to regulate access and reduce crashes.
- **Right-of-Way Management**: Preserving right-of-way for future capacity improvements, sight distance improvements, and other access-related improvements.

Access management improvements are typically effective where an arterial roadway is in or is serving an emerging growth area and has a high percentage of through trips. Access management strategies may also be applied along existing developed corridors where uncontrolled access causes congestion and safety issues. Implementing access management strategies along existing developed corridors requires the support of local government officials, community leaders, and the highway owner to facilitate solutions acceptable to adjacent property owners.

Transportation Systems Management (TSM) improvements optimize the efficiency of the transportation system by improving vehicle flow. The TSM approach to congestion mitigation seeks to identify operational improvements to enhance the capacity of existing transportation systems. TSM improvements are designed to improve traffic flow and the movement of vehicles and goods, which in turn improves air quality, system accessibility, and safety. TSM improvements like the ones noted below are currently being implemented by jurisdictions in the GHMPO area and are included in the 2040 MTP:

- Highway geometric improvements;
- Traffic signal improvements; and
- Wayfinding and signage improvements.

Intelligent Transportation Systems (ITS) strategies use information technology to improve the functionality of the transportation system. ITS improvements like the ones noted below are currently being managed and implemented by GDOT in the GHMPO area:

- Video traffic surveillance;
- Dynamic message signs;

- Traveler information and rerouting systems; and
- 511 system.

6.2.6. Travel Demand Management Strategies

Travel Demand Management (TDM) improvements are aimed at affecting travel demand by reducing the need for travel, increasing vehicle occupancy or the use of alternative modes, or shifting the timing of trips to periods outside of the peak travel times. TDM measures can improve system performance by reducing and/or re-distributing the demand for single occupancy vehicle (SOV) travel, which is critical on some GHMPO roadways. TDM measures are typically targeted to influence peak travel times by reducing either the number of total work trips or the number of SOV work trips taken during the most congested travel periods. Thus, TDM improvements increase the efficiency of the transportation system by promoting alternative travel modes, such as ridesharing, vanpooling, transit, bicycling, and walking all of which are supported in the 2040 MTP. TDM strategies include the following:

Increasing rideshare strategies encourage carpooling and vanpooling. Typically, ridesharing has minimal costs because it makes use of empty vehicle seats, and it is most suitable for work commute trips. The following improvements help to increase ridesharing in an urbanized area and many of these have been implemented by jurisdictions in the GHMPO area:

- Initiating and managing a Rideshare Program;
- Constructing park-and-ride facilities in suburban areas; and
- Connecting public transportation routes to park-and-ride facilities.

6.2.7. Rail Crossing Improvements

A highway-railroad grade crossing is an intersection where a roadway crosses railroad tracks at the same level. Both public and private entities have jurisdiction over these crossings. Private railroad companies own and maintain the tracks, and normally own the rights-of-way on both sides of the railroad tracks. Railroad companies typically install and maintain the tracks, the roadway surface between and around the rails, and traffic control devices. While the railroad owns the track, the roadways in the GHMPO area are owned by GDOT, Hall County, or a one of the cities.

FHWA is responsible for public grade crossing issues that affect highway safety. FHWA provides guidelines and standards for the correct design of grade crossings, the assessment of safety at a grade crossing, and appropriate placement of traffic control devices at and on the approach to a grade crossing. These traffic control devices include

circular advance warning signs, crossbucks (the familiar *x*-shaped signs), pavement markings, and, in some locations, bells, gates, and flashing lights as described in the FHWA's Manual on Uniform Traffic Control Devices (MUTCD).

GDOT determines which public crossings are in need of improvements, and determine the type of improvement needed. In order to make highway-railroad grade crossing improvements, GDOT relies heavily on federally supplied funds authorized under the SAFETEA-LU program. This program allocates money to GDOT specifically for eliminating hazards at public highway-railroad grade crossings and these funds can be used in the GHMPO area to improve railroad crossings.

The Federal Railroad Administration (FRA) regulates the aspects of grade crossing safety pertaining specifically to the railroads: track safety, train-activated warning devices, and train safety and conspicuity. For example, FRA regulations specify the type of lighting to be placed on a locomotive, the audibility of the train horns, and the inspection, testing, and maintenance standards for active grade crossing signal system safety.

6.3 Bicycle and Pedestrian Improvements

6.3.1. Bicycle and Multi-Use Trail Improvements

As noted earlier, the Central Hall Recreation and Multi-Use Trail will be constructed in nine phases or segments. When multi-use trail system is completed, the Central Hall Recreation and Multi-Use Trail will stretch around 16 miles along connecting recreational, residential, commercial, and government areas.

As part of the Friendship Road/SR 347 widening project (PI# 162430 – GH-007), GDOT is constructing a 10 foot multi-use trail on both side of the roadway between SR 211 and I-985 and a sidewalk between I-985 and McEver Road/SR 53 (PI# 170735 – GH-014). Also, the Spout Springs Road widening project (PI# 0009679 – GH-023) will provide a multi-use trail on both sides of the roadway. The 2040 MTP dedicates lump sum funding in Tier 2 and Tier 3 to pursue bicycle and pedestrian improvements that should focus on providing both local access and enhanced connectivity to the bicycle and pedestrian facilities that will be constructed over the next few years, as well as new systems that will promote walking and bicycling as a viable transportation option in the GHMPO area.

In the City of Flowery Branch, the Comprehensive Plan and the Downtown Transportation Study recommended constructing the Alberta Banks Park to City Park

greenway/multi-use trail. As noted in the Downtown Transportation Study, much of the land required to construct the multi-use trail passes through undeveloped land. But the City should coordinate with future developers to preserve right-of-way for the multi-use trail and, to the extent possible, link the multi-use trail with future development plans.[7] The 2040 MTP identifies approximately $300,000 per year in bicycle and pedestrian improvements. Recommended improvements, such as the Alberta Banks Park to City Park greenway/multi-use trail, should be considered as funding becomes available.

6.3.2. Pedestrian Improvements

In order to make walking a reasonable modal option, the basic needs of pedestrians must be taken into consideration. Pedestrians are composed of all types of people walking for a variety of purposes. Environments that are more conducive to walking are those that encompass mixed and dense land uses and offer pedestrian-oriented activities. In addition, pedestrian facilities must be safe and ADA-compliant for individuals with disabilities. Furthermore, a quality pedestrian environment should provide direct paths, be continuous, have safe crossings, have visual interest and offer amenities, and be secure.

Pedestrian facilities along interconnected streets generally provide more direct travel to destinations than curvilinear and cul-de-sac streets. Pedestrian street crossings should be well-designed, visible, and contain crosswalks and provide signal activation devices as needed. Additionally, pedestrian street crossings that include raised medians or bulbouts, which are an extension of the pedestrian network into the roadway, make street crossings safer for pedestrians. Streets that provide amenities, such as street furniture and trees, encourage more people to walk. Also, a sense of pedestrian safety and security is achieved by providing street lighting, pedestrian signs, and other visibility-related design features.

Similar to the provisions for on-road improvements, a comprehensive program of sidewalk connections and additions should be accomplished. From a policy perspective, the adoption of a Complete Streets policy will in most cases make sidewalks a requirement on any new or reconstructed street segment.

The following are focus areas for sidewalk initiatives:

[7] *Flowery Branch Downtown Transportation Study*, 2010.

- All new subdivisions;
- Areas around schools consistent with SRTS directives;
- Concurrent with improvements of existing facilities; and
- Programmatic additions of sidewalks in deficient areas (annual allocation).

6.3.3. Develop Complete Street Policy

Given the expected funding parameters being considered for the federal surface transportation bill, the developing a GHMPO Complete Street Policy would be beneficial in the next couple of years.

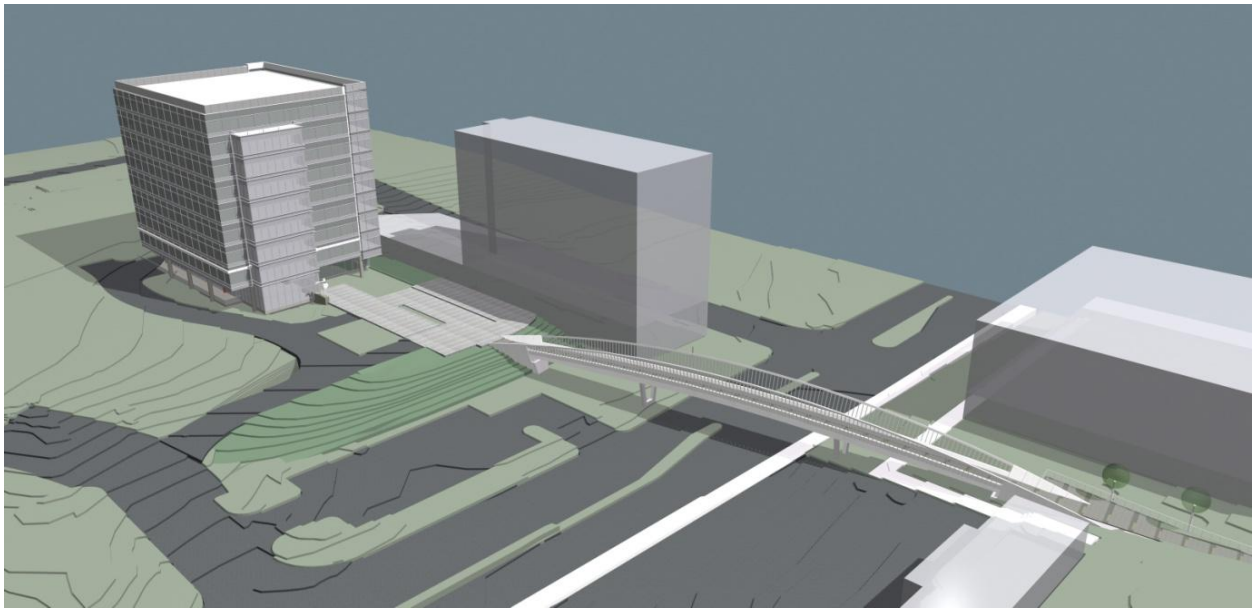
Congress passed the National Complete Streets Act of 2009 in the fall of 2009, and Secretary of Transportation Ray LaHood has made it clear that consideration of all modes of travel in the next surface transportation bill will be a priority for funding consideration. With that in mind, the GHMPO area should develop and adopt a Complete Streets policy in line with both the National and state guidelines. Additional resources and peer jurisdiction policies can be found through the National Complete Streets Coalition (**www.completestreets.org**).

6.3.4. Gainesville Midtown Pedestrian Improvements

The City of Gainesville has been working since 2000 to redevelop a unique section of the city, known as Midtown. Development concepts include renovating the historic railroad depot, establishing an entertainment district, converting the CSX rail line into a greenway, installing streetscaping along key streets, providing mixed-income housing, and protecting some of the area's valuable historic resources. The Midtown Greenway will improve the aesthetics of the area and will provide an alternative mode of transportation, recreational opportunities, and pedestrian connections to the downtown square, the Elachee trail system, and the Rock Creek Greenway.[8]

Another major undertaking in Gainesville is the City View Center development, which includes two new office buildings, parking, hotel, and conference center with a 450 foot pedestrian bridge that will span Jesse Jewel Parkway that will connect downtown with midtown. The pedestrian bridge is currently under construction and when the development is completed, it will be similar to the rendering photo shown below. The city will pay up to $3 million for the pedestrian bridge once a certificate of occupancy is issued for an office building or hotel that will sit in place of the old public safety building.

[8] City of Gainesville



Source: City of Gainesville

6.4 Public Transportation Improvements

This section identifies short and long-range transit improvements in the GHMPO area. The improvements consider the goals, objectives, and performance measures developed for the MTP and can generally be grouped in the following categories:

- **Transit operations and maintenance** – recommendations to support or expand the range of services within the GHMPO area;
- **Transit capital investments** – investments in rolling stock to maintain or increase services or to add, upgrade, or replace facilities; and
- **Complementary projects** – projects to support transit utilization, which includes pedestrian infrastructure or roadway improvements such as bus lanes or pull-outs.

As noted earlier, the GHMPO area has a number of human service transportation providers serving target populations, including elderly and disabled persons as well as those with medical needs. Limited intercity bus transportation is privately operated by Greyhound Lines, Inc. National intercity rail service is offered daily by Amtrak through Amtrak Crescent service between New Orleans and New York. Other private providers include taxicabs and Atlanta airport shuttles. The region currently does not sponsor a transportation demand management (TDM) program to coordinate area vanpools or carpools.

Prior to the development of the 2040 MTP, HAT completed a Transit Development Plan, which focused on developing a five-year action plan for the Red Rabbit fixed route service. In 2009, GHMPO completed a Human Services Transportation Plan that identified issues and opportunities related to the coordination of human services transportation. Many of the recommendations from the TDP and HST have been implemented, but a number of identified projects or services have not. Projects that are planned but not yet been implemented are included in the 2040 MTP. In addition, through MTP evaluation and public input and in coordination with HAT, additional improvements have been identified in the 2040 MTP to serve anticipated growth and GHMPO area needs.

6.4.1. Transit Service Operations and Maintenance Improvements

To maintain and meet demand for existing and future transit services within the GHMPO area, modifications and expansion of the various transit services will be needed.

HAT Service Improvements or Modifications

Although a number of changes to HAT services were implemented after completion of the TDP, a number of recommendations have yet to be implemented. Once operational funding is available, the following service enhancements are recommended.

- Blue Route: Extend north on Limestone Parkway to Ridgecrest Apartments and connect with Green Route. Eliminate service on Limestone Parkway between Beverly Road and Jesse Jewell Parkway and terminate at new HAT Transfer Center;
- Red Route: Originate at Linwood Apartments and terminate at new HAT Transfer Center. Eliminate service on Queen City Parkway and operate on a 60 minute frequency;
- Flex Route: Establish new Flex Route Service with 60 minute frequency on Highway 129 from termination point on Gold Route to Jackson County boundary;
- Purple Route: Expand complementary paratransit service in the Atlanta Highway corridor; and
- Purple Route: Extend to Flowery Branch.

Anticipated population growth within the GHMPO area is concentrated in existing population centers, including Gainesville, Oakwood, and Flowery Branch. In addition, population increases are forecast along major travel corridors including I-985, US 129/SR 11/Athens Highway, and west of US 23/SR 365/Cornelia Highway near Lula. Existing employment concentrations are within the heart of Gainesville and this pattern is forecast to continue. Some employment growth is expected northeast of Gainesville near the junction of SR 369/Jesse Jewell Parkway and US 129/Limestone Parkway in the vicinity in the NE Georgia Medical Center and in south Hall County, north of Braselton along the SR 53/Winder Highway corridor. Additional services for employment trips should be examined for the SR 60/Thompson Bridge Road corridor in the Murrayville area to serve poultry industry facilities north of Gainesville and along the US 129/SR 11/Cleveland Highway.

To serve anticipated growth and demand for services, all of the HAT routes will require an increase in service frequency. Desired service frequencies are 15 to 30 minutes. To determine specific service needs, HAT should undertake an update of their TDP in 2013.

Human Service Transportation Actions

As directed by Georgia Transit Investment Act (TIA), GDOT and GRTA continue efforts to improve human services transportation. GRTA has served as coordinator for a statewide Rural and Human Services Transportation Committee, while GDOT is overseeing development of a *Coordinated Rural and Human Services Transportation Plan*. The interim Statewide *Coordinated Public Transit-Human Services Transportation Plan* identified strategies and gaps in service for Region 2, which includes Hall County. Strategies identified in the *Interim Plan* include using private vans or shuttle buses to provide transportation at hours when HAT does not operate services, procuring transportation planning services to evaluate the system to improve efficiencies and increase ridership, and developing a Geographic Information System (GIS) database for current employment listings that indicate whether the job is on a bus route. Revised recommendations from the statewide plan are anticipated in fall 2011, which will be after the adoption of the 2040 MTP. One of the preliminary recommendations from the plan update is establishing regional mobility management programs. Mobility management programs serve as liaisons for coordinating funding, providers, and those needing service.

The 2009 GHMPO HST Plan recommended the following improvements which should be developed as funding becomes available:

- Develop a comprehensive mobility management policy and means to better coordinate services and resources. Mobility management is an innovative approach for managing and delivering coordinated transportation services to transit customers, including older adults, persons with disabilities, and individuals with lower incomes.
- Coordinate with Georgia Department of Human Services (DHS) to identify eligible projects for Federal Transit Administration (FTA) Section 5310 (Specialized Transportation, Elderly and Disabled) grants.
- In addition, HAT is interested in pursuing HST coordination between Gainesville and Braselton through one service provider.

Commuter Rail Services

Existing plans from GDOT and the Georgia Rail Passenger Program (GRPP) have identified passenger rail service connecting Atlanta and Gainesville, but the plans are very long range, with Gainesville service initiated in year 11 out of an 18-year schedule which has not yet commenced. The 2040 MTP does not include any funding for commuter rail projects in the GHMPO area.

Intercity Transit Services

Currently, the GHMPO area has no commuter bus operations. Some intercity Greyhound Bus Service exists between Gainesville and Atlanta, and a private shuttle service operates between Gainesville and the Hartsfield-Jackson Atlanta International Airport.

The GRTA *2007 Xpress Expansion Plan* proposed expanding commuter bus service with a new commuter route between midtown Atlanta and a park and ride lot at Exit 16 on I-985 in Hall County. This route was proposed as part as a 24-route expansion planned for implementation by 2014. Prior planning and continued interest and travel growth between Atlanta and Gainesville indicate that commuter bus service should be considered for additional service concept development and implementation over the next few years. Due to limited operational funding, commuter bus service is not listed in the financially constrained 2040 MTP. However, as funding becomes available through GRTA or other sources, the following origination service locations should include:

- Oakwood park-and-ride lot at the intersection of Winder Highway /SR 53 and Wallis Road, just south of the I-985 northbound off-ramp at Exit 16;

- Thurman Tanner Park and the park-and-ride lot at Atlanta Highway /SR 13 and I-985; and
- The Georgia Mountains Center on Jesse Jewel Parkway/SR 369 in Gainesville.

The following destination service locations should include:

- Downtown Atlanta;
- Midtown Atlanta;
- Mall of Georgia;
- Discover Mills; and
- Georgia Gwinnett College.

Transportation Demand Management (TDM)

Within the GHMPO area, there have been an increasing number of residents commuting out of the county to jobs in Gwinnett, Fulton, and Forsyth Counties. Likewise, workers are commuting to the City of Gainesville from Gwinnett, Jackson, and Forsyth Counties. The greatest concentrations of workers commuting out of county are in southern Hall County and northern Gwinnett County. In Gwinnett County, the greatest number of residents commuting out of Gwinnett County to Hall County is north of the I-985 and I-85 interchange, including the areas of Sugar Hill and Buford.

The growth in travel between Hall County and its adjacent counties for employment suggests a need for examining the provision of commuter options, which could include commuter bus service or promotion of vanpooling or carpooling, formally or informally. Since Hall County is included in the 20-county Atlanta air-quality nonattainment area, the GHMPO can participate in clean commute programs through the Atlanta Clean Air Campaign. A commuter assistance program can establish a ridesharing database to match commuters to establish carpools and vanpools. Other elements of a commuter assistance program include employer and employee outreach, assistance in establishing commuter tax benefit programs as allowed by the Internal Revenue Service, and guaranteed ride home service that provides those participating in carpools or vanpools assurance that they can get home if their schedule changes or need to attend to family matters.

6.5 Transit Capital Projects

Investment in transit capital is necessary to support and maintain existing service, improvements, and service expansions.

6.5.1. TDP-Recommended Capital Improvement Projects

The following recommendations for the Red Rabbit service should be implemented with the capital and operating funds identified in the financially constrained 2040 MTP.

- Update bus stop sign design and size to reflect new vehicle paint scheme;
- Develop web links from GHMPO service area organizations and institutions to HAT website and create a dedicated web site for HAT;
- Consider implementation of Intelligent Transportation System (ITS) applications such as traveler information/display systems, passenger security systems, transit vehicle monitoring and maintenance, and transit signal priority; and
- Develop multimodal terminal and operations center near the Amtrak rail station on Industrial Drive to serve HAT local bus, Amtrak rail service, Greyhound intercity bus service, pedestrians, bicyclists, and parking.

6.5.2. Bus Fleet

The current HAT bus fleet includes 11 buses for the fixed route service, eight of which are required for peak service. The demand response service has 12 vehicles, ten of which are used for service. HAT has recently ordered two replacement buses for its fixed route fleet. Their schedule for bus replacement is every seven years and to maintain existing operations, the fleet will require at least three replacements during the MTP period. At this time, HAT anticipates that their existing fleet will be able to operate the recommended increase in service frequencies to 15 and 30 minutes.

6.6 Pedestrian Improvements to Support Transit Mobility

Improving pedestrian accessibility to Red Rabbit bus stops is a need that must be addressed. In many instances, sidewalks are unavailable, and some bus stops do not meet Americans with Disabilities Act (ADA) accessibility guidelines. **Table 6-1** provides a list of pedestrian infrastructure improvements that would improve safety, mobility, and connectivity to HAT fixed routes. The financially constrained 2040 MTP provides lump sum funding for pedestrian improvements and these improvements should be reviewed annually and programmed into the TIP.

Table 6-1: Pedestrian Improvements along HAT Routes

Street	Extent	Serves HAT Route
US 129/SR 11/Athens Street/Athens Highway	MLK Jr. Boulevard to Lenox Drive	Route 1 – Yellow
Beverly Road	Limestone Parkway to White Sulphur Road	Route 2 – Blue
SR 369/Browns Bridge Road	Memorial Park Drive to Shallowford Road	Route 5 – Pink
Clarks Bridge Road	Park Hill Drive to Kids Way	Route 3 – Red
E.E. Butler Parkway	MLK Jr. Boulevard to West Ridge Road	Route 1 – Yellow
SR 369/Jesse Jewell Parkway (Downtown, East)	Limestone Parkway to White Sulphur Road	Route 2 – Blue
US 129/Limestone Parkway	Jesse Jewell Parkway to Beverly Road	Route 2 – Blue
Martin Luther King Jr. Boulevard	Pine Street to Fair Street	Route 1 – Yellow
Memorial Park Drive	Browns Bridge Road to Old Flowery Branch Road	Route 5 – Pink
SR 11/Park Hill Drive and Morningside Drive	Riverside Drive to Clarks Bridge Road	Route 3 – Red
Shallowford Road	Dawsonville Highway to Pearl Nix Parkway	Route 5 – Pink Route 6 - Purple
South Enota Drive, Downey Boulevard, and SR 11 Connector	Jesse Jewell Parkway to Park Hill Drive	Route 3 – Red
SR 60/Thompson Bridge Road	Linwood Drive to Oak Tree Drive	Route 3 – Red
West Ridge Road	E.E. Butler Parkway to Athens Street	Route 1 – Yellow
White Sulphur Road	Beverly Road to Jesse Jewell Parkway	Route 2 – Blue

6.7 Integrating the Congestion Management Process into the MTP

The Congestion Management Process (CMP) is a systematic process for defining what levels of congestion are acceptable to the community; developing performance measures to monitor levels; identifying alternative solutions to manage congestion; prioritizing funding for those strategies and assessing the effectiveness of those actions. SAFETEA-LU requires metropolitan planning organizations serving a Transportation Management Area (TMA) – metropolitan area with a population in excess of 200,000 – to have a process that provides for effective management and operation to address congestion management.

The development of a CMP can assist in managing congestion along major routes within a transportation system by establishing performance measures, monitoring the system's performance, and developing strategies to manage or alleviate congestion. The GHMPO does not meet the federal population threshold of a TMA and thus is not required to develop a CMP. However, since a small portion (5%) of the Atlanta urbanized area is contained in Hall County, which is in the GHMPO area, the CMP for this area will be updated in coordination with the Atlanta Regional Commission (ARC),

which is the primary agency responsible to conduct and develop the CMP in the Atlanta TMA.

The network of facilities monitored by ARC includes all regionally significant roadways functionally classified as arterial or higher, coupled with additional facilities meeting regulatory guidelines. The following Hall County roadways are located in the Atlanta urbanized area and projects are identified for these facilities in the 2040 MTP:

- SR 347/ Lanier Islands Parkway; and
- SR 13/Atlanta Highway.

6.7.1. Transit, Bicycle and Pedestrian

Transit does not serve the CMP study area, but as transit options are explored, the GHMPO will continue to evaluate transit alternatives that can provide congestion relief in this area. As noted earlier, the Lanier Islands Parkway/SR 347 widening project (PI# 162430 – GH-007), GDOT is constructing a 10 foot multi-use trail on both side of the roadway between SR 211 and I-985 and a sidewalk between I-985 and McEver Road/SR 53 (PI# 170735 – GH-014). This multi-use facility will improve mobility options for local residents and improve multimodal connectivity in the Atlanta urbanized area.

6.7.2. Implementation Strategy

Congestion-reduction strategies were reviewed for implementation but none were found to be appropriate for these corridors because they would not satisfactorily reduce congestion levels on SR 347/ Lanier Islands Parkway, and SR 13/Buford Highway. The analysis supports the proposal to widen these roadways, and each of the projects listed above are identified in the 2030 LRTP Update. **Table 6-2** and **Tables 6-3** summarize the evaluation of congestion mitigation strategies along SR 347/ Lanier Islands Parkway and SR 13/Atlanta Highway.

Table 6-2: Congestion Mitigation Strategies – SR 347/Lanier Islands Parkway

Strategy	Applicability	Remarks
Transportation Demand Management Measures	No	The low density residential development pattern and an absence of major employers or employment centers do not support programs such as alternative work strategies and ridesharing.
Traffic Operational Improvements	Partial	Traffic operational improvements will improve access on and off the facility, but would not significantly reduce overall congestion levels through the corridor.
Public Transportation Improvements	No	The absence of a public transit system in this area does not allow for these measures. The lower density development existent and projected does not support traditional fixed route – fixed schedule (including express commuter service) within the corridor.
ITS Technologies	No	ITS improvements alone will not improve congestion on facility, however, any appropriate ITS technology (variable message signs, signal system interconnects, etc) will be examined further by GDOT during project concept development.
Additional System Capacity	Yes	The widening of this facility is the only strategy that will significantly reduce projected "no-build" congestion on this facility.

Table 6-3: Congestion Mitigation Strategies – SR 13/Atlanta Highway

Strategy	Applicability	Remarks
Transportation Demand Management Measures	No	The low density residential development pattern and an absence of major employers or employment centers do not support programs such as alternative work strategies and ridesharing.
Traffic Operational Improvements	Partial	Traffic operational improvements will improve access on and off the facility, but would not significantly reduce overall congestion levels through the corridor.
Public Transportation Improvements	No	The absence of a public transit system in this area does not allow for these measures. The lower density development existent and projected does not support traditional fixed route – fixed schedule (including express commuter service) within the corridor.
ITS Technologies	No	ITS improvements alone will not improve congestion on facility, however, any appropriate ITS technology (variable message signs, signal system interconnects, etc) will be examined further by GDOT during project concept development.
Additional System Capacity	Yes	The widening of this facility is the only strategy that will significantly reduce projected "no-build" congestion on this facility.

7. Air Quality

A joint task force consisting of representatives from HUD, USDOT, and EPA entitled the federal government's Partnership for Sustainable Communities developed six principles for sustainable communities. The first principle published was:"Provide more transportation choices to decrease household transportation costs, reduce our dependence on oil, *improve air quality* and promote public health." (Emphasis added). Air quality remains on the forefront of quality of life issues for federal, state, and regional government's decades after the adoption of the Clean Air Act in 1977 and the Clean Air Act Amendments of 1990.

7.1 Clean Air Act

Signed into law on November 15, 1990, the Clean Air Act Amendments (CAAA) imposed major challenges on metropolitan areas, especially those designated as non-attainment and maintenance areas, areas with measured concentrations of pollutants. Designated metropolitan areas were required to amend their transportation and planning processes in an attempt to meet National Ambient Air Quality Standards (NAAQS), standards that establish maximum pollutant concentrations allowed in outside ambient air.

The EPA defined NAAQS for six pollutants including ground level ozone, carbon monoxide, and particulate matter. Any metropolitan region failing to meet the NAAQS will be subject to increasingly stringent compliance requirements. The Atlanta region does not meet the federal standards for ground-level ozone and fine particulate matter, two of the six pollutants regulated under the Clean Air Act. ARC provides support in meeting state and federal mandates for air quality.

The EPA requires that each state develop a plan (State Implementation Plan) demonstrating how laws, regulations, and projects will reduce pollutant concentration to meet required standards. Air quality plans quantify pollution reduction needs and commit to reduction strategies including transportation control measures and planning standards. Once standards are met, metropolitan regions are classified as "maintenance" and must demonstrate their plan to keep pollutant levels low. For air quality purposes, GHMPO is considered to be in the Atlanta metropolitan region so it is classified as "non-attainment."

The Clean Air Act also authorizes EPA to set criteria and procedures regarding transportation plans to ensure compatibility with air quality standards under the Transportation Conformity Rule. The conformity rule mandates interagency

consultation among federal, state and regional agencies tasked with environmental and transportation issues. The interagency consultation group is comprised of ARC, GHMPO, GDOT, MARTA, Georgia EPD, FHWA, FTA and EPA plus representation from local transit (HAT) and GRTA. Regionally significant transportation projects must be included in the regional emissions model to be analyzed in accordance with the conformity rule. As agreed by the interagency partners, ARC's policy is that regional facilities with functional classifications of minor arterial or above must be included in the travel demand model and regional emissions analysis. ARC staff fulfills the role of travel demand model and regional emissions analysis development.

7.2 Transportation Control Measures (TCM)

The CAAA requires metropolitan areas to consider appropriate transportation control measures and implement those applicable. TCMs that assist in reducing or limiting mobile source emissions are varied and some are complex; however, many strategies are easily implemented at the local and regional levels.

Traffic control measures include broad and specific strategies to decrease reliance on single occupancy vehicles (SOV), reduce congestion, and reduce emissions through specific acts. TCMs that decrease reliance on SOVs include:

- **Improved public transit.** The Gainesville-Hall County region is served by an effective transit system, Hall Area Transit (HAT). Offering both fixed route (Red Rabbit) and demand-response service, HAT reduced congestion in the region by attracting over 170,000 riders in 2010.
- **Road or lane restrictions for high occupancy vehicles (HOV lanes).** HOV lanes on Interstate 985 and other major arterials would encourage ride-sharing as congestion increases.
- **Employer-based transportation management plans.** Large employers can improve traffic flow by providing incentives for employees to share rides, work flexible hours and other strategies to work with commuters.
- **Trip-reduction ordinances.** Some jurisdictions throughout the nation have adopted local ordinances requiring business to develop trip reduction plans and include incentives such as preferential parking for van and car pools, use of company vehicles for car pools, subsidized transit fares and other measures to reduce SOV commuting.

- **Fringe and corridor parking facilities (park and ride lots).** The two existing park and ride lots along I-985 successfully attract carpooling commuters plus express bus transit riders. Gwinnett Transit operates a successful express bus service from the Exit 4 Park and Ride Lot that reduces SOV traffic between Hall County and the rest of the Atlanta region.
- **Vehicle use restrictions in downtown or major activity centers.** Some jurisdictions have adopted ordinances creating vehicle-free zones at certain hours on designated roadways to enhance alternate modes and reduce SOVs in specified areas at specified times.
- **Programs that provide high-occupancy, shared ride services.** The Clean Air Campaign works with over 1,600 employers in Georgia to offer employees commute options including telework, shared ride van pool and car pool services. In addition, the Clean Air Campaign works with schools to plan lessons and offer special events to increase awareness and promote habits that reduce SOV traffic. Over 40 organizations have joined the Campaign's diesel idling reduction program to reduce unnecessary emissions.
- **Programs for construction of bicycle and pedestrian facilities.** A percentage of the capital improvement program can be designated to construct facilities for appropriate modes that offer alternatives to the SOV. Facilities include additional multi-use paths for bicycling and walking, bicycle lanes, storage facilities, bike parking, and sidewalks.

Programs that reduce SOV trips inherently relieve congestion because they remove vehicles from the roadways thereby enhancing traffic flow. Identification of appropriate transportation projects through the GHMPO planning process will also help relieve congestion by anticipating future "hotspots" and implementing capacity and transit projects to relieve existing and anticipated congestion. Continued diligence by GHMPO in providing viable alternative transportation modes and increased efforts to involve local and regional employers will help the region's infrastructure keep pace with anticipated growth.

Other potential TCMs include programs to control extended vehicle idling similar to Clean Air Campaign program, programs to reduce emissions under cold start conditions including appropriate equipment needed, and programs to encourage the voluntary removal of pre-1980 vehicles from the market place.

Other emission reduction initiatives and regulatory initiatives in Hall County include:

- **Georgia Retrofit Program.** The Georgia Department of Environmental Protection partnered with Georgia Conservancy, Clean Air Campaign, Southern Alliance for Clean Energy, and Mothers and Others for Clean Air to administer a program that helps school systems manage emissions from their diesel-powered fleets.
- **Georgia Power Green Energy program.** Georgia Power sponsors a voluntary program that offers customers an opportunity to benefit the community by purchasing Green Energy from sun and biomass sources.
- **Georgia Forestry Commission Burn Ban**. Hall County is one of 59 Georgia counties participating in banning outdoor burning between May 1 and September 30.
- **Education and outreach on health effects of air pollution.** The Clean Air Campaign offers educational lesson plans and materials for school age students under its Clean Air schools program. Safe Routes to School offers funding for educational services on transportation alternatives.
- **Avoidance, minimization, and mitigation**. GHMPO is committed to avoiding, minimizing, and, when necessary, mitigating the negative effects of transportation projects on the natural and built environments. Projects require varying levels of mitigation. New roadways and widenings involve major construction and considerable disturbance. Intersection improvements, street lighting, and resurfacing projects, involve minor construction and minimal, if any, disturbance. Mitigation efforts depend on the severity of the impact on environmentally sensitive areas. Transportation projects should be designed to avoid off-site impacts if possible. Otherwise, off-site disturbance in sensitive areas should be minimized and strategies should be developed to preserve air and water quality, limit tree removal, minimize grading and other earth disturbance, provide erosion and sediment control, and limit noise and vibration. Alternative project designs or alignments should be considered, when needed, to lessen the impact on environmentally sensitive areas.
- **Development patterns.** Comprehensive land use planning in Hall County has worked diligently to implement development patterns that complement transportation planning. Some level of density enhances the capability of the transportation system to offer alternative modes, enhancing congestion and reducing emissions.

8. Safety and Security

SAFETEA-LU requires that the MPO planning process include consideration and implementation of projects, strategies, and services to increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and non-motorized users.

Goal 1 of the 2040 MTP is to *provide an integrated multimodal and intermodal transportation system that includes more options to provide the desired level of accessibility and mobility of people and goods in a safe and secure manner*. Many of the projects, policies, and programs identified in the 2040 MTP will improve safety and security of the highway, bicycle, pedestrian, and transit system.

8.1 Safety

As a key objective throughout the MTP, safety is discussed relative to each component of the transportation system, roadway, transit, bicycle, pedestrian and freight. To demonstrate the legislative emphasis, SAFETEA-LU requires each state to develop a highway safety plan.

8.1.1. Hall County Crash Profiles

In August 2008, GHMPO completed the Hall County Crash Profile, which describes crash locations and statistics, including total crash numbers, crash rates, severity, injuries and fatalities, hotspots, and comparison with neighboring counties. The information reported was reviewed during the 2040 MTP and the financially constrained projects improve safety and operations along numerous roadways in the study area.

8.1.2. Georgia Highway Safety Plan

On its first page, the 2010 update of the Georgia Highway Safety Plan related end of 2009 statistics that demonstrated a clear trend. Focused on fatality statistics, the Plan illustrated a significant reduction in highway fatalities over the past three years. Fatalities dropped by 17 percent between 2008 and 2009. This statistic continued a historic trend of reductions since 2007. Roadway fatalities totaled 1,648 in 2007 but dropped to 1,413 in 2008 and 1,173 in 2009. The statewide goal continues to be approximately 1.0 fatality per 100 million miles traveled, or less than 1,498 per year, the current annual average.

Important public safety issues were evaluated and prioritized in order to develop Georgia's Key Emphasis Areas (KEA's):

- Occupant Protection:
  - Seatbelts and Air Bags
- Serious Crash Type:
  - Intersections
  - Keeping Vehicles on the Road – lane departure
  - Head-on and Cross Median Crashes
  - Minimizing Consequences of Leaving Road
  - Work Zones
  - Aggressive Driving/Super Speeder
  - Impaired Driver
- Age related issues:
  - Graduated Driver's Licensing
  - Younger Adult Drivers
  - Older Drivers
  - Non-motorized Users:
  - Pedestrians
  - Bicyclists
- Vehicle Type:
  - Heavy Trucks
  - Motorcycles
- Trauma System/Increasing EMS Capabilities:
  - Traffic/Crash Records and Data Analysis
  - Traffic Incident Management

8.1.3. Public Transportation Safety

The goal of FTA's Safety and Security Program is to achieve the highest practical level of safety and security for all modes of transit. To protect passengers, employees, revenues, and property, transit systems are encouraged to develop and implement a proactive system wide safety plan.

FTA provides support by developing guidelines and best practices, providing training and by performing system safety analyses and reviews. HAT integrates safety into its planning efforts and educates staff on appropriate safety measures. To assist in this effort, the FTA Office of Safety and Security provides an integrated set of oversight and technical assistance programs designed to prevent public transportation fatalities, injuries, property damage and system interruption, and to ensure the capability to respond effectively to emergencies.

8.2 Security

SAFETEA-LU requires that the planning process include consideration for projects and strategies that enhance the security of the motorized and non-motorized transportation systems. The cities and county are tasked with ensuring the security of their systems. Due to its vital role in evacuation plans and transporting of emergency services, the security of the transportation system is a primary concern. GHMPO works diligently to support jurisdictions in their efforts to maintain a secure multimodal transportation system through it MPO committee process. As needed, GHMPO also assist jurisdictions in coordinating with the Hall County Emergency Management Office, Georgia Emergency Management Agency and the Georgia Office of Homeland Security. The following provides a summary of the some of the local security initiatives in Hall County:

- **Hall County Emergency Operations Plan** – Gainesville City Council recently adopted five-year updates to the Hall County Pre-Disaster Hazard Mitigation Plan and the Hall County Local Emergency Operation Plan. The plans coordinate emergency response efforts between all jurisdictions in Hall County and establish teams to manage transportation, communications, public works, search and rescue and hazardous materials. Evacuation procedures are essential elements of the plans. Of particular interest are roadways subject to availability in the event of flooding.

- **Community Emergency Response Team (CERT) Program** – CERT training is designed to help people respond to emergency situations and is available free of charge for residents and organizations through the Hall County Emergency Management Office. Training offered includes:

- **Hall County Emergency Management Office** – Hall County Fire Services staffs the emergency management office. Its purpose is to conduct comprehensive pre-disaster planning and aggressively respond to emergency events. By analyzing potential threats, the office can develop mitigation plans and implementation training. In the event of an overwhelming event, the office is set up to communicate with the Governor's Office to request appropriate assistance and properly address consequences of disaster.

- **Georgia Emergency Operations Plan** – Georgia Emergency Management Agency/Homeland Security (GEMA) is responsible for developing the Georgia Emergency Operations Plan which provides a "comprehensive and aggressive all-hazards approach to homeland security initiatives, mitigation,

preparedness, response, recovery and special events in order to protect life and property and prevent and/or reduce negative impacts of terrorism and natural disasters in Georgia." Specifically related to transportation, the Plan includes evacuation routes in hurricane zones and installs Field Coordinators in each GDOT District.

- **Public Transportation** – Hall Area Transit can be called into service in the event widespread or specific area evacuation is required resulting from a security issue or a natural or manmade disaster.

9. Financial Plan

Federal planning statutes require that the MTP financial plan must be financially constrained, which means that the estimated cost for all MTP transportation improvements cannot exceed the amount of reasonably expected revenues projected from identified federal, state, and local funding sources. This requirement ensures that the MTP is based upon realistic assumptions and can be implemented.

Consequently, the GHMPO 2040 MTP financial plan was coordinated with FHWA, GDOT, and other local jurisdictions to identify transportation revenue that are reasonably expected to the year 2040. Actual funding availability to the year 2040 will depend largely upon future actions and public policy directives initiated at the federal and state levels. Today, most roadway, bicycle, and pedestrian projects in the GHMPO area are financed through federal (Federal Highway Administration), state, and local funds, which are mostly derived from taxes on fuel, fees from vehicle registration, and Special Purpose Local Option Sales Tax (SPLOST). Transit projects are also funded through federal (Federal Transit Administration), state, and local sources, as well as fare revenues.

The Financial Plan provides financial details such as anticipated federal, state, and local revenues, cost inflation factors, Year-of-Expenditure (YoE) dollars, and planning level cost estimates. Anticipated costs and revenues are based on the best available information, which was provided by GDOT and local jurisdictions in the GHMPO area.

9.1 Georgia Transportation Investment Act of 2010

During the 2010 Georgia General Assembly, House Bill 277 (HB 277) was passed and it was signed into law by Governor Purdue. The enacted law, The Georgia Transportation Investment Act of 2010, permits by statute referenda developing 12 Regional Commissions that cover all of Georgia and imposes on a 1 percent sales tax for 10 years to fund a list of transportation projects, which may include all modes of transportation. The referenda will occur during the 2012 primary election day. If passed by Georgia voters, it is anticipated that the GHMPO area will receive transportation funding from this potential new funding source. However, the GHMPO 2040 MTP does not include any financial revenue from this potential new funding source.

9.2 Projected Federal and State Revenues

Table 9-1 shows the actual GHMPO federal and state funding received between 2001 and 2011. Using GHMPO 2001 to 2010 historical funding numbers, a trend analysis was completed to develop a reasonable baseline revenue estimate to be used in the 2040 MTP.

Table 9-1: GHMPO Federal and State Funding (1994 to 2011)

Year	Funding*
2001	$44,860,000
2002	$2,056,000
2003	$45,424,000
2004	$1,357,000
2005	$4,105,000
2006	$141,055,000
2007	$13,527,734
2008	$6,092,357
2009	$11,624,741
2010	$42,063,915
2011	$46,793,909**

Source: Georgia Department of Transportation.
**excludes transit and maintenance*
*** As of May 18, 2011*

Based upon the GHMPO historical funding and the GDOT recommended 2.5 percent revenue inflation factor, it can be reasonably estimated that the available federal and state revenue for highway, pedestrian, and bicycle improvements in the 2040 Financially Constrained MTP will total $1.525 billion and maintenance will total $155.9 million, as shown in **Table 9-2**. The $1.525 billion estimate includes Transportation Enhancement (TE), Congestion Mitigation and Air Quality (CMAQ), Safe Routes to School SRTS) funding and the GHMPO 2040 MTP will program set-aside categories for these funding sources. While there is uncertainly at the federal and state level on future funding, the 2.5 percent inflation factor is reasonable to use because the GHMPO will update the revenue projects over the next four years during the next MTP update.

Table 9-2: GHMPO Federal and State Funding (2012 to 2040)

Year	Estimated Programmed Funding*	Estimated Maintenance Funding
2012	$73,973,000	$3,724,546
2013	$14,436,000	$3,817,659
2014	$11,620,000	$3,913,101
2015	$15,613,000	$4,010,928
2016	$37,284,000	$4,111,202
2017	$83,326,000	$4,213,982
2018	$42,145,083	$4,319,331
2019	$43,198,710	$4,427,315
2020	$44,278,678	$4,537,997
2021	$45,385,644	$4,651,447
2022	$46,520,286	$4,767,733
2023	$47,683,293	$4,886,927
2024	$48,875,375	$5,009,100
2025	$50,097,259	$5,134,327
2026	$51,349,691	$5,262,686
2027	$52,633,433	$5,394,253
2028	$53,949,269	$5,529,109
2029	$55,298,001	$5,667,337
2030	$56,680,451	$5,809,020
2031	$58,097,462	$5,954,246
2032	$59,549,899	$6,103,102
2033	$61,038,646	$6,255,680
2034	$62,564,612	$6,412,071
2035	$64,128,727	$6,572,373
2036	$65,731,946	$6,736,683
2037	$67,375,244	$6,905,100
2038	$69,059,625	$7,077,727
2039	$70,786,116	$7,254,670
2040	$72,555,769	$7,436,037
Total	**$1,525,235,218**	**$155,895,690**

*Source: Gainesville-Hall MPO. * Funding for 2012 and 2013 are the dollar amounts included in TIP. **Baseline revenue estimate derived from trend of 1994-2011 GHMPO funding*

9.3 Projected Local Revenues

Local project funding for roadways, bicycle facilities, and pedestrian infrastructure is primarily provided through the Hall County Special Local Option Sales Taxes (SPLOST). Hall County has a strong track record of supporting such taxes, the latest program (SPLOST VI) was approved in March 2009 with an affirmative vote of 62 percent. Hall County SPLOST VI has budgeted $54.2 million for specific transportation projects (new road construction, intersection improvements, and traffic safety improvements) in Hall County and in each of its six cities. In addition, SPLOST VI

budgeted $21.8 million for roadway maintenance improvements (resurfacing and culvert replacement) in Hall County and in each of its six cities. The SPLOST VI transportation project and maintenance budget totals nearly $76 million.

SPLOST VI has a six-year lifespan (June 2009 to July 2015) and it is reasonably anticipated that five additional SPLOST taxes referendums will be approved during the 2040 MTP time period. The SPLOST projections assume a similar level of transportation funding in each subsequent SPLOST, with a 10 percent increase in each successive SPLOST based on increases in sales tax due to population growth in the period. This equates to a conservative 1.6 percent compound annual growth rate between each SPLOST, which is significantly less than the population growth rate projected during the same time periods. As shown in **Table 9-3**, the SPLOST revenue available for the 2040 MTP (2012 to 2040) totals $327.4 million for projects and $131.6 million for maintenance. The total local revenue reasonably expected during the 2040 MTP time period totals nearly $459 million.

9.4 Federal and Local Public Transportation Revenue

Using Hall Area Transit 2008 to 2011 historical funding numbers (**Table 9-4**), a trend analysis was completed to develop a reasonable baseline revenue estimate to be used in the 2040 MTP.

Based upon the HAT historical funding and the GDOT recommended 2.5 percent revenue inflation factor, it can be reasonably estimated that the total revenue (federal, local, and program) for public transportation in the GHMPO 2040 Financially Constrained MTP totals $91.8 million. The federal (Federal Transit Administration) revenue estimate totals $56.1 million, local revenue estimate (Hall County and City of Gainesville) totals $20.9 million, and HAT program revenue (fare box) totals nearly $14.8 million, as shown in **Table 9-5**.

Table 9-3: SPLOST Project and Maintenance Funding (2012 to 2040)

Year	SPLOST Project Revenue (Years 2012 to 2040)	SPLOST Maintenance Revenue (Years 2012 to 2040)	SPLOST
2012	$9,033,333	$3,631,667	SPLOST VI
2013	$9,033,333	$3,631,667	
2014	$9,033,333	$3,631,667	
2015	$9,033,333	$3,631,667	
2016	$9,936,667	$3,994,833	SPLOST VII
2017	$9,936,667	$3,994,833	
2018	$9,936,667	$3,994,833	
2019	$9,936,667	$3,994,833	
2020	$9,936,667	$3,994,833	
2021	$9,936,667	$3,994,833	
2022	$10,930,333	$4,394,317	SPLOST VIII
2023	$10,930,333	$4,394,317	
2024	$10,930,333	$4,394,317	
2025	$10,930,333	$4,394,317	
2026	$10,930,333	$4,394,317	
2027	$10,930,333	$4,394,317	
2028	$12,023,367	$4,833,748	SPLOST IX
2029	$12,023,367	$4,833,748	
2030	$12,023,367	$4,833,748	
2031	$12,023,367	$4,833,748	
2032	$12,023,367	$4,833,748	
2033	$12,023,367	$4,833,748	
2034	$13,225,703	$5,317,123	SPLOST X
2035	$13,225,703	$5,317,123	
2036	$13,225,703	$5,317,123	
2037	$13,225,703	$5,317,123	
2038	$13,225,703	$5,317,123	
2039	$13,225,703	$5,317,123	
2040	$14,548,274	$5,848,835	SPLOST XI
TOTAL	**$327,378,027**	**$131,615,631**	**$458,993,658**

Source: Hall County.

Table 9-4: Hall Area Transit Historical Funding (2008 to 2011)

Year	Funding
2008	$2,141,317
2009	$2,476,875
2010	$2,074,656
2011	$2,226,574

Source: Hall Area Transit.

Table 9-5: Projected Federal, Local, and Program Public Transportation Revenues

Year	Federal	Local Match	Program Revenue	Total
2012	$1,340,320	$499,562	$353,363	$2,193,244
2013	$1,373,827	$512,051	$362,197	$2,248,075
2014	$1,408,173	$524,852	$371,251	$2,304,276
2015	$1,443,378	$537,973	$380,533	$2,361,883
2016	$1,479,462	$551,422	$390,046	$2,420,930
2017	$1,516,448	$565,208	$399,797	$2,481,454
2018	$1,554,360	$579,338	$409,792	$2,543,490
2019	$1,593,219	$593,822	$420,037	$2,607,077
2020	$1,633,049	$608,667	$430,538	$2,672,254
2021	$1,673,875	$623,884	$441,301	$2,739,061
2022	$1,715,722	$639,481	$452,334	$2,807,537
2023	$1,758,615	$655,468	$463,642	$2,877,726
2024	$1,802,581	$671,855	$475,233	$2,949,669
2025	$1,847,645	$688,651	$487,114	$3,023,410
2026	$1,893,836	$705,867	$499,292	$3,098,996
2027	$1,941,182	$723,514	$511,774	$3,176,471
2028	$1,989,712	$741,602	$524,569	$3,255,882
2029	$2,039,455	$760,142	$537,683	$3,337,279
2030	$2,090,441	$779,145	$551,125	$3,420,711
2031	$2,142,702	$798,624	$564,903	$3,506,229
2032	$2,196,270	$818,590	$579,026	$3,593,885
2033	$2,251,176	$839,054	$593,501	$3,683,732
2034	$2,307,456	$860,031	$608,339	$3,775,825
2035	$2,365,142	$881,532	$623,547	$3,870,221
2036	$2,424,271	$903,570	$639,136	$3,966,976
2037	$2,484,877	$926,159	$655,114	$4,066,151
2038	$2,546,999	$949,313	$671,492	$4,167,805
2039	$2,610,674	$973,046	$688,279	$4,272,000
2040	$2,675,941	$997,372	$705,486	$4,378,800
TOTAL	**$56,100,809**	**$20,909,794**	**$14,790,445**	**$91,801,049**

Source: Hall Area Transit and GHMPO.

9.5 Total Estimated Revenue

Based on the consultation with federal, state, and local agencies, **Table 9-6** shows the estimated revenue for the GHMPO 2040 Financially Constrained MTP is $2.232 billion. The share of total estimated federal and state funding available to the year 2040 for the GHMPO area is $1.73 billion. The projection for local dollars, primarily through Special Purpose Local Option Sales Taxes (SPLOST) is $494.7 million. Most of these funds will be required as local match on projects that cannot be fully funded by outside sources.

Table 9-6: Projected Federal, State, and Local Revenues

Source	Projects	Maintenance	Transit	Total YoE Dollars
Federal/State	$1,525,235,218	$155,895,690	$56,100,809	**$1.737 billion**
Local	$327,378,027	$131,615,631	$35,700,239	**$494.7 million**
TOTAL	**$1,852,613,245**	**$287,511,321**	**$91,801,048**	**$2.232 billion**

Source: GDOT, GHMPO Staff, Hall County, Hall Area Transit, and Wilbur Smith Associates.

9.6 Year-of-Expenditure Dollars

SAFETEA-LU requires that MTP projects and programs must be financially constrained and projects and programs also must account for costs in terms of Year-of-Expenditure (YoE) dollars. The Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) have jointly provided guidance on fiscal constraint for metropolitan plans, transportation improvement programs (TIPs), and Statewide TIPs. The guidance calls for the use of "forecast year" dollars in preparing cost projections for highways and transit projects in MPO planning documents. The guidance recommends using of a four percent annual inflation rate for calculating both highway and transit improvement costs. However, if more appropriate data is available, a lower or higher rate can be used as long as it is documented. Based on consultation with FHWA, GDOT, and the Atlanta Regional Commission (ARC), it was determined that a 2.2 percent annual inflationary rate be used to escalate project costs in the GHMPO 2040 MTP.

In order to develop YoE dollars, inflationary cost increases must be applied to each project or program contained in Tier 2 (2019 to 2029) and Tier 3 (2030 to 2040) in the MTP. Projects and programs contained in Tier 1 (2012 to 2018) include the next TIP period, and these costs are already financially constrained by the MPO through consultation with GDOT and the annual congressional balancing process.

The YoE requirement dramatically increases the complexity involved in developing the constrained project list. However, as allowed by SAFETEA-LU, MTP projects in the outer years (2018 to 2040) can be grouped into bands or tiers. Developing tiers enables an average inflation rate to be applied to projects that are grouped into one of the time bands. It also provides flexibility in the projects start and end date so that the appropriate inflation factor can be applied. The GHMPO 2040 MTP contains the following three time bands:

- Tier 1 – FY 2012 to FY 2017, Six Year Transportation Improvement Program;
- Tier 2 – FY 2018 to FY 2030 (13 years); and
- Tier 3 – FY 2031 to FY 2040 (10 years).

As noted earlier, the GDOT,FHWA, ARC consultation process approved a 2.2 percent compound annual growth rate (cagr) or inflation rate to apply to the initial planning level cost estimate to derive the inflation-adjusted estimate or YoE of project costs identified in the GHMPO 2040 financially constrained MTP. The first time band (Tier 1 – 2012 to 2017), represent projects contained in the upcoming FY 2012 to 2017 TIP and cost estimates are shown in YoE dollars, so an inflation factor is not necessary since project costs are already in YoE dollars. The GHMPO 2040 MTP uses a 1.301 inflation factor for Tier 2 (2018 to 2030) projects and a 1.672 inflation factor for Tier 3 (2031 to 2040) projects. **Table 9-7** shows the inflation factors for each MTP tier.

Table 9-7: Inflation Factors by Tier

	Tier 1 2012 to 2017	Tier 2 2018 to 2030	Tier 3 2031 to 2040
Inflation Factor	Already shown YoE$	1.301	1.672

Source: GHMPO Staff and Wilbur Smith Associates.

9.7 Planning Level Cost Estimates

Federal planning regulations require that all project cost estimates include the cost of the total project and account for inflation. Planning level cost estimates were developed by using GDOT's planning level cost estimation tools. The first tool, RUCEST—the Right-of-Way and Utility Relocation Cost Estimate Tool—estimates right of way and utility relocation costs based on the current and proposed typical sections, assumed existing and needed right-of-way, and known and assumed utilities. The second tool modified the AASHTO Shareware Trns•port© Cost Estimation System© (CES©) tool. "Trns•port© CES©" estimates the planning level construction phase based on the proposed project's typical section while utilizing the latest available GDOT project cost trends. Both tools provide a consistent and systematic approach to developing planning level cost estimates and both tools utilize updated construction material, right-of-way, and utility relocation costs. Some of the planning level cost estimates contained in the Financially Constrained 2040 MTP were recently updated by GDOT and thus some costs are derived from GDOT's Preconstruction Status Reports.

9.8 Expenditures

As shown in **Table 9-8**, the planning level cost estimates and YoE dollars for the 2040 MTP projects are divided into three Tiers. Projects programmed covering period 2012 to 2017 are considered short-term, while the mid-term and long-term cover the implementation periods of 2018 to 2030 and 2031 to 2040, respectively. The YoE dollars for Tier 1 (2012 to 2017) total $388 million; YoE for Tier 2 total $941 million; YoE for Tier 3 total $876 million; and the 2040 MTP YoE dollars totals $2.2 billion.

Table 9-8: Expenditures by Tier

Time Period	Planning Level Cost Estimate Dollars	Year of Expenditure Dollars
Tier 1 (2012 to 2017)	$388,578,123	$388,578,123
Tier 2 (2018 to 2030)	723,647,402	$941,465,271
Tier 3 (2031 to 2040)	524,283,651	$876,302,263
Total	**$1,636,509,176**	**$2,206,234,657**

Source: GHMPO Staff and Wilbur Smith Associates.

9.9 Expenditures vs. Revenues

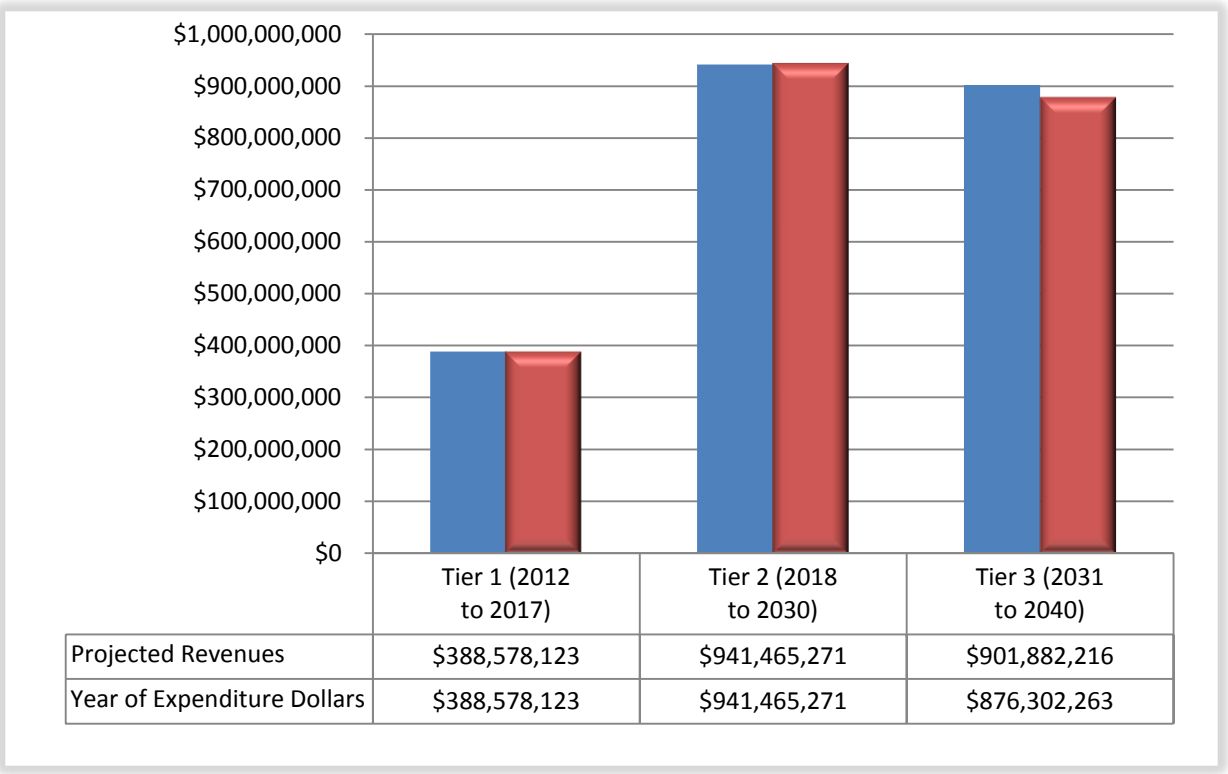
Federal planning regulations require that the financial plan presented in the MTP must be financially constrained, which means that the planning level cost estimates for all transportation improvements presented in the MTP cannot exceed the amount of reasonably expected revenues projected from identified funding sources. This requirement ensures that the MTP is based upon realistic assumptions and can be implemented over the 25 year planning period. **Table 9-9** and **Figure 9-1** demonstrates that the 2040 MTP is financially constrained. In other words, the federal, state, and local revenue anticipated in GHMPO area over the next 29 years (2012 to 2040 = $2.232 billion) is adequate to cover the planning level cost estimates for the project phases ($2.206 billion) listed in the 2040 MTP.

Table 9-9: Expenditures and Revenue by Tier

Time Period	Projected Revenues	Year of Expenditure Dollars	Remaining Revenue
Tier 1 (2012 to 2017)	$388,578,123	$342,077,672	$0
Tier 2 (2018 to 2030)	$941,465,271	$941,465,271	$0
Tier 3 (2031 to 2040)	$901,882,216	$876,302,263	$25,579,953
Total	**$2,231,925,610**	**$2,206,234,657**	**$25,579,953**

Source: GHMPO Staff and Wilbur Smith Associates.

Figure 9-1: Expenditures and Revenue by Tier



	Tier 1 (2012 to 2017)	Tier 2 (2018 to 2030)	Tier 3 (2031 to 2040)
Projected Revenues	$388,578,123	$941,465,271	$901,882,216
Year of Expenditure Dollars	$388,578,123	$941,465,271	$876,302,263

Source: GHMPO Staff and Wilbur Smith Associates.

10. Financially Constrained Plan

The multimodal transportation investments highlighted in **Figure 10-1** address the goals and objectives outlined in **Chapter 4**, as well as the comments received from local residents and members of the three MPO committees. The improvements concentrate on developing a sustainable multimodal transportation system that improves safety, mobility, connectivity, and access within the GHMPO area.

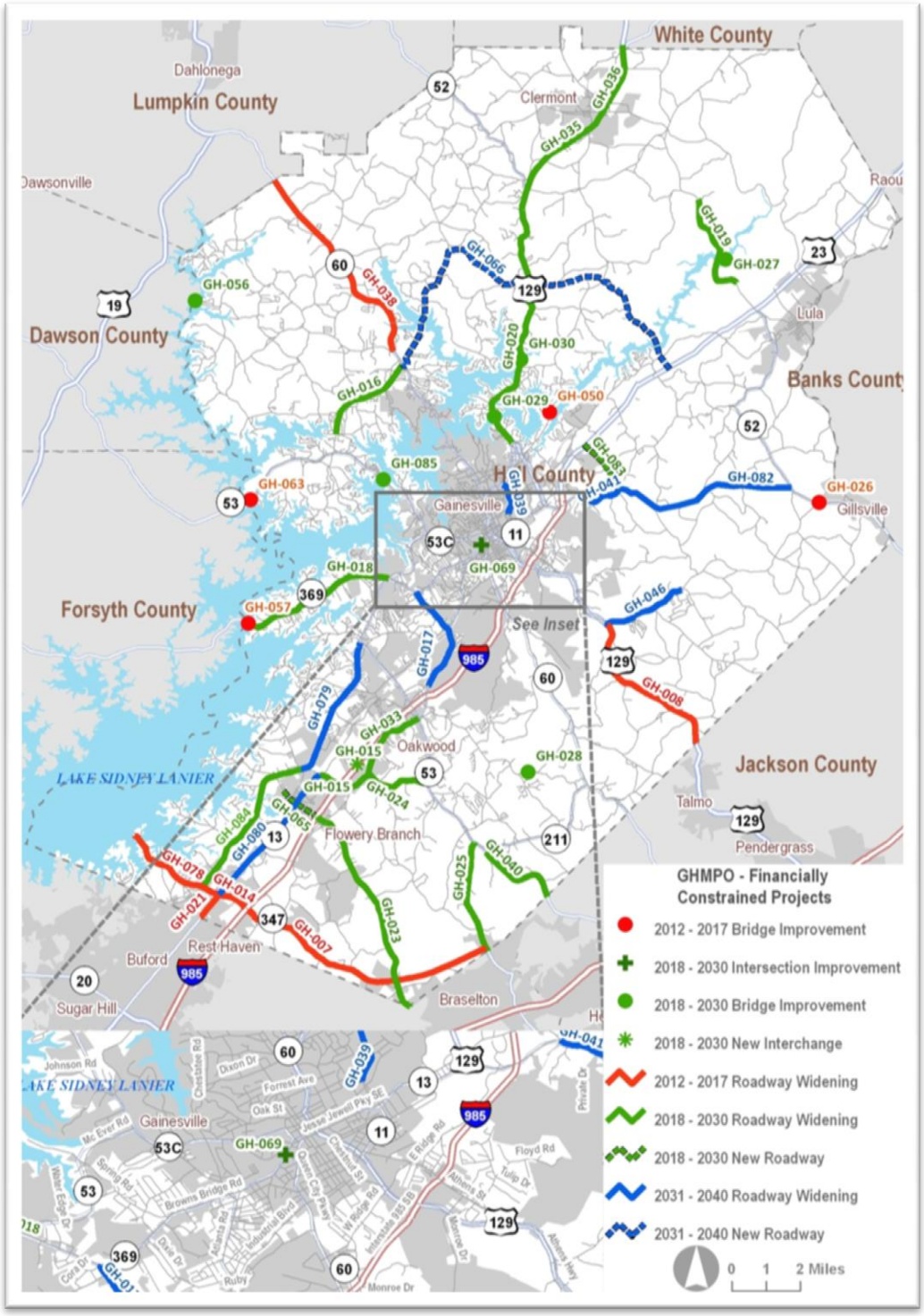
The Financially Constrained Plan provides financial and project phasing details, as well as planning level cost estimates, year-of-expenditure dollars, and anticipated revenues are also presented. Anticipated costs and revenues are based on the best available information, which was provided by GDOT and local jurisdictions and approved by FHWA.

10.1 Multimodal Projects

As noted earlier, there are $2.206 billion of improvements identified in the 2040 MTP. **Figure 10-2** shows the total expenditures by improvement type that are contained in the financially constrained MTP. Widening improvements total 66 percent ($1.4 billion) of the total expenditures; new location roadway improvements total 10 percent ($212 million) public transportation (capital and operating) improvements total 4 percent ($91.8 million); maintenance, preservation and operational improvements total 13 percent ($287.5 million); bicycle and pedestrian improvements total 1 percent ($11.4 million); intersection/interchange improvements total 2 percent ($52.3 million); and bridge improvements total 4 percent ($93 million).

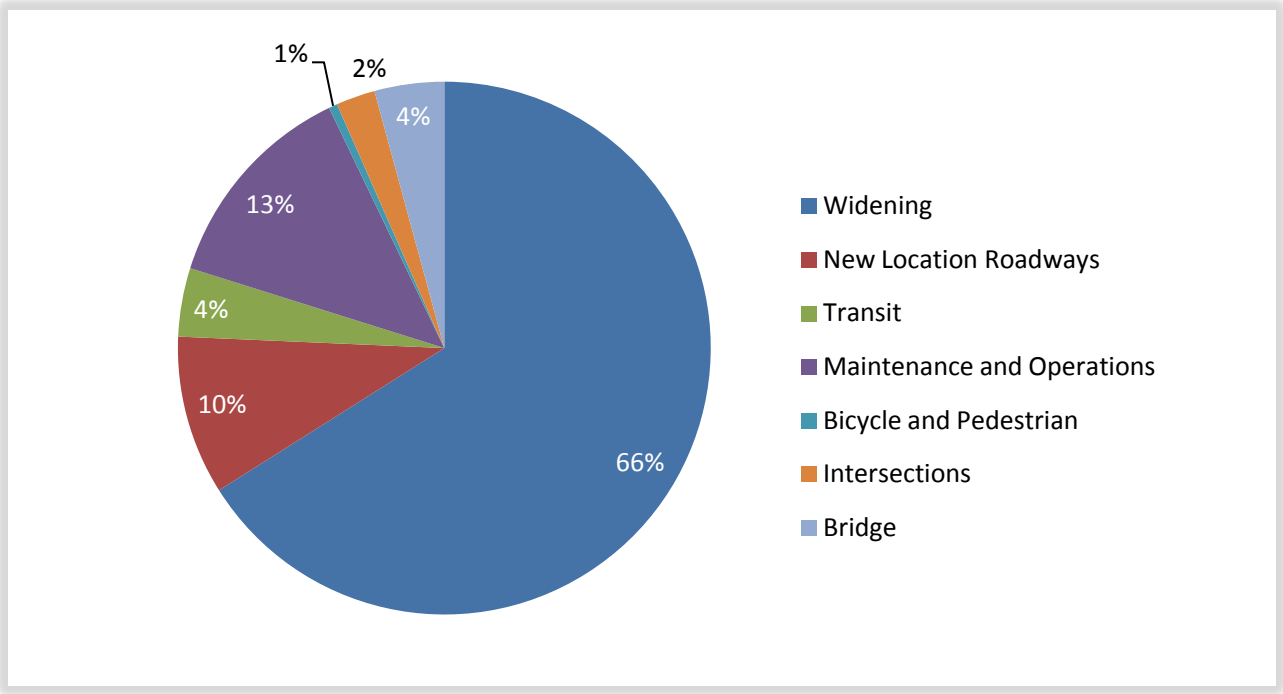
Implementing the 2040 MTP projects, programs, and policies will continue the trend of large investments in the GHMPO multimodal transportation system. Based upon comments from local residents and members of the three MPO committees, the multimodal transportation improvements identified in each of the three tiers address the six 2040 MTP goals, which will focus improvements on developing a safe, secure, efficient, connected, accessible multimodal transportation system in the GHMPO area.

Figure 10-1: Financially Constrained Roadway Projects



Source: GHMPO.

Figure 10-2: Expenditures by Improvement Type



Source: GHMPO Staff and Wilbur Smith Associates.

10.2 Funding Priorities

Projects identified in the GHMPO 2012 to 2017 Transportation Improvement Program (TIP) are contained in Tier 1. The majority of the TIP projects were defined and prioritized prior to the development of the 2040 MTP and some of the projects are already undergoing preliminary engineering and environmental analysis or right-of-way acquisition, or the project is under construction. Since the cost estimates for TIP projects include year-of-expenditure dollars, no additional escalation was required.

The 2012 to 2017 TIP was developed by the MPO as part of its continual planning process. On-going projects identified in the 2011 to 2016 TIP move forward into the 2012 to 2017 TIP, and any new projects or project phases are also added to the TIP, during this annual planning process. **Tables 10-1** to **10-3** identify the Tier 1 financially constrained GHMPO projects. The mid-range improvements consist of projects contained in Tier 2, which cover the years 2018 to 2030. **Tables 10-4** to **10-6** identify the Tier 2 financially constrained projects in the GHMPO area. The financially constrained long-range projects contained in Tier 3 (2031 to 2040) are shown in **Tables 10-7** and **10-8**.

Table 10-1: Tier 1 (2012 to 2017) Widening Projects

GHMPO No.	GDOT No.	Project Name	Phase	PE	ROW	UTL	CST	Total Cost Estimate
Widening Projects								
GH-007	162430	SR 347/Friendship Road From I-985 to SR 211	CST				$47,930,441	$47,930,441
GH-008	122150	US 129/Athens Hwy from SR 323/Gillsville Hwy to SR 332/Talmo in Jackson County	CST				$26,802,627	$26,802,627
GH-014	170735	SR 347/Lanier Islands Parkway – I-985 to McEver Road Phase I	UTL; CST			$645,800	$16,527,051	$17,172,851
GH-016	3626	Sardis Road Connector – SR 60/Thompson Bridge to Sardis/Chestatee Road	ROW		$25,177,680			$25,177,680
GH-018	122010	SR 369/Brown's Bridge Road – Forsyth Co. Line to SR 53/McEver Road	ROW		$36,592,993			$36,592,993
GH-021	132950	SR 13/Atlanta Hwy - From Gwinnett County line to SR 347/Lanier Islands Parkway	ROW; UTL; CST		$5,067,268	$849,741	$5,125,076	$11,042,085
GH-023	9679	Spout Springs Rd - Hog Mountain Rd to Gwinnett Co. Line	PE	$3,200,000				$3,200,000
GH-025	7233	SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment	PE	$2,502,080				$2,502,080
GH-033	1822	SR 13/Atlanta Highway - Radford Road to SR 53/Winder Hwy	PE	$5,075,944				$5,075,944
GH-035	150290	US 129/Cleveland Hwy - N of Nopone/J Hood Road to SR 284/Clarks Bridge Road	PE	$2,109,556				$2,109,556
GH-038	132610	SR 60/Thompson Bridge Road - SR 136/Price Road to Lumpkin County Line	ROW; CST		$4,281,670		$63,166,618	$67,448,288
GH-078	8663	SR 347/Lanier Islands Pkwy - Mc Ever Rd to Lake Lanier Islands	PE; ROW; UTL; CST	$510,000	$2,601,000	$5,399,544	$5,412,161	$13,922,705
GH-084	1821	McEver Rd from SR 347/Friendship Rd to Jim Crow Rd	PE	$3,100,906				$3,100,906
Total				**$16,498,486**	**$73,720,611**	**$6,895,085**	**$164,963,974**	**$262,078,156**

Table 10-2: Tier 1 (2012 to 2017) Interchange, New Location Roadway, Bridge, Bicycle & Pedestrian Projects

GHMPO No.	GDOT No.	Project Name	Phase	PE	ROW	UTL	CST	Total Cost Estimate
New Interchange Projects								
GH-015	425	I-985 – New Interchange North of SR 13 Near Martin Road	ROW		$16,529,865			$16,529,865
Total				**$0**	**$16,529,826**		**$0**	**$16,529,826**
New Location Roadway Projects								
GH-065	1095	Relocation of Lights Ferry Rd from Gainesville St to SR 13	PE; ROW; CST	$34,461				$34,461
GH-083		Howard Road Extension from SR 365 to Old Cornelia Highway	PE	$1,162,000				$1,162,000
Total				**$1,004,647**	**$0**		**$0**	**$1,004,647**
Bridge Projects								
GH-030	122066	US 129/Cleveland Hwy at East Fork Little River (Bells Mill) - Bridge	ROW		$1,104,080			$1,104,080
GH-029	122064	US 129/Cleveland Hwy at Chattahoochee River - Bridge	ROW		$2,208,162			$2,208,162
GH-026	132995	SR 52 at Candler Creek – Bridge	UTL; CST			$294,391	$2,691,649	$2,986,040
GH-085	10212	SR 53/Dawsonville Hwy westbound at Chattahoochee River - Bridge	PE	$1,126,162				$1,126,162
GH-050	142291	SR 284/Clarks Bridge Road at Chattahoochee River – Bridge	ULT; CST			$64,921	$7,410,367	$7,475,288
GH-063	7021	SR 53/Dawsonville Hwy at Chestatee River - Bridge	ROW; UTL; CST		$530,604	$54,122	$11,040,808	$11,625,534
GH-057	122012	SR 369/Browns Bridge Rd at Chattahoochee River - Bridge	ROW; UTL; CST		$795,906	$40,100	$19,720,884	$20,556,890
Total				**$1,126,000**	**$4,628,348**		**$30,785,780**	**$36,540,128**
Bicycle and Pedestrian Projects								
GH-051	7639	Central Hall Recreation and Multi-Use Trail	CST				$1,373,870	$1,373,870
Total				**$0**	**$0**		**$1,373,870**	**$1,373,870**

Table 10-3: Tier 1 (2012 to 2017) Transit, M&O Projects

GHMPO No.	GDOT No.	Project Name	Phase	PE	ROW	UTL	CST	Total Cost Estimate
Transit								
		Transit Capital - Lump	All					$3,502,466
		Transit Operations - Lump	All					$10,507,397
Total				**$0**	**$0**	**$0**	**$0**	**$14,009,863**
Maintenance and Operations								
		L010, L050, LU10, LU20, LU 30, LS 20, LS 30, L220, L230, L240, LS40, LS 50, LZ 20, L940	All					$46,307,752
Total				**$0**	**$0**	**$0**	**$0**	**$46,307,752**
TOTAL Tier 1			All	**$18,281,109**	**$94,889,228**	**$7,348,619**	**$207,201,552**	**$388,578,123**

Table 10-4: Tier 2 (2018 to 2030) Widening Projects

GHMPO No.	GDOT No.	Project Name	Phase	PE	ROW	CST	2011 Cost Estimate	Year of Expenditure Dollars
Widening Projects								
GH-016	3626	Sardis Road Connector – SR 60/Thompson Bridge Road to Sardis/Chestatee Road	CST			$46,509,052	$46,509,052	$60,508,277
GH-018	122010	SR 369/Brown's Bridge Road – Forsyth Co. Line to SR 53/McEver Road	CST			$39,418,123	$39,418,123	51,282,978
GH-019	132250	SR 52/Lula Road – 1 mile north of SR 365 to south of Julian Wiley Road	ROW; CST		$4,469,447	$14,250,321	$18,719,768	$24,354,418
GH-020	122060	US 129/Cleveland Hwy – Limestone Parkway to Nopone Road	ROW; CST		$54,620,986	$45,880,512	$100,501,498	$130,752,449
GH-023	9679	Spout Springs Road – Hog Mountain Road to Gwinnett County Line	ROW; CST		$6,205,788	$38,617,742	$44,823,530	$58,315,413
GH-024		Martin Road – Falcon Pkwy to SR 53/Winder Hwy	PE; ROW; CST	$1,642,155	$14,803,200	$14,480,800	$30,926,155	$40,234,928
GH-025	7233	SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment	ROW; CST		$2,679,094	$32,539,551	$35,218,645	$45,819,457
GH-033	1822	SR 13/Atlanta Highway - Radford Road to SR 53/Winder Hwy	ROW		$22,864,413		$22,864,413	$29,746,601
GH-035	150290	US 129/Cleveland Hwy - N of Nopone/J Hood Road to SR 284/Clarks Bridge Road	ROW; CST		$6,372,000	$15,376,397	$21,748,397	$28,294,664
GH-036	122240	US 129 - SR 284/Clarks Bridge Road to White Co. Line	ROW; CST		$3,427,000	$14,547,479	$17,974,479	$23,384,797
GH-084	1821	McEver Rd from SR 347/Friendship Rd to Jim Crow Rd	ROW; CST		$2,880,888	$41,956,500	$44,837,388	$58,333,442
GH-040	132860	SR 53/Winder Hwy from I-85 in Jackson Co. to SR 211/Tanners Mill Road	ROW; CST		$41,506,760	$33,427,264	$74,934,024	$97,489,165
Total				**$2,109,556**	**$180,225,239**	**$319,182,376**	**$501,517,172**	**$652,473,840**

Table 10-5: Tier 2 (2018 to 2030) Intersection, Interchange, and New Location Roadway Projects

GHMPO No.	GDOT No.	Project Name	Phase	PE	ROW	CST	2011 Cost Estimate	Year of Expenditure Dollars
Intersection Projects								
GH-069		Intersection Improvement at Jesse Jewel Pkwy and John Morrow Parkway	PE; ROW; CST	$228,480	$0	$1,904,000	$2,132,480	$2,774,356
Total				**$76,116**	**$17,574,264**	**$24,943,549**	**$42,593,929**	**$55,414,702**
New Interchange Projects								
GH-015	425	I-985 – New Interchange North of SR 13 Near Martin Road	CST			$25,422,158	$25,422,158	$33,074,228
Total				**$0**	**$0**	**$25,422,158**	**$25,422,158**	**$33,074,228**
New Location Roadway Projects								
GH-065	1095	Relocation of Lights Ferry Rd from Gainesville St to SR 13	PE; ROW; CST		$1,117,091	$4,266,480	$5,383,571	$7,004,026
GH-083		Howard Road Extension from SR 365 to Old Cornelia Highway	ROW; CST		$2,187,636	$6,099,746	$8,287,382	$10,781,884
GH-066		Northern Connector - Connection Between SR 60/Thompson Bridge Road and SR 365	PE	$20,989,091			$20,989,091	$27,306,807
Total				**$14,947,371**	**$3,304,727**	**$9,599,746**	**$27,851,845**	**$36,235,250**

Table 10-6: Tier 2 (2018 to 2030) Bridge, Bicycle, Pedestrian, Transit, M&O Projects

GHMPO No.	GDOT No.	Project Name	Phase	PE	ROW	CST	2011 Cost Estimate	Year of Expenditure Dollars
Bridge Projects								
GH-029	122064	US 129/Cleveland Hwy at Chattahoochee River - Bridge	CST			$8,672,578	$8,672,578	$11,283,024
GH-030	122066	US 129/Cleveland Hwy at East Fork Little River (Bells Mill) - Bridge	CST			$6,260,338	$6,260,338	$8,144,700
GH-056	7170	SR 136/Price Road @ Chestatee River - Bridge	PE; ROW; CST	$450,721	$25,000	$643,800	$1,119,521	$1,456,497
GH-085	10212	SR 53/Dawsonville Hwy westbound at Chattahoochee River - Bridge	ROW; CST		$229,738	$17,223,392	$17,453,130	$22,706,522
GH-028	142294	SR 332/Poplar Springs Road at Walnut Creek – Bridge	ROW; CST		$649,970	$1,340,893	$1,990,863	$2,590,113
Total				**$450,721**	**$4,988,827**	**$35,974,238**	**$41,413,786**	**$53,879,335**
Bicycle and Pedestrian								
		Bicycle and Pedestrian Improvements - Lump	All				$3,900,000	$5,073,900
Total				**$0**	**$0**	**$0**	**$3,900,000**	**$5,073,900**
Transit								
		Transit Capital - Lump	All				$7,399,993	$9,627,391
		Transit Operations - Lump	All				$22,199,979	$28,882,173
Total				**$0**	**$0**	**$0**	**$29,599,972**	**$38,509,564**
Maintenance and Operations								
		L010, L050, LU10, LU20, LU 30, LS 20, LS 30, L220, L230, L240, LS40, LS 50, LZ 20, L940	All				$93,960,846	$122,243,061
Total				**$0**	**$0**	**$0**	**$93,960,846**	**$122,243,061**
TOTAL Tier 2				**$23,310,447**	**$164,039,011**	**$408,837,126**	**$723,647,402**	**$941,465,271**

Table 10-7: Tier 3 (2031 to 2040) Widening Projects

GHMPO No.	GDOT No.	Project Name	Phase	PE	ROW	CST	2011 Cost Estimate	Year of Expenditure Dollars
Widening Projects								
GH-017	3701	SR 13/Atlanta Highway Widening & Memorial Park Drive Widening – Frontage Road to Browns Bridge Road	ROW;CST		$12,791,363	$23,009,739	$35,801,102	$59,559,443
GH-039		South Enota Drive - Widen from 2 To 4 Lanes from Park Hill Drive to Downey Blvd	PE; ROW; CST	$592,448	$1,412,000	$4,646,400	$6,650,848	$11,120,218
GH-041	133280	Old Cornelia Hwy – Exist. 4-lane E of I-985 to Joe Chandler Road	PE; ROW; CST	$1,091,317	$9,318,400	$13,641,452	$24,051,169	$40,213,555
GH-046	141820	SR 323/Gillsville Hwy - US 129/Athens Hwy to E of SR 82/Holly Springs Road	ROW; CST		$22,483,132	$11,341,523	$33,824,655	$56,554,823
GH-079		McEver Road from Jim Crow Road to SR 53	PE; ROW; CST	$2,824,010	$17,142,294	$49,380,944	$69,347,248	$115,948,598
GH-080		SR 13/Atlanta Highway Widening from SR 347 to Radford Road	PE; ROW; CST	$10,366,356	$69,676,218	$23,620,986	$103,663,560	$173,325,472
GH-082		Widening of Joe Chandler Road from SR 52 to Old Cornelia Highway	PE; ROW; CST	$5,368,956	$31,278,545	$17,042,055	$53,689,557	$89,768,938
Total				**$20,243,087**	**$164,101,952**	**$142,683,099**	**$327,028,139**	**$546,491,047**

Table 10-8: Tier 3 (2031 to 2040) New Roadway, Bicycle and Pedestrian, Transit, and M&O Projects

GHMPO No.	GDOT No.	Project Name	Phase	PE	ROW	CST	2011 Cost Estimate	Year of Expenditure Dollars
New Location Roadway Projects								
GH-066		Northern Connector - Connection Between SR 60/Thompson Bridge Road and SR 365	ROW; CST		$20,989,091	$78,624,000	$99,613,091	$166,553,088
Total				**$0**	**$54,458,182**	**$60,802,039**	**$115,260,221**	**$192,715,090**
Bicycle and Pedestrian								
		Bicycle and Pedestrian Improvements - Lump	All				$3,000,000	$5,016,000
Total				**$0**	**$0**	**$0**	**$3,000,000**	**$5,016,000**
Transit								
		Transit Capital - Lump	All				$5,873,448	$9,820,405
		Transit Operations - Lump	All				$17,620,345	$29,461,217
Total				**$0**	**$0**	**$0**	**$23,493,793**	**$39,281,622**
Maintenance and Operations								
		L010, L050, LU10, LU20, LU 30, LS 20, LS 30, L220, L230, L240, LS40, LS 50, LZ 20, L940	All				$71,148,628	$118,960,506
Total				**$0**	**$0**	**$0**	**$71,148,628**	**$118,960,506**
TOTAL Tier 3				**$20,243,087**	**$185,091,043**	**$221,307,099**	**$524,283,651**	**$876,302,263**

10.3 Future Year Build Conditions

As shown in **Figure 10-3**, the following roadways in the GHMPO area carry over 20,000 vehicles per day under the 2040 financially constrained scenario:

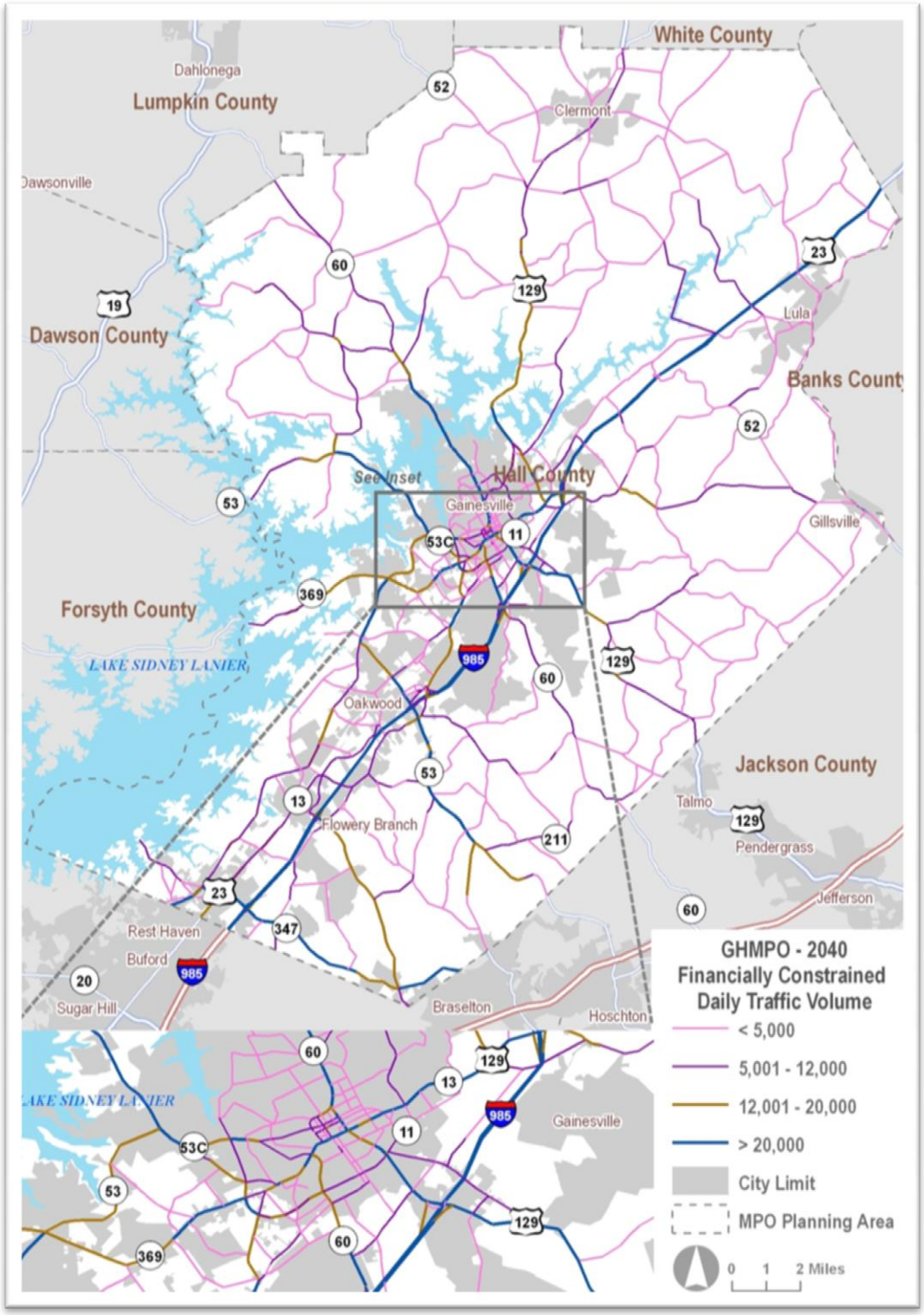
- I-985;
- Jesse Jewel Parkway/SR 369;
- E.E. Butler Parkway/SR 60/SR 11;
- Dawsonville Highway/SR 53;
- Atlanta Highway/SR 13 south of Lanier Islands Parkway;
- Friendship Road/SR 347;
- Mundy Mill Road/SR 53
- Thompson Bridge Road/SR 60;
- Queen City Parkway/SR 60;
- Athens Highway/SR 11;
- Limestone Parkway/US 129;
- Cornelia Highway/SR 365; and
- Winder Highway/SR 53.

Figure 10-4 shows the level of service on the GHMPO highway system, based on the financially constrained program of projects. Based on the projected population and employment growth, prior scenarios (see **Figures 5-4**, **5-6**, and **5-8**) showed that nearly all of the roadway segments in northwest Hall County were anticipated to operate at an unacceptable level of service. Upon application of the financially constrained network, most segments in northwest portion of the GHMPO area operate at an acceptable LOS. Other areas showing distinct improvement in LOS over the 2040 No-Build and E+C scenarios include:

- McEver Road in southwest Hall;
- SR 60 between Gainesville and Jackson County;
- SR 323 between Gainesville and Gillsville;
- Northeast Hall, with the exception of Interstate 985; and
- Old Winder Highway and Union Church Road between SR 53 and Cash Road.

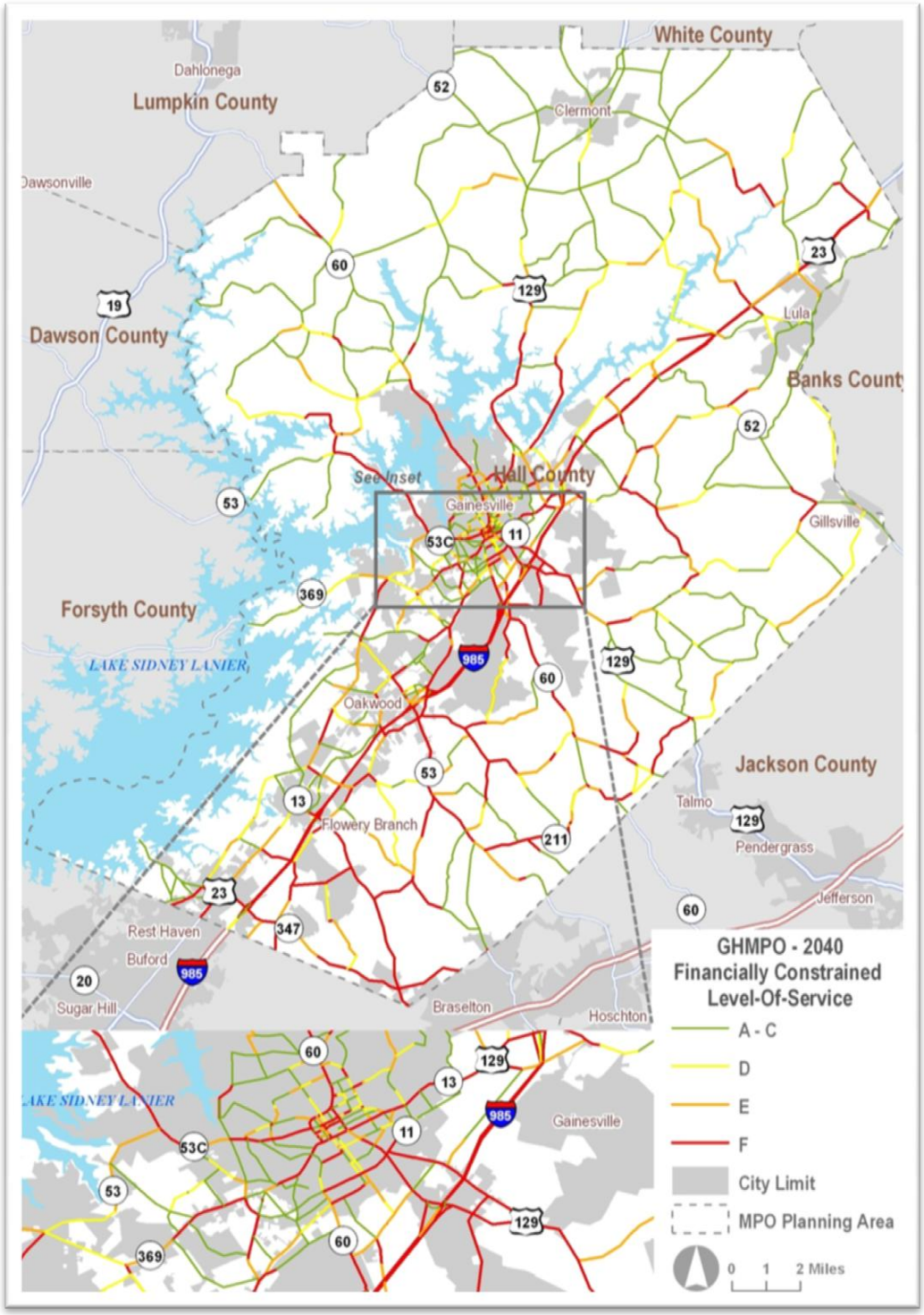
It is evident that roadway widening and new location projects alone will not solve the congestion issues in the GHMPO area. It is critical that the other multimodal projects, programs, and policies be implemented to assist in meeting the goals of the 2004 MTP.

Figure 10-3: Financially Constrained Roadway Traffic Volumes



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Figure 10-4: Financially Constrained Roadway LOS



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

10.4 Financially Constrained Roadway Conditions

Comparing vehicle miles of travel, vehicle hours of travel, and daily hours of delay between the financially constrained 2040 MTP improvements and the four different roadway scenarios outlined in **Chapter 5** is helpful to understand how the roadway projects included in the 2040 MTP will improve traffic operations in the GHMPO area.

10.4.1. Vehicle Miles Traveled

The total VMT for each of the five scenarios are shown in **Table 10-9** and **Table 10-10** shows the percent of VMT by LOS, while **Figure 10-5** graphically displays the amount of VMT for each highway scenario. VMT is reduced by 9.6 percent between the E+C scenario and the financially constrained scenario, which suggest that the improvements contained in the 2040 MTP will improve travel efficiency in the GHMPO area. Based on the large increases in population, households, and employment, 60 percent of the roadways in the GHMPO area will operate at LOS F by 2040 under the financially constrained scenario compared to only 7 percent in the base year. As noted earlier, this suggests that additional investments in public transit, express bus, car pooling, and commuter rail will be needed to further improve mobility options in the GHMPO area.

Table 10-9: Vehicle Miles of Travel by Roadway Scenario

Scenario	Total VMT
Base Year	4,008,307
No-Build	9,709,060
E+C	9,706,275
Unconstrained	8,786,560
Financially Constrained	8,774,905

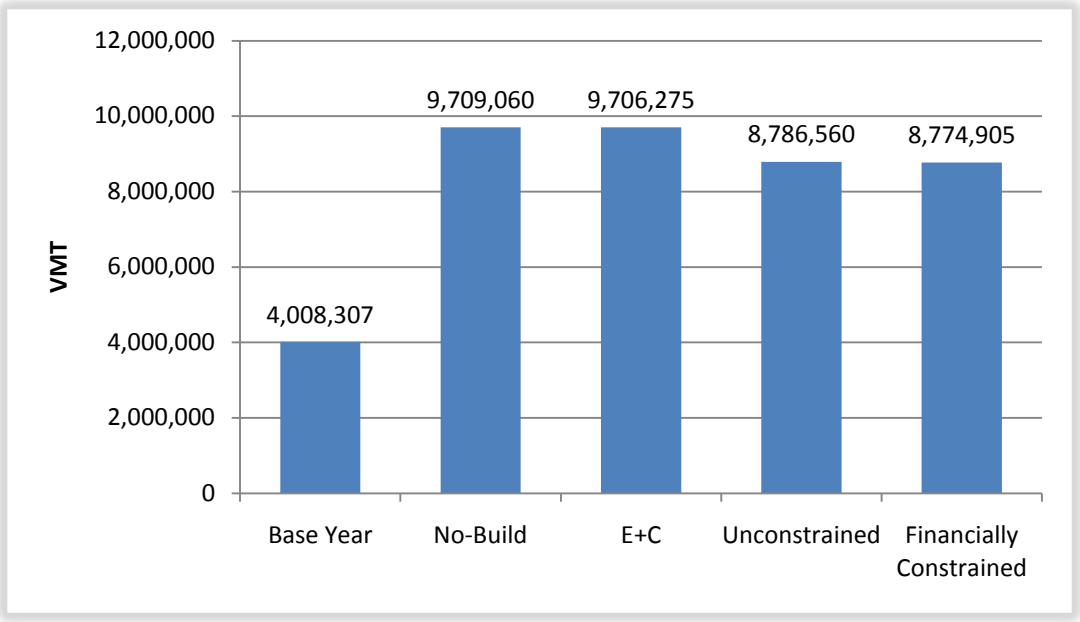
Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Table 10-10: Percent of Vehicle Miles of Travel by LOS

Scenario	LOS A, B, C	LOS D	LOS E	LOS F
Base Year	62%	22%	9%	7%
No-Build	8%	7%	9%	76%
E+C	7%	9%	8%	76%
Unconstrained	17%	11%	13%	59%
Financially Constrained	17%	10%	14%	60%

Source: GHMPO Travel Demand Model. Georgia Department of Transportation

Figure 10-5: VMT Comparisons



Source: GHMPO Travel Demand Model. Georgia Department of Transportation

10.4.2. Vehicle Hours Traveled

The total VHT for each of the five scenarios are shown in **Table 10-11** and **Table 10-12** shows the percent of VHT by LOS, while **Figure 10-6** graphically displays the amount of VHT for each scenario. The base year VHT totaled 149,896 and if no improvement are made on the GHMPO roadway system VHT will increase to 3.6 million. Comparing the financially constrained scenario to the E+C scenario, VHT is reduced by 1 million or 52 percent. Even though VHT is reduced between these scenarios, 81 percent of the hours traveled will be at LOS F. This is due to the projected increases in population, households, and employment in the GHMPO area and it further confirms that additional mobility options must be implemented to reduce congestion in the GHMPO area.

Table 10-11: Vehicle Hours Traveled by Roadway Scenario

Scenario	Total VHT
Base Year	149,896
No-Build	3,606,413
E+C	2,006,937
Unconstrained	942,264
Financially Constrained	959,316

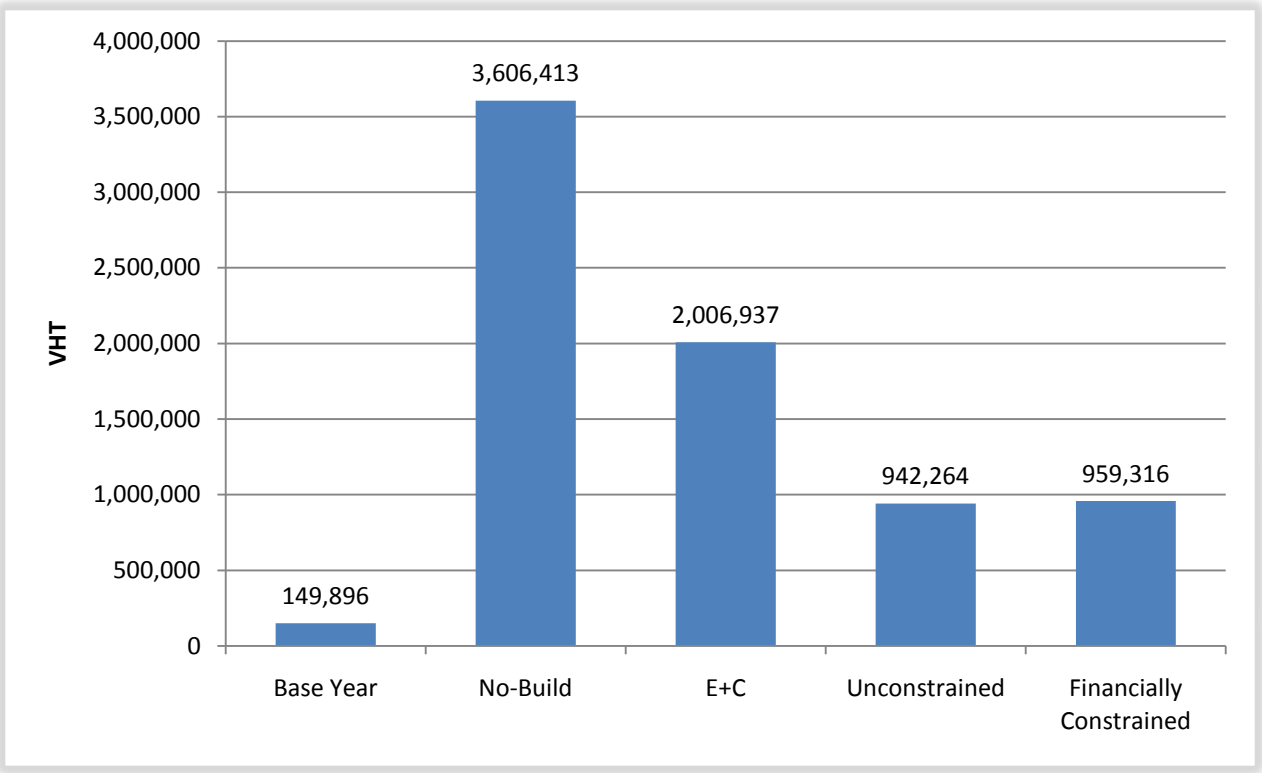
Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Table 10-12: Vehicle Hours Traveled by LOS

Scenario	LOS A, B, C	LOS D	LOS E	LOS F
Base Year	45%	24%	15%	16%
No-Build	1%	1%	2%	96%
E+C	2%	2%	2%	94%
Unconstrained	6%	5%	9%	80%
Financially Constrained	6%	4%	9%	81%

Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

Figure 10-6: VHT Comparisons



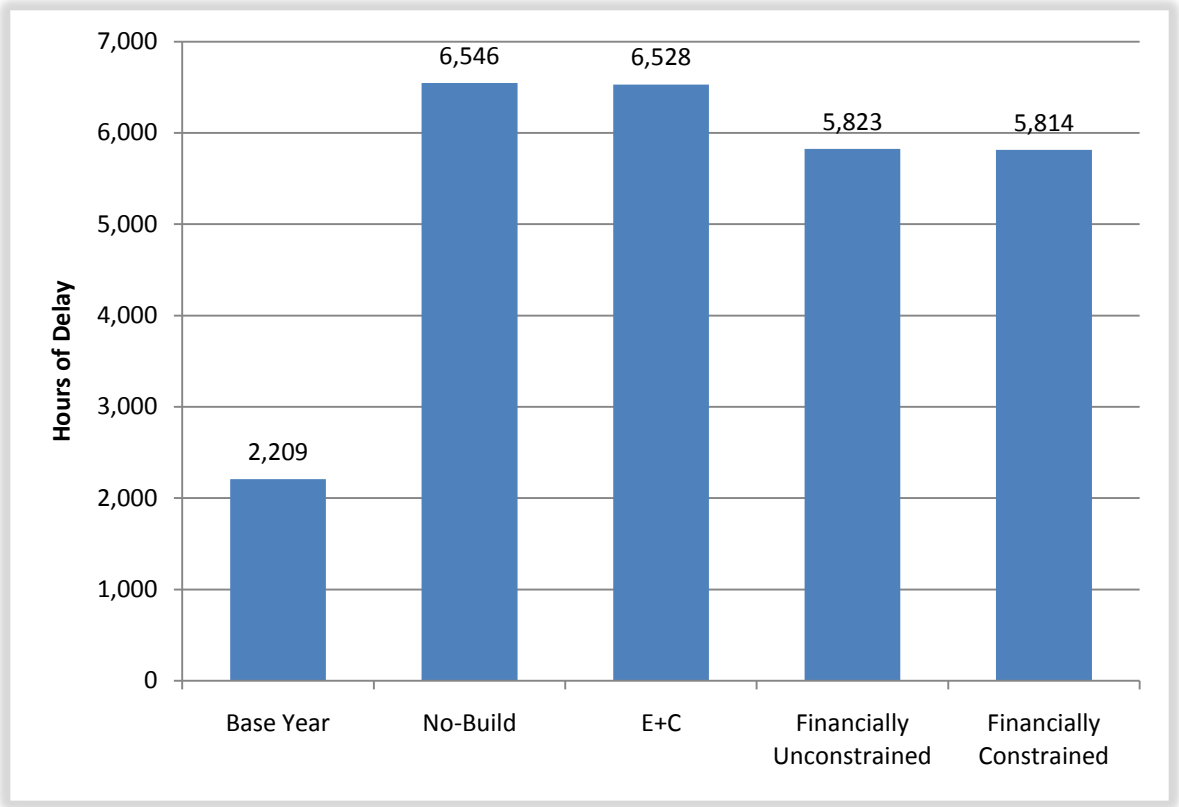
Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

10.4.3. Hours of Delay

The total hours of delay for each of the five scenarios are displayed in **Figure 10-7**. The total base year hours of delay was 2,209 hours and if nothing is done over the next 29 years the total delay would total 6,546 hours, which is an increase of 196 percent. There is a noticeable decrease of 714 hours of delay between the E+C scenario and the financially constrained scenario. Even though there is a decrease in the delay, it is

evident that additional mobility options must be implemented to further reduce the total hours of delay in the GHMPO area.

Figure 10-7: Hours of Delay



Source: GHMPO Travel Demand Model. Georgia Department of Transportation.

10.5 High Priority Unfunded Priorities

The projects shown in **Table 10-13** are high priority projects in the GHMPO area. However, current funding forecasts leave these projects without an identified funding source, and thus these projects are not contained in the financially constrained 2040 MTP. The project costs total $463 million dollars (2011 dollars) or $775 million in year of expenditure dollars. Should additional federal, state, local, or other funding become available, these projects will be developed and advanced within the GHMPO planning process.

Table 10-13: Unfunded High Priority Projects

GHMPO No.	Project Name	PE	ROW	CST	2011 Cost Estimate	Year of Expenditure Dollars
GH-067	Widen Ridge Road from Queen City Parkway to Old Cornelia Highway	$3,524,179	$14,258,618	$17,458,989	$35,241,786	**$58,924,266**
GH-072	Widen SR 53/ Dawsonville Hwy - Duckett Mill Road to Forsyth County Line	$1,388,021	$5,864,727	$6,627,466	$13,880,214	**$23,207,718**
GH-022	Widen MLK Blvd – SR 60/Queen City Parkway to EE Butler	$1,089,010	$5,693,091	$4,107,998	$10,890,099	**$18,208,246**
GH-070	Widen (6-lanes) I-985 from Gwinnett County Line to Exit 24	$4,321,505		$269,372,012	$273,693,517	**$457,615,560**
GH-071	Widen SR 365 from Exit 24 on I-985 to Hall Co. Line. Includes 3 New Diamond Interchanges	$11,316,473		$101,848,255	$113,164,728	**$189,211,425**
	ITS Upgrades: I-985/ SR365 from Gwinnett County Line to Habersham County Line	$500,000		$15,000,000	$15,500,000	**$25,916,000**
	ITS Upgrade - Gainesville/Hall County, GDOT Regional TCC			$1,500,000	$1,500,000	**$2,508,000**
Total		**$22,139,188**	**$25,816,436**	**$415,914,720**	**$463,870,344**	**$775,591,214**

Source: GHMPO and GDOT SR 365 Study.

11. Environmental Mitigation

Implementing this transportation plan will advance many of the 2040 MTP goals and objectives that were developed and presented at the public participation and MPO Committee meetings. Improved roadways, safer interchanges, reconstructed bridges, and new bicycle and pedestrian facilities will all serve to improve the GHMPO transportation system. However, the construction of these projects will not be without disruption to some members of the community, nor will they alone guarantee a better quality of life. Therefore, this section attempts to quantify some of the 2040 MTP impacts, as well as provide some mitigation strategies to pursue as the plan is implemented.

11.1 Evaluation Process

The fiscally constrained projects identified in **Chapter 10** were evaluated to determine the environmental impacts on the natural and cultural resources of Hall County. This analysis consisted of overlaying project alignments and locations onto a series of GIS layers representing sensitive natural and cultural resources. Buffers were assigned to financially constrained roadway projects that have potential environmental impact. The buffer size for each project varied depending on its type. Interchange projects were given a buffer of 500 feet from entrance and exit ramps and cross streets. Linear road projects were given a buffer of 250 feet on either side of the roadway, making a 500 feet wide buffer overall.

11.2 Environmental Assessment

As SAFETEA-LU requires a discussion of environmental mitigation strategies within MTPs, a qualitative screening analysis was performed to assess the potential environmental impacts of this plan's roadway projects. The purpose of this initial environmental assessment is to identify projects that may negatively impact the natural and built environment. This assessment is done early in the planning process with the intent of preventing negative impacts on the environment, as well as identifying potential issues early on in the planning process.

It is inevitable that some projects presented in the 2040 MTP will have an impact on environmental and social features in the GHMPO area. As communities in the region continue to grow, they face an increasing challenge concerning the relationship between natural resources and development needs. It will be important to strike an acceptable balance between the development, mobility, and commerce with the desire for a high quality of life that includes clean air and water, environmental preservation, and

recreational opportunities. In the GHMPO area, environmental features that may be impacted by transportation programs include wetlands, public parks, wildlife management areas, and historic structures.

11.2.1. Natural Resources

The GHMPO area is has a tremendous mixture of natural resources including unique water features and rolling topography. The preservation and enhancements of these resources not only ensures the health and viability of the environment for future generations, but also contributes an essential and beneficial element to the local economy. Major water bodies in the region include Lake Sidney Lanier, Chattahoochee River, Chestatee River, and Oconee River. Due to the presence of lakes and rivers, the area also includes a large amount of flood prone areas. In order to prevent future damage to property and transportation infrastructure, it is imperative to avoid developing in floodplains. Apart from these water sheds, Hall County also has numerous parks and recreational spaces, which are documented in the *Parks Facilities Master Plan*. The Hall County inventory includes sixteen county-owned parks and recreation centers, the Chicopee Woods Agricultural Center, which is owned by the City of Gainesville and leased by Hall County, and the Clarks Bridge Park, which is owned by the U.S. Army Corps of Engineers and leased to the City of Gainesville and Hall County. Following figure presents the water bodies, flood plains and green spaces in the region.

11.2.2. Cultural Resources

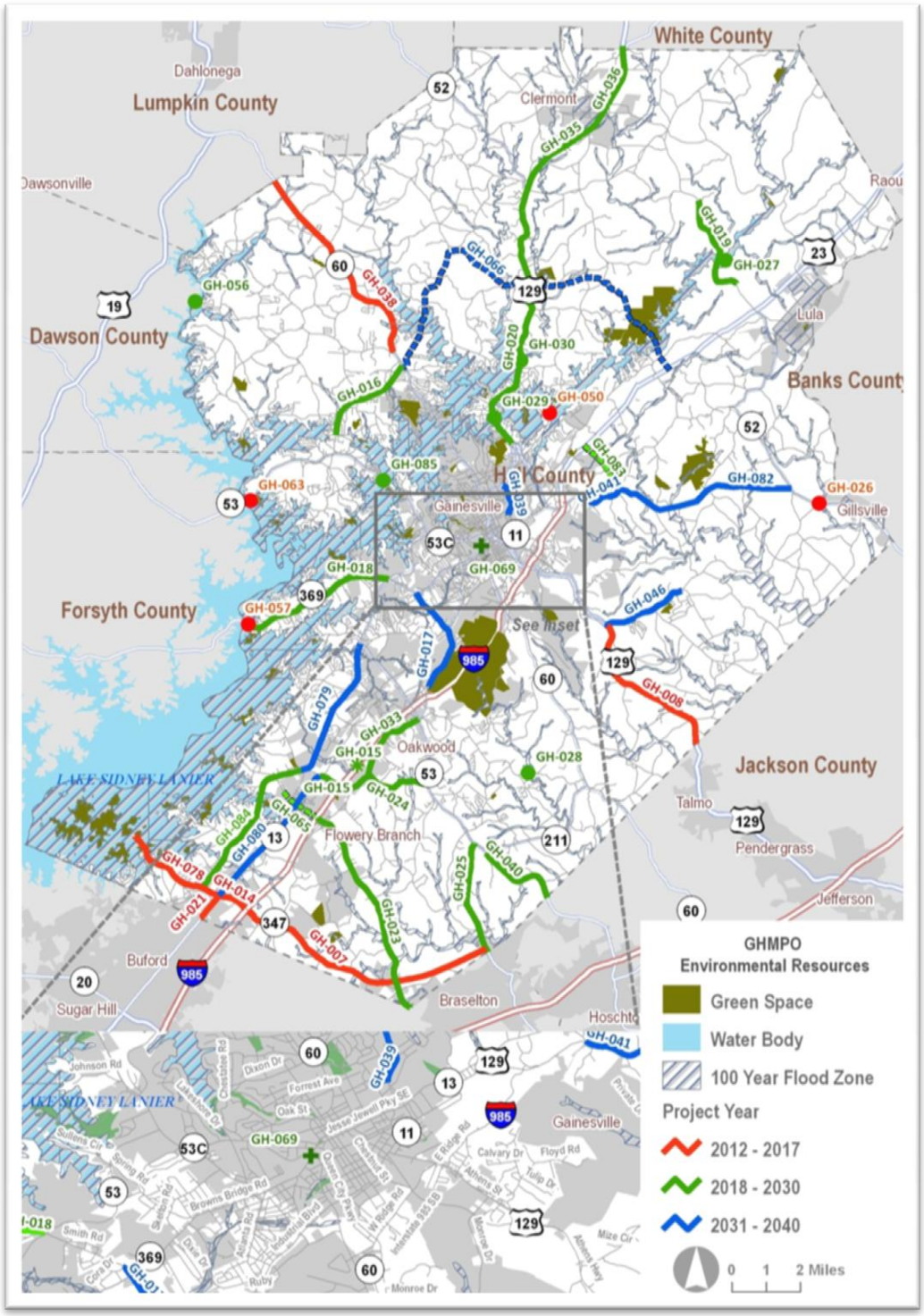
Cultural resources are significant and meaningful assets in a community and may encompass any number of places such as schools, libraries, museums, historic sites, or public facilities that serve essential, enriching or humanizing functions. For the purposes of this analysis, cultural and community resources are comprised of schools, libraries, museums, historic sites, hospital or medical facilities, and cemeteries found within the region. Following figures identifies the major historic and cultural resources in the region. They are worthy of preservation and protection, as these locations provide popular destinations for citizens and visitors of all ages, as well as important community landmarks and critical service facilities. Depending on the type of facility, careful consideration and planning for transportation projects and investments should be undertaken so as not to adversely impact the community.

Historic sites include those deemed historically significant at either the local, state, or national level. In particular, it is important for metropolitan transportation planning purposes to identify historical landmarks or sites. Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended in 1976, 1980, and 1992) and Section 4(f) of the Department of Transportation Act of 1966 requires the Federal Highway Administration (FHWA) to identify, evaluate, and protect properties of historical significance. The National Register of Historic Places (NRHP), as administered by the National Park Service, is the official list of the nation's historic landmarks and sites considered historically important and worthy of preservation.

11.2.3. Potential Impacts

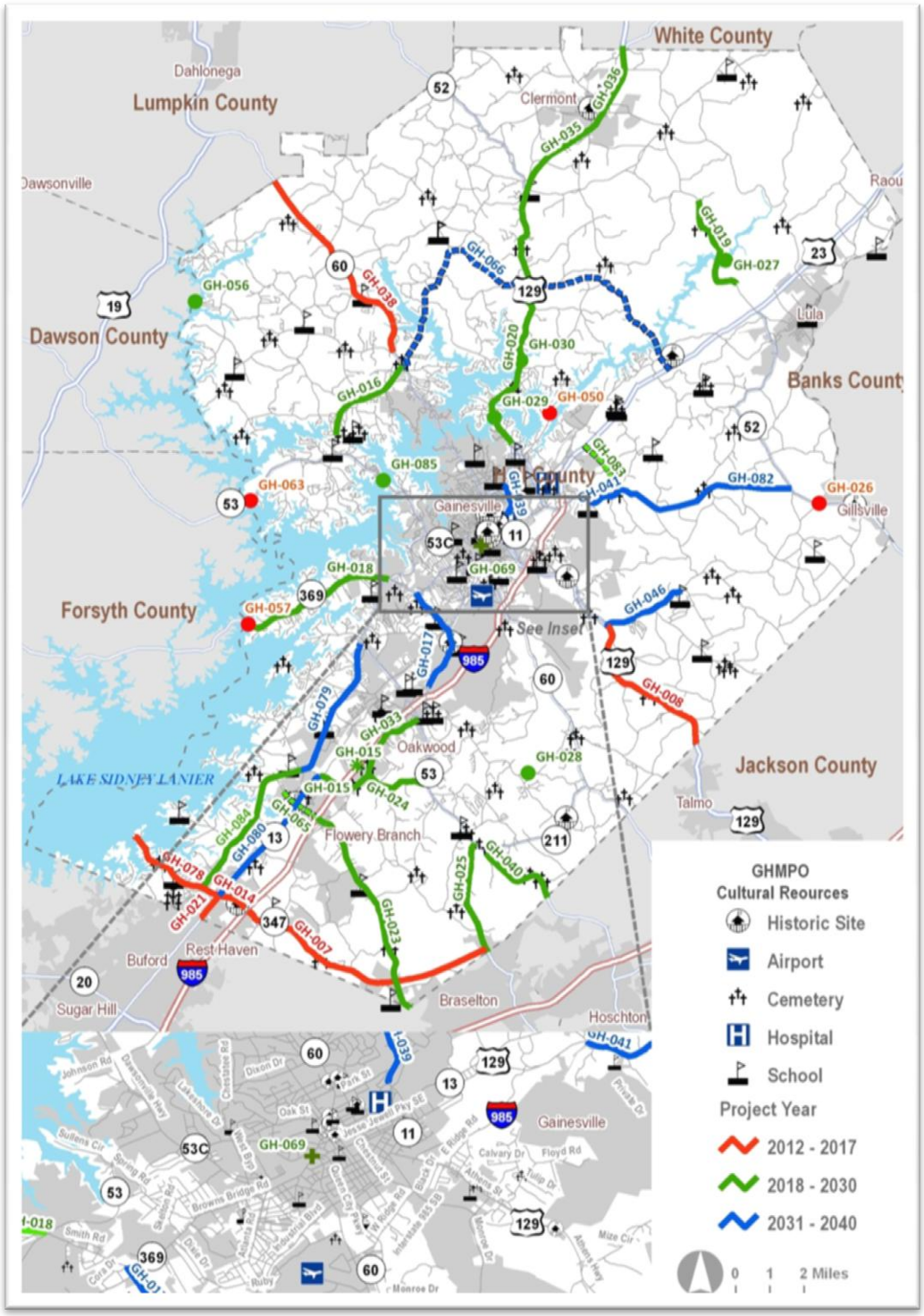
Figure 11-1 shows the environmental resources with the financially constrained 2040 MTP projects. **Figure 11-2** shows **Table 11-1** summarizes the potential impact the projects may have on environmentally sensitive areas. This table does not identify the various levels of potential impacts, but simply denotes an environmental factor's proximity to a proposed transportation project. This inventory of environmental features in no way substitutes a the need to complete a more in-depth environmental assessment, which will occur as the project move through the GHMPO planning process.

Figure 11-1: Environmental Mitigation – Green Spaces, Water Bodies, and 100-Year Flood Zones



Source: GHMPO and Georgia GIS Clearinghouse.

Figure 11-2: Environmental Mitigation – Historic Resources, Cemeteries, Schools, and Hospitals



Source: GHMPO and Georgia GIS Clearinghouse.

Table 11-1: Potential Impacts

GHMPO No.	Project Name	100-YR Flood Plain	Water Features	Park and Recreational Facilities	Airport	Cemetery	Historic Site	Medical Facility	School
GH-007	SR 347/Friendship Road From I-985 to SR 211	Yes							
GH-008	US 129/Athens Hwy from SR 323/Gillsville Hwy to SR 332/Talmo in Jackson County	Yes	-	-	-	Yes	-	-	-
GH-014	SR 347/Friendship Road – I-985 to McEver Road Phase I	Yes	-	-	-	-	Yes	-	-
GH-015	I-985 – New Interchange North of SR 13 Near Martin Road	Yes	-	-	-	-	-	-	-
GH-016	Sardis Road Connector – SR 60/Thompson Bridge to Sardis/Chestatee Road	Yes	-	-	-	-	-	-	-
GH-017	SR 13/Atlanta Highway Widening & Memorial Park Drive Widening – Frontage Road to Browns Bridge	Yes	-	Yes	-	-	Yes	-	Yes
GH-018	SR 369/Brown's Br Road – Forsyth Co. Line to SR 53/McEver Road (Construction)	Yes	Yes	-	-	-	-	-	-
GH-019	SR 52/Lula Road – 1 mile north of SR 365 to south of Julian Wiley Road	Yes	Yes	Yes	-	Yes	-	-	-
GH-020	US 129/Cleveland Hwy – Limestone Pkwy to Nopone Road	Yes	Yes	Yes	-	-	-	-	-
GH-021	SR 13/Atlanta Hwy - From Gwinnett County line to SR 347/Lanier Islands Parkway	Yes	-	-	-	-	-	-	-
GH-023	Spout Springs Rd - Hog Mountain Rd to Gwinnett Co. Line	Yes	-	-	-	-	-	-	Yes
GH-024	Martin Road – Falcon Pkwy to SR 53/Winder Hwy	Yes	-	-	-	-	-	-	-
GH-025	SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment	Yes	-	-	-	-	-	-	-
GH-026	SR 52 at Candler Creek – Bridge	Yes	-	-	-	-	-	-	-
GH-027	SR 52/Lula Road at Chattahoochee River – Bridge	Yes	Yes	-	-	-	-	-	-
GH-028	SR 332/Poplar Springs Road at Walnut Creek – Bridge	Yes	-	-	-	-	-	-	-
GH-029	US 129/Cleveland Hwy at Chattahoochee River - Bridge	Yes	Yes	-	-	-	-	-	-
GH-030	US 129/Cleveland Hwy at East Fork Little River (Bells Mill) - Bridge	Yes	Yes	-	-	-	-	-	-
GH-033	SR 13/Atlanta Highway - Radford Road to SR 53/Winder Hwy	Yes	-	Yes	-	Yes	-	-	-
GH-035	US 129/Cleveland Hwy - N of Nopone/J Hood Road to SR 284/Clarks Bridge Road	Yes	-	-	-	Yes	-	-	-
GH-036	US 129 - SR 284/Clarks Bridge Road to White Co. Line	Yes	-	-	-	-	-	-	-
GH-038	SR 60/Thompson Bridge Road - SR 136/Price Road to Hall County Line	Yes	Yes	-	-	-	-	-	-
GH-039	South Enota Drive - Widen from 2 To 4 Lanes from Park Hill to Downey Blvd	Yes	-	-	-	-	-	-	-
GH-040	SR 53/Winder Hwy from I-85 in Jackson Co. to SR 211/Tanners Mill Road	Yes	-	-	-	Yes	-	-	-
GH-041	Old Cornelia Hwy – Exist. 4-lane E of I-985 to Joe Chandler Road	Yes	-	-	-	Yes	-	-	-
GH-046	SR 323/Gillsville Hwy - US 129/Athens Hwy to E of SR 82/Holly Springs Road	Yes	-	Yes	-	-	-	-	-
GH-050	SR 284/Clarks Bridge Road at Chattahoochee River – Bridge	Yes	Yes	-	-	-	-	-	-
GH-051	Central Hall Recreation and Multi-Use Trail	Yes	-	-	-	-	-	-	-
GH-056	SR 136/Price Road @ Chestatee River - Bridge	Yes	Yes	-	-	-	-	-	-
GH-057	SR 369/Browns Bridge Rd at Chattahoochee River - Bridge	Yes	Yes	-	-	-	-	-	-

GHMPO No.	Project Name	100-YR Flood Plain	Water Features	Park and Recreational Facilities	Airport	Cemetery	Historic Site	Medical Facility	School
GH-063	SR 53/Dawsonville Hwy at Chestatee River - Bridge	Yes	Yes	-	-	-	-	-	-
GH-065	Relocation of Lights Ferry Rd from Gainesville St to SR 13	Yes	-	-	-	-	Yes	-	-
GH-066	Northern Connector - Connection Between SR 60/Thompson Bridge Road and SR 365	Yes	Yes	Yes	-	-	-	-	-
GH-078	SR 347/Lanier Islands Pkwy - Mc Ever Rd to Lake Lanier Islands	Yes	Yes	Yes	-	Yes	-	-	Yes
GH-079	McEver Road from Jim Crow Rd to SR 53	Yes	-	-	-	-	-	-	Yes
GH-080	SR 13/Atlanta Highway Widening from SR 347 to Radford Rd	Yes	-	-	-	Yes	Yes	-	-
GH-082	Widening of Joe Chandler Road from SR 52 to Old Cornelia Hwy	Yes	-	-	-	-	-	-	-
GH-083	Howard Road Extension from SR 365 to Old Cornelia Highway	Yes	-	-	-	-	-	-	-
GH-084	McEver Rd from SR 347/Friendship Rd to Jim Crow Rd	Yes	Yes						
GH-085	SR 53/Dawsonville Hwy westbound at Chattahoochee River - Bridge	Yes	Yes	-	-	-	-	-	-

11.2.4. Mitigation Activities

SAFETEA-LU requires that the MTP include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. In addition, SAFETEA-LU requires that potential environmental mitigation activities be developed in consultation with federal, state, tribal wildlife, land management, and regulatory (resource) agencies. The GHMPO is committed to minimizing and mitigating the negative effects of transportation projects on the natural and built environments in order to preserve the quality of life expected by all residents. In doing so, it is understood that not every project will require the same type or level of mitigation. Some projects, such as new roadways and roadway widening, involve major construction with considerable earth disturbance. Others, like intersection improvements, street lighting, and resurfacing projects, involve minor construction and minimal, if any, earth disturbance. The mitigation efforts used for a project should be dependent upon how severe the impact on environmentally sensitive areas is expected to be. The federal government suggests in 40 CFR 1508.20 the following five mitigation steps:

- Avoiding the impact altogether by not taking a certain action or parts of an action;
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- Compensating for the impact by replacing or providing substitute resources or environments.

11.3 Environmental Justice

Title VI of the 1964 Civil Rights Act (42 U.S.C. 2000d-1) states that, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." Title VI bars intentional discrimination as well as disparate impact discrimination (i.e., a neutral policy or practice that has a disparate impact on protected groups). The President's Executive Order on Environmental Justice amplifies Title VI by providing that "each federal

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

The Environmental Justice analysis for this plan mainly focused on the potentially adverse impacts caused by regionally significant street and highway construction projects. The construction of new roadways along new rights-of-way received special attention due to their potential to split or isolate parts of the community. Widening of existing roadways was considered not as critical, but was still scrutinized for potential impacts. Alternative mode investments in transit service and bicycle and pedestrian facilities were considered to provide positive impacts to the minority and low-income populations of the region. For those locations that do not currently have multimodal transportation facilities, alternative mode services and facilities would provide additional, lower-cost transportation options to increase the mobility of these populations and their access to the community.

11.3.1. EJ Areas

The GHMPO is committed to using extra efforts to involve the identified minority and low-income communities in the transportation planning process. As outlined in the GHMPO Participation Plan and the recently adopted Limited English Proficiency (LEP) Plan, particular effort are made to communicate with the rapidly growing Hispanic population through both broadcast and print Spanish language media outlets. In addition, projects and programs are screened during the planning process to ensure particular projects do not have a negative impact on low-income or minority populations, which assure environmental justice principles are upheld.

Gainesville-Hall MPO
Development Services Center
440 Prior Street, SE
Gainesville, GA 30503
770-531-6809
www.ghmpo.org

WilburSmith
ASSOCIATES

GHMPO