2030 Long Range Transportation Plan
2007 Update

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Prepared by
Gainesville-Hall Metropolitan Planning Organization

With assistance from
Wilbur Smith Associates

In cooperation with
Hall Area Transit
Georgia Department of Transportation
Federal Highway Administration
Federal Transit Administration

Gainesville - Hall
Metropolitan Planning Organization

GHMPO

Flowery Branch - Gainesville - Hall County - Oakwood

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Tom Oliver, Chairman, Hall County Board of Commissioners, Vice-Chairperson
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Introduction

Background

With the completion of the 2000 Census, the Gainesville-Hall area was officially designated as an urbanized area. Essentially, this means the City of Gainesville and the surrounding area attained a population in excess of 50,000 people within a concentrated geographical area, having a population density exceeding 1,000 people per square mile. 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.

GHMPO has established three committees: the Policy Committee comprised of elected officials and the Georgia Department of Transportation (GDOT) Commissioner's representative; the Technical Advisory Committee, made up of local government and GDOT staff; and the Citizens Advisory Committee, 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 GDOT and identified transportation projects to address existing and projected needs in response to changes in population, development and traffic through 2030.

Federal Requirements and Guidelines

In addition to the usefulness of having a LRTP, federal requirements state all metropolitan areas with more than 50,000 inhabitants, such as the Gainesville-Hall area, develop and maintain an LRTP. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the most recent law establishing federal transportation policy and funding authorizations provides $286 billion in guaranteed funding for federal surface transportation programs through FY 2009. SAFETEA-LU represents the largest surface transportation investment in our Nation's history. SAFETEA-LU builds upon the two previous highway acts – Transportation Equity Act for the 21st Century (TEA 21) and the Intermodal Surface Transportation Equity Act of 1991 (ISTEA) – by supplying the funds and refining the programmatic framework for investments needed to maintain and grow our Nation's transportation system.

The metropolitan planning process identified in SAFETEA-LU (Section(s): 1107, 6001 and 23 USC 104, 134) establishes a cooperative, continuous, and comprehensive framework for making transportation investment decision in metropolitan areas. A detailed technical memorandum addressing the steps taken by GHMPO to meet these new requirements are contained in Appendix B

The passage of SAFETEA-LU requires that certain planning factors must be considered as part of the transportation planning process for all metropolitan areas. SAFETEA-LU calls for the security of the transportation system to be a stand-alone planning factor, signaling an increase in importance from prior legislation, in which security was coupled with safety in the same planning factor. The planning factors address social, environmental and land use issues as

related to transportation systems. The following factors were considered and are reflected in our 2030 LRTP Update:

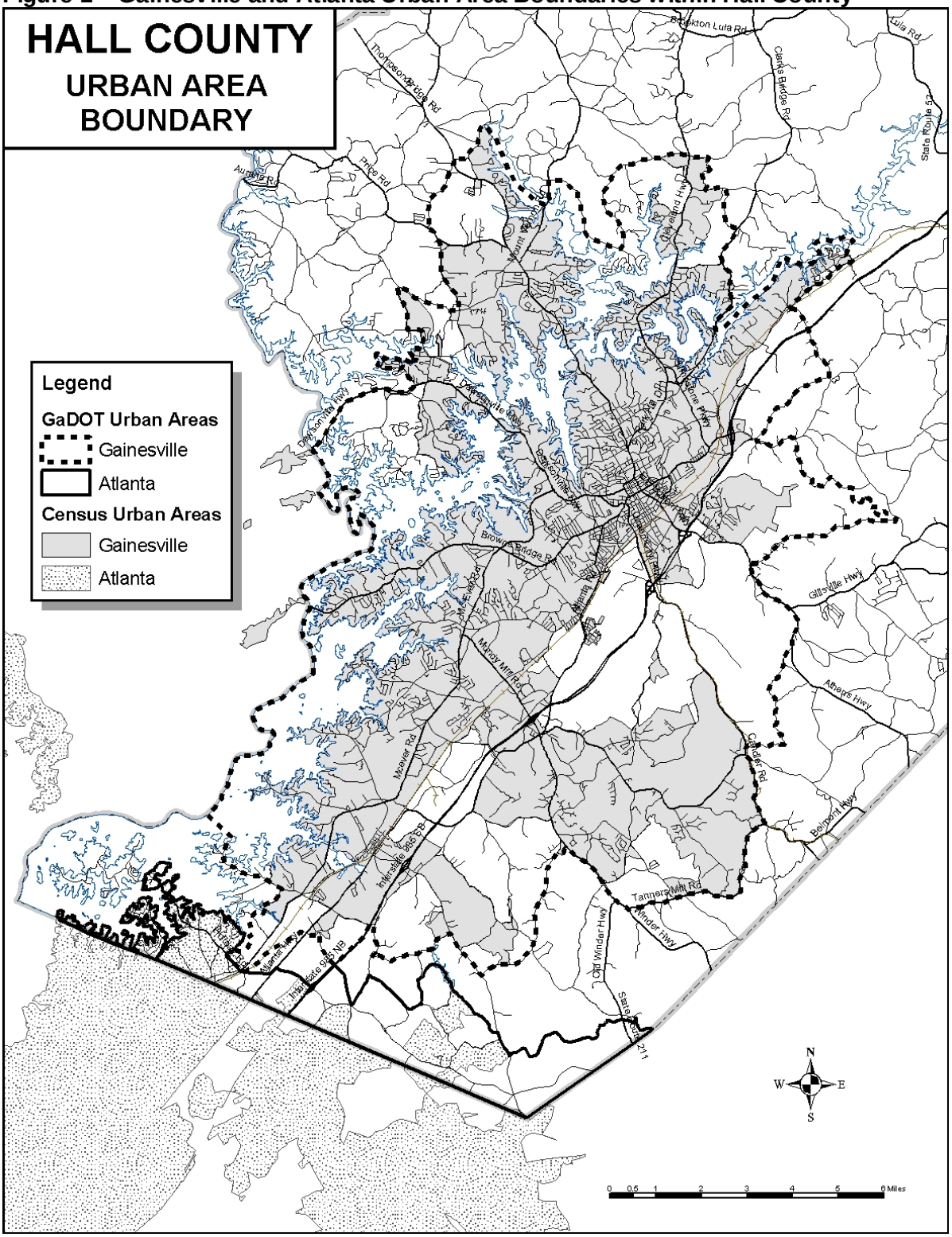
1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users;
4. Increase the accessibility and mobility of people and for freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
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.

Study Area

The study area for GHMPO includes Hall County in its entirety. The 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 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 will plan for the portion of the Atlanta urban area in Hall.

Hall County has been designated 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.

Figure 1 – Gainesville and Atlanta Urban Area Boundaries within Hall County



Area Description

Hall County encompasses approximately 394 square miles in northeast Georgia. As previously stated, the 2000 Census found that growth in the area qualified the County as urbanized, leading to the creation of the Gainesville-Hall Metropolitan Planning Organization (GHMPO). Approximately five percent of the County, lying within the Cities of Buford and Braselton and the unincorporated area, is also part of the GDOT Atlanta urban area. The 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 has been characterized by steady growth over the last decade. It experienced a 45.9 percent growth rate from the years 1990 to 2000, increasing in population from 96,053 to 139,277. This rate is comparable to that of other suburban counties in the exurbs of Atlanta. Further the County grew by 24.4 percent since 2000, adding 33,941 people for a total of 173,218, according to Census Bureau estimates released in April 2007. Future year forecasts project that by 2030 Hall County's population will increase an additional 192,023 (136 percent). This dramatic growth has created new and more complex challenges to adequately address citizen and business mobility needs.

Historical and Geographic Context

Mule Camp Springs, a trading post at the convergence of two Indian trails, was chartered as the City of Gainesville by the Georgia General Assembly in December 1823. During the 1800's, Gainesville slowly grew as a result of its mining, trading, services, and farming industries. In 1871, the area's first railroad – a route connecting Atlanta and Charlotte, North Carolina – initiated a significant expansion of Gainesville's economic affluence, as manufacturing activities were established. The community also became a resort center drawing patrons seeking its cool summer climate and nearby healing springs. Agriculture and agribusiness are mainstays of economic stability in the vicinity. Informally known as the Poultry Capital of the World, Gainesville and Hall County now generate over $720 million in poultry related products and services annually.

The creation of Lake Sidney Lanier in 1957, provided 540 miles of shoreline along the western County boundary and offered visitor and residential amenities that contributed significantly to the County's economy and quality of life. Accelerated population growth since that time can also be attributed to both the continued growth of Gainesville as a regional economic center, as well as the continued rapid expansion of the Atlanta metropolitan area. Today Hall County has become one of the fastest growing counties in Georgia.

The history and geography of Hall County have resulted in a transportation system with unique strengths and weaknesses. Gainesville's role as a regional center of commerce has resulted in multiple state and federal highways converging on the City, while the physical constraint of Lake Lanier has precluded a good network of connectors between those routes. The major ridge – the sub-continental divide between the Chattahoochee and Oconee river basins – has attracted strong northeast to southwest routes through the center of the County, with few parallel routes away from that corridor. The relatively rugged topography of much of the County adds to the constraints on developing the transportation system.

Development Patterns

Historically, most development in the County had centered around Gainesville, with a secondary emphasis along the I-985 corridor. Over the past 10 years, the impact of growth from Gwinnett County has been felt along the southern County boundary, as evidenced by the incursion of the Atlanta urban area approximately 1 mile into the County along much of that area. More recently, there appears to be increasing residential growth pressure from the southeast in Barrow and Jackson Counties, and in the northwest corner of the County, which lies only a mile from the northernmost reaches of the fast growing State Road 400 corridor.

The County's Comprehensive Plan adopted in 2005 shows primary commercial and industrial growth to be centered in Gainesville and along the I-985/SR 365 corridor, with a secondary element between SR 211 and SR 53 in the southern part of the County. While most major retail development has historically been centered in Gainesville, it appears that major retailers are now ready to establish additional locations in the southern and northern portions of the County.

Transportation Planning Challenges

As Gainesville and Hall County grow internally and regionally, congestion in downtown Gainesville will be a continuing challenge. With little available right-of-way, the traditional response to congestion – road widening – becomes less and less practical. One of Gainesville-Hall County's public policy principles is that increasing capacity in downtown Gainesville would only be implemented after careful consideration and study.

Another guiding principle for the plan is that alternative transportation modes, such as transit, sidewalks, bike paths, and Travel Demand Management (TDM) techniques, will continue to be emphasized to accommodate increasing growth and demand on the system.

One way the City and County are working to help resolve this issue is by including signal upgrades in its program of projects. Another initiative, the Midtown Greenway, will use CSX Railroad right-of-way as a multiuse trail, thus offering pedestrian and bicycle transportation modes as viable alternatives to vehicles.

Hall County is facing a challenge similar to that experienced by the City of Gainesville as portions of the County, particularly in the south, become urbanized: providing mobility in a more congested, high value property environment. As a result, strategies similar to those considered within the City of Gainesville must be employed in the County's urbanized area. However, the greater percentage of vacant property in rural Hall County will enable growth challenges to be met by the full range of transportation improvements. For instance, regional facilities can be widened in the County at less cost than within the City and urbanized areas.

Gainesville and Hall County will be faced with many challenges, including implementing long and short-term transportation planning. The City and County are experiencing significant population and employment growth, which is expected to continue into the future. It also must now deal with the constraints of being designated in non-attainment for air quality under the Environmental Protection Agency's (EPA) 8-hour standards. The federal transportation planning process takes into account and balances transportation needs and environmental impacts. The 1998 Transportation Equity Act for the 21st Century (TEA-21) and the Clean Air Act Amendments (CAAA) of 1990 challenge policy makers to maximize mobility, connectivity, and accessibility while protecting the environment. In areas that exceed federal air quality

standards, the transportation planning process must ensure that transportation programs perform within the limits of federal emissions restrictions.

All of these factors describe the special transportation context of Gainesville-Hall County. The financial, geographic and growth challenges are considerable, and the need for coordinated regional solutions adds an additional level of complexity to the planning process. Table 1 reinforces this bureaucratic element of the challenge by identifying each agency's roles and responsibilities in the transportation planning process.

Table 1 -
Agency Roles and Responsibilities

GHMPO	ARC	GDOT
• Administer transportation planning process • Update and maintain land use and socio-economic data for travel forecasting • Coordinate with ARC and GDOT on TIP, LRTP, and CMP. • Conduct participation process • Develop Unified Planning Work Program (UPWP) • Maintain the Participation Plan • Prepare cost estimates for GDOT proposed CWP projects • Provide maps and transportation system data	• Work with GHMPO in implementing planning process • Work with GHMPO to coordinate long range Regional Transportation Plan (RTP) in the Atlanta urbanized area. • Work with GHMPO to develop short range Transportation Improvement Program (TIP) in the Atlanta urbanized area. • Perform air quality conformity analysis • Coordinate with GHMPO on the Congestion Management Process (CMP) in the Atlanta urbanized area.	• Assist in implementing planning process • Prepare Statewide Transportation Improvement Program (STIP) • Prepare Construction Work Program (CWP) • Meet with County annually for STIP development and additionally as requested • Program County projects using federal funds • Provide maps and transportation system data • Maintain the travel demand model • Maintain HPMS Data

Goals and Objectives

The Long Range Transportation Plan addresses the challenges brought on by substantial population, employment, and travel growth, as well as air quality concerns. The purpose of the plan is to propose a program of projects and strategies that meet the County's transportation needs and provides guidance in making decisions regarding future infrastructure needs and investments. Three goals are identified to help guide the development of a plan that meets this purpose.

In developing goals and objectives for the LRTP, direction was sought from many sources. Overall goals developed as part of the comprehensive planning process are the foundation for gauging the community's desires. The Gainesville-Hall County Comprehensive Plan adopted in 2005 included the following two transportation goals:

> *Goal 1: Adequate Transportation System*
>
> Gainesville and Hall County will provide a transportation system to move people and goods with a level of service that supports economic development goals and maintains a high quality of life.
>
> *Goal 2: Transportation Alternatives*
>
> Gainesville and Hall County will continue to explore and promote mechanisms to alleviate traffic congestion through the use of alternative modes of transportation and better management of the existing road network.

As mentioned earlier on page 2, FHWA and FTA planning standards include eight factors that must be considered as part of the metropolitan planning process. These planning factors, along with the goals of the Comprehensive Plan, have led to the following LRTP goals.. The three goals take these considerations and address them in the terms of the type of system, its characteristics, and how it integrates with and supports broader community goals.

SAFETEA-LU emphasizes that transportation infrastructure investment should be driven by the need for improvement. The goals and performance measures established for the GHMPO were designed to meet the County's transportation needs while simultaneously incorporating sensitivity to the transportation efforts of the region's multiple planning partners. The goals and performance measures for Hall County, provided in Table 2, consider the objectives outlined in the County's Comprehensive Plan, and support the federal planning factors.

Table 2 -
GHMPO Long Range Transportation Plan 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

Performance measures are necessary tools in needs-based plan development because they can track performance over time and assist in identifying improvements. They provide accountability and link strategic planning to resource allocation. By defining specific performance measures, the GHMPO will be able to measure the effectiveness of selected programs in meeting its goals.

Planning Process

The GHMPO 2030 Long Range Transportation Plan builds on the previous Plan (adopted in 2004) and defines a set of transportation programs and projects that address Hall County's existing and future transportation needs. The LRTP will guide future transportation investments and provides mobility solutions to accommodate the County's future population and employment growth.

Discussions with elected officials, community-based stakeholders, and county and cities of Gainesville, Flowery Branch, and Oakwood staff produced broad policy direction and appropriate goals. Information on travel behavior, community needs, and transportation preferences was obtained through interaction with community stakeholders and the general public, as well as review of previous transportation studies. Trends impacting transportation planning in Hall County were examined and forecasts of future growth were developed to determine overall needs and appropriate transportation strategies. From the goals and community needs and preferences, investment principles were developed to guide future transportation projects, programs and strategies.

Participation activities also included consultation with appropriate public agencies, public transportation providers, providers of freight transportation services, pedestrian walkways and bicycle transportation facilities users and disabled citizens. Techniques used to engage these representatives included: visioning exercises to identify needs, small group discussions to obtain input on draft elements of the plan, open house meetings to receive comments on draft plans, public opinion surveys and public hearings.

An inventory of the existing transportation system was prepared and its performance assessed. The existing transportation network, combined with committed future projects, was examined to evaluate potential conditions in 2030. After examining future conditions and identifying deficiencies, potential transportation investment strategies to improve the 2030 network were identified and assessed.

Developing specific program and project recommendations required a detailed assessment of travel conditions for all roadways in the County. To fully address transportation needs, all modes were evaluated, including automobile, transit, carpool/vanpool, pedestrian and bicycle. Methods for reducing and managing system demands were also considered.

Needs Assessment Process

Ensuring that the goals of the GHMPO Long Range Transportation Plan are achieved requires an assessment of future mobility needs and community input regarding transportation needs and preferences. Mobility needs are defined through a travel demand modeling process based on the existing transportation network and planned population and employment growth. The effort requires developing future travel forecasts and identifying where future deficiencies might occur.

The modeling process used to develop the GHMPO Long Range Transportation Plan relied on information compiled through examination of demographic trends, traffic flow patterns, and transportation demands.

The model examined 2005 (base year) travel conditions, which established a baseline for the assessment of future scenarios and performance measures. After the base year and 2030 existing plus committed (E+C) networks* were determined, the model tested potential improvement strategies to determine their impact system-wide. Once potential improvements, were identified, specific travel corridors were examined in detail to determine an appropriate mix of options to provide a cohesive multimodal transportation system. Recommended projects were assessed against identified performance measures at the corridor and system-wide levels.

While the GHMPO travel demand model has been used to help determine project needs, it was determined through the Atlanta Interagency Consultation process that the model is not suitable for use in the conformity determination for the Atlanta Nonattainment Area for ozone under the 8-hour standard. See Appendix F for details of the mechanism agreed to by the Interagency Consultation Group. For conformity determinations, ARC assists the GHMPO by including Hall County projects in the overall 20-County air quality model for the Atlanta non-attainment region. Future methodology for the Atlanta Nonattainment Area will be readdressed, and functional classifications and regional significance designations for the GHMPO will be coordinated with those of the ARC through the Atlanta Interagency Consultation process.

Strategy Screening

To ensure that the overall goals of the Long Range Transportation Plan are achieved, recommended programs and projects should meet established goals. Whether or not the goals are successfully achieved is assessed objectively by comparing existing and future conditions, using the defined set of performance measures and thresholds. To aid in screening program strategies, four questions were considered in defining and screening program strategies.

> *Do the strategies meet the plan's goals and objectives?* The recommended program should demonstrate, through specific performance measures, that the plan's goals and objectives have been met.
>
> *Are the strategies appropriate and proportional to needs?* Strategies must not only be effective, but also appropriate and proportional to needs. For example, effective fixed route transit service is possible only for areas where the employment and/or population densities exceed certain levels.
>
> *Are strategies cost effective?* Federal law requires transportation plans to be fiscally constrained. Consequently, detailed scrutiny is required to ensure the best possible use of financial resources.
>
> *Are other options viable?* All viable options must be considered. For example, busways may be an alternative to light rail. Population and employment densities determine cost-effectiveness. System optimization improvements, such as improving intersection geometrics and signal timing, are low-cost options to alleviate localized congestion. A variety of TDM options could be implemented over a large area to reduce congestion and emissions rather than focusing on a specific road or corridor.

* The existing plus committed network includes all projects in the GDOT 2008-2010 State Transportatioi Improvement Program (STIP) with right-of-way acquisition or construction scheduled in or before 2010.

Socio-Economic Context

The growth that led to the area's metropolitan area designation after the 2000 census has continued into the new century. Growth pressures based on the expansion of the Atlanta Metropolitan area will continue to increase, while the Gainesville area itself continues to attract jobs and residents on its own.

Base Year and Area Wide Projections – Population and Employment

The GHMPO Travel Demand Model is calibrated with 2005 Census data as the base year and has 278 Traffic Analysis Zones (TAZs) in total. Growth projections from the Hall County Comprehensive Plan were considered in forecasting socio-economic data for the TAZs. Three different growth scenarios – short term (2005-10 & 2010-15), mid term (2015-20 & 2020-25), and long term (2025-30) were assigned to applicable TAZs based on anticipated growth and local knowledge. A slightly higher Persons per Household (PPH) rate of 2.9 was applied to the short term scenario and a lower rate of 2.8 was applied to both mid and long term scenarios, to match the base year rate of 2.82.

Table 3 below demonstrates the growth in population and employment under the base and 2030 land use scenarios. The base scenario reflects the land use as of 2005, as well as the Census 2005 population and employment. The 2030 land use reflects the land use plan adopted by Gainesville and Hall County and the anticipated 2030 population and employment projected by the Plan.

Based on the adopted land use plan, the population is projected to be 365,000, which is a 148 percent increase over 2005 population. This fits an S-shaped population growth curve, indicating the pattern of an area approaching build-out at the end of the planning horizon.

Table 3 -
Population and Employment

Adopted Land Use Plan	*Population*	*Employment*
Base (2005)	**163,204**	**65,133**
2030 Estimates (% increase over base)	**365,241 (148%)**	**280,000 (331%)**

Source: Census Bureau & Hall County Comprehensive Plan

Current Demographics

In 2005, 79 percent of Hall County residents considered themselves white. The remaining 21 percent of the population was comprised of 6.2 percent black, 12.7 percent Hispanic and 2.1 percent other. The non-white minority population is primarily located in and around Gainesville.,but primarily southeast of Gainesville along Candler Road and Athens Highway, and along the Interstate 985 corridor. The largest minority population is concentrated is in the southeast and southwest sides of the city of Gainesville. In addition, 2005 Census data indicates that Hall County's poverty rate (12 percent or 19,584 persons) is lower than the state average of 13.4 percent. Persons aged 65 and over (9.3 percent, or 15,177 persons), is very

close to the statewide average of 9.6 percent. With a projected 148 percent increase in population over the 30-year period, these segments of the population can also be expected to increase.

In 2005, approximately 25 percent of the County population was identified as being of Hispanic origin (any race). By 2030, the percentage of Hispanic population is projected to comprise approximately 35 percent.

In 2005, approximately 18 percent of the population was age 55 or older. While the continuing growth of a young Hispanic population will have some effect, the overall trend of aging baby boomers will result in the 55 or older population growing to approximately 25 percent by 2030.

Current and Projected Employment

As shown in Table 3, Hall County's total employment is projected to increase from 65,133 in 2005 to 280,000 in 2030, based on the adopted Comprehensive Plan. A review of data reveals that year 2005 employment is concentrated in manufacturing, retail trade, services, and government. These four sectors employ almost 80 percent of the year 2005 workforce in Hall County.

Current and Projected Jobs-to-Housing Ratios

The jobs-to-housing ratio compares the number of jobs to the number of people living in an area. The ratio is a useful analysis tool because housing location decisions in relation to workplace marginally affect commute times, costs, and congestion. In 2025, the projected balanced ratio in the Atlanta metro area ranges between 0.81 and 1.2.[1] This ratio applied on a sub-regional basis would indicate a balance in the number of jobs available for the working population in the area, thus reducing trip lengths and congestion.

The 2000 jobs-to-housing ratio for Hall County is 1.37 jobs per household. The adopted Comprehensive Plan provides for significantly higher job creation, and the jobs-to housing ratio is projected to increase to 2.2 jobs per housing unit, in 2030.

Land Use

Existing Land Use

Existing land use in Hall County is dominated by undeveloped, agriculture/forestry, and residential land uses. Of the County's total acreage, 86 percent (234,795 acres) of the land is currently in these three categories. Residential land use accounts for 62,962 acres or 23 percent of the total acreage. Agriculture/forestry land use accounts for 71,043 acres or 26 percent of the total acreage.

The existing land use pattern of the County is characterized by the urban core in and around Gainesville, with a pattern of scattered subdivision and rural residential development throughout much of the rest of the County except the areas furthest to the north and east. Subdivision development is most pronounced in the southern part of the County, but there are significant

[1] Atlanta Regional Commission, Regional Transportation Plan Needs Assessment Report, May 1999, page 5-22

numbers of developments north and northwest of Gainesville, particularly along Lake Lanier. Most commercial and industrial development is located in Gainesville and along the I-985 corridor to the southwest.

Land Use Plan

The state of Georgia requires local governments to consider policies for managing growth by requiring the development and maintenance of Comprehensive Plans. Managing the type and location of growth reduces traffic congestion and provides a better quality of life.

By clustering or concentrating mixed uses, community residents have access to most of their daily needs within a short distance, maintaining the option of using alternative modes of transportation. Schools, shopping centers, and places of employment are popular destinations and should be developed in locations providing maximum accessibility by the residents of the community or region. Land use can be an important tool for enabling growth and controlling congestion.

The Hall County land use plan promotes the directing of new growth toward areas that can be efficiently provided with infrastructure and services. Infrastructure will be used as a tool to help manage growth, with infrastructure provided in support of desired types and patterns of growth, with a particular emphasis on high quality commercial, industrial, and business development.

Projected future land use shows 188,080 acres, 71 percent of Hall's total acreage, projected for residential uses in the future. The majority of residential land uses will be low and medium density. Industrial land uses are expected to more than double from 5,508 acres in 2000 to a projected 11,338 acres in 2030. Conservation/parks/recreation is expected to comprise 15 percent of the total acreage in the future and mixed uses are projected to account for 4 percent of total land use.

Hall County is currently implementing a plan to construct sewer service along the SR 365 corridor north of Gainesville. This effort will extend the pattern of employment up this major road corridor from Gainesville. The Future Land Use Plan for the balance of Hall County reflects an urban development pattern along the I-985/S.R. 365 corridor through and including the Cities of Buford, Flowery Branch, Oakwood, Gainesville, and Lula. Lower density suburban development is reflected around the balance of Lake Lanier and Gainesville, along the major highway corridors to the north, east and west, and in most of the southern portion of the County ranging from 1 unit per one acre to 1 unit per 1.5 acres. A semi-rural residential pattern is retained in large sections of the northern and eastern portions of the County with densities ranging from 1 unit per 2.5 acres to 1 unit per 3.3 acres.

Developing the Needs Assessment

As part of this LRTP process, Hall County's existing transportation system was evaluated using performance measures that correlate to the County's overall transportation goals. Performance measures were developed to determine system-wide needs and gauge the performance of proposed strategies, improvements and programs. In addition to reviewing data related to the transportation system, input from the public ensured that the concerns of County residents and other transportation network users were considered in evaluating existing conditions.

The identification of existing and projected future needs is a significant element of the transportation planning process. The selection of specific multi-modal transportation investment strategies is guided by the County's needs, identified through a variety of factors, including travel characteristics, conditions and deficiencies; safety, and citizen input.

Travel Characteristics, Conditions and Deficiencies

Understanding the travel characteristics of a community is crucial to developing a LRTP that meets existing and future travel needs. Development of an assessment of needs is based partially on the inventory of the condition of the existing transportation system. To identify deficiencies related to current and future congestion, travel demand modeling is a useful tool.

A travel demand model assisted by identifying existing and future congestion on roadwyas throughout the GHMPO study area. Data requirements for the model included population, household and employment information, as well as existing and future land use data and policies from the County's comprehensive plan and other planning documents.

The model provides travel statistics for the 2005 base year and 2030 existing plus committed (E+C) scenario. The E+C scenario offers a tool to identify needs and prioritize transportation improvements. The 2030 E+C network was evaluated to assess transportation roadway conditions and the impact of no additional capacity projects (beyond those programmed for right-of-way acquisition or construction by 2013 even as population and employment grow. Again, the travel demand model was only used for needs assessment, and not as part of air quality conformity determination.

Performance measures were used to compare year 2005 model conditions against year 2030 existing plus committed conditions. Fundamental system-wide performance measures include projected traffic volumes, volume to capacity ratio, and percent of vehicle miles of travel over capacity.

Travel Characteristics

Examining the Hall County commuting patterns helps to guide transportation improvement investments. As demonstrated in Table 4 below and based on 2000 Census data, Hall County's mode split follows state trends. Higher percentages of workers are driving alone and working at home, while fewer persons are carpooling and walking. The majority of Hall County residents age 16 and over commutes elsewhere to work. The majority of these commute trips are to Gwinnett, Fulton, and DeKalb counties. There are additional users of the roadways competing for space and fewer of these people are using alternate modes, which contributes to congestion.

Table 4 -
Hall County Mode Split Commute to Work Trips

	Georgia 1990	Georgia 2000	Percent Change	Hall 1990	Hall 2000	Percent Change
Workers 16 years and over	3,106,393	3,832,803	23.4%	48,153	65,402	35.8%
Drove alone	76.5%	77.5%	1.0%	76.8%	76.4%	-0.4%
Carpooled	15.1%	14.5%	-0.6%	17.6%	17.9%	0.3%
Public transportation	2.8%	2.3%	-0.5%	0.3%	1.1%	0.8%
Bicycled or Walked	2.3%	1.7%	-0.6%	1.8%	1.4%	-0.4%
Motorcycle or Other	1.0%	1.0%	0%	1.3%	1.1%	-0.2%
Worked at home	2.1%	2.8%	0.7%	2.2%	2.2%	0%
Mean travel time to work (min.)	22.7	27.7	22%	22.1	26.1	18.1%

Source: Census Transportation Planning Package (CTPP 2000)

Traffic Volumes

The 2030 E+C scenario includes projects in the GHMPO 2008-2013 TIP that are programmed for construction or right-of-way acquisition by 2013 Table 5 shows the change in traffic conditions under this scenario.

Table 5 -
Hall County 2030 Traffic Volumes

Highway (Station No.)	Count Location	2005	2030	Percent Increase
Athens Hwy. (US 129) (114)	W of Jackson county line	9,440	31,080	229%
Cleveland Hwy. (US 129) (145)	N of Gainesville	12,930	24,270	88%
Athens Hwy. (US 129) (116)	SE of Gainesville	20,300	61,160	201%
Atlanta Hwy. (SR 13) (165)	S of Gainesville	9,280	45,140	386%
SR 365 (212)	NE of Gainesville	29,380	59,830	104%
Dawsonville Hwy. (SR 53) (267)	W of Gainesville	24,380	56,920	133%
Mundy Mill Road (SR 53) (283)	Oakwood	26,310	53,910	105%
Candler Road (SR 60) (303)	North of Candler	12,940	54,020	317%
Interstate 985 (409)	South Hall	41,860	87,590	109%
SR 365 (215)	Lula	26,400	59,750	126%
Browns Bridge Rd (SR 369) (429)	E of Lake Lanier	15,610	41,510	166%

Source: GHMPO Travel Demand Model

Volume to Capacity Ratios

Identifying congestion through the use of daily roadway volume to capacity (v/c) ratios is useful in assessing roadway needs. Based upon the roadways functional classification, a v/c ratio compares the amount of traffic on the road to the capacity of the road. A lower v/c ratio

indicates less congestion on a segment of roadway than does a higher v/c ratio. For example, a v/c ratio of 1.0 would mean that the road is carrying its full capacity of traffic volume, while a v/c ratio of 0.5 would indicate it is carrying half of the volume that it has the capacity to carry. Generally, a v/c ratio of 0.7 or less is considered to be an acceptable level of traffic congestion on a segment of roadway. The closer the v/c ratio gets to 1.0, the more congested the roadway segment.

Figure 2 shows the year 2005 (base year) v/c ratios on Hall County's roadway network. In 2005, 6.4 percent of roadway miles in Hall County demonstrated a v/c ratio of greater than 0.7, which indicates that a majority of the system is operating efficiently on a daily basis. Projected 2030 v/c ratios for the County roadway network, including only the existing network and committed projects, are shown in Figure 4. In 2030, 41 percent of roadway miles in the County are projected to have V/C ratios greater than 0.7 compared to 6.4 percent in the year 2000. This large increase is attributed to growth in population, households and employments, as well as residents commuting patterns.

Figure 2 -
2005 Volume/Capacity Ratios

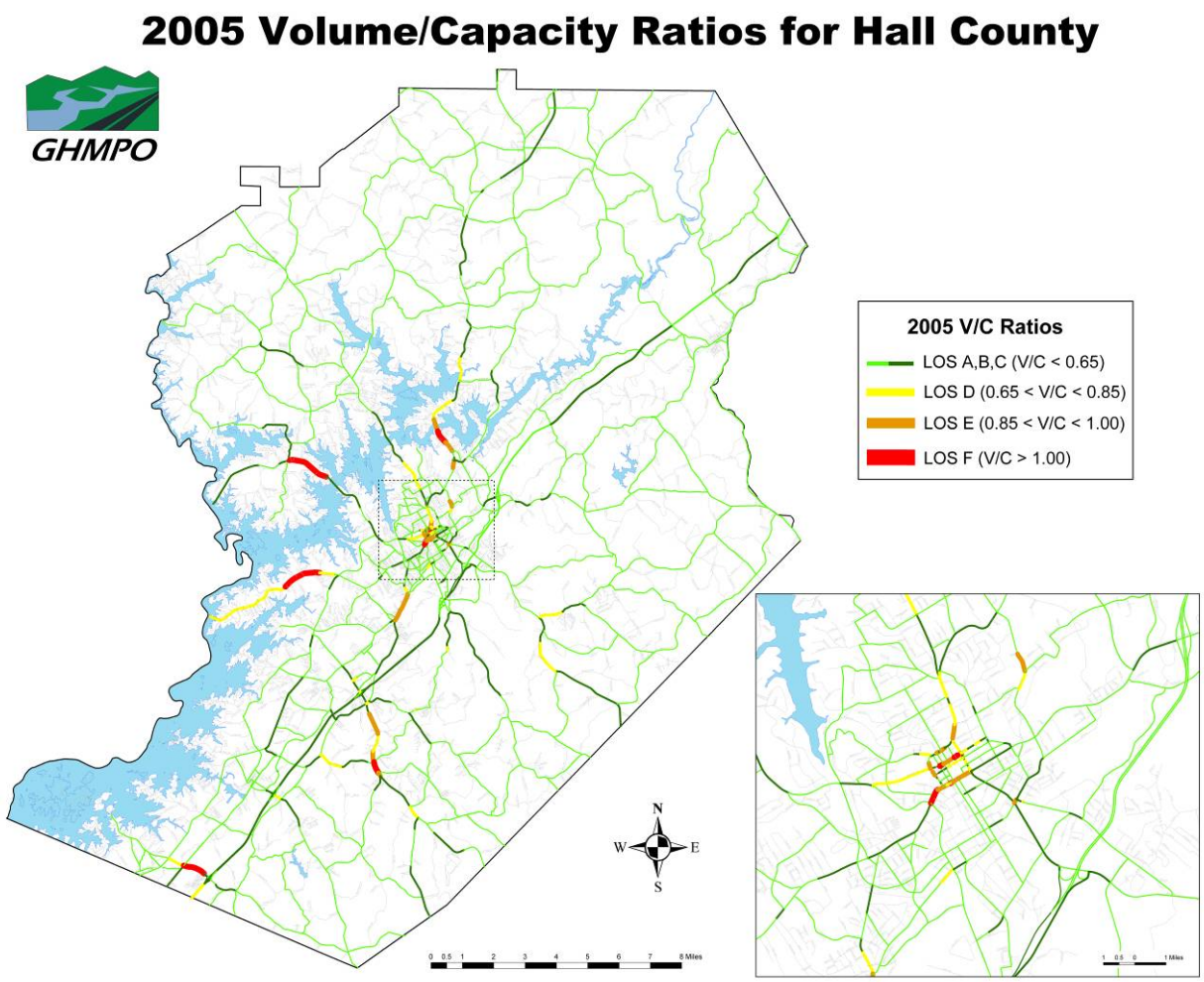
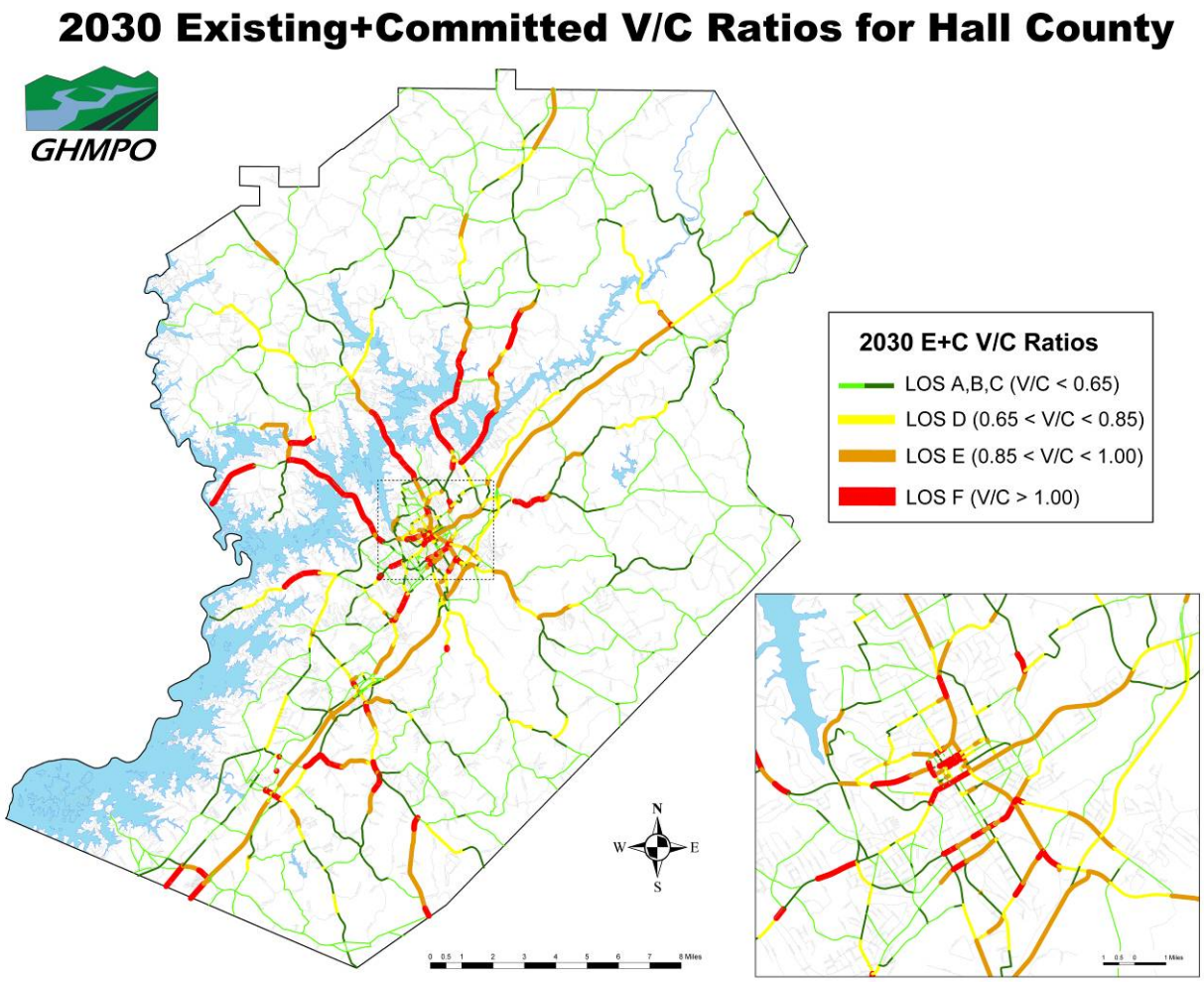


Figure 3 -
2030 Volume/Capacity Ratios
Existing Network plus Committed Projects



Vehicle Miles of Travel and Vehicle Hours of Travel

An important objective in developing an efficient transportation system is slowing the growth in trip lengths and congestion on the roadway network. Vehicle miles of travel (VMT) and vehicle hours of travel (VHT) are useful measures for gauging progress in achieving this objective. VMT represents the average daily number of total vehicle miles driven on the roadway network, while VHT represents the average daily travel time of all vehicles on the roadway network during an average day.

The majority of VMT in Hall County occurs on the arterial and collector networks, as shown in Table 6. The importance of these routes is demonstrated in that they carry 78 percent of VMT, yet comprise of only 33 percent of the County's centerline roadway mileage. Even though local routes are 65 percent of the total mileage, they support only 16 percent of the total VMT.

Table 6 -
Centerline Miles & Daily Vehicle Miles of Travel (VMT) by Functional Class

Functional Classification	Centerline Miles	% of Total	VMT	% of Total
Interstates	17	1.3%	685,800	14.9%
Arterial	154	11.4%	2,336,800	50.8%
Collector	227	16.8%	898,300	19.5%
Local Road	953	70.5%	675,500	14.7%
Total	**1352**	**100%**	**4,596,400**	**100%**

Source: Georgia Department of Transportation

Between 1990 and 2000, the Georgia average travel time to work increased 22 percent to almost 28 minutes, with Hall County increasing almost 18 percent to 26 minutes. By year 2030, the total trip time for all Hall County trips is expected to increase further, as will congestion. Strategies and Programs to reduce congestion and travel times, especially during the peak travel periods when most work-related trips occur, need to be identified, developed and implemented to improve future traffic conditions .

Based on the v/c ratios, a significant impact on the transportation system is looming. The overall analysis of future system-wide conditions indicates that system performance could deteriorate significantly in the future without constructing and implementing new transportation improvements and strategies.

Safety

Network crash history helps identify intersections and roadways that should be considered for potential safety improvements. Safety projects often demand higher priority and are eligible for federal safety funds administered through GDOT .

Identification of potential safety improvements was accomplished through the utilization of geographic information system (GIS) processing. Average crash rates and fatal crash rates were calculated for the state routes by functional class. Crash rates and fatality rates for Hall County by functional classification are shown in Table 7. The crash and fatality rate on Hall

County Interstates and arterials is above the statewide average rates, but below the statewide crash and fatality rate on collector roadways.

Table 7 -
2005 Crashes and Fatalities by Functional Classification

Functional Class	Number of Crashes	Number of Fatal Crashes	Crash Rate*	Fatal Crash Rate*
Interstate	1,095	7	393	2.51
Arterials	3,003	16	376	2.00
Collectors	713	2	329	0.92

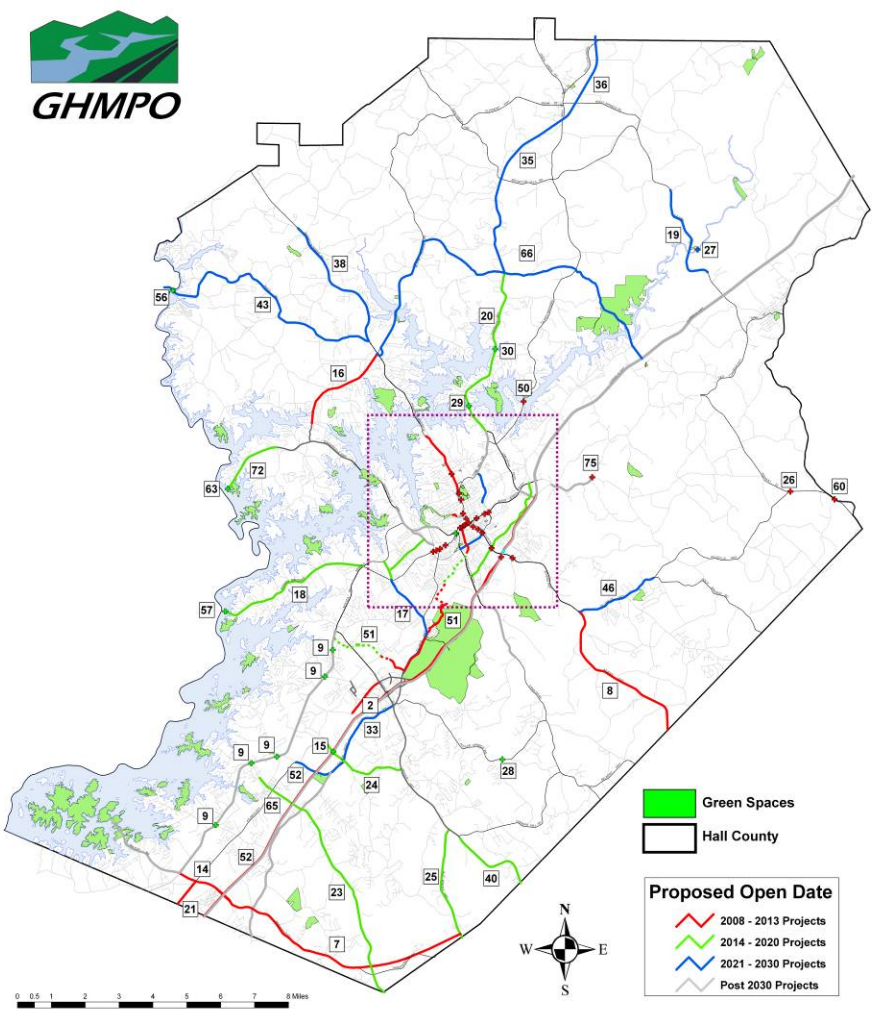
Source: GDOT Office of State Traffic Safety and Design
* Crash and fatal crash rates per million vehicle miles traveled (MVMT)

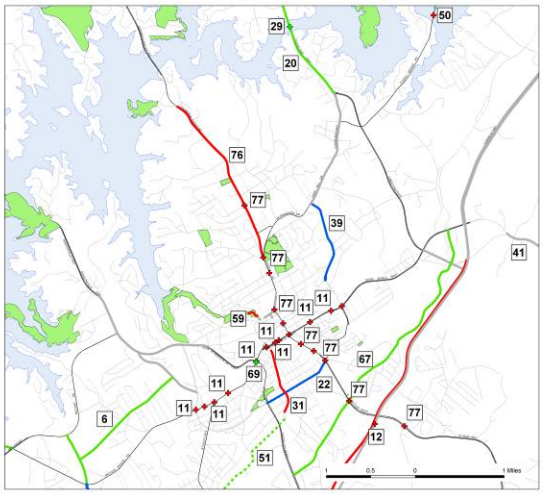
Environmental Mitigation

SAFETEA-LU requires that GHMPO examine, at a program level, possible impacts to resources in the Gainesville-Hall study area by proposed transportation improvements. Resources in this case include green spaces, historic resources, and water bodies. In order to fulfill this requirement, GHMPO has consulted with local, state, and federal agencies "responsible for planned growth, economic development, environmental protection, airport operations, freight movements, land use management, natural resources, conservation, and historic preservation" as outlines in the GHMPO Participation Plan. Through this coordination, three maps (Figures 4,5 and 6) and a complementary table (Table 8) have been developed to identify possible resource impacts in relation to proposed GHMPO projects. As projects move forward in the transportation planning process, those that may impact resource areas would be examined more closely during the Preliminary Engineering phase.

Figure 4 Environmental Mitigation – Green Spaces

Environmental Mitigation - Green Spaces





Map No.	Segment/Location	Description	GHMPO No.
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6	Memorial Park Ext/Skeltor Road & Connector	Widening	GH-006
7	SR 347/Friendship Road From I-985 to SR 211	Widening	GH-007
8	US 129/Athens Hwy from SR 323/Gillsville Hwy to SR 332/Talmo in Jackson County	Widening	GH-008
9	McEver Rd Intersections-Gaines Ferry, Lights Ferry, Jim Crow, Flat Creek, Stephens Rd, Chamblee Rd	Intersection	GH-009
11	Upgrade Traffic Signals along Jesse Jewell – Pearl Nix to Downey, 11 signals	Signals	GH-011
12	I-985 – Exit 22 Ramp Improvements at US 129/E.E. Butler	Interchange	GH-012
14	SR 347/Friendship Road – I-985 to McEver Road Phase I	Widening	GH-014
15	I-985 – New Interchange North of SR 13 Near Martin Road	Interchange	GH-015
16	Sardis Road Connector – SR 60/Thompson Bridge to Sardis/Chestatee Road	Widening	GH-016
17	SR 13/Atlanta Highway Widening & Memorial Park Drive Widening – Frontage Road to Browns Bridge	Widening	GH-017
18	SR 369/Brown's Br Road – Forsyth Co. Line to SR 53/McEver Road	Widening	GH-018
19	SR 52/Lula Road – 1 mile north of SR 365 to south of Julian Wiley Road	Passing Lanes	GH-019
20	US 129/Cleveland Hwy – Limestone Rd to Nopone Road	Widening	GH-020
21	SR 13-Buford/Atlanta Hwy – Thompson Mill Road to Relocation of SR 347/Friendship Road	Widening	GH-021
22	MLK Blvd – SR 60/Queen City Parkway to EE Butler	Widening	GH-022
23	Spout Springs Road – Hog Mountain Road to Gwinnett Co. Line	Widening	GH-023
24	Martin Road – New I-985 Interchange to SR 53/Winder Hwy	Widening	GH-024
25	SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment	Widening	GH-025
26	SR 82 at Candler Creek – Bridge	Bridge	GH-026
27	SR 52/Lula Road at Chattahoochee River – Bridge	Bridge	GH-027
28	SR 332/Poplar Springs Road at Walnut Creek – Bridge	Bridge	GH-028
29	US 129/Cleveland Hwy at Chattahoochee River	Bridge	GH-029
30	US 129/Cleveland Hwy at East Fork Little River (Bells Mill)	Bridge	GH-030
31	Midtown Greenway on CSX Right-of-Way	Multi-use Trail	GH-031
33	SR13/Atlanta Highway - Radford Road to SR 53/Winder Hwy	Widening	GH-033
35	US 129/Cleveland Hwy - N of Nopone/J Hood Road to SR 284/Clarks Bridge Road	Widening	GH-035
36	US 129 - SR 284/Clarks Bridge Road to White Co. Line	Widening	GH-036
38	SR 60/Thompson Bridge Road - SR 136/Price Road to Hall County Line	Widening	GH-038
39	South Enota Drive - Widen from 2 To 4 Lanes from Park Hill to Downey Blvd	Widening	GH-039
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43	SR 136/Price Road - SR 60/Thompson Bridge Road To Dawson Co. Line	Widening	GH-043
46	SR 323/Gillsville Hwy - US 129/Athens Hwy to E of SR 82/Holly Springs Road	Widening	GH-046
50	SR 284/Clarks Bridge Road at Chattahoochee River – Bridge	Bridge	GH-050
51	Central Hall Recreation and Multi-Use Trail	Trail	GH-051
52	Advanced Traffic Management System on I-985	ITS	GH-052
54	Traffic Signal Upgrades - SR 11, SR13, SR 53, SR 60	Signals	GH-054
56	SR 136/Price Road @ Chestatee River	Bridge	GH-056
57	SR 369/Browns Bridge Road - New Bridge over Lake Lanier	Bridge	GH-057
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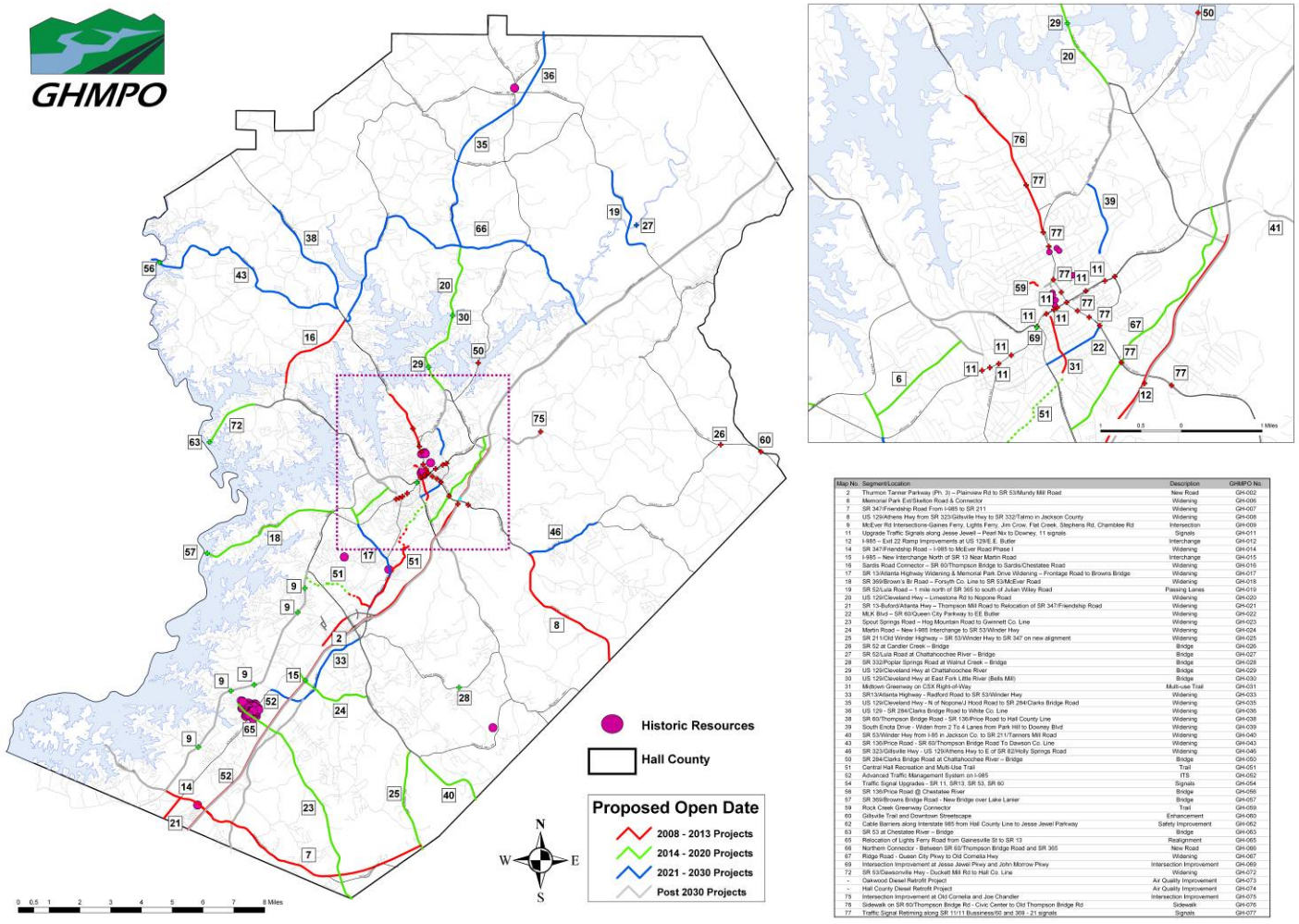
77	Traffic Signal Retiming along SR 11/11 Bussiness/82 and 369 - 21 signals	Signals	GH-077

Figure 5 Environmental Mitigation – Historic Resources

Environmental Mitigation - Historic Resources



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18	SR 369/Brown's Br Road – Forsyth Co. Line to SR 53/McEver Road	Widening	GH-018
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20	US 129/Cleveland Hwy – Limestone Rd to Nopone Road	Widening	GH-020
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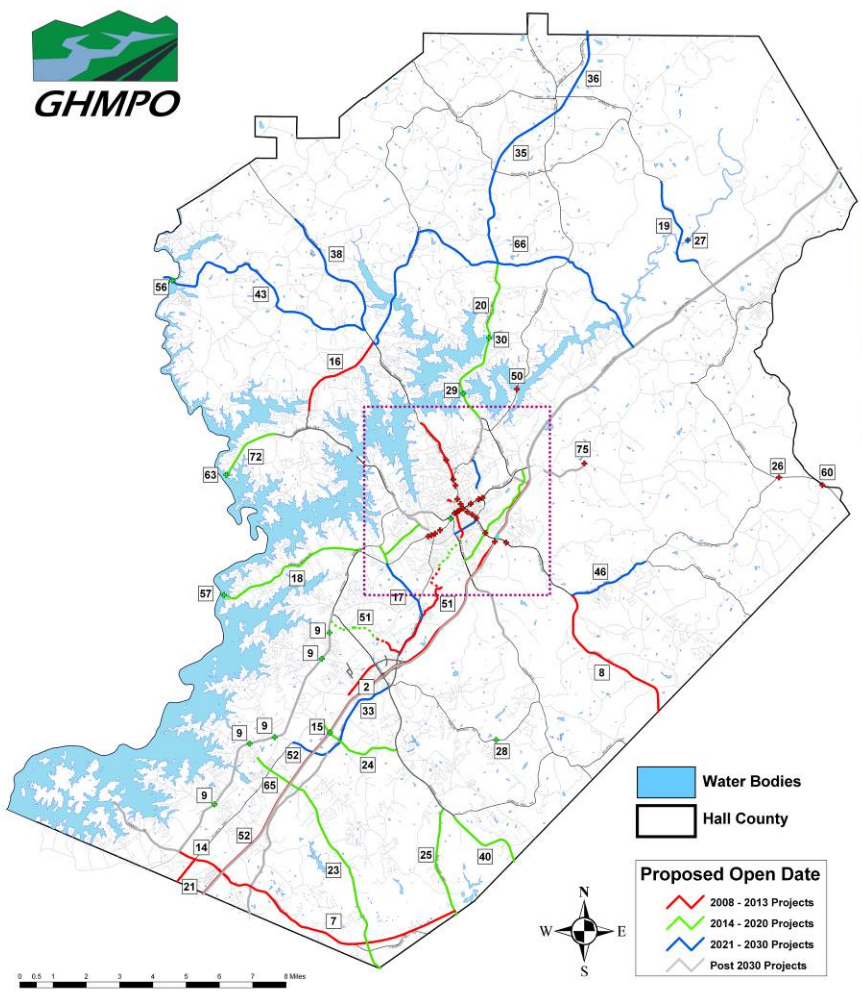
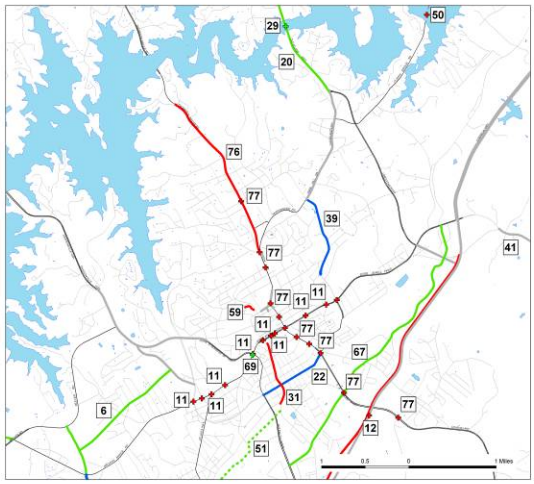
Figure 6 Environmental Mitigation – Water Bodies

Environmental Mitigation - Water Bodies





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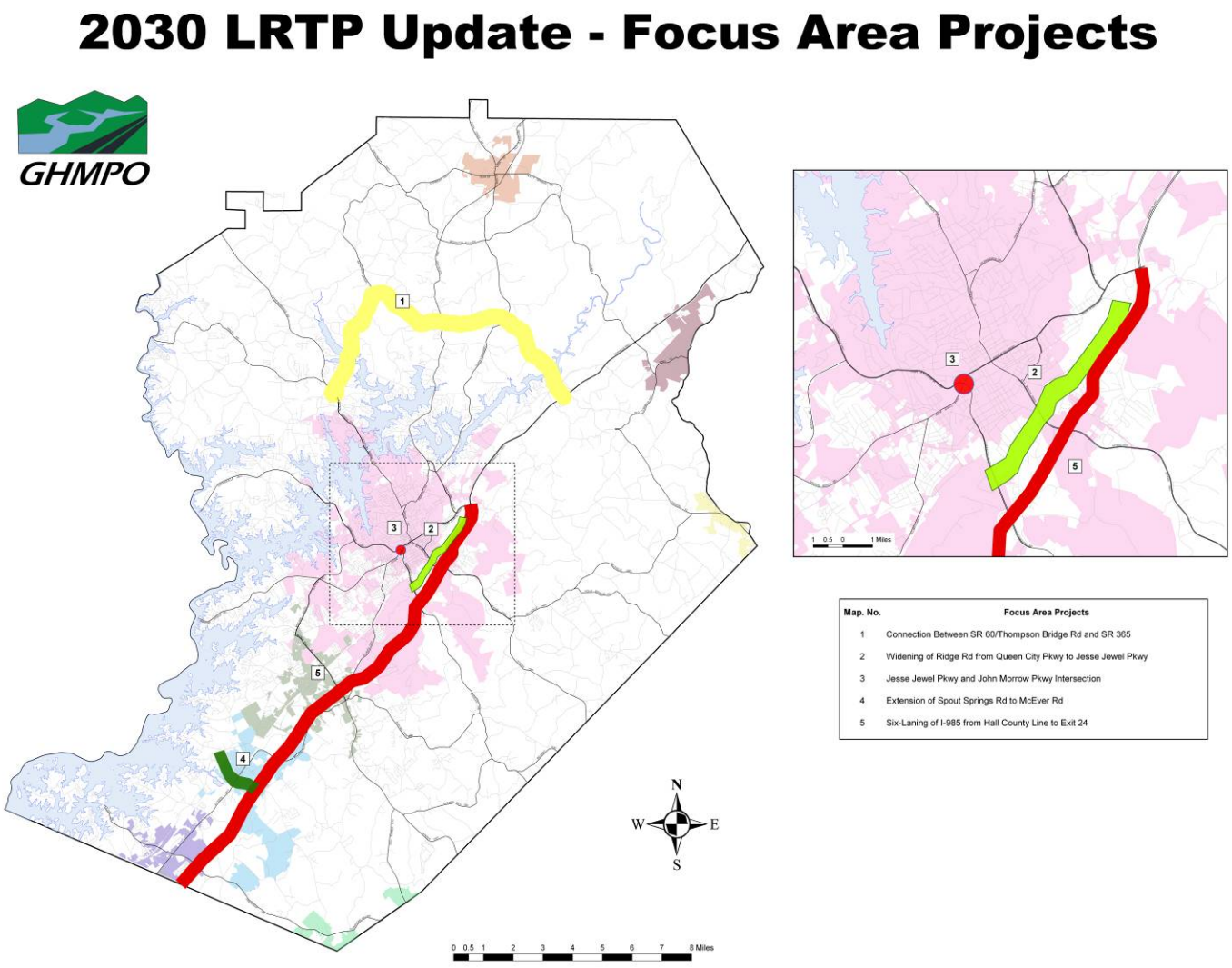
25	SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment	Widening	GH-025			X
26	SR 52 at Candler Creek – Bridge	Bridge	GH-026			
27	SR 52/Lula Road at Chattahoochee River – Bridge	Bridge	GH-027			X
28	SR 332/Poplar Springs Road at Walnut Creek – Bridge	Bridge	GH-028			X
29	US 129/Cleveland Hwy at Chattahoochee River	Bridge	GH-029			X
30	US 129/Cleveland Hwy at East Fork Little River (Bells Mill)	Bridge	GH-030			X
31	Midtown Greenway on CSX Right-of-Way	Multi-use Trail	GH-031		X	
33	SR13/Atlanta Highway - Radford Road to SR 53/Winder Hwy	Widening	GH-033			
35	US 129/Cleveland Hwy - N of Nopone/J Hood Road to SR 284/Clarks Bridge Road	Widening	GH-035			
36	US 129 - SR 284/Clarks Bridge Road to White Co. Line	Widening	GH-036			
38	SR 60/Thompson Bridge Road - SR 136/Price Road to Hall County Line	Widening	GH-038			
39	South Enota Drive - Widen from 2 To 4 Lanes from Park Hill to Downey Blvd	Widening	GH-039			X

40	SR 53/Winder Hwy from I-85 in Jackson Co. to SR 211/Tanners Mill Road	Widening	GH-040			
43	SR 136/Price Road - SR 60/Thompson Bridge Road To Dawson Co. Line	Widening	GH-043			
46	SR 323/Gillsville Hwy - US 129/Athens Hwy to E of SR 82/Holly Springs Road	Widening	GH-046	X		
50	SR 284/Clarks Bridge Road at Chattahoochee River – Bridge	Bridge	GH-050	X		X
51	Central Hall Recreation and Multi-Use Trail	Trail	GH-051	X	X	
52	Advanced Traffic Management System on I-985	ITS	GH-052			
54	Traffic Signal Upgrades - SR 11, SR13, SR 53, SR 60	Signals	GH-054			X
56	SR 136/Price Road @ Chestatee River	Bridge	GH-056			X
57	SR 369/Browns Bridge Road - New Bridge over Lake Lanier	Bridge	GH-057			
59	Rock Creek Greenway Connector	Trail	GH-059	X		
60	Gillsville Trail and Downtown Streetscape	Enhancement	GH-060		X	
62	Cable Barriers along Interstate 985 from Hall County Line to Jesse Jewel Parkway	Safety	GH-062			
63	SR 53 at Chestatee River – Bridge	Bridge	GH-063			X
65	Relocation of Lights Ferry Road from Gainesville St to SR 13	Realignment	GH-065		X	
66	Northern Connector - Between SR 60/Thompson Bridge Road and SR 365	New Road	GH-066	X		X
67	Ridge Road - Queen City Pkwy to Old Cornelia Hwy	Widening	GH-067			
69	Intersection Improvement at Jesse Jewel Pkwy and John Morrow Pkwy	Intersection	GH-069			
72	SR 53/Dawsonville Hwy - Duckett Mill Rd to Hall Co. Line	Widening	GH-072	X		X
-	Oakwood Diesel Retrofit Project	Air Quality	GH-073			
-	Hall County Diesel Retrofit Project	Air Quality	GH-074			
75	Intersection Improvement at Old Cornelia and Joe Chandler	Intersection	GH-075			
76	Sidewalk on SR 60/Thompson Bridge Rd - Civic Center to Old Thompson Bridge Rd	Sidewalk	GH-076	X		
77	Traffic Signal Retiming along SR 11/11 Bussiness/60 and 369 - 21 signals	Signals	GH-077			

Focus Areas

GHMPO staff initially developed a list of areas to examine in the 2030 LRTP throughout the study area (intersection, corridors, new location roadways, etc.) and presented each area to the Technical Coordinating Committee (TCC) for review and additional input. After the review, 15 Focus Areas were developed throughout the study area. During the first GHMPO 2030 LRTP Public Information Meeting in June 2006, local citizens were asked to provide their comments on which Focus Areas should be examined in more detail during the 2030 LRTP update. Based on this input, 10 Focus Areas moved forward. In August 2006, MPO, GDOT, County and City staff along with transportation planners, traffic engineers and designers from the consultant team met together to discuss potential Focus Area improvements. Potential alignments were identified by using aerial photography, as well as fieldwork. These projects were included in the travel demand model to evaluate the impacts on the Gainesville-Hall transportation system and if and when the improvement was needed. During additional meetings with the Gainesville-Hall MPO Committee members, 5 Focus Areas as shown in Figure 7 emerged for additional study.

Figure 7 Focus Area Projects



Below is the list of Focus Area projects and a brief description of the need.

1. **"Northern Connector" north of Gainesville**
   Need
   - Provide connectivity between SR 60/Thompson Bridge Road and SR 365 and access to Forsyth County and SR 400 through SR 53 Dawsonville Highway

2. **Widening of Ridge Road from Queen City Parkway to Jesse Jewel Parkway**
   Need
   - Improve roadway network in the City of Gainesville that will remove traffic and particularly truck traffic from the center city.

3. **Extension of Spout Springs Road between Atlanta Highway and Lights Ferry Road/McEver Road**
   Need
   - Additional east-west connectivity is needed in Flowery Branch and rapidly growing south Hall County.

4. **Jesse Jewel Parkway and John Morrow Parkway**
   Need
   - Heavy traffic volumes are causing turning movement delays at this intersection.

5. **Six-Laning of Interstate 985**
   Need
   - Additional lanes on I-985 are needed to address rapid growth and traffic in Hall County.

Future Improvements

During the development of future improvements, three scenarios were tested in the GHMPO travel demand model.

Scenario 1 improvements consisted of projects that were included in the GHMPO 2030 LRTP (approved in 2004), with the exception of projects that have been constructed or let to construction.

Scenario 2 improvements consisted of all Scenario 1 improvements plus the following Focus Area projects:

- Northern Connector
- Widening of Ridge Road
- Extension of Spout Springs Road
- 6-laning of I-985 from Hall County line to Exit 24

Scenario 3 improvement consisted of all projects contained in Scenarios 1 and 2, as well as adding HOV lanes to I-985 from the Gwinnett County line to Exit 24. Table 9 below, shows the vehicle miles traveled (VMT) for each of the three scenarios.

Table 9 – Vehicle Miles Traveled by Scenario

Functional Classification	Scenario 1 VMT	%	Scenario 2 VMT	%	Scenario 3 VMT	%
Interstates	1,969,817	26%	2,170,388	28%	2,351,703	29%
Principal Arterials	3,206,788	42%	3,603,547	46%	3,776,986	47%
Minor Arterials	1,624,344	21%	1,465,029	19%	1,399,766	17%
Collectors	782,168	10%	647,598	8%	555,190	7%
Total (excludes local roads)	7,583,117	100%	7,886,562	100%	8,083,645	100%
Socioeconomic Data						
Households	57,524					
Population	165,661					
Vehicle Miles of Travel (VMT) Ratios						
VMT/Household	131.8		137.1		140.5	
VMT/Person	45.8		47.6		48.8	

The majority of the VMT regardless of scenario will be on Principal Arterials in the GHMPO. Overall, Scenario 1 provides the lowest VMT, followed by Scenario 2 and then Scenario 3. The improvements modeled in Scenario 2 increase the VMT on the Interstate and Principal Arterials, while VMT is reduced on Minor Arterials and Collectors. Likewise, constructing HOV lanes on I-985 (Scenario 3) further increase VMT on the Interstate and Principal Arterials, while VMT is reduced even further on Minor Arterials and Collectors.

The following provides key observations, based on the three scenarios tested in the travel demand model.

- The 2030 LRTP projects are still very beneficial and provide a "reasonable" Level of Service (LOS) throughout the county.
- VMT on Interstates increases by 19 percent with improvements (6-laning) to I-985.
- VMT on Principal Arterials increases by 18 percent due mostly to the construction of the "northern connector".
- VMT on minor arterials and collectors decreases by 14 percent and 29 percent respectively with the "northern connector" and improvements to I-985.
- While total VMT increases between Scenario 1 and Scenarios 2 and 3, it means that people are traveling a greater distance to access I-985 and/or the northern connector, which is good since utilization of these roadways is more suitable than adding traffic to surface streets (lower functional classes).
- The central business district of Gainesville provides the same LOS regardless of the scenario.
- While there are no drastic level of service (v/c ratio) improvements to the major roadway in Gainesville, the drop in VMT among Minor Arterials and Collectors is encouraging.
- Improving I-985 to provide 6-lanes of travel (3 in each direction) will be needed in the future.
- Due to the limited lake crossings, Dawsonville Highway, Thompson Bridge Road and Cleveland Highway will be congested (either LOS E or F) in 2030 regardless of scenario. However, Scenario 2 and 3 show a slightly improved LOS (LOS E rather than F in some sections) than Scenario 1 for each of these roadways.
- Widening of Ridge Road shows good LOS (v/c ratio) results and has great potential to serve as an industrial corridor paralleling I-985.

Transportation Needs

Roads and Bridges

The backbone of the Gainesville-Hall County transportation system is its roadway network. Gainesville is a crossroads for numerous state highways, as is evident from the number of radial routes, which extend outward from downtown like the spokes of a wheel. As both a major destination and a way point for trips in the northeast Georgia region, the Gainesville-Hall County roadway system serves automobile and truck transportation for both local and regional trips. The mobility of trucks on this network is particularly important to the vitality of numerous industries through out the county.

Existing Conditions

Key transportation routes in Hall County include Interstate 985/SR 365 and arterials such as 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). Lake Lanier and its many amenities serve as a major traffic generator for residential, tourism and recreation trips in the region. There are five bridges that provide necessary mobility and connectivity for travelers and residents. A center for employment and commercial, medical, and educational facilities and services, Gainesville is a regional transportation hub for Hall County; as well as, neighboring counties such as Jackson, Banks, Lumpkin, White, and Habersham. As a result, congestion peak periods include AM and PM commuter periods and a noon time rush hour. A recent study of traffic volumes on Jesse Jewel Parkway (SR 369) showed that the noon time vehicles per hour rate was as high or higher than the 5:00 PM traffic count and double that of the 8:00 AM traffic count.

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.

US 129 connects from Athens-Clarke County crosses I-85 in Jackson County and traverses north into Hall County. It connects to E.E. Butler Parkway, a four-lane divided arterial that extends through downtown Gainesville. Traffic flows predominantly northbound (or westbound) during the morning and southbound (or eastbound) during the afternoon, congestion is experienced during the typical morning and evening peak periods. 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. US 129 traverses north out of Gainesville into White County and provides access to the tourist destination of Helen.

SR 60 traverses from Dahlonega south into Gainesville along the Green Street/Thompson Bridge Road corridor. Traffic flow is highly directional during peak periods, with the flow predominately southbound in the morning and northbound in the evening. In addition, a mid-day peak period in town, extending from about 11:00 am to 1:00 pm, exhibits a roughly 50/50 directional split. SR 60 provides an important connection between Gainesville and I-985 along Queen City Parkway, serving the Lee Gilmer Airport and major industrial areas. The route

continues south as Candler Road, serving additional industrial areas, but traffic counts are lower in this area as SR 60 does not have an interchange at I-85.

The western portions of SR 369 (Browns Bridge Road and Jesse Jewel Parkway) are predominantly lined with strip commercial development, such as fast food restaurants, gas stations, shopping centers and automobile dealerships. The traffic characteristics are typical of these adjacent land uses, with morning and afternoon peak periods overshadowed by a long mid-day peak period. The eastern end of this corridor serves two local hospitals and numerous medical offices. The highest traffic volumes on this corridor are recorded on Jesse Jewel Parkway just west of E.E. Butler Parkway.

SR 53, which intersects I-985 in Oakwood and skirts the center of Gainesville via Mundy Mill and McEver Roads, carries high traffic volumes as it connects Gainesville College and major retail areas on the west side of Gainesville.

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.

GDOT prepares existing traffic volume field counts and reports Average Annual Daily Traffic (AADT) counts. The raw counts are collected and adjusted to reflect average traffic volumes at particular locations on an annual basis. Table 10 contains Hall County traffic volume data from 1992 to 2005; percent changes in traffic volumes along the various routes have also been calculated. Reflecting significant growth in population and employment, there is an upward trend in traffic volume from 1992 to 2005 on the County's road network. The heaviest traveled roadways in the County are Interstate 985 / US 23 / SR 365, Atlanta Highway (SR 13), US 129 (Athens Highway/Cleveland Highway), and SR 53 (Winder Highway /Dawsonville Highway).

Table 10 -
Selected Hall County Traffic Volumes

Road [Station No.]	Count Location	1992 AADT	2005 AADT	Percent Change
E.E. Butler (SR 11) [121]	**Just west of I-985**	**28,298**	**37,115**	31%
Cleveland Hwy. (SR 11) [134]	**Northern Gainesville**	**30,415**	**38,035**	25%
Atlanta Hwy. (SR 13) [194]	**Southern Gainesville**	**32,866**	**34,990**	6%
Athens Hwy. (SR 11) [116]	**Southeast of Gainesville**	**16,380**	**28,528**	74%
SR 365 [212]	**Northeast of Gainesville**	**18,376**	**32,057**	74%
Dawsonville Hwy. (SR 53) [267]	**West of Gainesville**	**17,043**	**22,785**	34%
Mundy Mill Road (SR 53) [285]	**Oakwood**	**23,584**	**32,489**	38%
Candler Road (SR 60) [303]	**North of Candler**	**6,652**	**11,367**	71%
Interstate 985 [409]	**South Hall**	**26,352**	**43,834**	66%
SR 365 [215]	**Lula**	**18,151**	**29,160**	61%
Browns Bridge Road (SR 369) [429]	**East of Lake Lanier**	**12,305**	**15,734**	28%

Source: Georgia DOT Traffic Count Data

Park and Ride Lots

Park and ride lots are an important element of the region's transportation system, providing carpooling opportunities and potential express bus pick-up and drop-off points. There is currently one park and ride lot in Hall County, which provides 126-spaces and is located at the intersection of I-985 and SR 53/Mundy Mill Road in Oakwood. A second park and ride lot with 300-400 spaces is under construction along Atlanta Highway and I-985 as part of the Exit 16interchange project. In addition, a significant number of Hall County residents utilize the Park and Ride lot at I-985 and SR 20, approximately 3 miles south of the county line, which is located in the Atlanta urbanized area.

National Highway System

The National Highway System (NHS) was established by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 to serve as a network of highways that could link together different modes of transportation such as major shipping ports, airports, intermodal facilities, and public transportation. The linking of these transportation systems allows the NHS to form a quality system important to the nation's economy, defense, and mobility. I985, and US Route129 and US Route 23 are classified as NHS routes in Hall County.

The advantage of NHS is that it encourages states to focus on a limited number of high priority routes and to concentrate on improving them with federal aid funds. At the same time, states can incorporate design and construction improvements that address their traffic needs safely and efficiently. With the NHS, states can choose from a range of improvements. They can make operational changes, such as a program to locate and remove disabled vehicles that are impeding smooth traffic flow. States can employ available technological improvements, such ITS, which will help reduce congestion and keep traffic moving without major roadway expansion. Federal NHS funds are received by states based on mileage of principal arterials, vehicle miles traveled on arterials, and amounts of diesel fuel used on highways in the state.

System Performance by Functional Classification

GDOT is responsible for classifying all public roads by geographic location and according to the character of service they are intended to provide. Functional classification was determined for each road in the network using GDOT's classification system to reflect the facility's service characteristics. Functional classification assists in describing the existing and future road network by categorizing the role of various types of roads in the network. Classifications used and their major features are described below.

> **Interstates** - Defined as significant highways that feature limited access and continuous, high-speed movements for a wide variety of traffic types. Of the 2,610 lane miles in Hall County, Interstate 985 comprises 66 lane miles or six percent.
>
> **Arterials** - Classified as major or minor, these roads connect activity centers and carry large volumes of traffic at moderate speeds. The arterial system in Hall County totals approximately 253 lane miles, or 10 percent of total lane miles. Examples of major arterials in Hall County are US 23 and 129 and SR 13, 53, 60, and 369.

Collectors - Typically allow access to activity centers from residential areas. Their purpose is to collect traffic from streets in residential and commercial areas and distribute it to the arterial system. The collector system in Hall County incorporates almost 575 lane miles, or 22 percent of the total roadway system.

Local Streets - Feed the collector system from low volume residential and commercial areas. Usually local streets are found in subdivisions and rural areas. There are approximately 1,702 miles, or 65 percent of roads classified as local in Hall County.

Table 11 provides details about the performance of the base year 2000 roadway network in the Gainesville-Hall area. Volume to capacity (v/c) ratios for interstates and ramps are approaching levels of congestion that are a concern.

Table 11-
2005 System Performance by Functional Class

Functional Class	AADT	Avg. Volume/ Capacity Ratio
Interstate	19,333	0.7
Arterial	9,561	0.4
Collector	2,453	0.2
Local Road	1,073	0.1
Ramps	4,665	0.8

Source: Georgia Department of Transportation

Pavement Condition

Pavement condition is shown in Table 12-1. Pavement Service Rating (PSR) is a standard measure of pavement condition used by GDOT to rate pavement condition statewide. Total lane miles assigned a PSR are provided for each functional classification in Hall County. PSR is collected by GDOT for state system roads only.

Table 12 -
2001 Pavement Condition of Lane Miles by Functional Classification

Functional Class	Poor (PSR <3.5)	Average (PSR 3.5-4)	Good (PSR 4.1-4.5)	Excellent (PSR 4.6-5)	Total
Interstate	0	0	0	66.3	66.3
Arterial	63.4	58.6	43.9	64.3	230.2
Collector	67.0	113.5	51.4	59.0	290.9
Total	130.4	172.1	95.3	189.6	587.4

Source: Georgia Department of Transportation

A majority of the major road pavement in the GHMPO area is in average to excellent condition (78 percent). There are 130 lane miles of pavement rated in "poor" condition (a PSR of less than 3.5). The standard GDOT practice is to program rehabilitation or replacement pavement projects on state roads identified as being in "poor" condition. Local roads are the responsibility of the local governments and are usually improved using City or County resources. These roads are eligible for City/County contracts made available annually by GDOT to assist local governments with local off-system facilities.

Level of Service

The base network performance statistics demonstrate existing congestion and safety needs for the current level of employment and population residing in the GHMPO area.

Level of service (LOS) is a performance measure commonly applied to evaluate service and capacity. It is calculated using traffic volumes to road capacity (v/c) ratios. For example, a roadway that is operating at full capacity has a v/c ratio of 1.0; at half capacity, 0.5. Level of service is graded, with LOS A indicating completely uncongested conditions while LOS F represents bumper-to-bumper stop and go traffic. LOS E is identified by a v/c ratio of over one (1.0). LOS C and D are congested but considered acceptable (between 0.7 and 1.0) in urban areas. The existing GHTS network has 51.2 lane miles with a v/c ratio of greater than 0.7 but less than 1.0. There are 6.1 lane miles with v/c ratios of 1.0 and above.

The travel demand model computes forecast volumes through a combination of a variety of factors, including current and future (2030) population and employment coupled with the existing roadway network and committed roadway projects. The travel demand model helps identify locations of roadway sections that are likely to be congested in the future based on projected socio-economic growth and committed roadway projects.

Existing 2005 network performance was compared to the 2030 City of Gainesville and Hall County comprehensive plans. Table 13 compares lane mile v/c ratios calculated based on existing and forecast population, employment and land use, and shows the increase of congested lane miles through 2030.

Table 13 -
2030 System Performance

Performance Measure	Base (2005)	2030
V/C Equal to or Greater than 0.7 but Less than 1.0	51.2 lane miles	264.3 lane miles
V/C Greater or Equal to 1.0	6.1 lane miles	105.6 lane miles

Source: Georgia Department of Transportation

Public Transportation

Existing Conditions

Hall Area Transit (HAT) provides public transportation for the urban and rural portions of Gainesville and Hall County. HAT's fleet consists of 14 vehicles, five of which are assigned to the urban fixed route service (Red Rabbit) and nine are assigned to the rural demand response service (Dial-A-Ride). Hall Area Transit's mission is to provide residents (particularly transit dependent persons) of Hall County with an opportunity to access community resources they need (i.e. work, retail stores, social service agencies, government offices, etc.) through the provision of an urban and rural transportation system that is convenient, dependable and affordable.

Rural Service - The rural service has been operating in Hall County since 1983. It is composed of a demand-response Dial-A-Ride van service that picks up and drops off passenger curbside. Initially, its use was generally limited to seniors that participated in activities at the local Senior Center. Today, passengers using the rural service largely include seniors, employees working in the retail/service sector, and persons making the transition from dependence to independence. Six of the nine vehicles are wheelchair lift-equipped for the ability to transport mobility-impaired customers. Boardings for FY2003 were 36,177, with 11,371 service hours and 187,899 service miles.

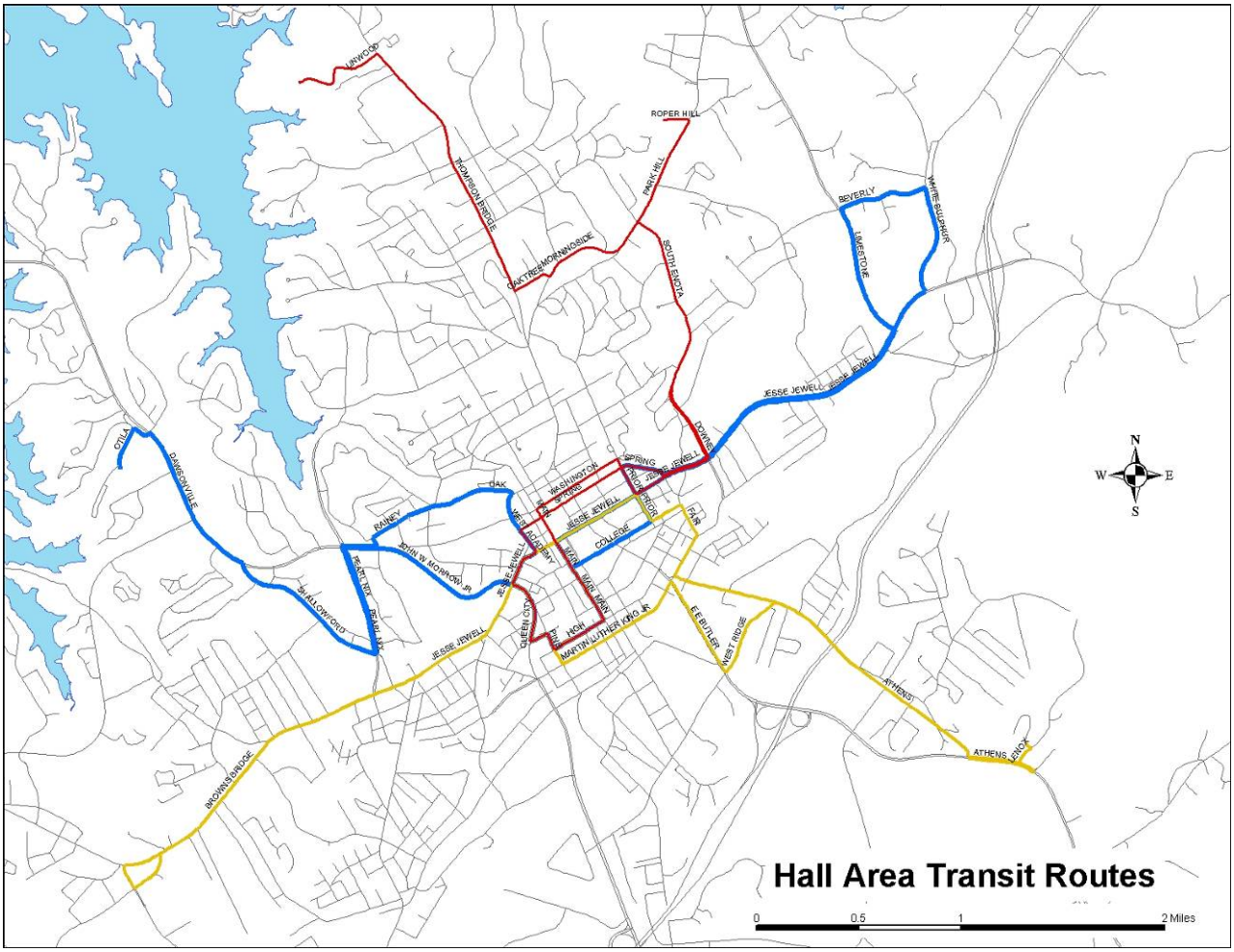
Urban Service – The urban service consists of a fixed route system known as the Red Rabbit and a complimentary para-transit service to transport passengers with certain ADA disabilities. Effective October 17, 2004, the urban service was reorganized consistent with the recently completed Hall Area Transit Strategic Plan. The new fixed-route service, depicted in Figure 8, includes three linear bus routes located within the City of Gainesville and a complimentary paratransit service. The fixed routes traverse the most heavily traveled corridors in the city, which includes Jesse Jewell Highway, Dawsonville Highway, E.E. Butler Parkway, Athens Highway and Limestone Parkway. Two routes operate on a 60 minute headway and one route, which accesses the Colonial Lakeshore Mall, Northeast Georgia Medical Center, Gainesville and Hall County government offices and other popular sites, runs on 30 minute headway. Overall, these routes are designed to give riders quick and easy access to the destination of their choice. The one-way fare for riding the fixed route is 50 cents for seniors and children and $1 for the general public.

The aim of the new consolidated route design is to provide service in a concentrated area within Hall County that has the greatest potential of increasing ridership. An important and desired benefit that may result from increased ridership is reduced congestion and travel time along these heavily traveled corridors. Once ridership has expanded along the new routes, additional routes may be added to reach additional areas within the City of Gainesville and other communities within Hall County. Plans are underway to add bus shelters, benches, bicycle racks and other amenities to the buses to give riders even greater access to the community. Figure 8 shows the new route design.

Boardings for the fixed route service for FY 2003 (under the old route structure) were 35,616, with 9,849 service hours and 134,004 service miles. Under that old structure, there were four fixed routes: three operating in the City of Gainesville and one that served Gainesville and portions of Oakwood. There was a local transfer station where all buses met once per hour to allow passengers to transfer to other routes. HAT has no other transit or intermodal terminals,

exclusive rights of way, or public transit corridors. All of the fixed route vehicles are wheelchair lift-equipped with the ability to transport mobility-impaired customers. The complimentary paratransit service is provided to handicapped patrons near the fixed route system.

Figure 8 -
Hall Area Transit Routes



Needs Analysis

Several needs have been identified to enhance transit service in the County. As noted above, the Strategic Plan recommended a new route structure that is projected to increase ridership and cut the service cost per passenger in half.

The system currently operates out of Community Service Center in a passenger vehicle parking lot, resulting in excessive pavement wear, traffic congestion and parking shortages at the building. A Transit Development Plan (TDP) is currently underway to evaluate feasibility and alternatives for new and expanded transit routes in Hall County. The TDP is expected to be completed by mid 2008 and will provide guidance on potential projects and improvements for

transit in Hall County. Proposed projects identified in the TDP will be coordinated into the GHMPO planning process for inclusion in the next LRTP update.

Aviation

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 SR 60 and Aviation Boulevard. The airport's main runway is 5,500 feet long by 100 feet wide. The airport also offers a 4,000-foot by 100-foot runway during daylight hours. 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 capable of accommodating commercial aircraft or a variety of business and corporate jet aircraft. For Level III airports, a minimum runway length objective of 5,500 feet has been established; ideally, operations at Level III airports should also be aided by a precision instrument approach. Although GVL does not currently have an instrument landing system (ILS), they have been allocated federal funding for this improvement and it should be in place by 2009.

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. 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, as well as intercity service to Greenville, South Carolina.

Commuter rail between Atlanta and Gainesville is in the second phase development of the Commuter Rail Program. The 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)[2].

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[3]. Neither of these rail programs are reflected in the 2030 LRTP due to financial constraints.

Bicycle and Pedestrian Facilities

In June of 2005, the GHMPO began a 10-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 citizen's expressed

[2] GDOT Commuter Rail Study.
[3] GDOT Intercity Rail Passenger Plan.

concern about the need for such facilities through out the county. An extensive outreach program with two public meetings, three task force meetings, fieldwork and 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, as well as, locating 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 www.ghmpo.org.

Planning Considerations

There are several over-arching considerations that must be taken into account as a Long Range Transportation Plan is developed. Environmental considerations increasingly impact transportation planning in the Atlanta region. Numerous federal and state regulations impact transportation planning, but the key issues are air quality and watershed protection because of their potential to influence transportation programs and strategies, as well as related residential and employment considerations. In addition, consideration of environmental justice issues must be an integral part of the transportation planning process. These major issues are highlighted in the following sections.

Air Quality

The 1990 Clean Air Act Amendments (CAAA) authorizes the U.S. Environmental Protection Agency (USEPA) to set criteria and procedures ensuring that transportation plans are compatible with the federal air quality standards. The Gainesville-Hall Metropolitan Planning Organization (GHMPO) planning process is complex due to the area's proximity to the Atlanta metropolitan area, as well as Hall County's non-attainment status for two air quality standards.

Hall County has been designated as part of a 20-county, 8-hour ozone nonattainment area as well as part of the 22-county, Particulate Matter 2.5 (PM 2.5) nonattainment area. This requires conformance with the State Implementation Plan (SIP) for air quality to secure federal transportation funding.

The GHMPO takes part in the Interagency Consultation Group, which was formed to foster greater coordination between the various agencies responsible for ensuring the conformity of the transportation plans with air quality standards. This group includes the U.S. Department of Transportation (USDOT), the USEPA, the Georgia Department of Transportation (GDOT), the Georgia Environmental Protection Division (EPD), the Georgia Regional Transportation Authority (GRTA), the Atlanta Regional Commission (ARC), and the GHMPO. In addition the GHMPO actively coordinates with the ARC, which provides air quality modeling for the region and develops the conformity determination report for the nonattainment areas, to ensure that there is not a lapse in meeting these requirements. Therefore, the area's transportation challenges must be met not only in the context of local constraints, such as funding, growth of congestion, but also within the constraints of regional air quality planning.

The ARC is currently developing a Regional Transportation Plan (RTP) and a Conformity Determination Report (CDR) that includes regionally significant projects in Hall County. Both of these documents will be considered for approval by the USDOT in coordination with the USEPA in November 2007.

Air Quality Conformity Determination

As part of the designated air quality nonattainment status, Hall County must follow additional federal transportation planning and programming regulations. Most importantly, projects that add capacity to the transportation system must undergo the region's testing to ensure they meet CAAA standards. In other words, GDOT and Hall County can not add certain needed projects into the transportation program without satisfying air quality conformity requirements. If the region is unable to meet federal air quality standards, federal funding for projects that add

capacity will be withheld. Due to the non-attainment status of Hall County, the LRTP must be updated every four years.

The ARC will be simultaneously performing a conformity analysis for the 8-hour ozone standard and the particulate matter 2.5 standard. A methodology was developed by the Interagency Consultation Group, and agreed to by the USEPA, and the USDOT, that will allow ARC to use Highway Performance Monitoring System (HPMS) Vehicle Miles Traveled (VMT) data to perform the 8-hour ozone and PM 2.5 analysis in the seven outlying counties, including Hall. A more complete discussion of this methodology and the rationale for its use is included in Appendix F. Cooperation and coordination amongst ARC, GHMPO, GDOT, and Georgia EPD regarding transportation planning and air quality concerns is laid out in the Memorandum of Agreement found in Appendix G.

Wetlands and Environmentally Sensitive Watersheds

The identification of wetlands and environmentally sensitive watersheds in transportation planning is important for several reasons. In many cases, these areas both create natural barriers to connecting roadways and limit the ability to develop selected areas. Furthermore, federal Clean Water Act regulations and more stringent state watershed protection rules are limiting the amount of impervious surface in key watersheds. Land use and environmental considerations are significant factors to be incorporated into the transportation planning process.

Protection of watersheds is not just an important part of transportation planning but also the overall planning process. The Hall County Comprehensive Plan addresses the identification and protection of sensitive watersheds, particularly large watersheds. Smaller watersheds are considered to be more vulnerable to environmental degradation than larger watersheds. Based on criteria developed by the Department of Natural Resources in *Rules for Environmental Planning Criteria*, large watersheds are defined as 100 square miles or more, with small watersheds defined as those less than 100 square miles.

The key item relating to transportation planning is that the County desires to protect environmentally sensitive areas from higher density land uses. These considerations have been taken into account in the strategies and programs developed in the 2030 LRTP.

Environmental Justice

As part of the transportation planning process, it is incumbent on the GHMPO to assure that the principles of environmental justice are upheld. These principles are:

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

In order to integrate environmental justice principles in the planning process, the MPOs need to:

> Enhance their analytical capabilities to ensure that the long-range transportation plan and the transportation improvement program (TIP) comply with Title VI.
>
> Identify residential, employment, and transportation patterns of low-income and minority populations so that their needs can be identified and addressed, and the benefits and burdens of transportation investments can be fairly distributed.
>
> Evaluate and - where necessary - improve their public involvement processes to eliminate participation barriers and engage minority and low-income populations in transportation decision making.

Geographic distribution of the minority and low-income communities has been previously discussed. 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, particular effort is made to communicate with the rapidly growing Hispanic population through both broadcast and print Spanish language media outlets. In addition, projects and programs will be screened to determine those projects that may need further evaluation to assure environmental justice principles are upheld.

Transportation Investment Strategies

In order to develop a LRTP, the community must evaluate potential projects, programs, and strategies to improve mobility in the context of its transportation and larger community goals. Once a Plan has been developed and implementation begins, the success of the Plan can be evaluated using the performance measures tied to the goals.

There is a whole series of strategies and projects that have the potential to reduce congestion, increase capacity, and improve the quality of life in Hall County in the future. A brief discussion of these and their potential application to the LRTP is provided below. Discussion of existing facilities and programs is located in the Transportation Needs section.

Growth Management

These strategies are implemented through the land use regulatory system.

Land Use

The management of growth through land use planning can have significant impacts on mobility in the community. The current comprehensive plan has the goal of locating higher density areas near community activities and services, which can reduce vehicle trips. By clustering or mixing uses in a small area, community residents have access to many of their daily needs within a short multi-purpose drive, bicycle ride, or walk from home. A more concentrated development pattern also increases the viability of transit and other alternatives to single occupancy vehicle trips. Schools, shopping centers, and places of employment are popular destinations and should be developed in locations with maximum accessibility by the residents of the community or region.

Access Management

The application of access management standards can improve the efficiency of a transportation network. Access management is a tool that can help prevent traffic congestion by limiting and controlling vehicles entering, exiting, and turning along a travel corridor. Application of access management techniques to arterial and collector roadways enable the roadways to best serve their designated function of moving through traffic. Effective access standards benefit a community by reducing accidents, increasing roadway capacity, providing better access to businesses, and improving mobility. Hall County is currently considering regulatory changes to strengthen access management.

Alternative Improvements

These improvements involve less capital intensive methods to reduce single occupancy vehicle trips and the impact of congestion on the community.

Transportation Demand Management (TDM)

An important strategy in reducing overall traffic congestion is implementation of Transportation Demand Management (TDM) strategies, which can help reduce traffic congestion by decreasing the number of vehicle trips by increasing occupancy and increasing multiple use trips. A few strategies that reduce vehicle trips by increasing travelers per vehicle include high occupancy vehicle (HOV) lanes, park and ride facilities, express bus routes, and vanpools. Other TDM strategies include lower parking rates for carpools and subsidized transit use. TDM can also impact peak period travel volumes by encouraging business owners to engage telecommuting, flexible work schedules, and compressed work weeks. Using each trip effectively by combining uses such as grocery and dry cleaning should be encouraged. Encouraging installation of features to provide convenient bicycle and pedestrian access is yet another TDM strategy.

The strategic placement of park and ride lots can be successful by providing a central meeting location for commuters to carpool to work or board transit. Park and ride lots provide a safe and convenient location for carpool and transit riders to meet close to their homes without requiring that each passenger be picked up at each individual home. An existing park and ride lot located at the I-985/SR 53 Mundy Mill Road interchange provides 126 spaces. A second park and ride lot with 300-400 spaces is under construction along Atlanta Highway and I-985 as part of the Exit 16interchange project. In addition, a significant number of Hall County residents utilize the Park and Ride lot at I-985 and SR 20, approximately 3 miles south of the county line, which is located in the Atlanta urbanized area.

Active employer participation is key to the success of many TDM strategies, and many kinds of businesses can benefit from the results of TDM. Experience has demonstrated that increased productivity can reduce commute trips. Energy, time, and other resources spent on the commute can be allocated more efficiently to enhance productivity. Employers have the power to modify work hours and establish telecommuting programs. They can also share some of their cost savings by providing financial or other rewards to employees who rideshare or hire transportation coordinators to run vanpool programs and personalize ride-matching.

Focusing TDM strategies around activity centers is critical for a variety of reasons. Within activity centers, implementation of strategies is focused on developing public-private partnerships by establishing Transportation Management Initiatives (TMIs) or Transportation Management Associations (TMAs). These are typically comprised of local businesses that partner with government agencies to provide transportation solutions, such as ride-matching services, discount transit passes, and shuttle services. Public education support and initial program start-up and coordination of TDM initiatives is available from GDOT and The Clean Air Campaign.

Pedestrian and Bicycle Improvements

Used for transportation as well as recreation, pedestrian and bicycle facilities serve as an integral element of a multimodal transportation network. Pedestrian and bicycle facilities are vital for providing links to transit, accommodating short trips between neighborhoods and community facilities, and providing circulation between land uses in denser activity centers. The connection of neighborhoods to activity centers, such as employment centers, community facilities, and retail opportunities, by way of pedestrian and bicycle facilities will improve resident accessibility to these locations. Demand for bicycle and pedestrian facilities has grown substantially since the inception of the ISTEA and TEA-21 surface transportation authorization programs, which have provided more funding for these modes.

There are two basic categories or forms of bicycle improvements: on-road facilities, including bike lanes, widened curb lanes, and designated bike routes, and off-road paths or trails. Bicycle users have varying levels of expertise; therefore, different types of facilities are desirable to different types of users. Cyclists are typically separated into three groups, Type A, Type B, and Type C, which are described in the *AASHTO Guide for the Development of Bicycle Facilities* as follows:

> *Type A Cyclists:* Advanced or experienced riders who generally use their bicycles as they would a motor vehicle.
>
> *Type B Cyclists:* Basic or less confident adult riders who may also be using their bicycles for transportation purposes, e.g., to get to the store or to visit friends, but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by the faster traveling motor vehicles.
>
> *Type C Cyclists:* Children, riding on their own or with parents, who may not travel as fast as their adult counterparts but still require access to key destinations in their community, such as schools, convenience stores and recreational facilities.

On-road facilities, such as designated bike routes, widened curb lanes or striped bicycle lanes immediately adjacent to vehicle travel lanes, serve mostly experienced cyclists (Type A) who use their bicycles as they would a motor vehicle. Less experienced Type B and Type C cyclists favor the security of wider roadways, less traffic, and off-road, multi-use paths.

One bikeway is designated for Hall County as part of the Statewide Bicycle Route System. The Appalachian Gateway (Route 55) would include 32.8 miles in Hall, traversing the length of the County. Entering from Gwinnett County to the south, the route would follow Hog Mountain Rd., SR 13/Atlanta Hwy., Industrial Blvd., Bradford St., Myrtle St., SR 11, SR 13, White Sulphur Rd., Pine Valley Rd., and SR 284, after which it would enter White County to the north. Route 55 would provide bicycle access to the communities of Flowery Branch, Oakwood, Gainesville, and Clermont, as well as Lake Lanier.

Cleaner Fuels and Vehicle Inspections

Hall County is part of a 25-county Department of Natural Resources, Environmental Protection Division Fuel Control Area. Under the DNR publication, *Rules for Air Quality* (Chapter 391-3-1), acceptable sulfur levels and Reid Vapor Pressure are defined. Cleaner fuels minimize harmful fuel emissions from vehicles and other motorized equipment, such as the formulation of seasonal ozone that lead to degraded air quality. Technological advances will continue to provide cleaner fuels.

Vehicle inspection programs detect vehicles that contribute to the degradation of air quality. As such, the DNR considers its implementation in counties with ambient air levels of ozone or carbon monoxide in excess of the National Ambient Air Quality Standards (NAAQS). Since Hall County has been declared in non-attainment of the 8-hour ozone standard, a vehicle inspection program could be instituted.

Traffic Safety and Operations

Non-capacity adding projects, such as safety and operational projects, can address specific community needs. These improvements address the need to maximize the efficiency and safety of the existing roadway network as a foundation for providing an overall transportation system that meets future demands. Safety and operational projects normally address issues such as sight distance limitations, sharp turning radii, intersection angles, and signage placement. The projects are essential to meeting the transportation needs of the community where adding roadway capacity is difficult.

Small-scale improvements can be incorporated into the existing roadway network to improve the flow of traffic, and they usually have a relatively short completion schedule and lower cost than roadway widening or new construction. Whenever possible, traffic operation improvements should be considered before determining the need for a widening or new construction project. Traffic operations can be optimized in many ways, including providing inter-parcel access, adding medians, closing curb cuts (driveways), adding turn, acceleration or deceleration lanes, or installing or upgrading traffic signals. Coordinated signal timing plans link together the operations of a series of traffic signals located close enough together to impact traffic conditions along an entire corridor. Developed to vary by time of day and day of week, coordinated signal timing plans improve the efficiency of signal operations along congested corridors, increasing the corridor's effective capacity by 10-15 percent.

Infrastructure Improvements

The need to maximize the effectiveness of existing roadway infrastructure is critical in maintaining an efficient transportation network. Potential infrastructure improvements include intersection and interchange improvements, HOV facilities, ITS strategies, transit systems, roadway projects, and other strategies requiring capital investment.

Intersection and Interchange Improvements

Many transportation conflicts resulting in congestion and safety issues are found at intersections and interchanges. Improvements to intersections and interchanges are vital to the safety and efficiency of transportation networks and to building a foundation for a network that meets future demands.

Improvements should be considered at intersections and interchanges with a high crash rate or intersections with severe congestion. Intersection and interchange improvements can correct roadway deficiencies, increase safety, and result in improved travel without the need to widen or make any additional improvements to the mainline roadway.

High Occupancy Vehicle Facilities

Implementing high occupancy vehicle (HOV) facilities reduces congestion and vehicular demands on roadways by reducing single occupancy vehicle (SOV) use. Commuters using multiple occupancy means of travel, from carpools and vanpools to commuter (express) bus and local transit service, are encouraged by the travel time advantages provided. The 2003 HOV Strategic Implementation Plan for the Atlanta Region identified the need for future HOV lanes in Hall County along Interstate 985. This study placed all HOV improvements proposed for the Atlanta region into seven prioritization tiers. Tiers 1 through 4 have been identified for

implementation before year 2030 and Tiers 5 through 7 after 2030, although some projects in Tiers 5 through 7 may be included in the 2030 implementation plan based on future project-by-project evaluation. The initial segment along I-985 into Hall County, beginning at SR 20/Buford Drive in Gwinnett County and terminating at SR 347/Friendship Road in Hall, was identified as a Tier 6 project. Two additional segments that would extend HOV coverage along I-985 from SR 347 to SR 53/Mundy Mill Road, and eventually to SR 369/Jesse Jewell Parkway near Gainesville, were identified as Tier 7 projects. Three HOV access points are proposed for I-985 in Hall County, including full drop ramps at Mulberry Street in Flowery Branch and Atlanta Highway, and direct merge access at SR 60.

Intelligent Transportation Systems (ITS)

Implementation of Intelligent Transportation Systems (ITS) utilizes technology to improve the safety and efficiency of the roadway system without increasing the physical size of roadway facilities. ITS strategies are used to relay information to travelers concerning congestion and incidents, as well as address railroad crossing safety and efficiency, aid emergency vehicles in efficient operation, and provide emergency operational and medical assistance to motorists. Through real time observation of traffic conditions and vehicle queuing patterns along entire corridors, ITS allows for development and implementation of new strategies to reduce congestion. Quick detection and better management of incidents minimizes congestion, enhancing the overall performance of the network. For example, in the event I-985 is temporarily closed, the coordination of signals on alternate routes would enhance traffic flow in emergencies. ITS technology provides the option of immediate, dramatic, and comprehensive changes from a single computer station during an emergency. ITS is an attractive alternative to explore in the future. GDOT recently installed Intelligent Transportation Systems (ITS) such as variable message signs and video cameras along I-985 in Hall County.

Local Transit and Commuter Bus

The implementation of multimodal transportation alternatives offers sound solutions to meet the County's transportation needs. Local transit, coupled with convenient express bus service, can extend the useful life of the expensive roadway infrastructure. Express bus alternatives can offer commuters a safe and convenient ride to work that, when all factors are considered, is cost-effective for most commuters.

A viable transportation option for Hall County travelers is Hall Area Transit's Red Rabbit fixed route and demand response service. Based on existing capacity and ridership data, the service has the capacity to serve a significant percentage of travelers choosing an alternative to vehicle travel. According to a ridership survey conducted in June 2003, approximately 60 percent of fixed route riders use the system during peak hour. The annual fixed route peak hour capacity of 51,000 compared to current estimated annual fixed route peak hour ridership, 19,900, demonstrates a significant supply of transit capacity. With an expected increase of population of 134 percent by 2030, ridership could increase at the same rate to approximately 46,600, which is within current capacity. Increasing fleet maintenance and operation cost requirements must continue to be met.

Intercity Passenger and Freight Rail

Commuter rail between Atlanta and Gainesville is a second phase development in the Commuter Rail Program. The 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 could potentially recover a substantial part of the operating costs from the farebox (estimated recovery about 60%).[4]

The same line would serve as part of an intercity rail program also envisioned by GDOT, which would complement existing AMTRAK intercity service to Gainesville. The Intercity Rail Passenger Plan explores the possibility of intercity rail passenger services between Atlanta and Greenville going through Gainesville. The service is projected to attract 128,000 passengers annually by 2020.[5] Implementation of the service is expected to cost approximately $104 million. In addition, this line forms part of the federally designated Southeast High Speed Rail Corridor (SEHSR) project, which proposes high speed passenger rail service between Atlanta and Washington, DC.

Aviation

Hall County's Lee Gilmer Airport is considered a Level III – Business airport of regional impact by GDOT. This is defined as capable of accommodating commercial aircraft or a variety of business and corporate jet aircraft. For Level III airports, a minimum runway length objective of 5,500 feet has been established; ideally, operations at Level III airports should also be aided by a precision instrument approach. Although the airport does not currently have an instrument landing system (ILS), they have been allocated federal funding for implementation. An ILS should be in place within the next two years.

While Lee Gilmer Airport 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.

[4] GDOT Commuter Rail Study
[5] GDOT Intercity Rail Passenger Plan

Congestion Management Process

The Congestion Management Process 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. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law by the President on August 10, 2005. In a provision similar to the earlier reauthorizations acts, ISTEA and TEA-21, 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. Previous to SAFETEA-LU, Congestion Management Process (CMP) was referred to as 'Congestion Management System (CMS).

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 study 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 GHMPO travel demand model and the performance measures identified in Section 2 of this document provide the basis for developing a CMP. The performance measures developed to identify needs in Hall County are very similar to those used by many urbanized areas. Three roadway performance measures have been identified to gauge the efficiency of the roadway transportation network: volume to capacity (V/C) ratios, a congestion index (or a measure of declining speeds), and intersection level-of-service (LOS).
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 identification of congested facilities is determined using a base year and future year (with a 25-year horizon peak period) regional travel demand model. All facilities that meet CMP monitoring requirements are subject to review before any capacity-adding projects can be implemented.

The CMP developed for the Hall County portion of the Atlanta urbanized area is attached as Appendix E. This system has documented congestion in this area and evaluated the two proposed capacity-adding projects along with a menu of improvement alternatives.

Project Cost Escalation Process and Recommendations

Background

Since the enactment of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, planning entities have been required to ensure that transportation plans are fiscally constrained. As per the FHWA-FTA Fiscal Constraint Guidance published in June 2005, "*fiscal constraint requires that revenues in transportation planning and programming (Federal, State, local, and private) are identified and are 'reasonably expected to be available' to implement the metropolitan long range transportation plan and the STIP/TIP, while providing for the operation and maintenance of the existing highway and transit systems*.[6]"

However, estimating cost escalation for projects in future years is a new federal requirement enacted in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). 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 (4) percent annual inflation rate for construction costs for 2007 and beyond - for both highway and transit improvements. However, if more appropriate data is available, a lower or higher rate can be used as long as it is documented in the financial plan. It is important to note that the 4% inflation rate applies to "planning-level" cost estimation only. It is not to be used in place of the more researched forecasts required during project development for risk assessments and cost estimation of New Starts.

Potential Cost Escalation Options

Due to the rapid rise in materials, and construction costs and right-of-way costs in Georgia over the last three years, it was decided to develop a cost escalation process that would account for these increases. The process included coordination and consultation with the Federal Highway Administration (FHWA), Georgia Department of Transportation (GDOT) and the Atlanta Regional Commission (ARC). Based on this consultation process, it was determined that a 2.2% annual inflationary rate be used to escalate Gainesville-Hall Metropolitan Planning Organization (GHMPO) project costs. Since the project cost estimates contained in Tier 1 (2008 to 2013) were updated by GDOT in February 2007, GDOT cost estimates are used. Based on FHWA, GDOT and ARC recommendations, GHMPO will use a compounded growth rate of 22.0 percent for Tier 2 (2014 to 2020); 40.7 percent for Tier 3 (2021 to 2030) and 62.7 percent for post 2030 projects. Table 14 below shows the inflationary compound growth rate for each tier.

Table 14- Inflationary Compound Growth Rates on Cost Estimates by Tier

	Tier 1	Tier 2	Tier 3	Tier 4
	2008-2013	**2014-2020**	**2021-2030**	**Post 2030**
Rate	*updated by GDOT*	22.00%	40.70%	62.70%

[6] Federal Highway Administration (FHWA), "FHWA-FTA Fiscal Constraint Guidance" FHWA, June 25, 2005.

Since the GHMPO Long Range Transportation Plan (LRTP) identifies projects into three tiers (2008 to 2013, 2014 to 2020 and 2021 to 2030), the inflationary compound rates were compiled and averaged based on these three time periods.

Example Project

GHMPO No.	Project Name	Phase	2007$	Year of Expenditure $
GH-006	Memorial Park Ext/Skelton Road & Connector	ROW; CST	$15,651,000	$19,094,220

Project GH-006, Memorial Park Ext/Skelton Road & Connector, is programmed in Tier 2 (2014 to 2020).

2007 Dollars

Preliminary Engineering :	Authorized
Right-of-Way :	$ 5,800,000
Construction:	$ 9,851,000
TOTAL:	$15,651,000

Year of Expenditure Dollars

TOTAL:	$15,651,000 X 1.22 = $19,094,220

Thus, the project cost for the Memorial Park Ext/Skelton Road & Connector now totals **$19,094,220**, which is a 22 percent increase from 2007 dollars.

Proposed Projects

Roadway improvements identified through travel demand modeling and the public involvement process were central features during the LRTP planning process. Additional roadway projects that improve levels of service, reduce congestion, and improve safety were the foundation for meeting transportation needs to the year 2030.

The Georgia Department of Transportation, Hall County and its municipalities are actively pursuing the development and maintenance of a road network that accommodates continuing growth. Tables 15, 16 and 17 show the planned projects to meet the long term needs in the study area over the next 23 years. The projects are categorized into three tiers: Tier 1, 2008 to 2013; Tier 2, 2014 to 2020; and Tier 3, 2021 to 2030. The projects are reflected in Figures 9 and 10.

Table 15- Tier 1 Projects

2008-2013 Projects

GHMPO No.	GDOT No.	Project Name	Phase	Cost Estimate
GH-002	1097	Thurmon Tanner Parkway (Ph. 3) – Plainview Rd to SR 53/Mundy Mill Road	ROW; CST	$11,454,800
GH-007	162430	SR 347/Friendship Road From I-985 to SR 211	ROW; CST	$69,865,000
GH-008	122150	US 129/Athens Hwy from SR 323/Gillsville Hwy to SR 332/Talmo in Jackson County	ROW; CST	$40,950,120
GH-009	7389	McEver Road Intersections – Gaines Ferry, Lights Ferry, Jim Crow, Flat Creek, Stephens Rd, Chamblee Road	PE	$920,000
GH-011	6448	Upgrade Traffic Signals along Jesse Jewell – Pearl Nix to Downey, 11 signals	ROW; CST	$2,257,000
GH-012	7240	I-985 – Exit 22 Ramp Improvements at US 129/E.E. Butler	ROW; CST	$4,558,000
GH-014	170735	SR 347/Friendship Road – I-985 to McEver Road Phase I	ROW; CST	$16,668,000
GH-015	425	I-985 – New Interchange North of SR 13 Near Martin Road	ROW	$18,504,000
GH-016	3626	Sardis Road Connector – SR 60/Thompson Bridge to Sardis/Chestatee Road	ROW; CST	$23,521,000
GH-018	122010	SR 369/Brown's Br Road – Forsyth Co. Line to SR 53/McEver Road	ROW	$12,853,000
GH-021	132950	SR 13-Buford/Atlanta Hwy – Thompson Mill Road to Relocation of SR 347/Friendship Road	PE; ROW; CST	$3,101,600
GH-024		Martin Road – Falcon Pkwy to SR 53/Winder Hwy	PE; ROW	$20,556,693
GH-025	7233	SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment	PE	$1,165,000
GH-026	132995	SR 52 at Candler Creek – Bridge	ROW; CST	$1,760,000
GH-031		Midtown Greenway on CSX Right-of-Way	PE, ROW, CST	$1,000,000
GH-050	142291	SR 284/Clarks Bridge Road at Chattahoochee River – Bridge	ROW; CST	$9,959,000
-	-	FY 2008-2013 Section 5307 Urban Operating Expenses	Transit	$5,518,813
-	-	FY 2008-2013 Section 5307 Urban Capital Expenses	Transit	$2,002,958
-	-	FY 2008-2013 Section 5309 Discretionary Capital	Transit	$2,472,491
-	-	FY 2008-2013 Section 5310 Elderly and Disable Program	Transit	$553,783
-	-	FY 2008-2013 Section 5311 Rural Operating Expenses	Transit	$3,443,668
-	-	FY 2008-2013 Section 5311 Rural Capital Expenses	Transit	$1,211,600
-	-	FY 2008-2013 Section 5316 Access to Jobs	Transit	$1,216,686
GH-051	7639	Central Hall Recreation and Multi-Use Trail	PE; ROW; CST	$3,929,709
GH-052	6336	Advanced Traffic Management System on I-985	PE	$3,900,812
GH-054	7353	Traffic Signal Upgrades - SR 11, SR13, SR 53, SR 60	CST	$1,600,000
GH-059		Rock Creek Greenway Connector	CST	$375,000
GH-060		Gillsville Trail and Downtown Streetscape	CST	$112,500
GH-062	0007467	Cable Barriers along Interstate 985 from Hall County Line to Jesse Jewel Parkway	CST	$2,690,000
GH-063	0007021	SR 53/Dawsonville Hwy at Chestatee River – Bridge	ROW	$118,500
GH-073		Oakwood Diesel Retrofit Project	_	$14,000
GH-074		Hall County Diesel Retrofit Project	_	$235,336
GH-075		Intersection Improvement - Old Cornelia and Joe Chandler	PE; ROW; CST	$680,000

GH-076		Sidewalk on SR 60/Thompson Bridge Rd - Civic Center to Old Thompson Bridge Rd	CST	$67,738
GH-077		SR 11/11 Business/60 and SR 369 Traffic Signal Retiming	_	$126,000
Total				**$269,362,807**

Table 16- Tier 2 Projects

2014-2020 Projects

GHMPO No.	GDOT No.	Project Name	Phase	2007 Dollars	Year of Expenditure Dollars
GH-006	141840	Memorial Park Ext/Skelton Road & Connector	ROW; CST	$15,651,000	$19,094,220
GH-009	7389	McEver Road Intersections – Gaines Ferry, Lights Ferry, Jim Crow, Flat Creek, Stephens Rd, Chamblee Road	ROW; CST	$10,437,350	$12,733,567
GH-015	425	I-985 – New Interchange North of SR 13 Near Martin Road	CST	$18,101,000	$22,083,220
GH-018	122010	SR 369/Brown's Br Road – Forsyth Co. Line to SR 53/McEver Road (Construction)	ROW; CST	$18,502,000	$22,572,440
GH-020	122060	US 129/Cleveland Hwy – Limestone Rd to Nopone Road	ROW; CST	$58,304,000	$71,130,880
GH-023		Spout Springs Road – SR 13/Atlanta Highway to Gwinnett Co. Line	PE; ROW; CST	$40,084,708	$48,903,344
GH-024		Martin Road – Falcon Pkwy to SR 53/Winder Hwy	CST	$18,101,000	$22,083,220
GH-025	7233	SR 211/Old Winder Highway – SR 53/Winder Hwy to SR 347 on new alignment	ROW, CST	$10,491,000	$12,799,020
GH-028	142294	SR 332/Poplar Springs Road at Walnut Creek – Bridge	ROW; CST	$1,115,000	$1,360,300
GH-029	122064	US 129/Cleveland Hwy at Chattahoochee River - Bridge	CST	$10,283,000	$12,545,260
-	-	FY 2014-2020 Transit Funding	Transit	$17,496,144	$21,345,296
GH-030	122066	US 129/Cleveland Hwy at East Fork Little River (Bells Mill) - Bridge	CST	$7,336,000	$8,949,920
GH-040	132860	SR 53/Winder Hwy from I-85 in Jackson Co. to SR 211/Tanners Mill Road	ROW; CST	$6,956,040	$8,486,369
GH-056	7170	SR 136/Price Road @ Chestatee River - Bridge	PE; ROW; CST	$909,750	$1,109,895
GH-057	122012	SR 369/Browns Bridge Road - New Bridge over Lake Lanier	CST	$3,762,000	$4,589,640
GH-063	7021	SR 53/Dawsonville Hwy at Chestatee River – Bridge	CST	$4,208,859	$5,134,808
GH-065	0001095	Relocation of Lights Ferry Rd from Gainesvill St to SR 13	PE; ROW; CST	$3,800,000	$4,636,000
GH-066		Northern Connector - Connection Between SR 60/Thompson Bridge Road and SR 365	PE	$26,236,363	$32,008,363
GH-067		Widening of Ridge Road from Queen City Pkwy to Old Cornelia Hwy	PE; ROW; CST	$23,609,270	$28,803,309
GH-069		Intersection Improvement at Jesse Jewel Pkwy and John Morrow Pkwy	PE; ROW; CST	$285,600	$348,432
GH-072		SR 53/Dawsonville Hwy - Duckett Mill rd to Hall Co. Line	PE; ROW; CST	$12,125,000	$14,792,500
Total				**$307,795,084**	**$375,510,002**

Table 17- Tier 3 Projects

2021-2030 Projects

GHMPO No.	GDOT No.	Project Name	Phase	2007 Dollars	Year of Expenditure Dollars
GH-017	3701	SR 13/Atlanta Highway Widening & Memorial Park Drive Widening – Frontage Road to Browns Bridge	ROW; CST	$19,665,000	$27,668,655
GH-019	132250	SR 52/Lula Road – 1 mile north of SR 365 to south of Julian Wiley Road	ROW; CST	$11,140,000	$15,673,980
GH-022		MLK Blvd – SR 60/Queen City Parkway to EE Butler	PE; ROW; CST	$5,625,921	$7,915,671
GH-027	142290	SR 52/Lula Road at Chattahoochee River – Bridge	ROW; CST	$5,925,000	$8,336,475
GH-033	1822	SR13/Atlanta Highway - Radford Road to SR 53/Winder Hwy	PE; ROW; CST	$11,775,000	$16,567,425
GH-035	150290	US 129/Cleveland Hwy - N of Nopone/J Hood Road to SR 284/Clarks Bridge Road	PE; ROW; CST	$29,700,000	$41,787,900
GH-036	122240	US 129 - SR 284/Clarks Bridge Road to White Co. Line	ROW; CST	$15,361,000	$21,612,927
GH-038	132610	SR 60/Thompson Bridge Road - SR 136/Price Road to Hall County Line	ROW; CST	$41,523,000	$58,422,861
-	-	FY 2021-2030 Transit Funding	Transit	$19,775,921	$27,824,721
GH-039		South Enota Drive - Widen from 2 To 4 Lanes from Park Hill to Downey Blvd		$8,313,560	$11,697,179
GH-041	133280	Old Cornelia Hwy – Exist. 4-lane E of I-985 to Joe Chandler Road	PE; ROW; CST	$273,000	$384,111
GH-043		SR 136/Price Road - SR 60/Thompson Bridge Road To Dawson Co. Line	PE; ROW; CST	$42,799,515	$60,218,918
GH-046	141820	SR 323/Gillsville Hwy - US 129/Athens Hwy to E of SR 82/Holly Springs Road	ROW; CST	$27,748,000	$39,041,436
GH-066		Northern Connector - Connection Between SR 60/Thompson Bridge Road and SR 365	ROW; CST	$140,258,182	$197,343,262
GH-070		Six-Laning of I-985 from Hall Co. Line to Exit 24	PE	$9,265,400	$13,036,418
GH-071		Widening of SR 365 from Exit 24 on I-985 to Hall Co. Line. Includes 3 New Diamond Interchanges	PE	$10,988,640	$15,461,016
Total				**$400,137,139**	**$562,992,955**

Figure 9
Long Range Transportation Plan Projects (Countywide)

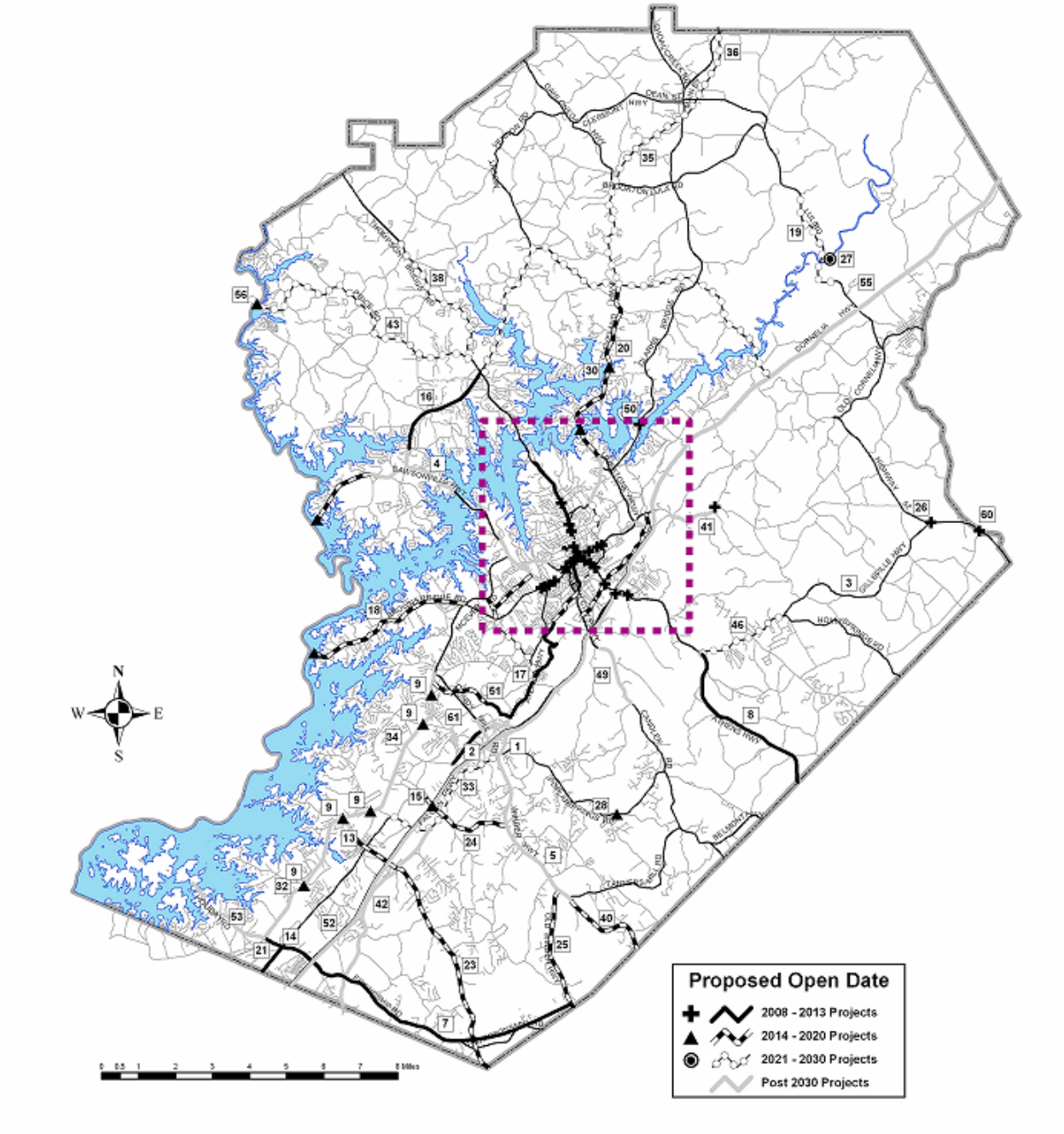
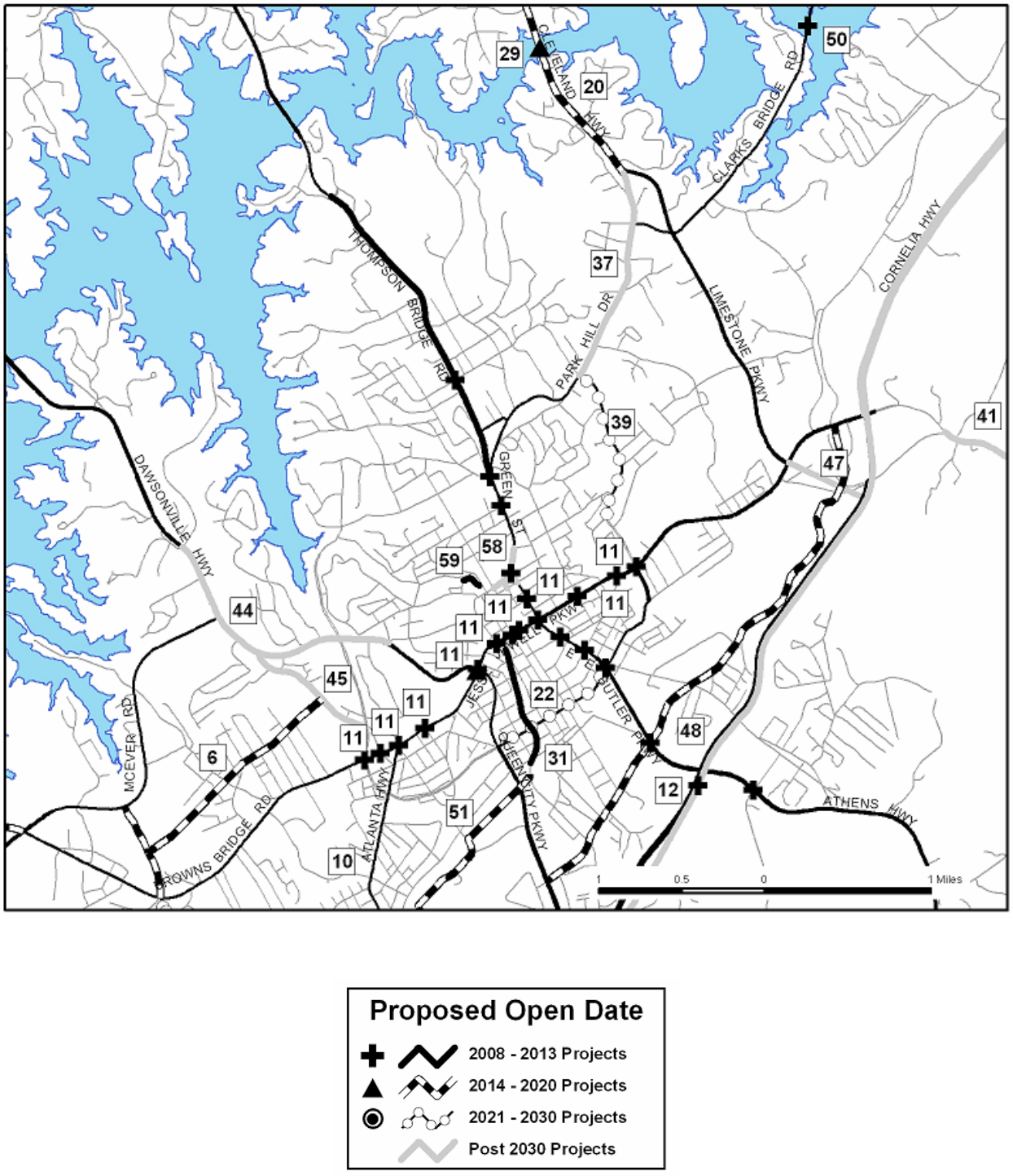


Figure 10
Long Range Transportation Plan Projects (Gainesville Inset)



Implementation Plan

The Implementation Plan provides financial and project phasing detail, as well as highlighting short-term actions to implement plan strategies. General planning cost estimates and revenues for the program are also presented. Anticipated costs and revenues are based on the best available information, and will need to be updated in subsequent Plan updates as project information is refined and revenue sources are re-authorized or modified.

Potential Funding Sources

Hall County is eligible for many types of federal and state funding for transportation improvements. Local sources of funding are often necessary to match state or federal funds, and identifying state and local sources to match potential federal revenues is a challenge. Georgia has one of the lowest motor fuel taxes in the country. To help augment state revenues, counties can enact Special Purpose Local Option Sales Tax (SPLOST) programs, which have specific time frames for collections that make program continuity subject to voter approval. Hall County voters recently approved a new SPLOST program, the County's fifth, which allocates a portion of the funds for transportation projects. Additional SPLOST programs are anticipated during the planning horizon. The details of the revenue projections are also outlined in the Appendix C.

Other potential sources of funding include:

General operating funds;

Transit farebox revenues;

Tolls;

Public/private partnerships, such as Community Improvement Districts (CIDs) and developer contributions; and

Development impact fees.

Estimated Revenues

Total estimated revenues available from all sources for the program of roadway projects in 2007 dollars is $1.23 billion, as reflected in Table 4 below. The share of total estimated state and federal funding available to the year 2030 for the GHMPO area is $1.13 billion. The projection for local dollars, primarily through Special Purpose Local Option Sales Taxes (SPLOST) is $99 million. Most of these funds will be required as local match on projects that can not be fully funded by outside sources. Details on these projections are provided in Appendix A.

Table 18-Estimated Revenue Summary

Source	Projects	Maintenance	Transit	Total
Federal/State	$1,132,142,000	$87,932,000	$50,712,000	$1,270,786,000
Local	$99,000,000	$44,250,000	$16,904,000	$160,154,000
Total	**$1,231,142,000**	**$132,182,000**	**$67,616,000**	**$1,430,940,000**

Source: Gainesville-Hall MPO and Georgia DOT

In addition to capital costs, there will also be operations and maintenance costs that grow as a result of a variety of factors over the next thirty years:

Increased roadway mileage associated with plan improvements;

Increased number of local roadway miles due to new growth in commercial and residential developments;

Implementation of transit improvements requiring on-going operations and maintenance costs; and

Expansion of ITS components and associated monitoring and response capabilities.

These costs and revenues to cover them have been accounted for separately above and beyond the project revenue outlined in Table 15 above. This topic is covered in more detail in the Appendix D.

Project Phasing

As noted earlier, the total anticipated revenue for roadway projects to be built in Hall County totals $1.23 billion. The GHMPO 2030 LRTP must be fiscally constrained, meaning that projected year of expenditure cost for all roadway projects does not exceed the anticipated revenue calculated by GDOT and the MPO. The GHMPO 2030 LRTP will have three distinct programming phases and projects and project phases have been categorized into the following three tiers:

Tier 1 represents projects and project phases identified in FY 2008 to 2013 (TIP years);
Tier 2 represents project and projects phases identified in FY 2014 to 2020; and
Tier 3 represents projects phases identified in FY 2021 to 2030.

Based on these three tiers, the GHMPO must develop a programming plan that is fiscally constrained. The table below provides the GDOT and GHMPO estimated programming funds, year of expenditure project costs and the dollar difference for each of the three tiers.

Table 19- Comparison of Estimated Funds and Costs by Program Tier

Tier	Programming Years	Estimated Roadway Programmed Funds	Estimated Project Costs	Difference
1	2008 to 2013	$313,946,518	$230,249,541	$83,696,977
2	2014 to 2020	$374,743,014	$374,201,784	$541,230
3	2021 to 2030	$542,453,000	$535,168,234	$7,284,766
	Total	**$1,231,142,532**	**$1,139,619,559**	**$91,522,973**

Note: The estimated programmed funds do not include maintenance and transit funding, but do include anticipated SPLOST funding revenue.

As shown in the table, Tier 1 (2008 to 2013) project costs total $230 million, which is $84 million less than the anticipated revenues for this time period. Since there may be some project costs adjustments by GDOT in this tier, it is recommended that no additional projects be added to this tier unless a project of equal or great value is removed. Tier 2 (2014 to 2020) project costs total $374 million, with barely half-a-million in surplus funds. Tier 3 (2021 to 2030) project costs total $535 million, which is $7 million less than the anticipated revenues for this time period.