

GAINESVILLE AND HALL COUNTY COMPREHENSIVE PLAN



TRANSPORTATION ELEMENT

ADOPTED: JUNE 24, 2004
AMENDED: MAY 12, 2005

7.0.0.0: Introduction and Study Background	1
7.0.1.0: Study Area Overview	1
7.0.2.0: Transportation System Characteristics	1
7.0.3.0: Transportation Planning Process	2
7.0.4.0: Comprehensive Plan Transportation Element	3
7.0.5.0: Challenges	4
7.1.0.0: Transportation System Inventory	6
7.1.1.0: Classification Features of Roadway Network and Vehicle Miles of Travel (VMT)	6
7.1.2.0: Roadway Capacity	9
<i>Table 1: 2000 Roadway Capacities by Functional Class</i>	9
<i>Table 2 : 2000 System Performance by Functional Class</i>	11
7.1.3.0: Number of Lanes	11
7.1.4.0: Average Annual Daily Traffic (AADT) Volumes	11
<i>Table 3 : Historic and Existing Gainesville-Hall County Traffic Volumes</i>	13
7.1.5.0: Pavement Condition	13
<i>Table 4 : 2001 Pavement Condition of Lane Miles by Functional Classification</i>	13
7.1.6.0: Public Transportation	14
7.1.6.1: Fixed Route	14
7.1.6.2: Demand Response (Paratransit)	14
<i>Figure 4 – Hall Area Transit Map</i>	15
7.1.8.0: Volume to Capacity Ratios	16
7.1.9.0: Accident Frequency	16
<i>Table 5 : 2001 Crashes and Fatalities by Functional Class</i>	16
7.1.10.0: Bridges	19
<i>Table 6 : 2002 Bridge Sufficiency Ratings</i>	19
7.1.11.0: Aviation	21
7.1.12.0: Rail	21
7.2.0.0: Assessment of Current and Future Conditions	22
7.2.1.0: Population and Employment	22
<i>Table 7 : Population and Employment</i>	22
7.2.2.0: Existing Network Conditions	22
7.2.3.0: Future Network Conditions and Capacity Needs	24
<i>Table 8 : 2030 Network Performance</i>	24
7.2.4.0: Programmed Improvements	27
<i>Table 9: Short-Range Transportation Improvement Projects</i>	27
7.2.5.0: Cost Estimates and Funding Sources	27
<i>Table 10: Estimated Cost of Congestion Solutions</i>	28
<i>Figure 10 : Source of Funds for Roadway Projects in Georgia (1995-1999)</i>	28
7.2.6.0: Public Transit	29
7.3.0.0: Transportation Goals and Implementation	30
7.3.1.0: Goals and Objectives	30
<i>Goal 1: Adequate Transportation System</i>	30
<i>Goal 2: Transportation Alternatives</i>	30
7.3.2.0: Transportation Investment Strategies	31
7.3.2.3: Safety and Operations	34
7.3.2.4: Infrastructure Enhancements	35
7.3.3.0: Summary	36

7.0.0.0: INTRODUCTION AND STUDY BACKGROUND

7.0.1.0: STUDY AREA OVERVIEW

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. The community became a resort center drawing patrons seeking its cool summer climate and nearby healing springs. New manufacturing activities, such as shoe factories, tanneries, carriage makers, corn mills and cotton gins, were generated in the late 1800's. This economic growth was accompanied by the addition of churches, cemeteries and schools to the community's infrastructure.

Gainesville's urban development continued well into the 20th century, and today has become one of the fastest growing counties in Georgia. Agriculture and agribusiness have become the 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.

Recent rapid growth from new residents has contributed to the community's ongoing transition from a predominantly rural area to an increasingly affluent urban area. Lake Lanier, providing 540 miles of shoreline along the western County boundary, offers visitor and residential amenities that contribute significantly to the County's economy and quality of life. New residents seeking a broader range of services, amenities and entertainment outlets have caused growth in service sectors to soar to an all-time high.

7.0.2.0: TRANSPORTATION SYSTEM CHARACTERISTICS

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 Gainesville's industries.

Key transportation routes in Hall County include Interstate 985 and arterials such as E.E. Butler Parkway, Green Street/Thompson Bridge Road, Browns Bridge Road, and Jesse Jewel Parkway. These routes combine with collectors and local streets to form the County's roadway system. Lake Lanier serves as a major traffic generator for residential, tourism and recreation trips in the region and currently requires five bridges to 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, Franklin, Stephens, White, Habersham. As a result, congestion peak periods not only include commuter periods but also a noon time rush hour. A recent study of traffic volumes on Jesse Jewel Parkway showed that the noon time vehicles per hour rate was as high or higher than the 5:00 PM count and double that of the 8:00 AM count.

May 12, 2005

E.E. Butler Parkway is a four-lane divided arterial. Traffic flows predominantly southbound (or eastbound) during the morning and northbound (or westbound) during the afternoon, peaking during the typical morning and evening heavy travel 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.

On 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, extending from about 11:00 am to 1:00 pm, exhibits a roughly 50/50 directional split.

Browns Bridge Road and the western portions of Jesse Jewel Parkway are predominantly lined with strip commercial development, such as fast food restaurants, gas stations, and strip mall shopping. 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 highest traffic volumes on this corridor are recorded on Jesse Jewel Parkway just west of E.E. Butler Parkway.

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.

7.0.3.0: TRANSPORTATION PLANNING PROCESS

Transportation planning is a continuous process in which planning factors, such as growth and needs assessments, are monitored and identified deficiencies evaluated. Long-range transportation plans cover at least a 20-year period and must be updated regularly to reflect changes in development patterns, travel demand, legislative requirements, political issues, available funding levels and other factors. Throughout recent history, Gainesville-Hall County has emphasized transportation planning, including the City's transportation plan adopted in 1997. Hall County's growth necessitates a proactive process to support quality decision-making.

Transportation in the Gainesville and Hall County area has reached a significant milestone. U.S. Census 2000 population for the Gainesville and Hall County area was 139,277, making it one of 76 newly designated urbanized areas nationwide. That designation triggers federal requirements impacting the transportation planning process. Urbanized areas are required to establish a Metropolitan Planning Organization (MPO) and comply with the federally regulated metropolitan planning process. An MPO is made up of representatives from local governments, the State Department of Transportation, and local/regional transportation and planning agencies and authorities. The MPO's duties and responsibilities are outlined in Title 23 CFR Part 450 of the U. S. Code of Federal Regulations in April 2004.

On February 25, 2003, Georgia's Governor designated the Hall County Planning Department as the MPO for the Gainesville-Hall County Transportation Study (GHTS). The newly designated GHTS metropolitan planning process is expected to establish a cooperative, continuous, and comprehensive framework for making transportation investment decisions.

The GHTS process was launched on January 9, 2004. The MPO's Committees met and adopted the MPO Bylaws and held their first official meeting. MPOs have an established schedule for their transportation planning work program. Generally, each MPO is required to develop a short-range transportation improvement program (TIP) based on a long-range

May 12, 2005

transportation plan. Development of the plans follows a federally prescribed transportation planning process.

7.0.4.0: COMPREHENSIVE PLAN TRANSPORTATION ELEMENT

Transportation's role of providing essential mobility to communities is critical and thereby warrants a significant level of analysis. The Community Facilities element of the Comprehensive Plan incorporates infrastructure inventory and needs assessment for all City and County services, including transportation, schools, and water and sewer. Recognizing transportation as essential to community comprehensive planning, the City of Gainesville and Hall County focused the Transportation element of the Comprehensive Plan on addressing the following:

- Transportation Inventory
- Transportation Assessment
- Transportation Goals and Implementation

The transportation component establishes several strategies for addressing the transportation challenges resulting from rapid growth, changing land use development patterns, opportunities for business development and air quality requirements. The sequence of inventorying transportation facilities and assessing transportation needs in turn leads to the development of goals and a framework for implementation. The framework to be used to develop responses to transportation needs is the urban Metropolitan Planning Organization (MPO) process. The process requires analysis and assessment of existing and future transportation needs, followed by development of the implementation solutions required to meet the needs.

To ensure that participants in the comprehensive planning process are aware of current available facilities and to determine performance of the transportation system, an inventory of the existing system was conducted and the system's performance was assessed. The existing roadway network and committed projects were identified and included in a travel demand forecast model to determine conditions in the plan's horizon year, 2030. The Georgia Department of Transportation (GDOT) had previously initiated an update of the transportation model for Gainesville and Hall County as part of a more comprehensive regional transportation planning effort. It was fortunate that the two work programs could be coordinated and provide insight about transportation impacts from land use alternatives being considered in development of the comprehensive plan. After forecasting future conditions and identifying deficiencies, potential transportation investment strategies to improve the 2030 network and meet previously articulated community goals were evaluated.

The GHTS model reflects socio-economic distribution for the most recent land use plan for the Gainesville and Hall County area. The traffic analysis zones in the model take into consideration the expected residential and employment densities in the land use plan. This makes the transportation plan a more responsive tool, reflecting the area's development and more sensitive to transportation demands.

Public involvement is important to good planning. Public involvement activities soliciting community input and concerns were scheduled and conducted as part of the Gainesville-Hall Planning Process Manual.

May 12, 2005

7.0.5.0: CHALLENGES

The location of Gainesville-Hall County requires a special transportation context. The County features its own MPO as well as a small portion of the metropolitan Atlanta urbanized area. Regional issues become local concerns and local issues must be dealt with regionally. 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 regional air quality restraints.

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 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. The County is aggressively addressing this challenge by programming improvements to SR 347 and the Lanier Access Road.

Gainesville and Hall County will be faced with many challenges, including implementing long and short-term transportation planning. The City and County are experiencing aggressive population and employment growth, which is expected to continue into the future. It is also expected to be declared 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. Once the Gainesville-Hall County area has been designated as a non-attainment area under the CAAA, the federal transportation planning and air quality restrictions will apply.

The greater Atlanta air quality non-attainment area currently includes 13 counties and is expected to grow to 20 or 21 counties after the new non-attainment designations are made. Transportation plans in the 13 currently designated counties conform to emission requirements as set forth in the State Implementation Plan (SIP) as a condition of federal transportation funding eligibility. After designation as an air quality non-attainment area, Gainesville-Hall County will become part of the Atlanta non-attainment area and will be required to test ozone

May 12, 2005

production from capacity-adding transportation projects before the projects can be programmed. Also, because it is EPA's practice to declare full counties in non-attainment, the long and short-term transportation plans developed by GHTS for the entire City and County must conform to the adopted existing SIP. As of January 2004, the EPA designation of Hall County as a non-attainment area had not been made.

7.1.0.0: TRANSPORTATION SYSTEM INVENTORY

The transportation network is a key element in determining a county's ability to grow, function, and meet the mobility needs of its residents. This section provides a multimodal inventory of the GHTS area's existing transportation network and discusses current revenue sources for funding transportation projects.

7.1.1.0: CLASSIFICATION FEATURES OF ROADWAY NETWORK AND VEHICLE MILES OF TRAVEL (VMT)

GDOT is responsible for classifying all roads in the public road system by geographic location in rural, small urban, or urban areas 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 is a necessary step toward assessing and evaluating the effectiveness of the roadway network. Individual roads depend on surrounding and intersecting roads to create a functioning network or transportation system. 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 the GHTS area, Interstate 985 comprises 66 (14 in Gainesville) lane miles (three percent) and 669,019 daily VMT (19 percent of the system).
- **Arterials** – Classified as major or minor, these roads connect activity centers and carry large volumes of traffic at moderate speeds. The arterial system in the GHTS area totals approximately 253 (55 in Gainesville) lane miles, or 10 percent of total lane miles. Examples of major arterials are U.S. Highways 23 and 129 and State Routes 11, 13, 53, 60, and 369. The daily VMT on arterial roadways is 1,005,029 (28 percent of the system).
- **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 incorporates over 575 (87 in Gainesville) lane miles, or 22 percent of the total roadway system. The daily VMT on collector roadways is 1,650,324 (47 percent of the system).
- **Local Streets** – Feed the collector system from low volume residential and commercial areas. Local streets are usually found in subdivisions and rural areas. There are approximately 1702 (187 in Gainesville) lane miles (65 percent) of roads classified as local in the GHTS area. The daily VMT on local streets is 199,853 (six percent of the system).

Figure 1 shows the 2000 roadway facilities by functional classification. Figure 1-A shows the road network by number of lanes.

May 12, 2005

Figure 1

May 12, 2005

Figure 1-A

7.1.2.0: ROADWAY CAPACITY

The Gainesville-Hall County transportation travel demand model incorporates features of the area's transportation network and provides insights into the system's capacity. Key to identifying potential current and future deficiencies, modeled lane miles of roadway able to accommodate traffic volumes of varying intensity by functional class are shown in Table 1. Current roadway capacities are mapped in Figure 2. While the GHTS area's roadway capacity is significant, recent rapid growth in population and employment will challenge the system's ability to continue to provide acceptable levels of service.

Table 1: 2000 Roadway Capacities by Functional Class

Functional Class	Less than 20,000	20,000-24,999	25,000-29,999	30,000-34,999	Greater than 35,000	Total
City of Gainesville						
Interstate	0	0	0	13.1	0	13.1
Arterial	7.1	40.1	2.9	1.4	0	51.5
Collector	82.3	19.6	0	0	0	101.9
Local Road	23.5	0	0	0	0	23.5
Ramps	0.4	0	0	0	0	.4
Sub-Total	113.3	59.7	2.9	14.5	0	190.4
Remainder of Hall County						
Interstate	0	0	0	53.9	0	53.9
Arterial	55.3	23.3	7.8	10.1	41.1	137.5
Collector	526.4	28.4	4.7	1.9	0	561.4
Local Road	175	0	0	0	0	175
Ramps	4.1	0	0	0	0	4.1
Sub-Total	760.7	51.7	12.5	65.9	41.1	931.9
Grand Total	874	111.4	15.4	80.4	41.1	1,122.3

Source: Georgia Department of Transportation

May 12, 2005

Figure 2

May 12, 2005

Table 2 provides additional details about the performance of the base year 2000 roadway network in the GHTS area. Volume to capacity (v/c) ratios for interstates and ramps are approaching levels of congestion that are a concern. Vehicle Miles Traveled (VMT) offers a base statistic for road utilization by functional classification.

Table 2 : 2000 System Performance by Functional Class

Functional Class	Avg. Congested Speed (mph)	AADT	Avg. Volume/ Capacity Ratio	Vehicle Miles Traveled (VMT)	Percentage of Total VMT
Interstate	55	19,333	0.7	669,019	18.9%
Arterial	49	9,561	0.4	1,005,029	28.6%
Collector	29	2,453	0.2	1,650,324	46.7%
Local Road	26	1,073	0.1	199,853	5.8%
Ramps	24	4,665	0.8	20,214	0.6%

SOURCE: GEORGIA DEPARTMENT OF TRANSPORTATION

7.1.3.0: NUMBER OF LANES

The 2,610 lane miles in the GHTS area comprise a total of 1,272 roadway miles. Total roadway miles by number of lanes are provided below.

- One-lane road – 68 miles
- Two-lane road – 1,134 miles
- Three-lane road – 6 miles
- Four-lane road – 63 miles
- Five-lane road – 0.5 mile
- Six-lane road – 0.5 mile

The roadway network in the GHTS area is diverse with a concentration of two-lane roads throughout. This is in keeping with the higher percent of local collector roads that serve the area.

7.1.4.0: AVERAGE ANNUAL DAILY TRAFFIC (AADT) VOLUMES

Existing traffic volume field counts and AADT counts are prepared and reported by GDOT. The raw counts are collected and adjusted to reflect average traffic volumes at particular locations on an annual basis. Total daily roadway volumes for 2000 are mapped on Figure 3. Table 3 also contains area traffic volume data from 1992 to 2002. Changes in traffic volumes along the various routes have also been calculated. The general trend of significantly increased traffic volumes from 1992 to 2002 on the road network reflects significant growth in population and employment. The heaviest traveled roadways are I-985, SR 11, SR 365, SR 53, SR 369 and SR 60.

May 12, 2005

Figure 3

May 12, 2005

Table 3 : Historic and Existing Gainesville-Hall County Traffic Volumes

Highway (Station No.)	Count Location	1992 AADT	2002 AADT	10 Year Percent Increase
US129 (121)	Just west of I-985 intersection	28,298	37,115	31%
US129 (134)	North of Green St. – northern Gainesville	30,415	38,035	25%
SR 13 (194)	South of Armour St. – southern Gainesville	32,866	34,990	6%
US129 (116)	Just east of Gainesville City Limit	16,380	28,528	74%
US23 (212)	South of Ramsey Rd. – northeast of Gainesville	18,376	32,057	74%
SR 53 (267)	Just west of Sidney Lanier Bridge	17,043	22,785	34%
SR 53 (285)	Just south of I-985 in Oakwood	23,584	32,489	38%
SR 60 (303)	South of I-985 and north of Candler	6,652	11,367	71%
I-985 (409)	North of Friendship Rd. in south Hall	26,352	43,834	66%
US23 (215)	Just south of Lula Rd.	18,151	29,160	61%
SR 369 (429)	West of Keith Bridge Rd. near Lake Lanier	12,305	15,734	28%

Source: Georgia Department of Transportation Traffic Count Data

7.1.5.0: PAVEMENT CONDITION

Pavement condition is described in Table 4. Pavement Service Rating (PSR) is a standard measure of pavement condition used by GDOT to rate pavement 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 4 : 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
City of Gainesville					
Interstate	0	0	0	14.0	14.0
Arterial	17.9	7.1	10.6	11.4	47.0
Collector	19.8	17.6	1.9	1.8	41.1
Sub Total	37.7	24.7	12.5	27.2	102.1
Remainder of Hall County					
Interstate	0	0	0	52.3	52.3
Arterial	45.5	51.5	33.3	52.9	183.2
Collector	47.2	95.9	49.5	57.2	249.8
Sub Total	92.7	147.4	82.8	162.4	485.3
Total	130.4	172.1	95.3	189.6	587.4

Source: Georgia Department of Transportation

May 12, 2005

A majority of the major road pavement in the GHTS 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 practice of GDOT is to program for rehabilitation or replacement pavement 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.

7.1.6.0: PUBLIC TRANSPORTATION

Almost 94% of Hall County households have at least one vehicle available for use on the County transportation network, leaving almost 3,000 households dependent on alternative modes including the County’s transit system. Hall Area Transit (HAT) offers fixed route and demand response service for Hall County riders. The fixed route service, including stops and the transfer station, is mapped on Figure 4. The entire fleet consists of 14 vehicles, with six assigned to the fixed route (Red Rabbit) and eight for demand response. Total revenue, including farebox and charter, for transit service in Hall County during fiscal year 2003 totaled \$768,267. This covered 97.5% of the operator’s costs leaving a \$19,365 deficit for the system.

7.1.6.1: Fixed Route

There are four fixed routes: three operating in the City of Gainesville and one that serves Gainesville and portions of Oakwood. There is a local transfer station where all buses meet once per hour to allow convenient passenger transferring. 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 for the ability to transport mobility-impaired customers.

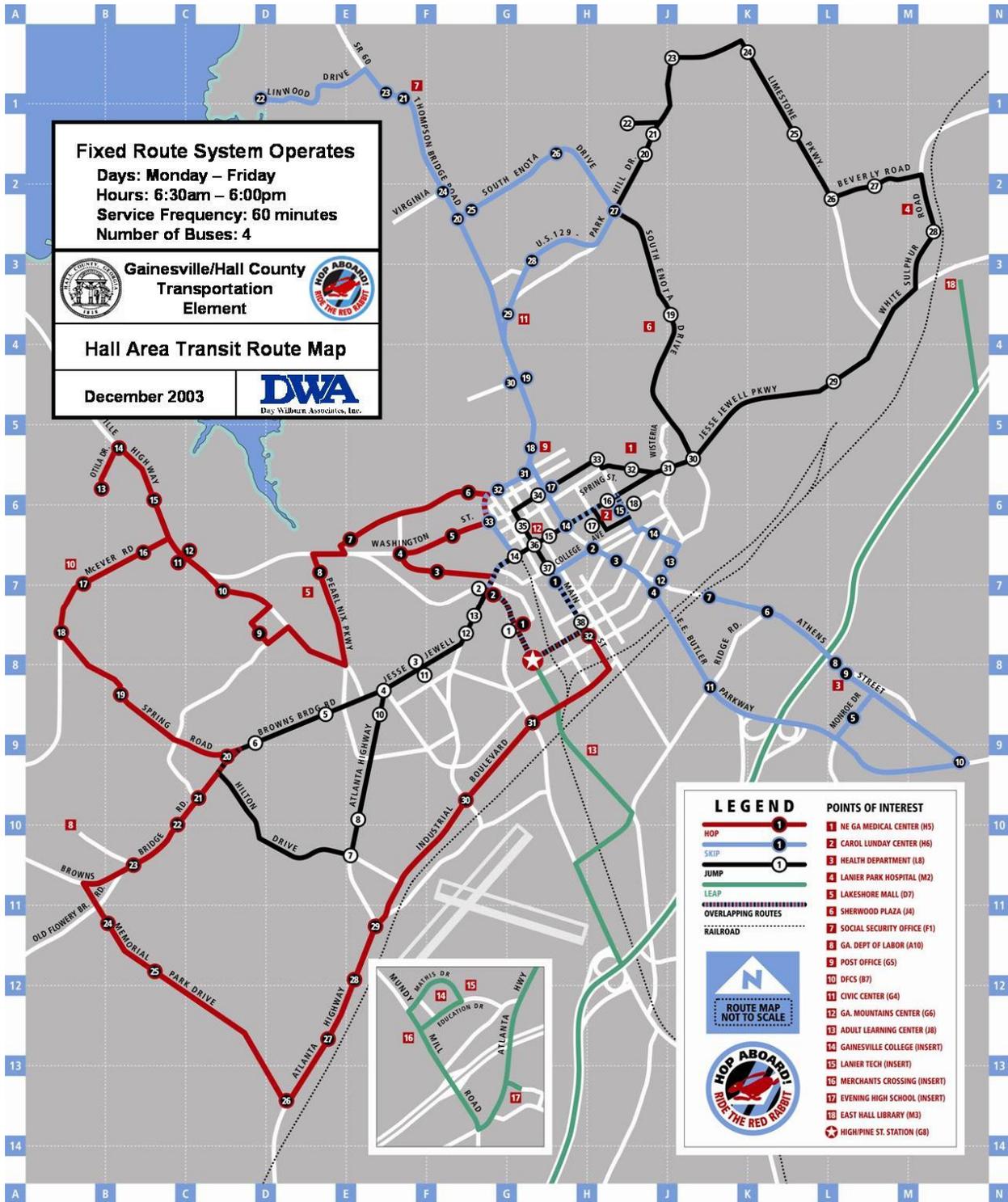
Major trip generators include Conagra Poultry, Fieldale Farm Corporation, Kubota Manufacturing, Mar-Jac Poultry, Northeast Georgia Medical Center, Lanier Park Hospital, Imaging Center, Dialysis Centers, Lanier Tech and Gainesville Community College. Boardings for FY2003 were 35,616, with 9,849 service hours and 134,004 service miles.

7.1.6.2: Demand Response (Paratransit)

Demand response service is offered throughout the service area, which includes all of Hall County. The paratransit service is a reservation-based system, requiring at least 24 hours advance notice. The operation utilizes scheduling software. Customers use this service for all needs that are not met by the fixed route service. Six of the eight vehicles are wheelchair lift-equipped for the ability to transport mobility-impaired customers. This service takes customers to jobs, social activities, school, and other activities that increase quality of life for citizens of Hall County. Boardings for FY2003 were 36,177, with 11,371 service hours and 187,899 service miles.

May 12, 2005

Figure 4 – Hall Area Transit Map



May 12, 2005

7.1.7.0: BICYCLE AND PEDESTRIAN FACILITIES

Georgia's Bicycle Master Plan, created by GDOT, proposes a network of 14 named and numbered routes totaling 2,943 miles that are or will be particularly well suited for bicycle use. The Statewide Bicycle Route Network includes a State Bicycle Route within the Gainesville-Hall County borders. State Bicycle Route 55 runs north-south along US 23 north to Gainesville and then along SR 284 to the County line for approximately 26 miles. There is currently no comprehensive sidewalk inventory for the study area. Multiuse trails in the Gainesville area include Rock Creek Greenway, the Elachee trail system, Midtown, and a potential conversion of CSX railroad right-of-way in Midtown. An off-road mountain biking trail is located at Chicopee Woods in Gainesville.

As demonstrated throughout the Comprehensive Plan, the increasing population and transportation demand growth of the study area requires increasing transportation opportunities. The need for continuing to offer additional bicycle and pedestrian facilities can be traced to the overall need for transportation infrastructure throughout the County to meet the increasing demand. The aggressive pursuit of relatively inexpensive alternative transportation modes including the bicycle/pedestrian initiatives described in this element will help relieve the capital costs of expanding roadway infrastructure.

7.1.8.0: VOLUME TO CAPACITY RATIOS

As shown in the system performance table (Table 2), 2000 volume to capacity ratios are a concern on the interstates and ramps. Figure 5 is a map of the 2000 volume to capacity ratios, which represent the Level of Service (LOS) information. Further discussion of LOS is included in the assessment of the existing network conditions in section 7.2.2.0. Roadway sections that are in need of monitoring and evaluation for potential congestion concerns because of v/c and LOS are identified. Demand for capacity resulting from increasing population and employment will ultimately create congestion deficiencies without an increase in capacity or alternate modes.

7.1.9.0: ACCIDENT FREQUENCY

Table 5 shows 2001 crashes, crash rates, and fatality rates by functional classification. Crash and fatality rates are shown as number of crashes/fatalities per million vehicle miles traveled (MVMT). Figure 6 maps the crash and fatality data safety concerns. In order to flag the most significant crash and fatality rates, roadway sections with crash and fatality rates greater than one-half of a standard deviation above the statewide averages (399 for crashes and 2.02 for fatalities) are identified on Figure 6 for further consideration.

Table 5 : 2001 Crashes and Fatalities by Functional Class

Functional Class	Crashes	Crash Rate (crashes per MVMT)	Fatality Rate (fatalities per MVMT)
Interstate	0	0	0
Arterial	1,704	267	2.35
Collector	2,012	303	0.75

Source: Georgia Department of Transportation

May 12, 2005

Figure 5

Figure 6

May 12, 2005

7.1.10.0: BRIDGES

Table 6 shows the sufficiency ratings of bridges by functional classification. Bridges with a sufficiency rating less than 50 are deficient. Figure 7 shows the location and classification of bridges and state routes. Figure 7 identifies the sufficiency ratings so that deficient bridges may be located.

Table 6 : 2002 Bridge Sufficiency Ratings

Functional Class	Less than 50 (deficient)	50-59.9	60-69.9	70-79.9	80-89.9	90-100	Total
City of Gainesville							
Interstate	0	0	0	0	0	0	0
Arterial	0	1	0	4	0	3	8
Collector	0	0	0	0	1	1	2
Local Road	0	1	1	0	0	2	4
Sub-Total	0	2	1	4	1	6	14
Remainder of Hall County							
Interstate	0	0	0	3	1	6	10
Arterial	1	3	1	4	6	8	23
Collector	4	4	5	6	14	10	43
Local Road	2	1	3	4	11	35	56
Sub-Total	7	8	9	17	32	59	132
Grand Total	7	10	10	21	33	65	146

Source: Georgia Department of Transportation

The seven deficient bridges are on routes not used for evacuation purposes; therefore, the bridge system is adequate to evacuate the population.

May 12, 2005

Figure 7

7.1.11.0: AVIATION

The Lee Gilmer Airport (GVL) provides private general aviation air service including fuel sales and aircraft storage. The airport is located just east 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 implementation. An ILS should be in place within the next two years.

7.1.12.0: RAIL

Two major active freight rail lines run in a north-south direction through Hall County. The Norfolk Southern Atlanta/Greenville line parallels US 23 and passes through Flowery Branch, 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 a second phase development of the Commuter Rail Program. The line would have seven stations beginning at Lenox and going to Norcross, Duluth, Suwannee, 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 farebox (estimated recovery about 60 percent)¹.

The same 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 2020². Implementation of the service is expected to cost approximately \$104 million.

¹ GDOT Commuter Rail Study.

² GDOT Intercity Rail Passenger Plan.

May 12, 2005

7.2.0.0: ASSESSMENT OF CURRENT AND FUTURE CONDITIONS

Based on population projections and transportation demand, the future transportation needs of the community cannot be met by the existing transportation facilities and services. Additional improvements are needed, and the basis for this conclusion is provided in this section.

7.2.1.0: POPULATION AND EMPLOYMENT

Table 7 demonstrates the growth in population and employment under the base and 2030 land use scenarios. The base scenario reflects the land use as of 2000 as well as the Census 2000 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 generated by the plan.

Table 7 : Population and Employment

Land Use Scenario	Population	Employment
Base (2000)	139,277	64,973
2030 Estimates (% increase over base)	445,371 (219%)	280,000 (331%)

Source: Hall County

TRANSPORTATION

In February of 2003, the Hall County Planning Department was designated, by the Governor of Georgia, as host agency for the Metropolitan Planning Organization (MPO) for the Gainesville - Hall Area Transportation Study. The Gainesville-Hall MPO (GHMPO) is responsible for the transportation planning activities within the urbanized area and for conducting comprehensive transportation planning. The Transportation Equity Act for the 21st Century in 1998 has increased the responsibility of the MPO and the participating local governments in this arena, and expanded the range of transportation projects available for federal funding. The Gainesville-Hall MPO is in the process of completing a Long-Range Transportation Plan. The ongoing efforts of the Gainesville-Hall MPO will be instrumental in addressing the transportation needs of Hall County in the future based upon population and employment trends.

7.2.2.0: EXISTING NETWORK CONDITIONS

The base network performance statistics demonstrate existing congestion and safety needs for the current level of employment and population residing in the GHTS area. The 2000 network is serving 3.54 million vehicle miles traveled (VMT). The network's average congested speeds by functional classification are:

- Urban Arterial – 31.5 mph
- Rural Arterial – 53.2 mph
- Urban Collector – 25 mph

May 12, 2005

➤ Rural Collector – 35.5 mph

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. Figure 5 shows v/c ratios calculated for the existing roadway network.

May 12, 2005

7.2.3.0: FUTURE NETWORK CONDITIONS AND CAPACITY NEEDS

Figure 8 shows roadway volumes forecast for 2030 by the travel demand model. The 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. Use of the model helps determine locations of roadway sections that are likely to be congested in the future based on projected growth and committed projects.

Existing 2000 network performance was compared to the current City of Gainesville and Hall County comprehensive plans and the comprehensive plan projected to 2030. Figure 9 graphically depicts v/c ratios based on future (2030) land use and population and employment forecasts. Table 8 compares VMT, lane mile v/c ratios, and average speeds calculated based on existing and forecast population, employment and land use.

Table 8 : 2030 Network Performance

Performance Measure	Base (2000)	2030 Plan
VMT	3.54 million	8.4 million (+137%)
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
Average Speed – Urban Arterial	31.5 mph	28.9 mph

Source: Georgia Department of Transportation

Forecast network vehicle miles of travel (VMT) increase by 137 percent from the base. Correspondingly, forecast congested lane miles increase substantially between 2000 and 2030. Urban arterial speeds decreased slightly. Figure 9 shows the 2030 network forecasted v/c ratios for the compact comprehensive plan adjusted for comparison purposes. Potentially congested roadways in 2030 are SR 60 northwest of Gainesville, I-985, SR 13 in south Hall, SR 53, and others (red on Figure 9). GHTS will be evaluating these corridors and other congestion needs in its transportation planning process.

The GHTS process will incorporate use of the model to develop its short-term program of projects and long-term transportation plan. The MPO process will utilize more resources than just the model in its process by incorporating activities to involve the public throughout the ongoing planning process. GHTS will work closely with GDOT to develop the program of projects through the comprehensive transportation planning process that meets the transportation capacity needs identified in this study (Figure 8) and other factors.

May 12, 2005

Figure 8

May 12, 2005

Figure 9

May 12, 2005

7.2.4.0: PROGRAMMED IMPROVEMENTS

Projects identified in the State Transportation Improvement Program (STIP) are listed in Table 9. These projects constitute committed GDOT road projects for the next three years. GHTS will be incorporating the STIP projects into their planning efforts to refine the needs analysis and determine transportation needs after these projects are implemented. Not included in Table 9 is GDOT project number 142292 which is programmed to improve the deficient bridge on SR 323 south of Lula. The other bridges identified as deficient are recommended for consideration.

Table 9: Short-Range Transportation Improvement Projects

Project No.	Description
0005288	Upgrade traffic signals along SR 11 BUS and SR 98
122150	Widen SR 11 from SR 332 in Talmo to SR 323 in Hall County
132250	Passing lanes on SR 52 from 1 mile north of SR 365 to south of Julian Wiley Road
132995	Replace bridge on SR 52 @ Candler Creek south of Lula (identified as deficient-Table 6)
142290	Replace bridge on SR 52 @ Chattahoochee north of Lula
142291	Replace bridge on SR 284 @ Chattahoochee north of Gainesville (identified as deficient- Table 6)
142294	Replace bridge on SR 332 @ Walnut Creek southwest of Candler
162430	Widen SR 347 from I-985 to SR 211
170735	Widen Lake Lanier Access Road from I-985 to Lake (3-4 lanes)
M002112	Deck replacement at three locations in Hall County
M002113	Deck replacement at two locations in Hall County
T000241	FY 2004 Access to Jobs for Gainesville
T000674	FY 2005 Access to Jobs for Gainesville
T000944	FY 2006 Access to Jobs for Gainesville
SPLOST	Sardis Radial Connector (from Dawsonville Highway to Thompson Bridge Road)
SPLOST	Phase 2 of Skelton Road (from Browns Bridge to Exit 16 on I-985)

Source: Georgia Department of Transportation

7.2.5.0: COST ESTIMATES AND FUNDING SOURCES

Meeting transportation needs over the next three decades will require significant funding. Estimated costs to meet congestion needs were prepared and are shown in Table 10. The plan was prorated to allow a proper comparison with the current plan. The implementation cost of the full-proposed plan is also included in the table. Effective traffic operations solutions are suggested where possible to avoid more costly widening projects.

May 12, 2005

Table 10: Estimated Cost of Congestion Solutions

Activity	Cost per Lane Mile	2030 Needs
Operations Improvements – Rural	\$250,000	\$30.8 million
Operations Improvements – Urban	\$400,000	\$56.4 million
<i>Operations Subtotal</i>		<i>\$87.2 million</i>
Widening – Rural	\$1.8 million	\$103.3 million
Widening – Urban	\$2.1 million	\$101.2 million
<i>Widening Sub-total</i>		<i>\$204.5 million</i>
Grand Total		\$291.8 million

Source: Georgia Department of Transportation

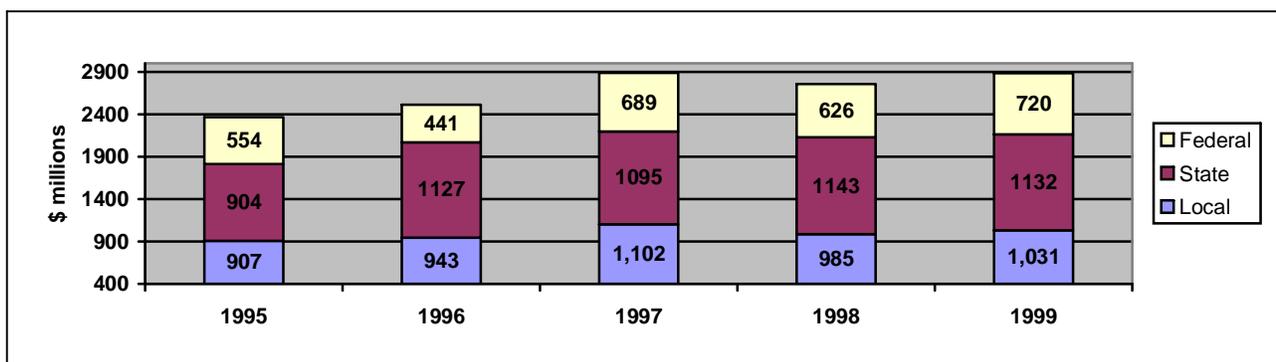
If population and employment control totals as included in the current plan are applied, the model predicts congestion needs that can be met through widening and operations projects. The estimated cost of build-out congestion solutions is \$291.8 million through 2030.

Funding for transportation improvements in the GHTS area has been approximately \$13 million per year for the past five years. Funding for the next three years is expected to increase to \$15.3 million per year. Assuming no radical change in funding policies, it is estimated that approximately \$350 million will be available through 2030

GHTS programs are 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. In Georgia, identifying state and local sources to match potential federal revenues is a challenge. To help augment state revenues, areas can enact Special Purpose Local Option Sales Tax (SPLOST) programs if approved in a voter referendum. While SPLOST programs can add significant amounts of revenue, they have specific time frames for collections that make program continuity subject to voter approval. In an effort to gain more funds for transportation, Hall County enacted a SPLOST. To date, nearly \$88 million of the projected SPLOST revenues of \$116 million total has been spent on road projects.

Georgia relies most heavily on the motor fuel tax to fund its transportation projects. In Georgia, four taxes are levied on motor fuel: federal (18.4 cents), two state per gallon taxes (7.5 cents and 3 cents, respectively), as well as state sales tax (1 percent). Figure 10 demonstrates the breakdown of funding for Georgia’s roadways between federal, state, and local sources.

Figure 10 : Source of Funds for Roadway Projects in Georgia (1995-1999)



May 12, 2005

Source: US Department of Transportation, Highway Statistics 1996-2001

Funding will continue to be an issue at all levels of government, and new innovative approaches to funding projects will be developed. Transportation programs must continue to be developed and prioritized despite financial constraint challenges.

7.2.6.0: PUBLIC TRANSIT

A viable option for Hall County travelers is Hall Area Transit's Red Rabbit fixed route and demand response service (Figure 4). Based on existing capacity and ridership data, the service has the capacity to serve a significant percentage of travelers choosing an alternative to personal vehicle travel. According to a ridership survey conducted in June 2003, approximately 60 percent of fixed route riders use the system during peak hours. A comparison between annual fixed route peak hour capacity (51,000) and current estimated annual fixed route peak hour ridership (19,900) indicates a significant supply of transit capacity. Assuming ridership increased at the same rate as the expected population increase (134 percent by 2030), the resulting ridership of 46,600 is within current capacity.

7.3.0.0: TRANSPORTATION GOALS AND IMPLEMENTATION

The development of the Gainesville-Hall County Comprehensive Plan included significant opportunities for public involvement. A series of monthly open forums were held to involve the public. The July and November 2003 forums were dedicated to transportation. Goals and objectives for the Gainesville-Hall County Comprehensive Plan were developed; the transportation goals and objectives are discussed below.

7.3.1.0: GOALS AND OBJECTIVES

The following section outlines the goals and policies Gainesville and Hall County will use to address the transportation issues.

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.

Objective 1: Gainesville and Hall County will establish a goal for arterial and collector roads in all urban and suburban areas of Level of Service E, and for arterial and collector roads in all rural areas of Level of Service D.

Objective 2: Gainesville and Hall County will develop a land use plan and review development approvals based on the goal of exceeding or maintaining the above levels of service on all roads that currently meet this standard.

Objective 3: Gainesville and Hall County will take actions to alleviate congestion on those roads that do not currently meet this standard.

Objective 4: Gainesville and Hall County will place a priority on transportation projects that directly support economic development goals.

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.

Objective 1: Gainesville and Hall County will develop standards to ensure that sidewalks are developed along urban and suburban roadways.

Objective 2: Gainesville and Hall County will continue to work with Hall Area Transit to provide an appropriate transit system to serve the community.

Objective 3: Gainesville and Hall County will explore transportation demand programs to alleviate congestion in major employment areas, and continue to support carpooling activities in the County.

May 12, 2005

To meet the community goals and objectives, the County's Capital Improvement Program must accommodate transportation needs identified by GHTS in the annual update of their Transportation Improvement Program (TIP). Also, Hall Area Transit is conducting ongoing strategic planning to consider future service expansion, as well as a Comprehensive Operational Analysis.

7.3.2.0: TRANSPORTATION INVESTMENT STRATEGIES

An inventory of potential strategies to be evaluated through the formal transportation planning process, including use of the transportation model, public input, and the experience and knowledge of the study team, is listed in this section. These strategies have the potential to reduce congestion, increase capacity, and improve the quality of life in Hall County in the future. Programs to address identified needs in Hall County will be drawn from the categories presented below.

- Growth Management
- Alternative Improvements
 - Transportation Demand Management
 - The Clean Air Campaign
 - Pedestrian and Bicycle Improvements
 - Cleaner Fuels and Vehicle Inspections
 - Passenger Rail
- Safety and Operations
 - Traffic System Operations Optimization
 - Intersections and Interchanges
- Infrastructure Enhancements
 - High Occupancy Vehicle Facilities
 - Intelligent Transportation Systems
 - Road Widening
 - New Roads

7.3.2.1: Growth Management

To meet the challenges of increasing growth forecast for Gainesville and Hall County over the next 30 years, growth must be actively managed. Managing the type and location of growth reduces traffic congestion and provides a better quality of life. Mixed use planning on a regional, community, and activity center level will improve accessibility to major destinations.

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.

7.3.2.2: Alternative Improvements

The Gainesville-Hall County plan focuses on decreasing single occupancy vehicle (SOV) usage by offering alternatives and encouraging other modes of travel.

7.3.2.2.A: TRANSPORTATION DEMAND MANAGEMENT

An important strategy in reducing overall traffic congestion is implementation of Transportation Demand Management (TDM) strategies. TDM strategies help reduce traffic congestion by decreasing the number of vehicle trips. This is accomplished by increasing both vehicle occupancy and by combining multiple trips. Encouraging the establishment of carpool and vanpools, and promoting transit ridership on the Red Rabbit, or express bus is important to reducing the number of vehicle trips. Facility investments can support TDM strategies. High occupancy vehicle (HOV) lanes and park and ride facilities, support the use of TDM alternatives.

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 cost effectively by combining uses, such as grocery and dry cleaning trips, may be promoted. 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 in reducing trips and increasing occupancy 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. Hall County has one park and ride lot, located at the I-985/SR 53 interchange, which provides 126 spaces. A nearby park and ride lot located in Gwinnett County at I-985 and SR 20 provides 335 spaces.

Active employer participation is key to the success of TDM in the work place. It is also proven that there are many kinds of businesses that can benefit from TDM. Experience has demonstrated that reducing commute trips will increase worker productivity. Energy and time spent on commuting can be redirected to enhance productivity. Many employers have established telecommuting programs and increased employee productivity. Some use financial incentives to encourage employees to rideshare. There are employers who have transportation coordinators on staff 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. Resulting policies and actions improve congestion, traffic flow, and air quality.

May 12, 2005

Support for TDM initiatives is available from GDOT and The Clean Air Campaign for ridesharing and initial program start-up and coordination. Appropriate TDM strategies are available for consideration.

7.3.2.2.B: THE CLEAN AIR CAMPAIGN

The Clean Air Campaign (CAC) is a not-for-profit organization funded primarily by U.S. Department of Transportation Congestion Mitigation and Air Quality (CMAQ) funds, in association with business and government sponsorships. The CAC has established commuter programs at the Federal Highway Administration – Georgia Division, Metropolitan Atlanta Rapid Transit Authority (MARTA), Cherokee County, Gwinnett County, the Atlanta Regional Commission (ARC), the Metro Atlanta Chamber of Commerce, GDOT and the Environmental Protection Division and more.

The CAC offers a variety of programs and services to employers, employees and individuals throughout the metropolitan Atlanta region, while also serving as a clearinghouse for information and education. Programs include:

- Employer assistance in setting up commute options, including carpooling and vanpooling, telecommuting, and transit pass programs.
- Financial incentive programs for commuters to encourage the use of carpooling, vanpooling and transit.
- A public information campaign that includes mass advertising, public relations, a speakers bureau, and community outreach.
- Distribution of smog alert notifications on behalf of the Georgia Environmental Protection Division.

Gainesville and Hall County can initiate a variety of alternative commute programs, including vanpools, ride-matching and telecommuting, with the help of the Clean Air Campaign. To meet the increasing demand, inexpensive Clean Air Campaign strategies may be considered.

7.3.2.2.C: PEDESTRIAN AND BICYCLE IMPROVEMENTS

Used for recreation as well as transportation, 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. Gainesville-Hall County has demonstrated regional leadership in providing alternative multi-use paths. The connection of neighborhoods to activity centers, including 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 ISTEPA and TEA-21, which provided more funding for these modes.

There are two basic categories or forms of bicycle improvements: on-road facilities and off-road paths or trails, which include bike lanes, widened curb lanes, bike routes, multi-

use paths, and designated bike routes. 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.

7.3.2.2.D: CLEANER FUELS AND VEHICLE INSPECTIONS

Gainesville-Hall County is part of a 25-county Department of Natural Resources (DNR), 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. Pursuant to the federal Clean Air Act, all counties in the state with ambient air levels of ozone or carbon monoxide in excess of the National Ambient Air Quality Standards (NAAQS) must have regular vehicle emissions testing. If Gainesville-Hall County is declared non-attainment, a vehicle inspection program will be instituted.

7.3.2.2.E: PASSENGER RAIL

During the middle of the term of the Plan, Gainesville-Hall County will assess interest in developing a detailed study of rail terminal needs for Amtrak, commuter rail, and high-speed rail in the Gainesville area. The study will be prepared in cooperation with GDOT and the Georgia Rail Passenger Authority and is estimated to cost approximately \$100,000.

7.3.2.3: Safety and Operations

Non-capacity adding projects, such as safety and operational projects, can address specific location or community needs. These improvements address the need to maximize the

May 12, 2005

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 without adding roadway capacity.

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 to 15 percent. Current signalization and signage infrastructure is recommended to be expanded and improved to accommodate future needs. The efficient use of signalization, signage, and pavement markings significantly increase the effectiveness of existing infrastructure avoiding costly capacity improvements.

Operational improvements are likely solutions to many of the roadway sections showing current and future higher volume to capacity ratios in Figures 5 and 9. Cost estimates of capacity improvements were refined to include less expensive potential operational improvements in Table 9.

7.3.2.4: Infrastructure Enhancements

The most costly of potential solutions can be infrastructure enhancements. However, implementation of additional improved infrastructure such as HOV facilities and Intelligent Transportation System (ITS) features may prove to be the most cost-effective solution.

7.3.2.4.A: 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. Installation of HOV facilities should be further examined, especially on I-985, to reduce future traffic demand and congestion.

7.3.2.4.B: 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

May 12, 2005

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.

7.3.2.4.C: ROAD WIDENING AND NEW ROADS

Road widening and development of new roads may be necessary in Gainesville and Hall County. Because it is a dynamic growing area, there may be a need to increase capacity and to provide new roadway facilities. These are issues that will be engaged by the new MPO which was launched on January 9th. These options are carefully evaluated in the transportation planning process to determine the transportation needs and identify the benefits of new capacity options.

According to travel demand model results and socioeconomic forecasts, several corridors in the Gainesville-Hall area are becoming congested and will require improvements into the future beyond those already in the program. Several corridors were discussed in the transportation element but bear repeating. The growth projected for north Hall will create a demand for improvements in the SR 283 corridor east of Clermont, SR 60 north of Gainesville, US 129 north of Gainesville, and in the SR 52 corridor west and north of US 23. Again, growth in the more urbanized south Hall will create a demand for improvements along the following corridors: I-985, SR 13, SR 53, and McEver. The Gainesville area is forecast to grow as well, creating the need for improvements on radials and connections to the Lake and east such as Brown's Bridge and Dawsonville Highway.

7.3.3.0: SUMMARY

The Gainesville-Hall Metropolitan Planning Organization transportation planning process is underway and GHTS is conducting the GDOT process following federal guidelines. The process is a proven, resilient and effective method of assessing existing and future transportation conditions in a land use setting. The Gainesville-Hall Comprehensive Plan, developed during the establishment of the GHTS process, will assist the City and County in integrating land use and transportation decision-making to accurately anticipate future need.

Transportation needs were identified in congestion, safety, pavement condition, and bridges. The GHTS process will incorporate the findings of this element into its needs assessment. GHTS will also incorporate the GDOT committed STIP projects as solutions to the identified needs. Remaining long-range needs will be specifically identified and incorporated in a program of projects for short, intermediate, and long-term implementation.

Gainesville-Hall County is recognized as a growth area with challenges to be met not only from continued growth but also from inclusion in the Atlanta air quality non-attainment area. This study estimated future transportation funding through 2030 based on previous transportation funding. Based on growth, costs for increasing transportation needs through 2030 for the City and County were also estimated. The GHTS process will refine cost estimates and estimates of future funding by completing additional model runs, public involvement and further analysis.

May 12, 2005

The effective, responsive and needs-based transportation planning process is offering the community a living tool that will help prepare for the transportation challenges of the future.