

COMPREHENSIVE TRANSPORTATION PLAN

Prepared for:
Gwinnett County DOT

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Submitted:
September 2008

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1 Introduction

Population and economic development in Gwinnett County continue to grow rapidly and change significantly, in ways that strongly affect transportation. Population in 2007 was 4.6 times larger than in 1980, and the areas of highest population and employment density have shifted away from the historic centers. Growth of the Atlanta Region continues to spread outward; the definition of the region has changed during the last 30 years from ten counties, with Gwinnett at the edge of the defined region, to 13 counties, then 20 (the level at which transportation studies used in this report were prepared), and now 28 counties. Growth and change produce transportation challenges. The response to those challenges is the subject of this report.

The purpose of this Comprehensive Transportation Plan (CTP) is to inform Gwinnett County officials on the subject of future transportation needs, projects that address those needs, and the advantages, costs, and funding of those projects. The CTP is paired with the Unified Plan's Comprehensive–Land Use Planning element. Together, these two documents define the long term comprehensive vision for growth of the County, and a plan for investment in the County's transportation system and other supporting infrastructure.

The Gwinnett Unified Plan examines alternative land use and transportation scenarios, which allow development of transportation investment strategies consistent with the likely land use and economic development future of the County. These scenarios and the resulting recommendations considered a full range of intermodal transportation improvements and strategies that would enhance the mobility, accessibility and safety performance of the County's transportation system.

The CTP examines a range of transportation options, as well as a variety of supporting strategies aimed at improving system performance. Given the current use of the transportation system in Gwinnett, and indeed in all of Georgia, it is not surprising that expansion of road capacity and improved traffic operations top the list of priority projects. This plan, however, also examines the need for improvements in other modes of transportation, such as transit, bicycles, and walking.

The Atlanta region is currently examining the future of transit through the efforts of the Transit Planning Board (TPB) and other planning partners. The CTP is developed with this in mind. The planning team met with all of the relevant transportation agencies to make sure that the recommended actions in the CTP were consistent with regional policies and directions being taken by other agencies.

The CTP includes policy elements relating to land use strategies, access management, and travel demand management, all of which are important in optimizing transportation system performance.

1.1 Historic Growth and Current Population and Employment Distribution

Gwinnett County has been one of America's fastest growing counties for the past 20 years. According to the US Census, Gwinnett County had 730,000 residents in mid 2005 and more than 300,000 jobs. This 2005 population level was a 23% increase over 2000 levels, and a 67% increase since 1990. Fast paced growth and low density development patterns have contributed

to increasing levels of traffic congestion and, as in the rest of the metro Atlanta area, one of the longest commute times in the country.

1.2 Planning Horizon Year Forecasts

The planning activities described below focused on identification of existing conditions as well as projections for the 2030 transportation system. The Gwinnett Unified Plan evaluated three distinct growth scenarios based on various economic circumstances and levels of policy intervention by the Board of Commissioners. The CTP is based on the Middle-of-the-Pack (or Trends-based) Scenario, which predicts a population of about 1 million by 2030 in roughly 362,000 households, with employment of 483,000 in the County. This represents a growth in population of about 47% and a job growth of about 53% over today's levels. The Middle-of-the-Pack Scenario assumes a continuation of existing trends, which would moderate the county's rate of growth.

The Unified Plan recommends shifts in policy designed to revitalize declining areas and re-energize the County's economy. Specifically, the International Gateway scenario, generally considered to be the most desirable outcome, forecasts higher intensity development in the I-85 corridor including an emphasis on redevelopment, mixed-use and higher densities. Therefore some shift in transportation investments will be necessary if the adopted policies actually result in a future that resembles the International Gateway Scenario. Even if implemented immediately, however, these policies will require time to take effect and the continued support of successive Boards of Commissioners, so the Middle-of-the-Pack scenario is viewed as the most likely to occur in the near term (five to ten years). The CTP includes an unfunded Aspirations Plan to identify additional projects needed to serve the County as the results of policy shifts begin to develop.

Figure 1-1 shows the projected net residential density for Gwinnett County and its cities. The projections indicate that many areas along major transportation corridors will continue to grow while available residential land in the eastern part of the County will develop, although at relatively low densities. As discussed below, this population growth will cause roadways that are currently strained to become more congested and roadways that are in less developed areas of the County now to carry even more traffic in the future.

Figure 1-2 shows the projected distribution of jobs in the County in 2030. The figure shows that job distribution in 2030 will continue to concentrate along major transportation corridors, with significant growth in the southwest portion of the County.

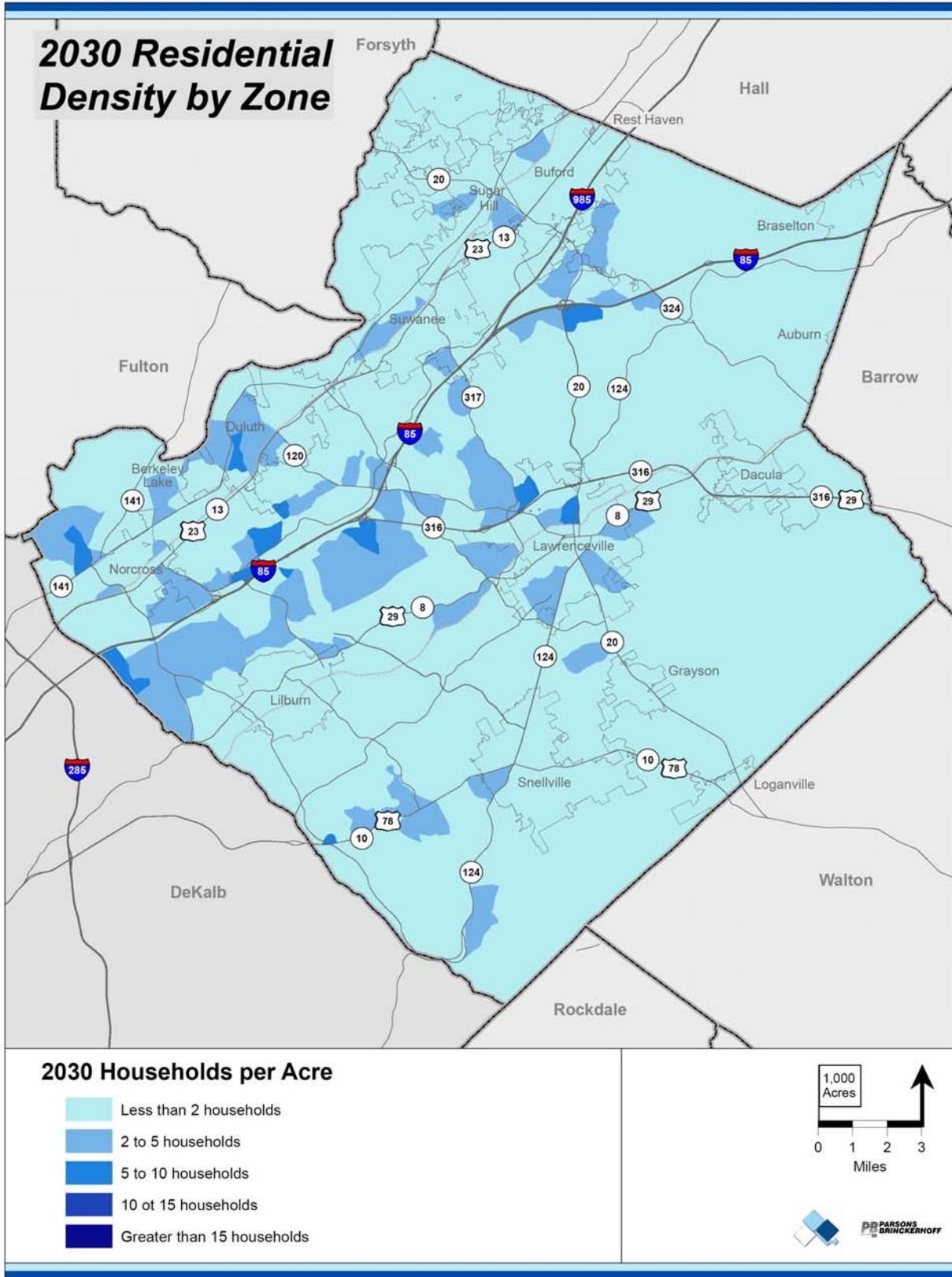


FIGURE 1-1: NET RESIDENTIAL DENSITY FOR GWINNETT COUNTY AND ITS CITIES

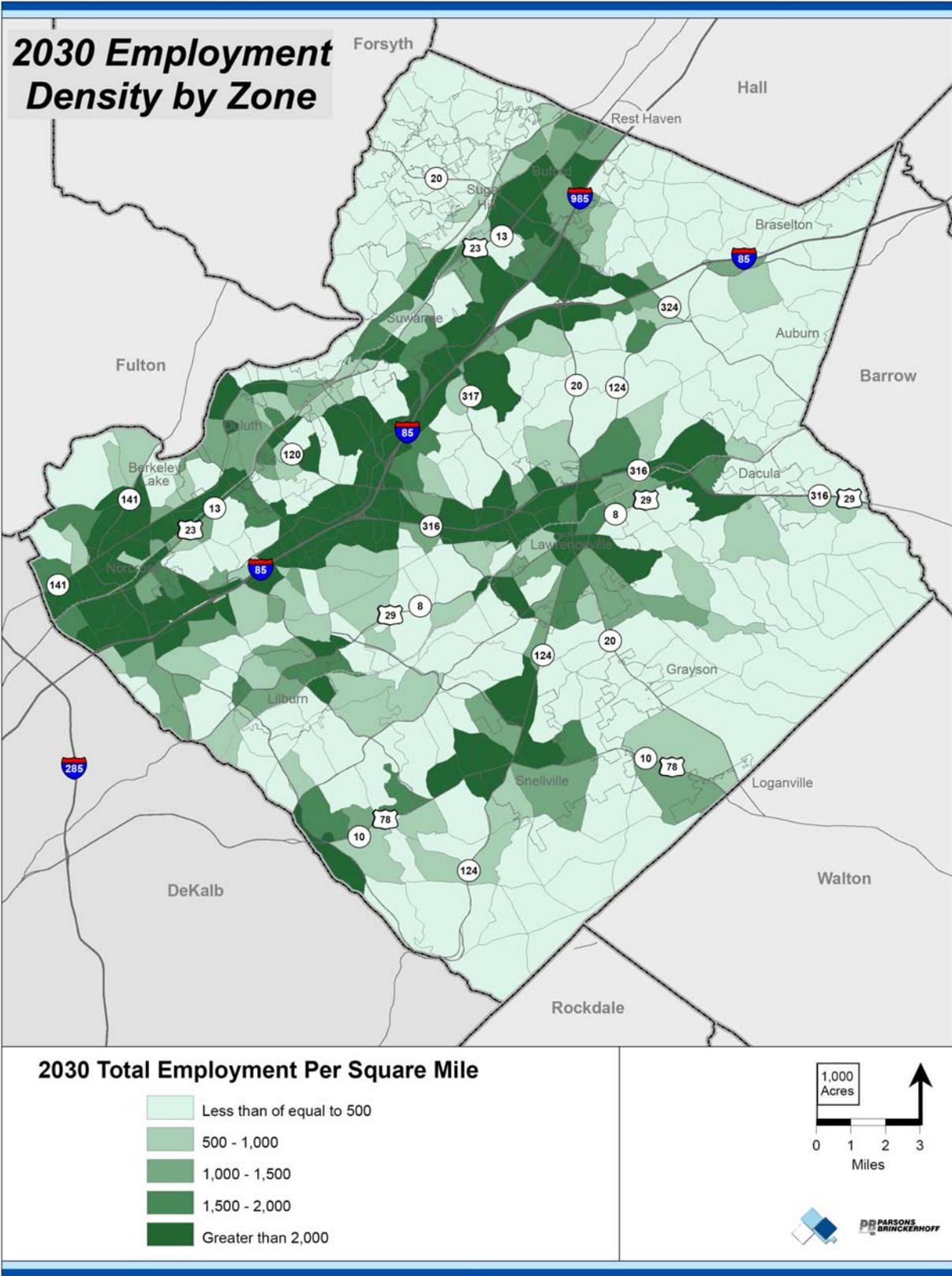


FIGURE 1-2: EMPLOYMENT DENSITY FOR GWINNETT COUNTY AND ITS CITIES

1.3 Regional Context

The Atlanta region has been among the fastest growing metropolitan areas in the United States over the past 15 or more years. As with many Sunbelt cities, residents and businesses have been attracted to Atlanta by its favorable quality of life, mild climate, relatively affordable real estate prices, diverse and expansive labor market, full spectrum of affordably priced housing, well developed infrastructure (including highway and airport), and the general perception that it is at the center of a thriving Southeastern economy.¹

The Atlanta region experienced one of its longest and most impressive periods of growth in the post-recession period of the 1990s with the addition of 556,600 new jobs and a population increase of nearly 872,000 new residents (a net increase in employment of 606,000 and in population of 1,045,066 in the central 13 counties).² Shortly before the recession in the early 2000s, the Atlanta region was adding nearly 100,000 residents annually, bringing the total population to 3.4 million (4.1 million in the 20 county MSA³) and employment to nearly 2 million by 2000.

While the recession in the early 2000s curbed the region's dynamic growth for a few years, the region has recovered well and is adding population at a rate equal to or even greater than that experienced in the 1990s. According to Atlanta Regional Commission estimates, between 2000 and 2006 the 10-county region added an average of more than 82,000 people per year, compared to 87,000 on average in the 1990s. Claritas estimates from 2007 put the 10-county growth even higher at over 88,000 on average since 2000. Somewhat counter-intuitively, employment growth, while still relatively strong, has diminished somewhat since 2000, with an average of around 23,500 jobs added each year, compared to the average of 56,000 jobs added in the 1990s. However, since the recovery from the recession of the early 2000s, the job growth statistics have been much stronger. It should be noted that several economists believe these estimates to be quite low, with increasing job growth potentially occurring in entrepreneurial jobs or other sectors that may not be adequately reflected in job growth statistics. This belief is fostered by the strong population gains that occurred while unemployment remained low, indicating job growth must have been higher than indicated.

Initial indications are that beginning in late 2007 or early 2008 the national economy entered a period of slow to negative growth. Although the duration and severity of the downturn is unknown at this time, it is likely to lead to a decline in employment and population growth in metro Atlanta for the next few years.

¹ The impact of the current water crisis has not been quantified or accounted for in any growth projections. It is possible that a significant and extended drought could dampen the actual performance of the metro economy.

² Source: US Census Bureau

³ The Atlanta MSA was expanded from 20 to 28 counties in 2003

2 Existing Conditions

An evaluation of Gwinnett County's existing transportation system was undertaken to provide a baseline for planning for the County's future mobility needs. Mobility will become an increasing concern as population and employment continue to grow. Gwinnett County is one of the most populous counties in the Atlanta region and was the fastest growing county in the Atlanta region for four decades from 1960 to 2000. In addition, it is an employment center, with over 300,000 jobs. The County workforce has experienced an enormous growth since 1990. According to the Georgia Department of Labor, the County workforce has grown from approximately 217,000 in 1990 to approximately 419,000 in 2006. By 2030, Gwinnett County's population is expected to exceed one million and its employment is expected to grow to nearly 500,000.

2.1 Demographic Overview

2.1.1 Population Growth and Development Pattern

Gwinnett County is part of the Atlanta Regional Commission's 20-County Region, as shown on Figure 2-1, and is located in the northeastern portion of the region just outside of I-285.

As a result of historically significant population growth, the highest population levels in the Atlanta region are found in Atlanta's core counties, which are the most urban. Population and employment growth has largely been concentrated in the region's "favored quarter", or the northeast quadrant, in which Gwinnett lies. The favored quarter is defined as the radiating quarter of a metropolitan area where the majority of the new housing growth and white-collar jobs are located. Atlanta's favored quarter is the area north of Downtown between I-75 and I-85 and anchored by Georgia 400 and the Chattahoochee River. Between 1990 and 2000, nearly 80% of the region's job growth occurred within this area. Although an increasing amount of growth has located in areas outside of the favored quarter in the last few years, the large majority of growth will continue to spread outward along I-75, I-85 and Georgia 400.

Much of the area's future office development is anticipated to occur in the "metro cores" within the northeast quadrant. Metro cores are concentrations of employment and regional activity and have evolved within the metropolitan area. Atlanta's largest urban cores include Downtown, Midtown, Buckhead, Central Perimeter and Cumberland-Galleria. These latter three cores are examples of "third generation cores" or cores that were largely founded in the 1970s and evolved into major employment and activity concentrations in the 1990s. These cores, which dominated office growth in the 1980s, have since seen gradual declines in their capture rates. Although these cores are still experiencing positive growth of new office and retail uses, they are losing share to newer "fourth generation cores," which are typically more amorphous and are located even farther out. The Georgia 400 North corridor in North Fulton, which accounted for close to half of the region's office growth in the late 1990s and 2000s, is the leading example of fourth generation core in the Atlanta region. The other major fourth generation cores are Town Center on I-75 and Gwinnett Place Mall and Sugarloaf areas in Gwinnett. During the 1990s and early 2000s, mature third Generation cores consistently lost ground to these newer cores due in part to significant traffic congestion along major freeways providing access to the older cores. However, the events of the past few years indicate that this continued outward expansion may be slowing somewhat. Most notably, the resurgence of Downtown as a place for new office and housing has made headlines, as has the evolution of Central Perimeter as both an employment, and now housing core.

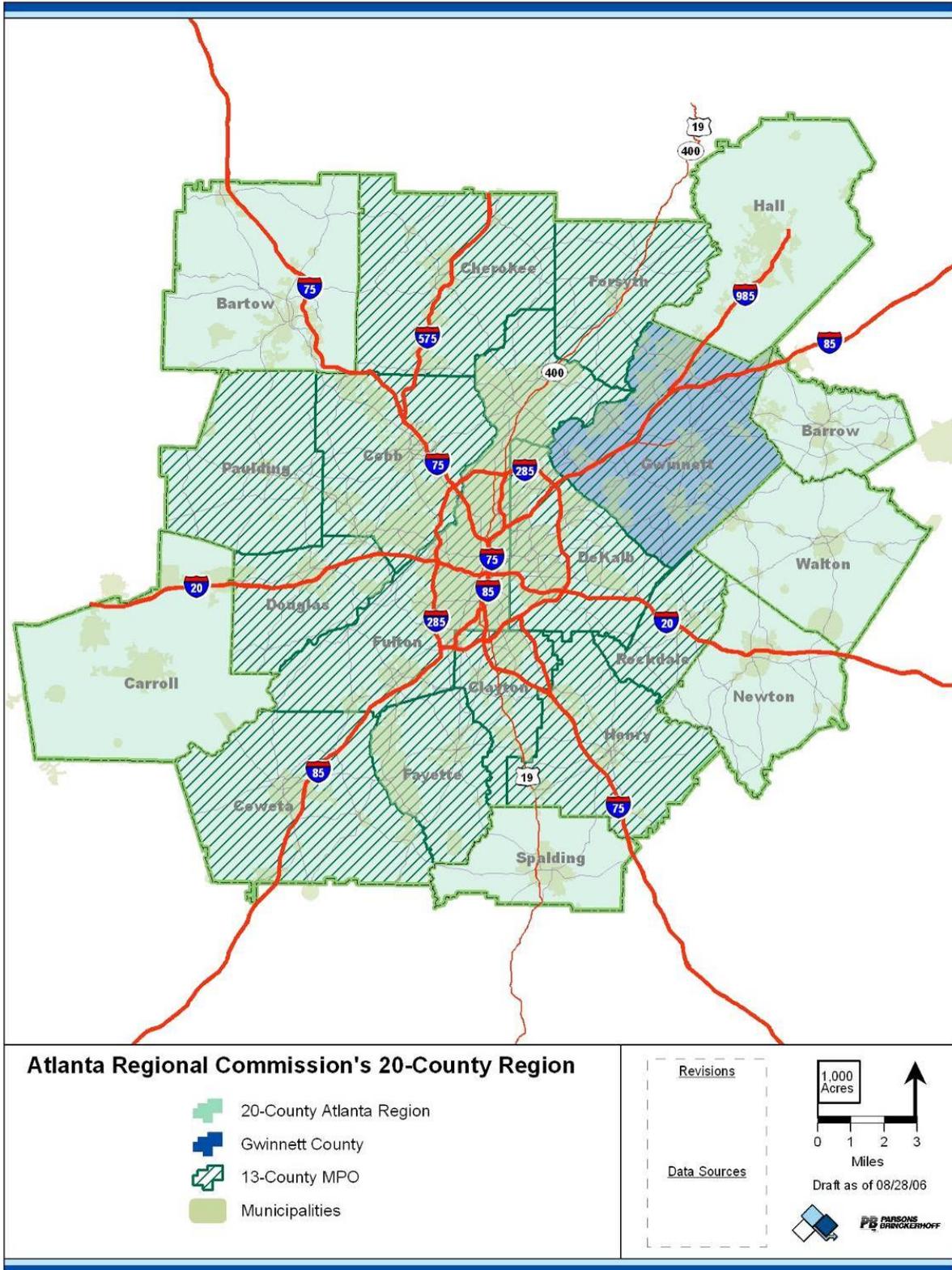


FIGURE 2-1: ATLANTA REGION

While this reinvestment in core submarkets is a noticeable trend, the fourth generation cores should still expect to capture large amounts of future growth due to their proximity to many attractive residential areas and their relative affordability as compared to in-town locations.

Gwinnett County's pro-growth policies have resulted in a range of housing options, expanding office cores, popular malls and retail centers, new civic and cultural amenities such as the Gwinnett Center and an acclaimed school system. This has led to doubling the County's share of the region's population, from 9% in 1980 to 18.9% in 2007. The County was the fastest growing county in the nation in 1984 and has consistently remained in the top 100 since that time. Fulton and DeKalb Counties have lost the greatest proportion of their respective populations, with each losing 7-8% of their share of the metro population in the past 27 years. Fulton County has fallen from 31% of the metro population to 24% and DeKalb County from just over 25% to less than 17%.

In terms of absolute growth, Gwinnett County continues to rank among the counties with the most robust growth in the nation. According to the US Census, between April 1, 2000 and July 1, 2006, Gwinnett ranked ninth in the nation in absolute population growth, adding over 168,000 residents. However, given the willingness of Atlanta's residents to "drive for value," a significant portion of buyers are likely to opt for suburban areas even farther out than Gwinnett County, which will fuel development of the next ring of counties. This is illustrated by Table 2-1, which lists counties experiencing the highest percentage growth rates.

TABLE 2-1: POPULATION GROWTH ESTIMATES BY COUNTY FOR THE FASTEST-GROWING US COUNTIES 2000 – 2006

U.S. Rank	Geographic area	Population estimates		2000 to 2006	
		2006	2000	Net Change	Percent Change
1	Flagler County, FL	83,084	49,835	33,249	66.7
2	Kendall County, IL	88,158	54,520	33,638	61.7
3	Rockwall County, TX	69,155	43,074	26,081	60.5
4	Loudoun County, VA	268,817	169,599	99,218	58.5
5	Forsyth County, GA	150,968	98,407	52,561	53.4
6	Pinal County, AZ	271,059	179,537	91,522	51.0
7	Douglas County, CO	263,621	175,766	87,855	50.0
8	Henry County, GA	178,033	119,344	58,689	49.2
9	Paulding County, GA	121,530	81,608	39,922	48.9
10	Lyon County, NV	51,231	34,501	16,730	48.5
11	Newton County, GA	91,451	62,001	29,450	47.5
22	Barrow County, GA	63,702	46,144	17,558	38.1
24	Cherokee County, GA	195,327	141,903	53,424	37.6
32	Jackson County, GA	55,778	41,589	14,189	34.1
43	Lee County, GA	32,495	24,757	7,738	31.3
47	Walton County, GA	79,388	60,687	18,701	30.8
51	Effingham County, GA	48,954	37,535	11,419	30.4
58	Douglas County, GA	119,557	92,244	27,313	29.6
61	Coweta County, GA	115,291	89,215	26,076	29.2
64	Dawson County, GA	20,643	15,999	4,644	29.0
65	Pickens County, GA	29,640	22,983	6,657	29.0
69	Gwinnett County, GA	757,104	588,448	168,656	28.7
82	Bryan County, GA	29,648	23,417	6,231	26.6

Source: US Census

Figure 2-2 compares population among the inner ten Atlanta Region counties from 1980 to 2007. Figure 2-3 provides the corresponding percentage distribution of population among these

counties, illustrating the large and growing share Gwinnett County has captured within the region. Figure 2-4 compares the 10 counties in the Atlanta Region by share of population.

Employment growth in Gwinnett County has also been relatively strong over the past few years, averaging more than 5,000 net new jobs per year from 2000 to 2006.⁴ Over the past three years, the Northeast/I-85 corridor, which includes Gwinnett County, has captured slightly more than its “fair share” of office absorption, representing 10% of current space compared to 12% of absorption.⁵ While there has been much discussion of shifting towards a more “inside-the-perimeter” orientation, Gwinnett County still constitutes a large capture of the metro area’s employment growth, a trend that is likely to continue over the next few decades.

These growth trends of the past 25 years are forecasted by the Atlanta Regional Commission (ARC) to continue over the next 25 years, with Gwinnett County continuing to lead the way in growth. Fueled by an expanding economy, led by the services and retail trade sectors, with corresponding job creation and development of suburban cores, the 13-county area is expected to increase by 1.3 million jobs and 2.7 million residents between 2000 and 2030, for total employment of 3,355,269 and a total population of 5,962,177.

The Atlanta Regional Commission estimates that Gwinnett County will add 400,246 residents and 224,101 jobs during this 30-year period, leading all other counties in population growth and ranking second behind Fulton County in employment growth. As a result, Gwinnett County is estimated to have a 2030 population of 988,694 and employment of 516,001. It is expected to surpass DeKalb County, becoming the second largest population center in the region, and overtaking both Cobb and DeKalb to also gain the secondary ranking in employment, trailing only Fulton County in both cases.

2.1.2 Six Major Issues Impacting Gwinnett Today

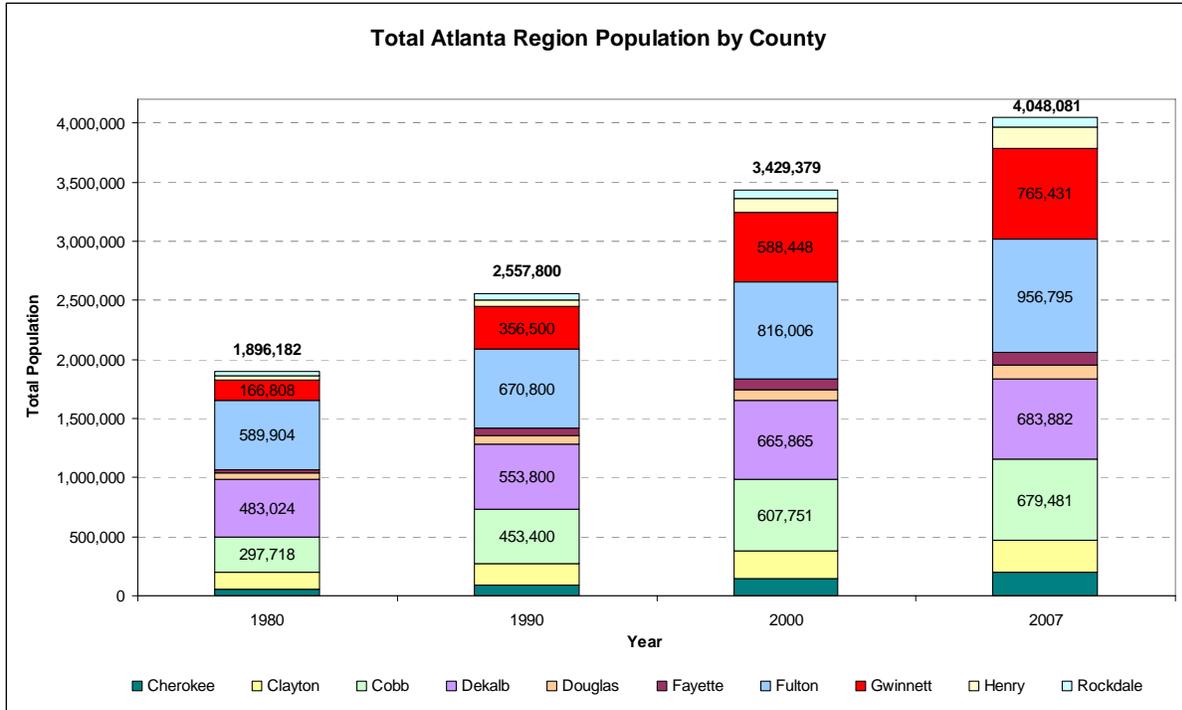
Within that larger context, six significant issues have been identified for consideration in the planning process, recognizing that they will shape growth and investment in Gwinnett in the coming years.

- Gwinnett is transitioning from an industrial job center to a more office-oriented job center
- Demographically, the area is rapidly diversifying in terms of racial and ethnic composition as well as in the types (age, size, etc.) of households being attracted
- Housing continues to serve the full spectrum of price points
- Gwinnett serves as a major regional shopping destination for the I-85 corridor
- Several areas, particularly those in the south of the county are struggling with revitalization
- Currently Gwinnett lacks a “center” or downtown area, although multiple centers are emerging as cities are reinvesting in their downtowns

The above issues are discussed later this Plan, where they help shape the County’s long range vision, goals and strategies.

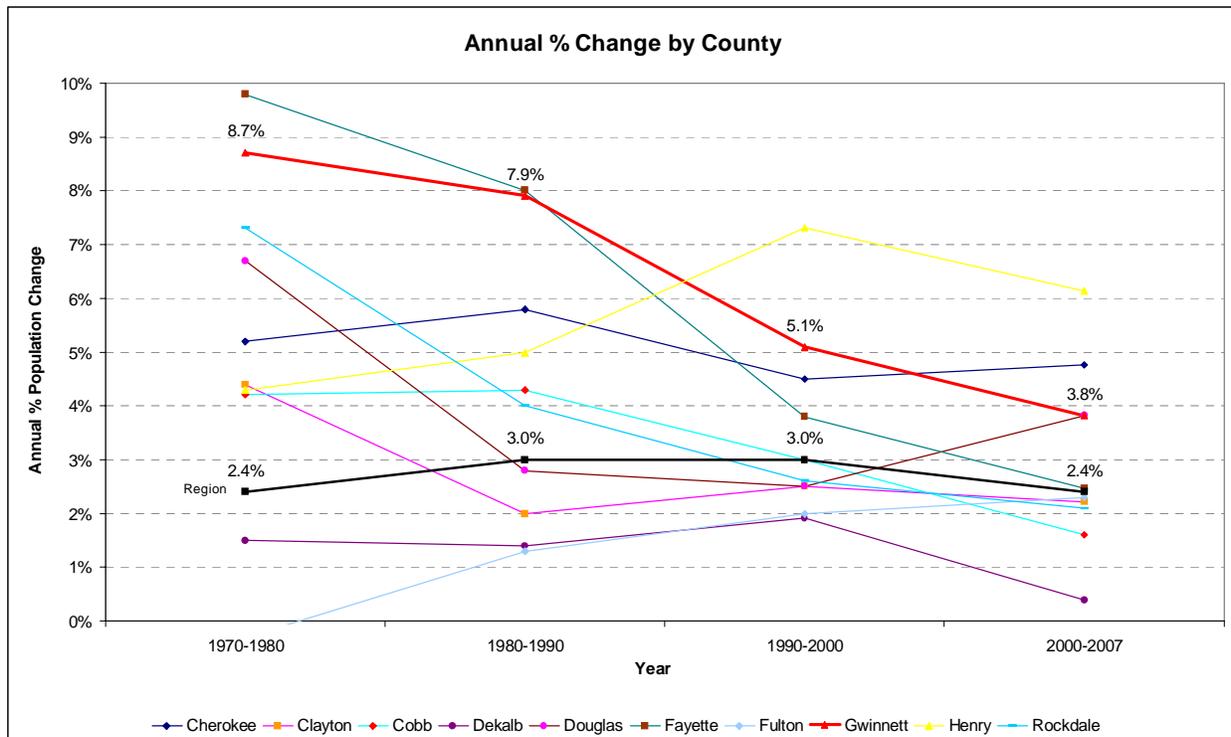
⁴ Source: Atlanta Regional Commission estimates

⁵ Source: CoStar 4th Quarter 2007 Office Guide



Source: US Census; 2007 figures from Claritas, Inc.

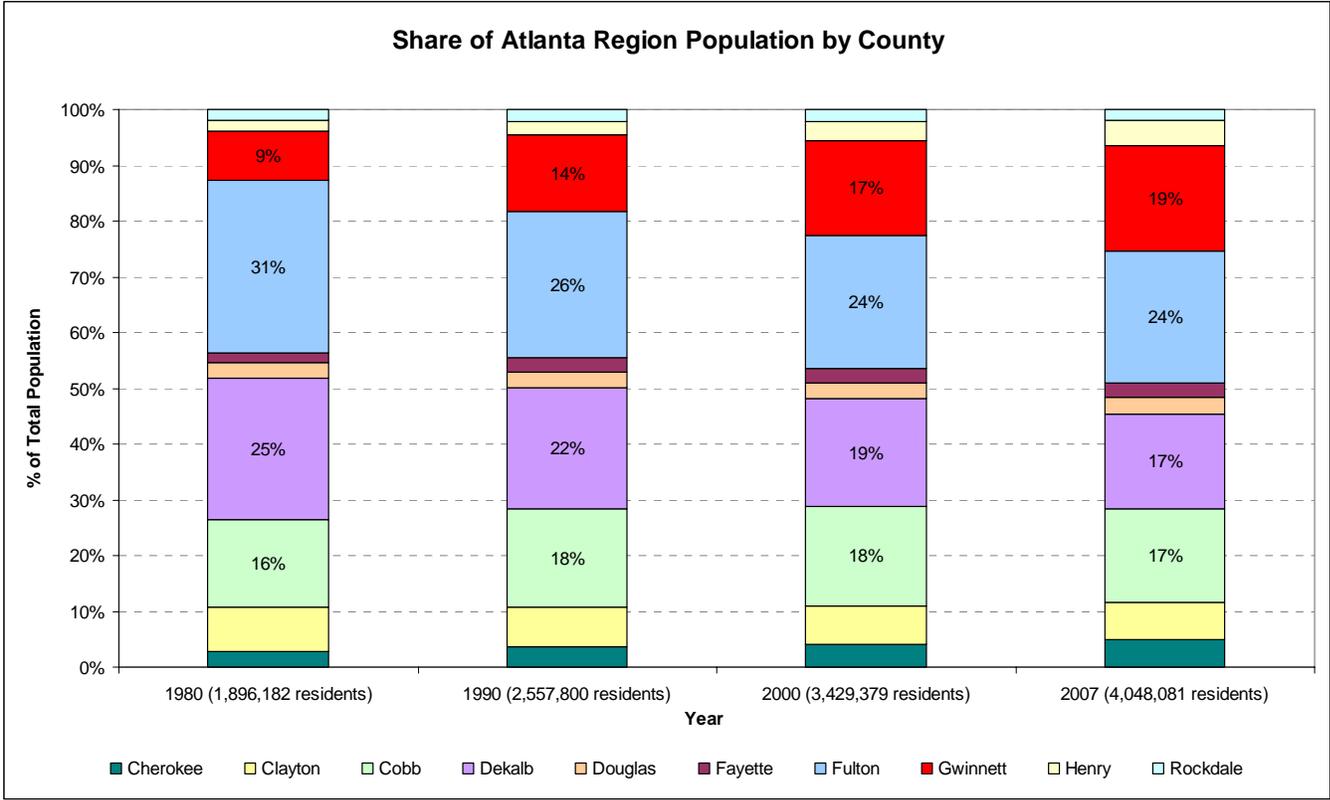
FIGURE 2-2: TOTAL POPULATION BY COUNTY 1980 - 2007



Source: US Census; 2007 figures from Claritas, Inc.

FIGURE 2-3: ANNUAL POPULATION CHANGE BY COUNTY 1970 - 2007





Source: US Census; 2007 figures from Claritas, Inc.

FIGURE 2-4: SHARE OF ATLANTA REGION POPULATION BY COUNTY 1980 - 2007



2.2 Existing Transportation System

This section describes Gwinnett County's existing bridges and road network. This section also identifies Gwinnett County's place in the Atlanta Regional Congestion Management System, and highlights safety issues.

2.2.1 Bridges

Deficient bridges within Gwinnett County may reduce road network capacity and could even impair the function of the road network. The Georgia Department of Transportation maintains a bridge inventory within its Bridge Management System and provides sufficiency rating reports for each bridge within the County. These reports assist in determining the need for maintenance, rehabilitation or reconstruction of a bridge structure. With adequate maintenance, any structure with a sufficiency rating of above 75 should maintain an acceptable rating for at least 20 years. Structures with a rating between 65 and 75 are considered less satisfactory. Structures with a sufficiency rating of 65 or lower have a useful life of less than twenty years and will require major rehabilitation or reconstruction work during the study horizon. Bridges with a sufficiency rating of fifty (50) or lower are identified as deficient.

It should be noted that identification as "deficient" does not imply that the bridge is unsafe. However, when left open to traffic, a deficient bridge will require significant maintenance to remain useful to the public, and eventually rehabilitation or replacement will be necessary. Federal aid programs are in place to address bridge maintenance. A sufficiency rating of 50 or below triggers eligibility for federal funds, which are administered through GDOT. These funds require a local match, and Gwinnett County's Special Purpose Local Option Sales Tax (SPLOST) program generates monies that can be used to provide this match. Figure 2-5 shows Gwinnett County bridges, including bridges with sufficiency ratings below 50 and those with ratings of 50 or higher.

2.2.2 Arterial and Collector System

Each road has a functional class designated by the Georgia Department of Transportation (GDOT). Roadway facilities are generally classified as either urban or rural based on whether or not they are located in an urban area as determined by the US Census Bureau. Parts of the County have recently been reclassified so that all of Gwinnett County is now considered urban and no "rural" facilities currently exist. Facilities are further divided into principal arterials, minor arterials, major collectors, minor collectors, and local roads. Principal arterials serve mostly through traffic, and local roads provide direct parcel access, serving the beginning or end of a trip. In addition, major limited access facilities in the County, which include Peachtree Industrial Boulevard, I-85, I-985, and SR 316, are classified as urban freeways and expressways.

The functional classification designation for Gwinnett County's network of arterials, collectors and other roads is shown in Figure 2-6. Figure 2-7 shows the existing number of lanes on Gwinnett County's roads. Several major arterials intersect in incorporated areas such as Lawrenceville, Snellville, Duluth, and Sugar Hill. The radial pattern in these cities suggests potential bottleneck areas, where traffic is concentrated on major roads and at major intersections rather than being distributed more widely over a grid-based network.

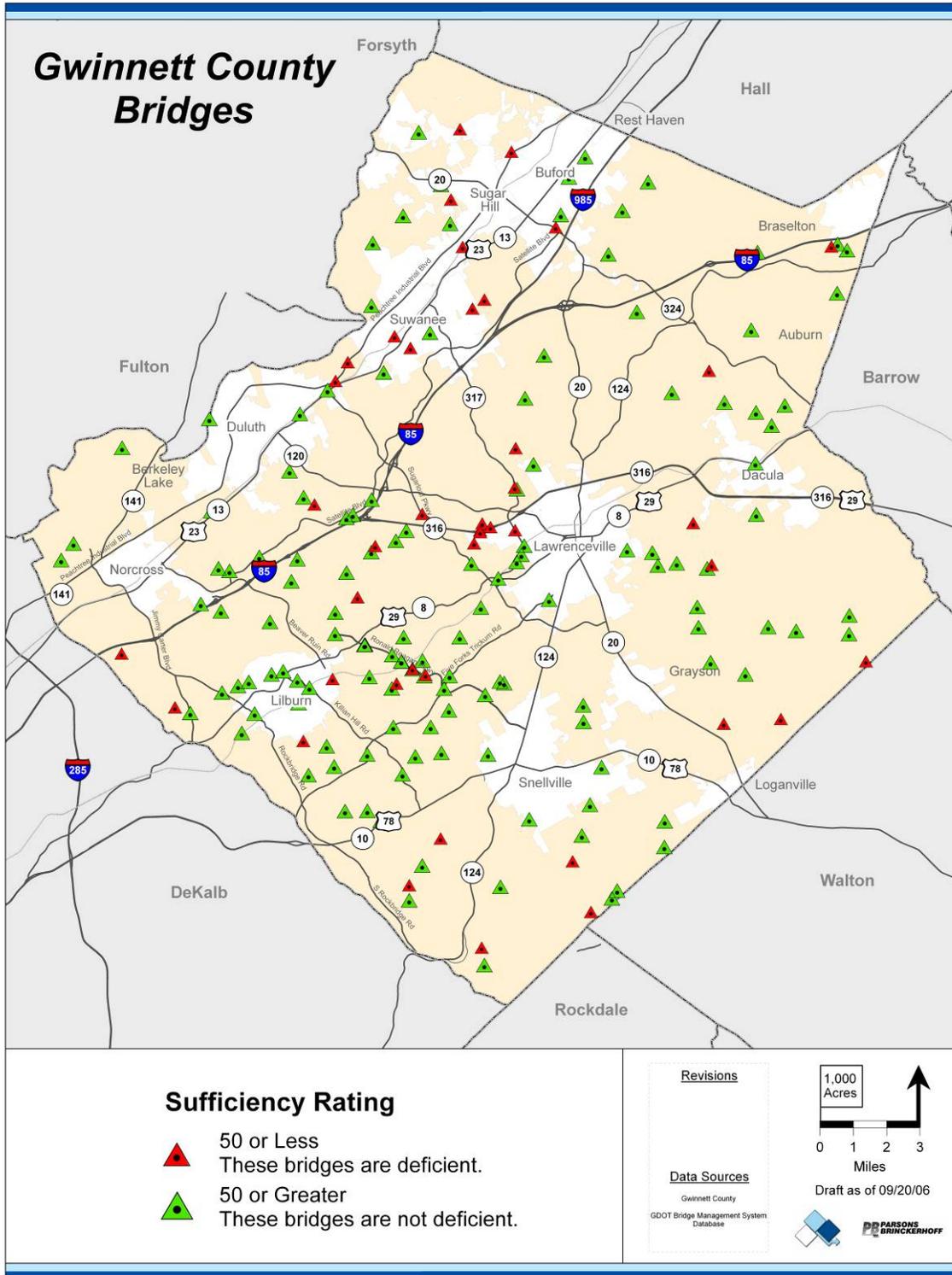


FIGURE 2-5: GWINNETT COUNTY BRIDGES

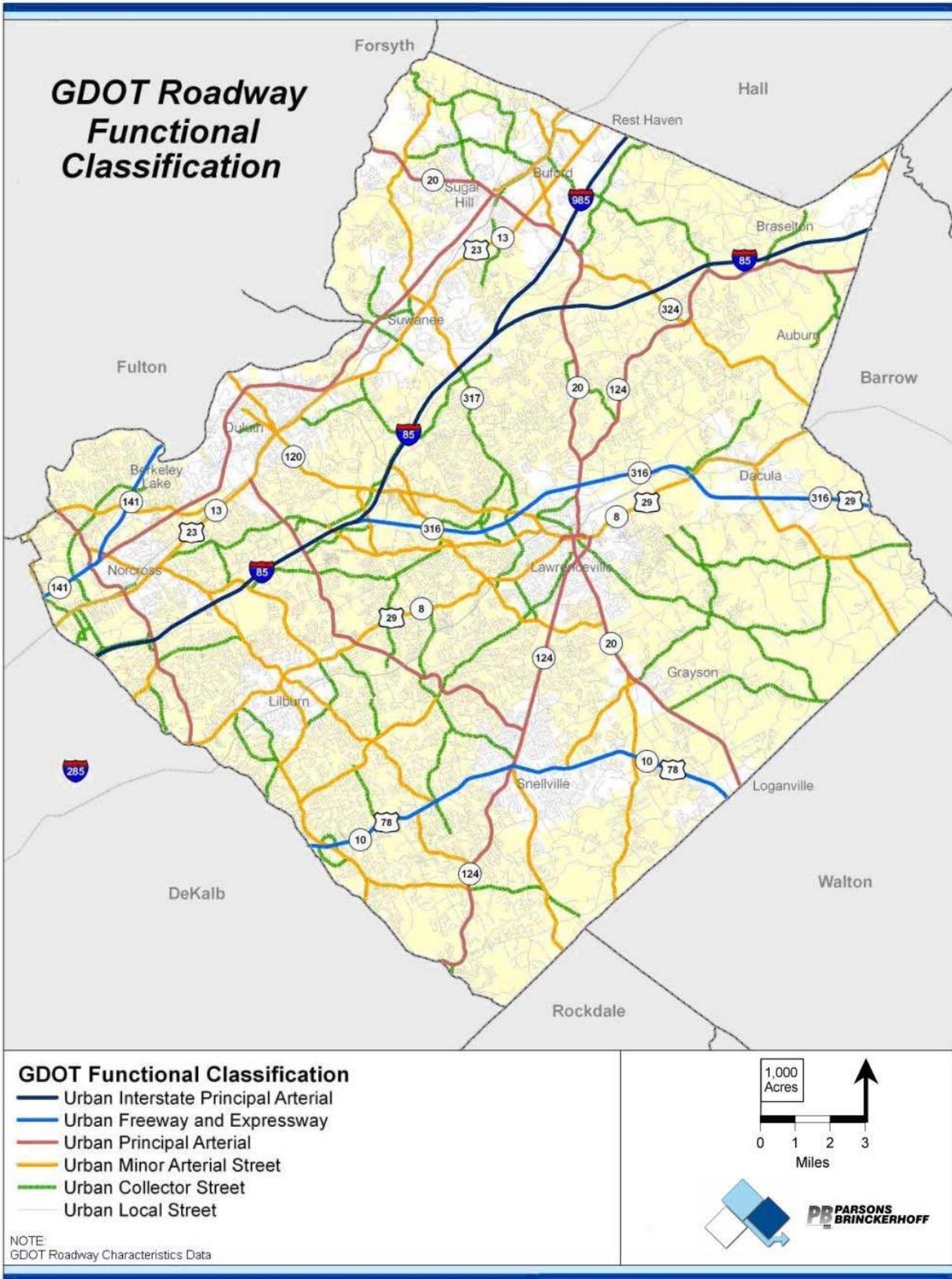


FIGURE 2-6: GDOT ROADWAY FUNCTIONAL CLASSIFICATION

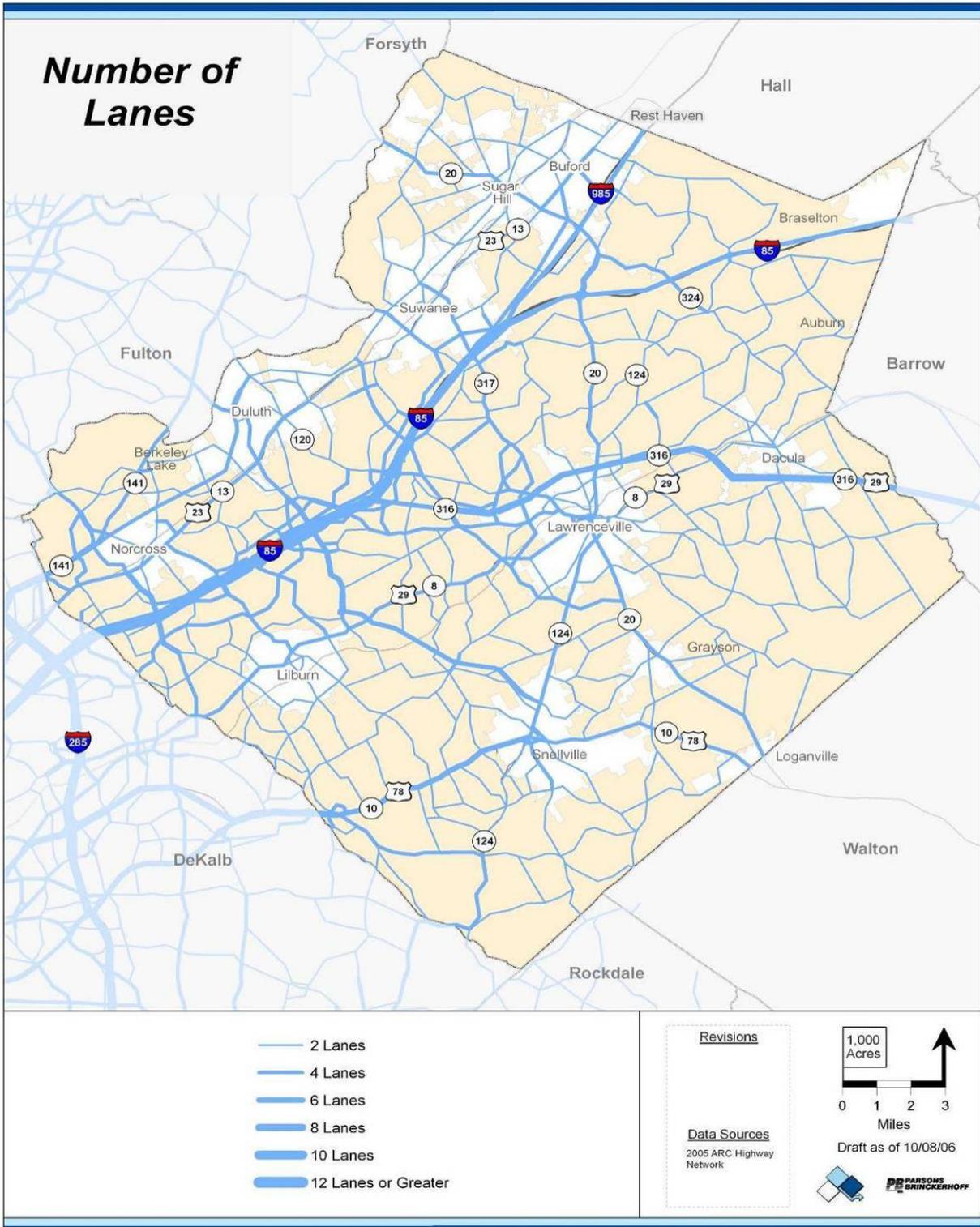


FIGURE 2-7: ROADWAYS BY NUMBER OF LANES

2.2.3 Daily Traffic Volume

In general, traffic volume in Gwinnett County has increased over the past decade. Historically, the highest daily traffic volumes have been along I-85 from the DeKalb County line to the I-85/SR 316 split. Today, however, heavy traffic stretches all the way to the I-85/I-985 split with over 147,000 vehicles per day. Additionally, over 80,000 vehicles travel on I-85 from the I-85/I-985 split to SR 20 on a daily basis. Other significant arterials with over 80,000 vehicles per day are Peachtree Industrial Boulevard from the DeKalb County line to Peachtree Parkway, and SR 316 from I-85 to Sugarloaf Parkway.

Figure 2-8 shows Gwinnett County's traffic volumes, according to the latest count information from GDOT and the Gwinnett County Department of Transportation. The interstates were excluded from the map to prevent I-85 and I-985 very large volumes from obscuring other major roads in the figure. Key routes are Peachtree Parkway, Peachtree Industrial Boulevard, Buford Highway (US 23/SR 13), Lawrenceville Highway (US 29/SR 8), Five Forks Trickum Road, US 78/SR 10, SR 316, SR 20, Pleasant Hill Road, Jimmy Carter Boulevard, Ronald Reagan Parkway, Lawrenceville Suwanee Road, Beaver Ruin Road, Indian Trail Lilburn Road, Killian Hill Road, Satellite Boulevard, SR 124, and SR 120.

Gwinnett County traffic count data from the Georgia Department of Transportation (GDOT), which includes counts on all arterials and many collectors in the County, provides insight into the existing traffic levels in Gwinnett. The planning team studied recent traffic counts in conjunction with results from the ARC travel demand model to examine present and future year congestion in Gwinnett County. Present day analysis used year 2005 household and employment data from ARC to test the performance of the 2005 roadway network. Near term analysis used 2015 household and employment forecasts developed for the Gwinnett Unified Plan as did the long term, 2030, analysis.

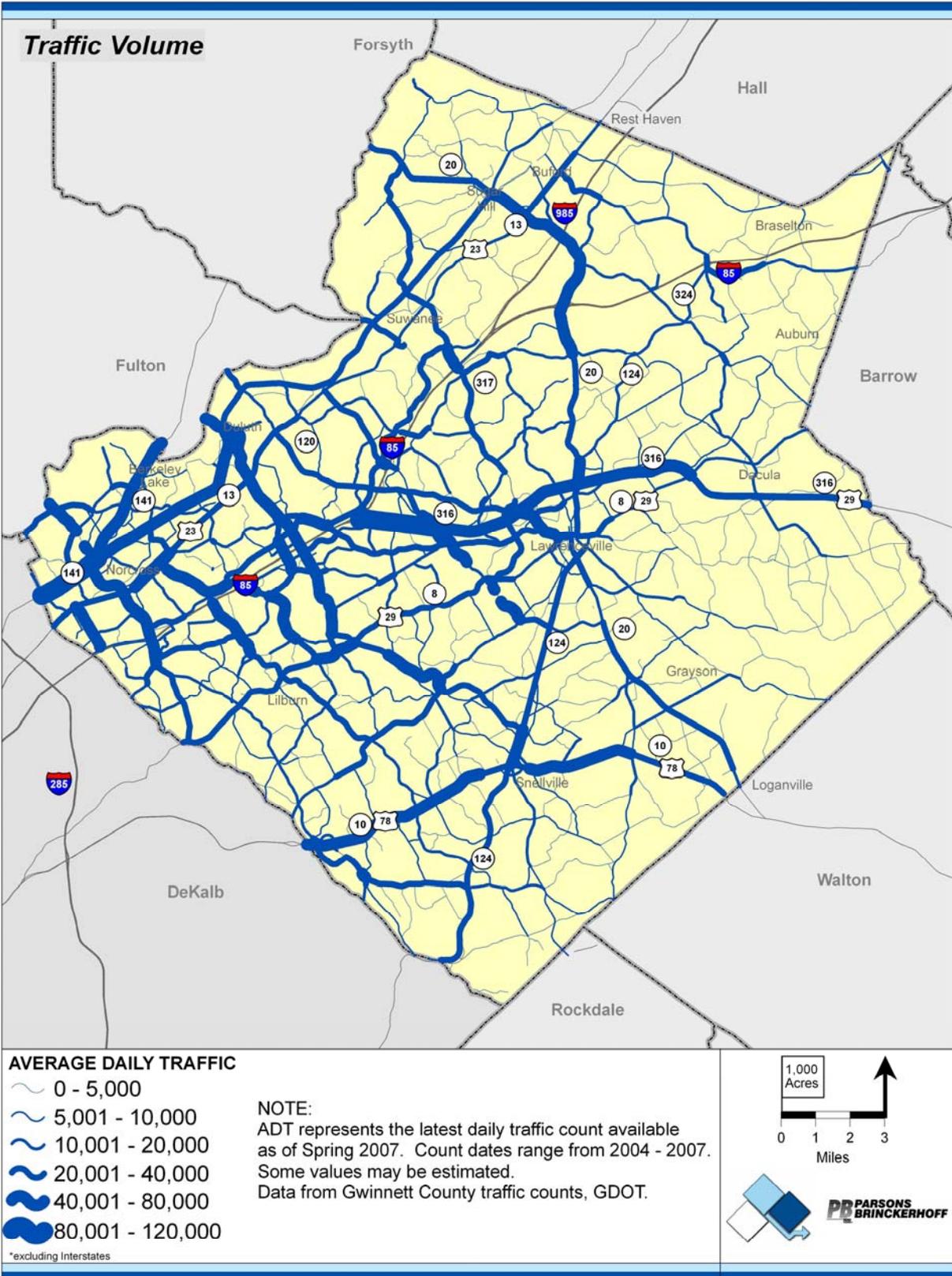


FIGURE 2-8: GWINNETT COUNTY TRAFFIC VOLUME, EXCLUDING INTERSTATES

2.2.4 Traffic Safety and Operations

Figure 2-9 through Figure 2-12 show 2005 annual crash data in Gwinnett County from the CARE database. High crash locations are highlighted in Figure 2-9 through Figure 2-12, with the largest, darkest markers indicating locations with the greatest number of crashes in the County. The figures also show the top 100 crash locations based on 2005 data from Gwinnett County's Department of Transportation. Table 2-2 highlights the top 40 of these 100 locations in descending order by number of crashes. It should be noted that while crash data can be used to highlight locations for potential improvements, a high number of crashes at a particular location does not necessarily imply an unsafe, deficient or improperly designed roadway system; specific mitigation measures can come only from careful engineering analysis.

Gwinnett County roads experience varying degrees of traffic congestion. The Atlanta region's Congestion Management System (CMS) extends into Gwinnett County and includes the County's expressways and arterial roads which are shown in Figure 2-13. The CMS evaluates congestion levels on the affected roadways and attempts to mitigate the congestion. Mitigation efforts may include minor modifications to the roadway, encouragement of alternative modes, capacity enhancement and other strategies. ARC is responsible for creating the region's Congestion Management Process (CMP), which identifies and attempts to mitigate roadway congestion by increasing the system's efficiency and providing alternatives to single occupancy vehicle trips. As a component of the CMP, ARC maintains the CMS database of congested roadways. The following is a list of the 2005 CMS roadways in the County:

- GA 10 (Stone Mountain Hwy/Athens Hwy)
- GA 120 (Duluth Hwy/West Pike St)
- GA 124 (Scenic Hwy/Centerville Hwy/Braselton Hwy)
- GA 13 (Buford Hwy)
- GA 140 (Jimmy Carter Blvd/Holcomb Bridge Rd)
- GA 141 (P'tree Industrial Blvd/P'tree Pkwy)
- GA 20 (Cumming Hwy/Buford Dr/Grayson Hwy/Loganville Hwy)
- GA 324 (Gravel Springs Rd/Auburn Rd)
- GA 378 (Beaver Ruin Rd)
- GA 84 (Grayson Pkwy)
- GA 864 (Pleasant Hill Rd/Ronald Reagan Pkwy)
- GA 8 (Lawrenceville Hwy/Winder Hwy)
- SR 316
- I 85 NE
- I 985
- Jimmy Carter Blvd
- Pleasant Hill Rd
- Killian Hill Rd
- Lawrenceville Suwanee Rd
- McGinnis Ferry Rd
- Medlock Bridge Rd
- Peachtree Industrial Blvd
- Rockbridge Rd (one word)
- Spalding Drive
- Sugarloaf Pkwy
- Five Forks Trickum Rd

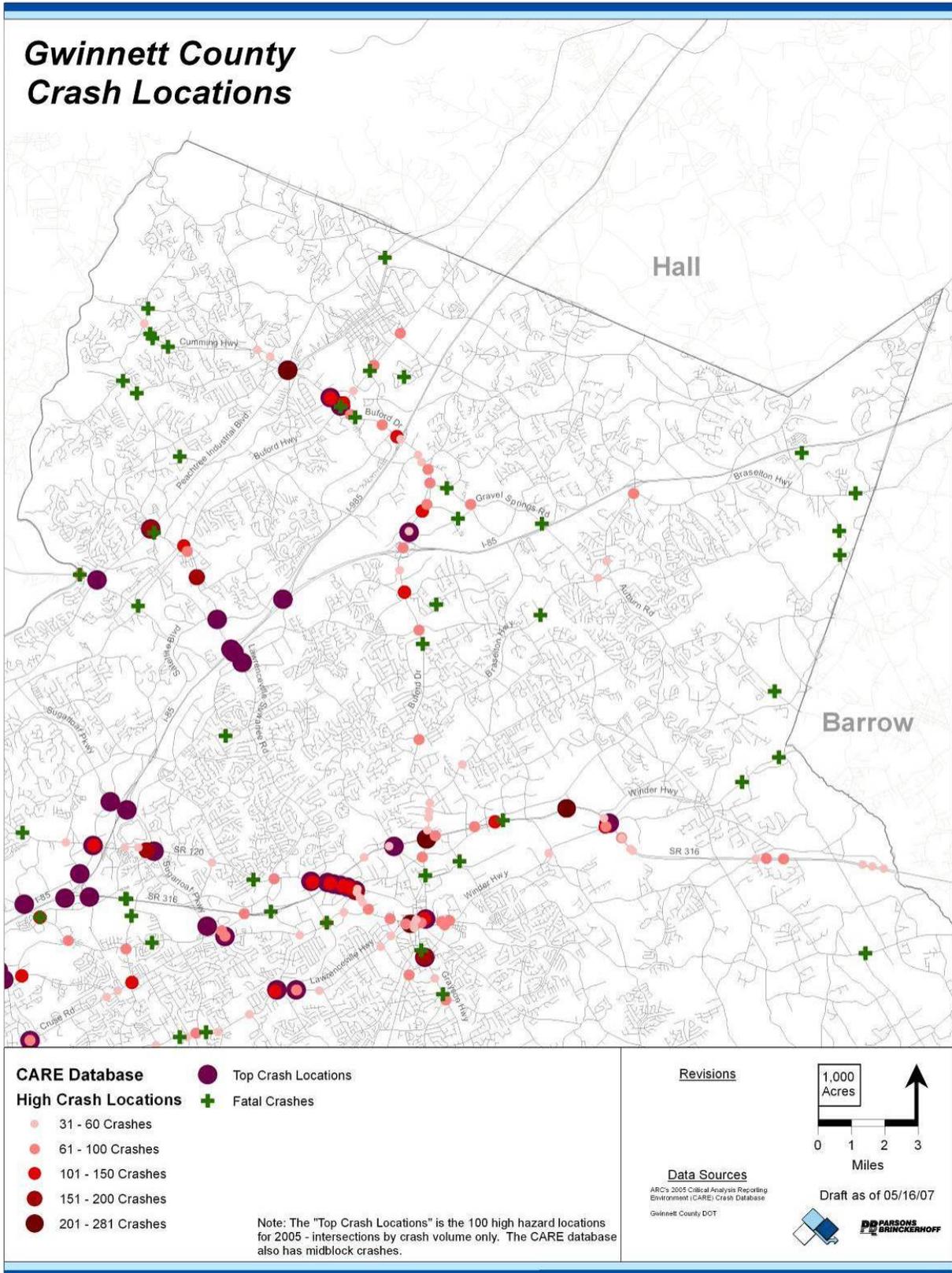


FIGURE 2-9: CRASH LOCATIONS FOR THE NORTHERN QUADRANT

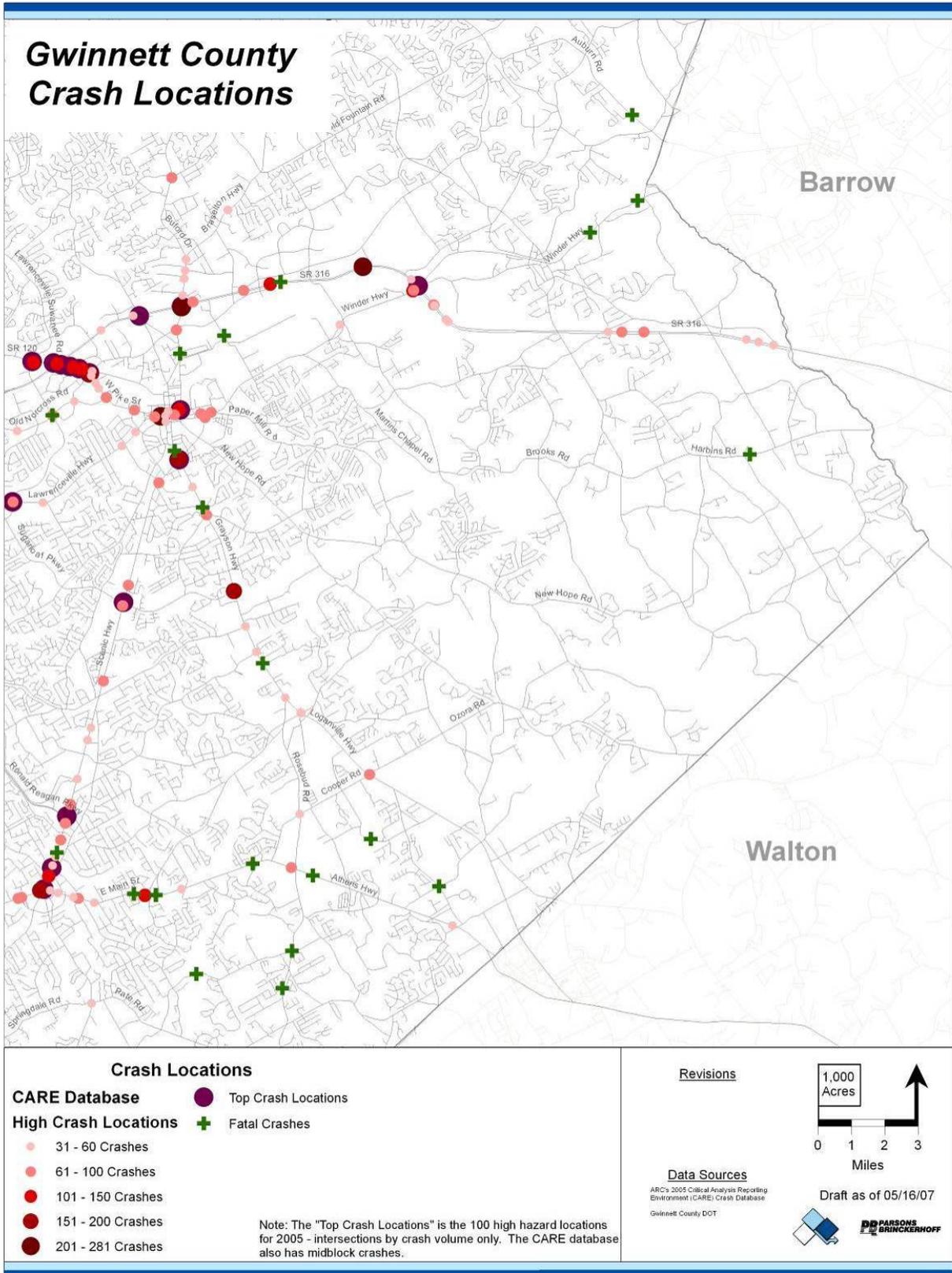


FIGURE 2-10: CRASH LOCATIONS FOR THE EASTERN QUADRANT

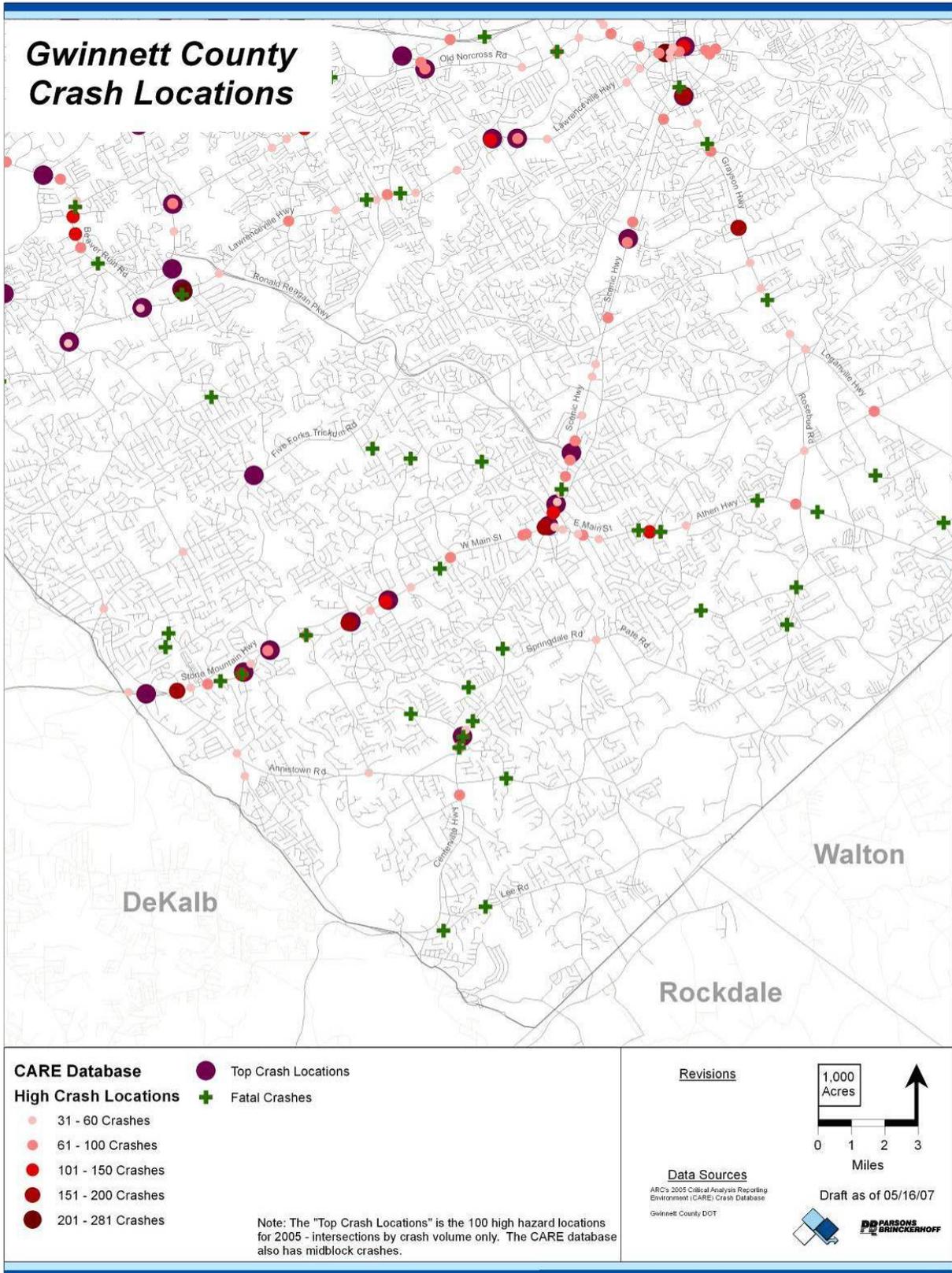


FIGURE 2-11: CRASH LOCATIONS FOR THE SOUTHERN QUADRANT

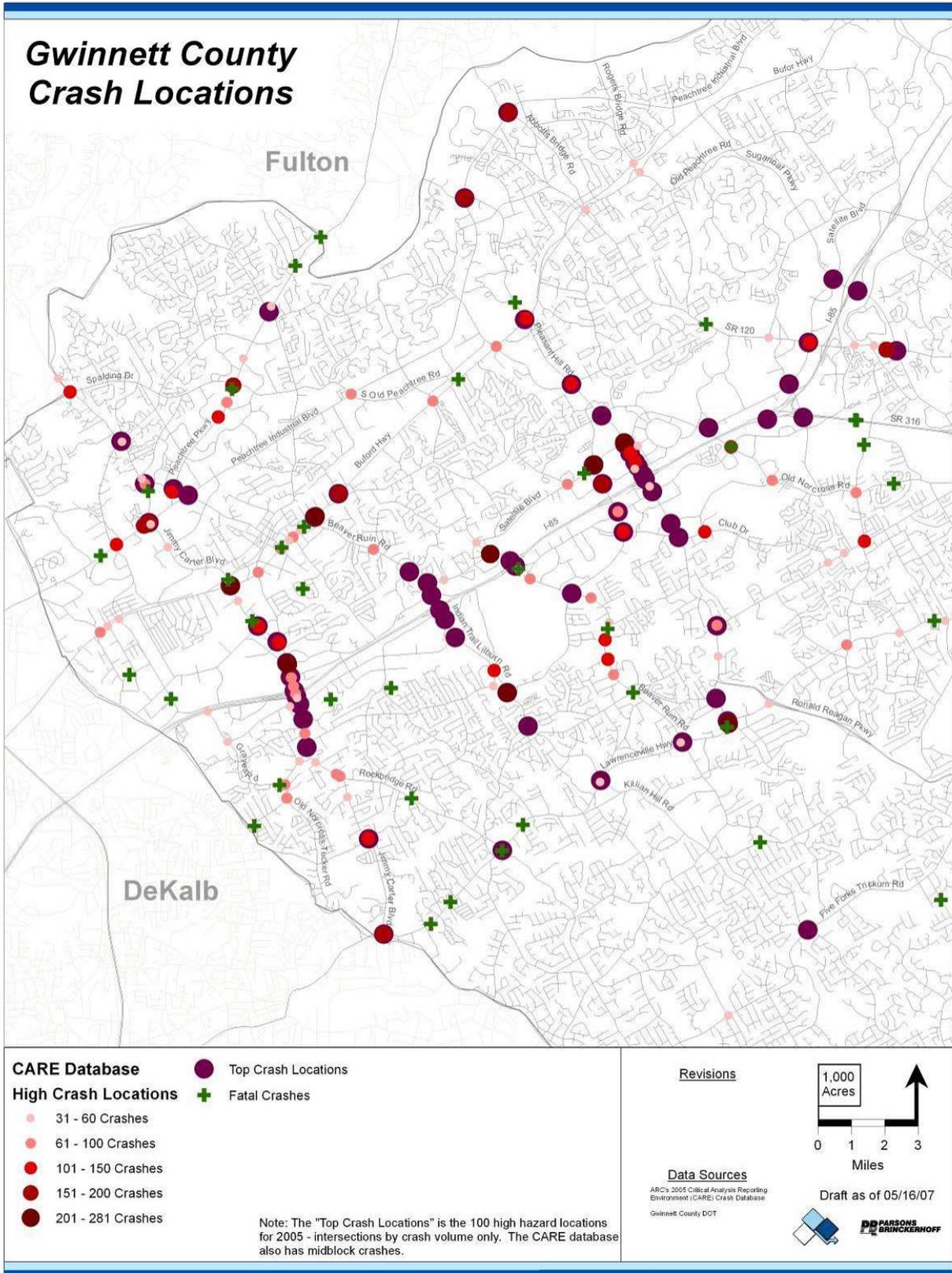


FIGURE 2-12: CRASH LOCATIONS FOR THE WESTERN QUADRANT

TABLE 2-2 INTERSECTIONS WITH RELATIVELY HIGH CRASH VOLUMES IN 2005

FIRST STREET	SECOND STREET
I-85 NB OFF RAMP/I-85 NB ON RAMP	JIMMY CARTER BOULEVARD/ JIMMY CARTER BOULEVARD
I-85 NB OFF RAMP/I-85 NB ON RAMP	PLEASANT HILL ROAD/ PLEASANT HILL ROAD
JIMMY CARTER BOULEVARD/JIMMY CARTER BOULEVARD	SOUTH NORCROSS-TUCKER ROAD/ SINGLETON ROAD
I-85 SB OFF RAMP/I-85 SB ON RAMP	JIMMY CARTER BOULEVARD/ JIMMY CARTER BOULEVARD
LAWRENCEVILLE HIGHWAY/LAWRENCEVILLE HIGHWAY	PLEASANT HILL ROAD/ LESTER ROAD
BUFORD HIGHWAY	JIMMY CARTER BOULEVARD
ARCADO ROAD/BEAVER RUIN ROAD	LAWRENCEVILLE HIGHWAY/ LAWRENCEVILLE HIGHWAY
I-85/I-85 SB ON RAMP	UNIVERSITY PARKWAY/ UNIVERSITY PARKWAY
BUFORD DRIVE	UNIVERSITY PARKWAY
PLEASANT HILL ROAD	SATELLITE BOULEVARD
DAWSON BOULEVARD/JIMMY CARTER BOULEVARD	LIVE OAK PARKWAY/ JIMMY CARTER BOULEVARD
I-85 NB OFF RAMP/I-85 NB ON RAMP	LAWRENCEVILLE-SUWANEE ROAD/ LAWRENCEVILLE-SUWANEE
CLUB DRIVE	PLEASANT HILL ROAD
I-85 SB OFF RAMP/I-85 SB ON RAMP	PLEASANT HILL ROAD/ PLEASANT HILL ROAD
BUFORD DRIVE	MALL OF GEORGIA BOULEVARD
INDIAN TRAIL-LILBURN ROAD/INDIAN TRAIL-LILBURN ROAD	STEVE REYNOLDS BOULEVARD/ SINGLETON ROAD
I-85 SB OFF RAMP/I-85 SB ON RAMP	LAWRENCEVILLE-SUWANEE ROAD/ LAWRENCEVILLE-SUWANEE
BEAVER RUIN ROAD	STEVE REYNOLDS BOULEVARD
HARBOUR OAKS DRIVE/SCENIC HIGHWAY	WISTERIA DRIVE/ SCENIC HIGHWAY
BROOK HOLLOW PARKWAY	JIMMY CARTER BOULEVARD
JIMMY CARTER BOULEVARD/LAWRENCEVILLE HIGHWAY	MOUNTAIN INDUSTRIAL BOULEVARD/ LAWRENCEVILLE HIGHWAY
SATELLITE BOULEVARD	STEVE REYNOLDS BOULEVARD
INDIAN TRAIL-LILBURN ROAD/KILLIAN HILL ROAD	LAWRENCEVILLE HIGHWAY/ LAWRENCEVILLE HIGHWAY
BRECKINRIDGE BOULEVARD/PLEASANT HILL ROAD	SHACKLEFORD ROAD/ PLEASANT HILL ROAD
BEAVER RUIN ROAD/BEAVER RUIN ROAD	I-85 NB ON RAMP/ I-85 NB OFF RAMP
BUFORD DRIVE	EAST PIKE STREET
UNIVERSITY PARKWAY	WINDER HIGHWAY
NELSON BROGDON BOULEVARD	PEACHTREE INDUSTRIAL BOULEVARD
BETHANY CHURCH ROAD/KILLIAN HILL ROAD	STONE MOUNTAIN HIGHWAY/ STONE MOUNTAIN HIGHWAY
LAWRENCEVILLE HIGHWAY	SUGARLOAF PARKWAY
BEAVER RUIN ROAD	BUFORD HIGHWAY
PEACHTREE INDUSTRIAL BOULEVARD	PLEASANT HILL ROAD
COLLINS HILL ROAD	UNIVERSITY PARKWAY
OLD NORCROSS ROAD WEST	PLEASANT HILL ROAD
BROOK HOLLOW PARKWAY/I-85 SB OFF RAMP	INDIAN TRAIL-LILBURN ROAD/ INDIAN TRAIL-LILBURN ROAD
DULUTH HIGHWAY/HURRICANE SHOALS ROAD	WEST PIKE STREET/ HURRICANE SHOALS ROAD
LAWRENCEVILLE-SUWANEE ROAD	SATELLITE BOULEVARD
BUFORD DRIVE/BUFORD HIGHWAY	NELSON BROGDON BOULEVARD/ BUFORD HIGHWAY
DULUTH HIGHWAY/DULUTH HIGHWAY	UNIVERSITY PKWY EB ON RAMP/ UNIVERSITY PKWY EB OFF
HORIZON DRIVE/LAWRENCEVILLE-SUWANEE ROAD	OLD PEACHTREE ROAD/ LAWRENCEVILLE-SUWANEE ROAD

Source: Gwinnett County Department of Transportation

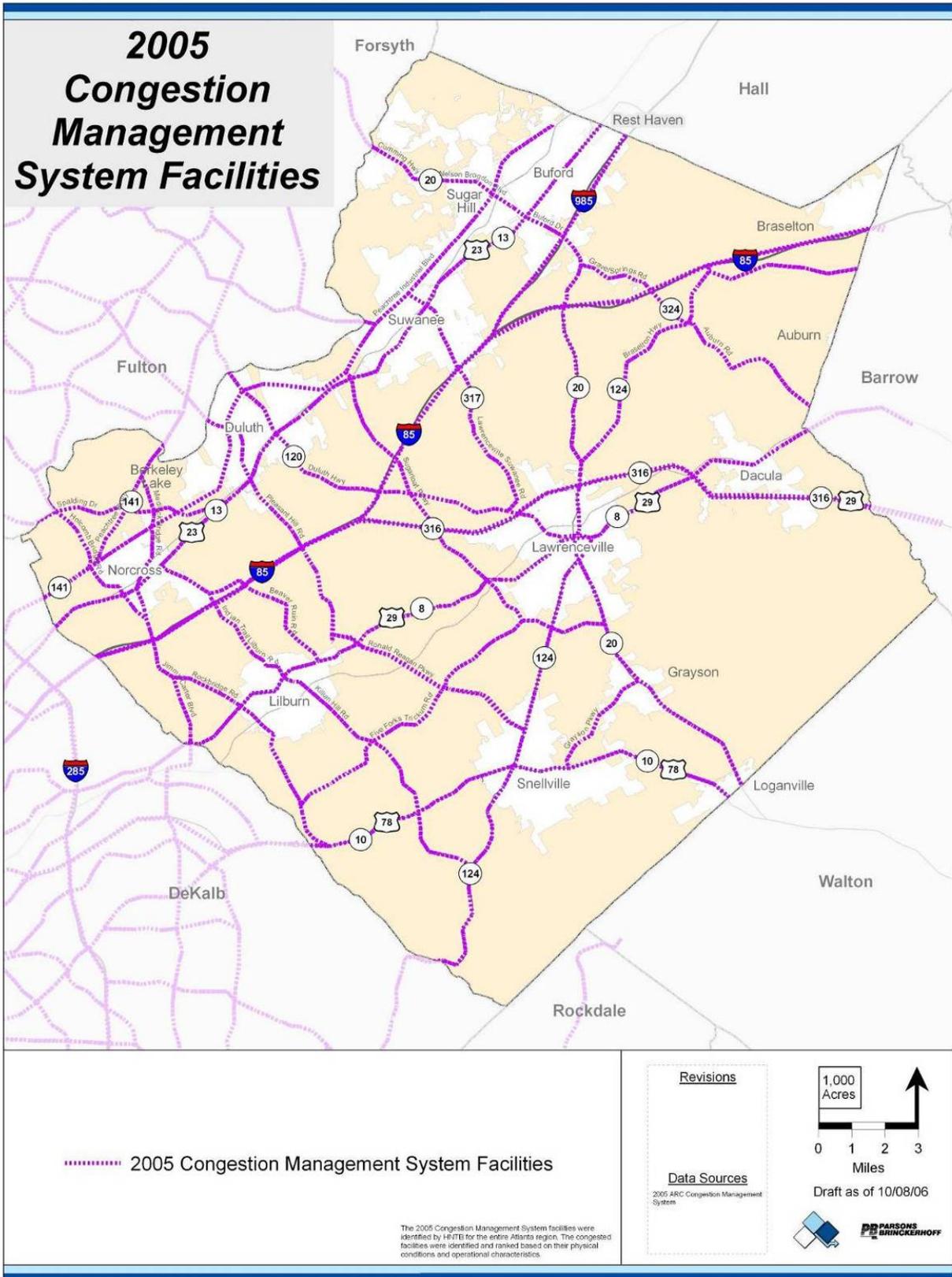


FIGURE 2-13: 2005 CONGESTION MANAGEMENT SYSTEM FACILITIES

2.2.5 Public Transportation Services

Gwinnett County Transit provides express and local bus service for Gwinnett County. The express service consists of three routes in each direction on weekdays from various points in the I-85/I-985 corridor to Downtown and Midtown Atlanta. Five local routes provide trips within the County from Monday to Saturday. Additionally, the transit system provides para-transit service for citizens who are physically unable to utilize the fixed route bus system from Monday to Saturday.

According to the *National Transit Database*, in 2005, Gwinnett County Transit carried more than 1.6 million unlinked passenger trips on its fixed route buses. Approximately 6,000 unlinked passenger trips are carried on the fixed route system on an average weekday and approximately 2,200 unlinked passenger trips are carried on an average Saturday. In addition to the fixed route service, the para-transit service carried 6,800 passenger trips in 2005.

Gwinnett County Transit's fixed route buses travel a total of 2.1 million miles annually. On weekdays, the service's buses travel 8,000 miles and on Saturdays they travel 2,700 miles. A total of 34.5 million annual passenger miles are logged on the system. On an average weekday, 133,000 passenger miles are logged and on an average Saturday, 17,000 passenger miles are logged. The 6,000 weekday unlinked trips have an average length of more than 20 miles.

Local Bus Service

Gwinnett County Transit provides local bus service to much of the southern portion of the I-85 corridor including service to Norcross, Duluth, Lawrenceville, Buford, the Gwinnett Place Mall area, the Discover Mills Mall area, and the Mall of Georgia area, which are shown on Figure 2-14. Service is along five routes with headways ranging from 15 minutes to 30 minutes in the peak period, except for Route 50 to Buford which has a headway of 90 minutes (Table 2-3). A transit center is located adjacent to Gwinnett Place Mall where transfers can be made among four of the five routes. Local service is also provided to the Doraville MARTA station in northern DeKalb County. Recent route-specific annual ridership data is shown in Table 2-5.

TABLE 2-3 GWINNETT COUNTY TRANSIT ROUTE HEADWAY

Route	Weekday Peak	Weekday Off-peak	Saturday
Route 10	15	30	30
Route 20	30	30	60
Route 30	15	30	60
Route 40	30	30	60
Route 50	90	90	90

Source: Gwinnett County Transit

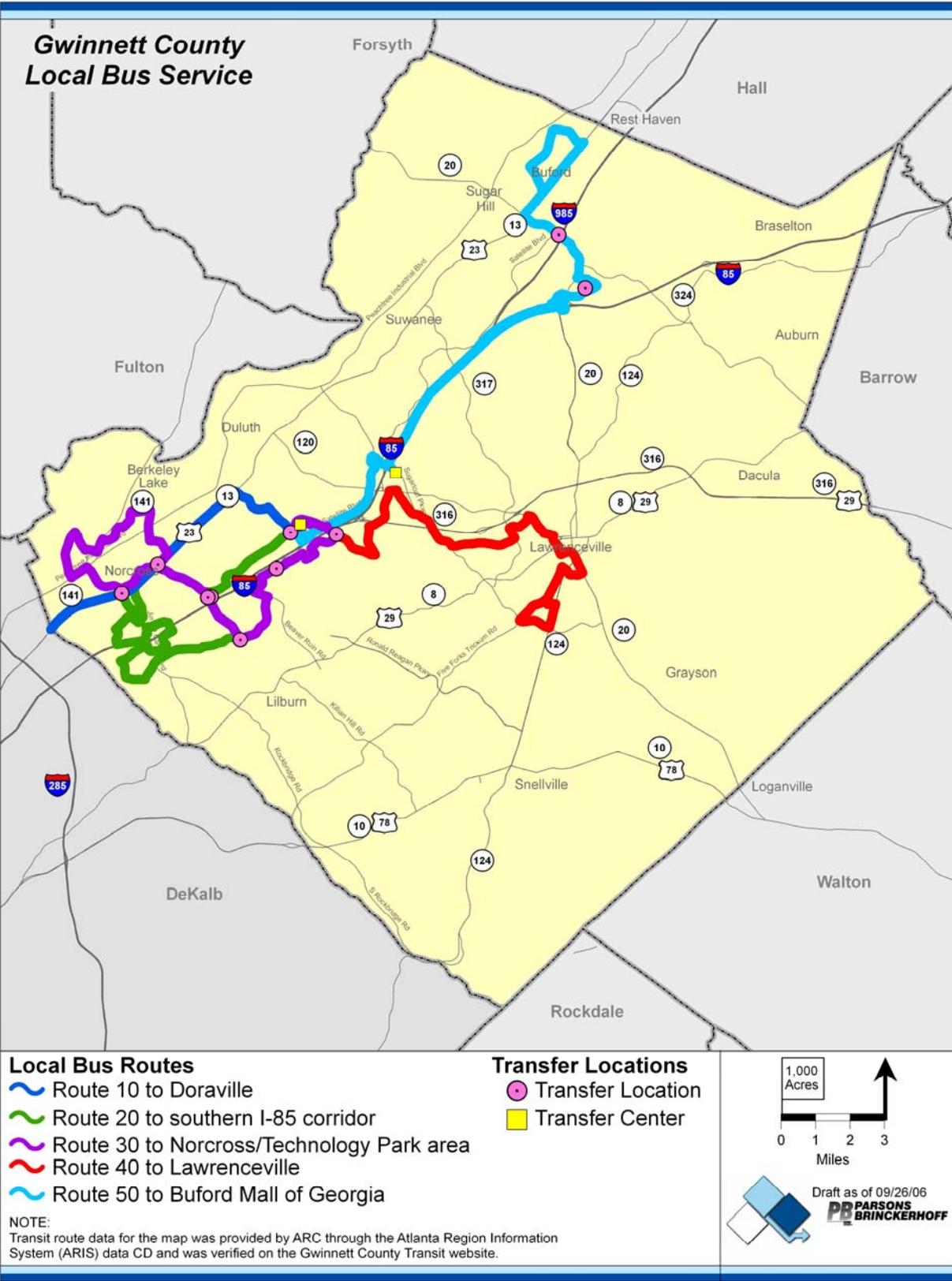


FIGURE 2-14: GWINNETT COUNTY LOCAL BUS SERVICE



Commuter Bus Service

In addition to local service, Gwinnett County Transit along with the Georgia Regional Transportation Authority (GRTA) provides commuter bus service in the County. Gwinnett County Transit offers three commuter bus routes in the peak direction and three in the reverse commute direction. These routes originate at the I-985 Park and Ride lot, the I-85 Indian Trail Park and Ride lot, and the Discover Mills Park and Ride lot and serve Downtown and Midtown with headways ranging from 10 minutes to 30 minutes. GRTA also offers four routes. Two of the routes originate at Discover Mills and one of the routes terminates service at the Lindbergh MARTA station; the other route also serves the I-85 Indian Trail Park and Ride facility and terminates service in Midtown. The third route originates from the John's Creek area near the Fulton County and Forsyth County boundary and extends through Gwinnett County to terminate service at the Doraville MARTA station; connections to local bus and heavy rail service are available at Doraville station. Finally, a fourth route was recently initiated from Snellville in southern Gwinnett County to Downtown. Express Bus Service routes are shown on Figure 2-15 and ridership data is shown in Table 2-5. Headways on these routes vary from 30 minutes to 60 minutes. Data for the map was provided by ARC through the ARIS data CD and was verified on the Gwinnett County Transit and GRTA Express Bus website.

TABLE 2-4 GWINNETT COUNTY EXPRESS BUS HEADWAYS

Route	Headway
Route 101	15
Route 101A	30
Route 102	30
Route 102A	30
Route 103	10
Route 103A	15-30
GRTA 410	45
GRTA 412	30
GRTA 418	30-60
GRTA 408	30

Source: Gwinnett County Transit and Georgia Regional Transportation Authority

TABLE 2-5: GWINNETT COUNTY TRANSIT RIDERSHIP (OCT. 2006 - SEPT. 2007)

Service	Route	Total Annual Boardings	Average Weekday Boardings
Gwinnett County Local	Route 10	534,396	1,746
	Route 20	239,666	783
	Route 30	273,463	894
	Route 40	254,204	831
	Route 50	22,204	73
Gwinnett County Express	Route 101	142,939	563
	Route 102	57,717	227
	Route 103	271,227	1,068
GRTA	Route 408	63,036*	249*
	Route 410	31,554	124
	Route 412	124,762	491
	Route 418	19,037	75
Totals		2,034,205	7,124

*Numbers are for 12-month period from July 2006 through June 2007

Source: Gwinnett County Transit

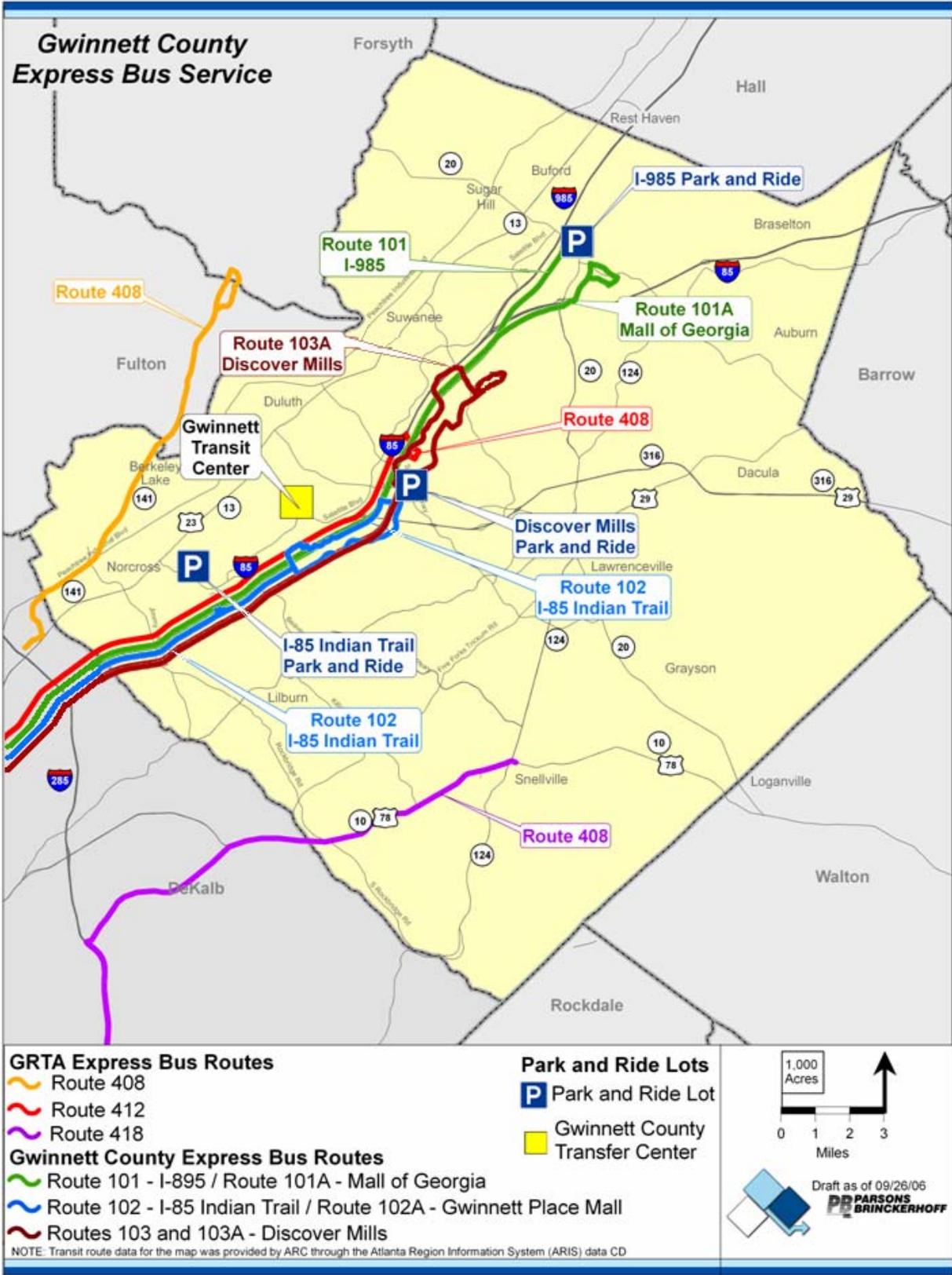


FIGURE 2-15: GWINNETT COUNTY EXPRESS BUS SERVICE

2.2.6 Park and Ride Facilities

Gwinnett County Transit provides patrons with park and ride facilities in five locations to serve express bus patrons. These locations are along I-985 at SR 20, at Discover Mills Mall, along I-85 at Indian Trail Road, and in Snellville at Snellville First Baptist Church and at Hewatt Road along US 78. Each of these locations is adjacent to a major highway facility and has convenient automobile access; however none of the locations are convenient for pedestrian access.

2.2.7 Bicycle and Pedestrian Planning

Many Gwinnett County Transit local bus service patrons require pedestrian or bicycle access to transit. A goal of this plan and the future capital programs should be to identify and close gaps that exist in the existing network of pedestrian facilities. Priority should be assigned to those projects that provide safe and efficient access to transit.

The County currently has an *Open Space and Greenway Master Plan*. The plan is a comprehensive document intended to inform and guide the County's ongoing green space preservation program. As bicycle and pedestrian planning are components of the plan, the Department of Parks and Recreation coordinates with the County DOT on elements affecting transportation. There are 16 pedestrian and multi-use path projects in Gwinnett County that are included in the 2006-2011 TIP. All are scheduled for completion between 2007 and 2010.

2.2.8 Rail and Intermodal Facilities

Rail freight service in Gwinnett County is provided by two Class I railroads, Norfolk Southern and CSX Transportation through separate corridors in the western and central portions of the County, shown on Figure 2-16. The western corridor, operated by Norfolk Southern, serves Norcross, Duluth, Suwanee, Sugar Hill, and Buford. The central corridor, operated by CSX Transportation, serves Lilburn, Lawrenceville, and Dacula. The Norfolk Southern carries more than 25 trains per day, while the CSX carries up to 40 trains per day. These railroads connect Atlanta to the East Coast and the Northeast.

Although neither of the two railroads have major intermodal rail yards in the County, both provided a significant level of intermodal service through rail sidings that connect to area businesses. The largest cluster of rail sidings is located in the Norcross area along the Norfolk Southern line. These sidings serve an extensive area of industrial and manufacturing facilities. Smaller sidings are located in the Duluth and Lawrenceville areas and serve a variety of industries. Data concerning rail service was provided by the Federal Railroad Administration database.

2.2.9 Airport

Gwinnett County's Briscoe Field is the County's only general aviation airfield. It is located on 500 acres one mile northeast of Lawrenceville. The airfield's 6,000 foot runway and air traffic control system accommodate general aviation aircraft and most corporate jets. On average, there are approximately 300 operations per day. Charter flight services are available at the airfield as are flight schools, restaurants, fixed base operators, and hangar space. There is however no scheduled air carrier service.

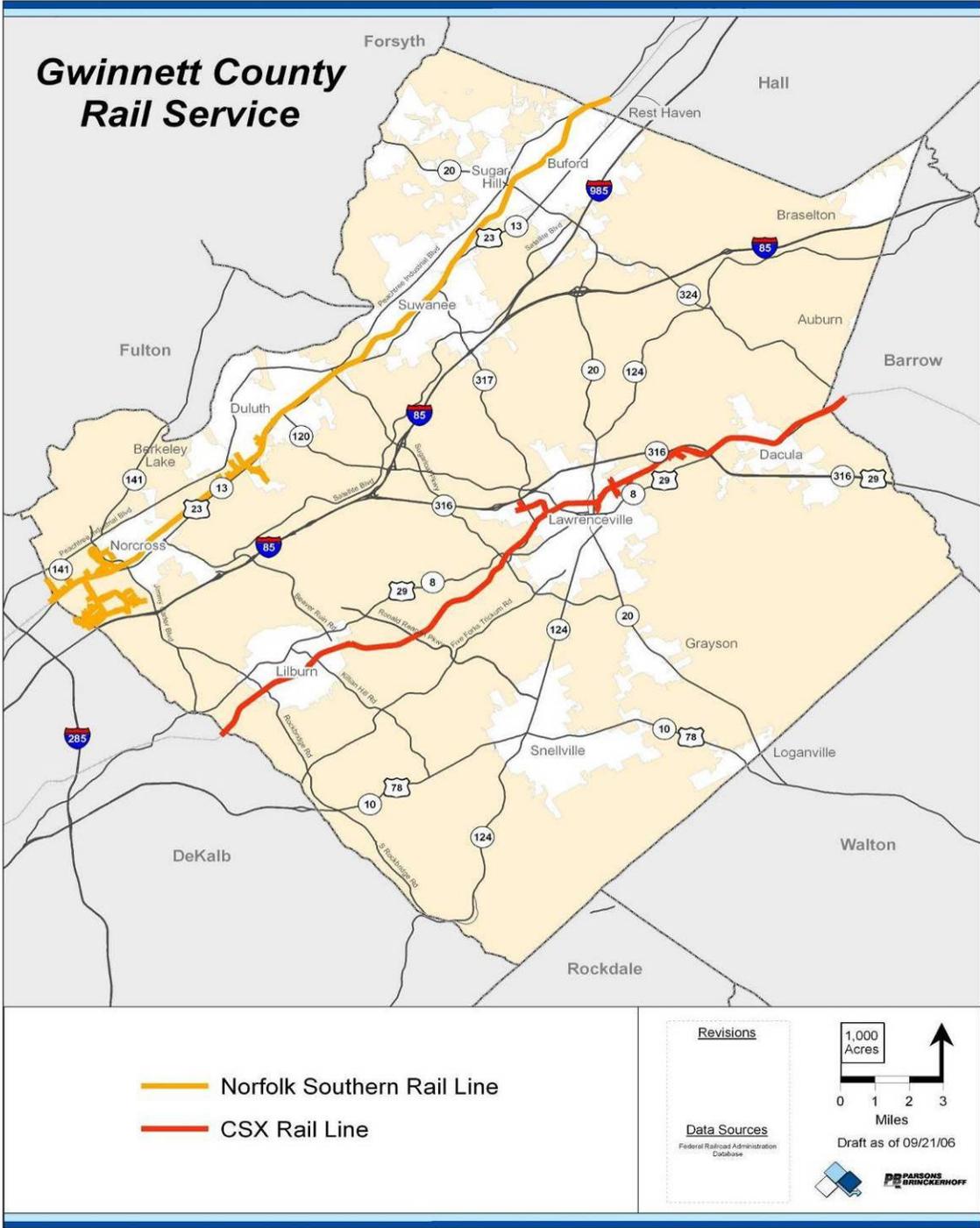


FIGURE 2-16: GWINNETT COUNTY RAIL SERVICE

2.2.10 Parking

Although Gwinnett County is home to more than 700,000 residents, provides more than 300,000 jobs, and has a host of visitors, parking is generally considered to be more than adequate to serve present demand. Fees are almost never assessed for parking and very few parking structures exist in the County.

2.2.11 Land Use Policies

In general, Gwinnett County has a low density, suburban pattern of development, which overshadows the former prominence of the several towns within the county. While the general pattern of development is low density, there are more densely developed places which tend to be focused around major roads. Most of the activity centers are located along Interstates 85 and 985, Peachtree Industrial Blvd, Buford Hwy (US 23/SR 13) , SR 316, Lawrenceville Hwy (US 29/SR 8), and Athens Hwy (US 78/SR 10). The higher the traffic volume on the road, typically the more dense the development is along that road. This is particularly the case in areas surrounding interstate exit ramps where regional attractions tend to be located. Alternatively, as traffic volume decreases, so does the development along the road. There are some small downtown areas usually focused around railroads.

Individual residential and commercial developments in Gwinnett County are often not connected to adjacent developments by pedestrian or roadway connections,. Thus, an automobile trip or a relatively long pedestrian trip is required to access nearly all developments. Furthermore, the trip must exit one development onto a collector or arterial street and then enter another development even though the developments are adjacent. This pattern of development has led to the need for an automobile for most trips in the County.

2.2.12 Regional Development Plan Consistency

ARC has created a Regional Development Plan (RDP) to guide future development patterns in the Atlanta region. The RDP contains 18 policies related to the developed area, housing and neighborhoods, open space and preservation, and governmental coordination. Gwinnett County policies have been evaluated with respect to these regional policies to determine the consistency of County policies with RDP policies.

TABLE 2-6: REGIONAL DEVELOPMENT PLAN CONSISTENCY

RDP Policies		Gwinnett Policy Vehicles for Addressing RDP Policies			
		Future Land Use Map / Comprehensive Plan	County Ordinance / Development Regulations	Zoning Code	Other
Developed Area Policies					
1	Promote sustainable economic growth in all areas of the region.	Balance jobs and housing	Ordinance to establish an Office of Economic Development		
2	Encourage development within principal transportation corridors, the Central Business District, activity centers, and town centers.	Allows development intensity in corridors. Establishment of Activity Centers in the 2020 Comprehensive Plan (2020 Plan)	Overlay Districts		Use of CIDs
3	Increase opportunities for mixed-use development, transit-oriented development, infill and redevelopment.		Establishment of 3 Community Improvement Districts in Redeveloping areas	Mixed Use Development (MUD)/ Redevelopment Overlay (MUR)	Transit investments through CTP
4	At strategic regional locations, plan and retain industrial and freight land uses.	Contains industrial use along major corridors			Transportation investments in freight corridors through CTP
5	Design transportation infrastructure to protect the context of adjoining development and provide a sense of place appropriate for our communities.	Policies stated in 2020 Plan	Use of transportation CIDs and overlay districts	MUR/MUD Districts	Use of CIDs / Use of Access Management
6	Promote the reclamation of Brownfield sites.			MUR Overlay	Use of CIDs to redirect investment
Housing and Neighborhood Policies					
7	Protect the character and integrity of existing neighborhoods, while also meeting the needs of communities.				Achieve housing mixture through Consolidated Plan
8	Encourage a variety of home styles, densities and price ranges in locations that are accessible to jobs and services to ensure housing for individuals and families of all income and age groups.	Policies stated in 2020 Plan		MUR/MUD Districts; high rise district in activity centers	Achieve housing mixture through Consolidated Plan

TABLE 2-6: REGIONAL DEVELOPMENT PLAN CONSISTENCY

RDP Policies		Gwinnett Policy Vehicles for Addressing RDP Policies			
		Future Land Use Map / Comprehensive Plan	County Ordinance / Development Regulations	Zoning Code	Other
9	Promote new communities that feature greenspace and neighborhood parks, pedestrian scale, support transportation options and provide an appropriate mix of uses and housing types.		Conservation Subdivision	Conservation subdivision; MUR / MUD districts	
10	Promote sustainable and energy efficient development.				Investments in existing transportation corridors through CTP
Open Space and Preservation Policies					
11	Protect environmentally-sensitive areas including wetlands, floodplains, small water supply sheds, rivers and stream corridors		Buffer ordinance-50 foot from bank + 25 more for pervious surface/septic		Employ Context Sensitive Solutions (CSS) in CTP identified projects
12	Increase the amount, quality, connectivity and accessibility of greenspace.		Buffer, Landscape and Tree Ordinance (BLT)		Full-time Greenway/Open Space Coordinator (Marcie Diaz/Community Service Dept.) Greenspace Plan and Parks Master Plan
13	Provide strategies to preserve and enhance historic resources.	Policies stated in 2020 Plan			Employ Context Sensitive Solutions (CSS) in CTP identified projects
14	Through regional infrastructure planning, discourage growth in undeveloped areas.	Encourage investment in existing built up areas			Make transportation investments in existing corridors
Coordination Policies					
15	Assist local governments to adopt growth management strategies that make more efficient use of existing infrastructure.				Make transportation investments in existing corridors

TABLE 2-6: REGIONAL DEVELOPMENT PLAN CONSISTENCY

RDP Policies		Gwinnett Policy Vehicles for Addressing RDP Policies			
		Future Land Use Map / Comprehensive Plan	County Ordinance / Development Regulations	Zoning Code	Other
16	Inform and involve the public in planning at regional, local and neighborhood levels.	Planning Advisory Committee, Revitalization Task Force, Growth Issues Steering Committee, Citizen Review Committee for 1997 Major Update. Gwinnett Planning Committee (GPC).			CTP advisory committees and stakeholder outreach activities
17	Coordinate local policies and regulations to support Regional Policies.	Staff participation in LUCC.			Tie CTP to Unified and Consolidated Plan
18	Encourage the development of state and regional management policy.				Active and responsive involvement with DRI process

Source: Gwinnett County Planning Division, Gwinnett County Zoning Ordinance and Gwinnett County Development Regulations

2.2.13 Developments of Regional Impact (DRI)

Large-scale developments which are likely to affect areas outside the local jurisdiction in which they are located are considered Developments of Regional Impact. The Department of Community Affairs requires these developments to be studied to determine how they will impact surrounding areas. Figure 2-17, which maps the location of these developments, shows that while DRIs were distributed throughout the County, many are clustered along Route I-85.

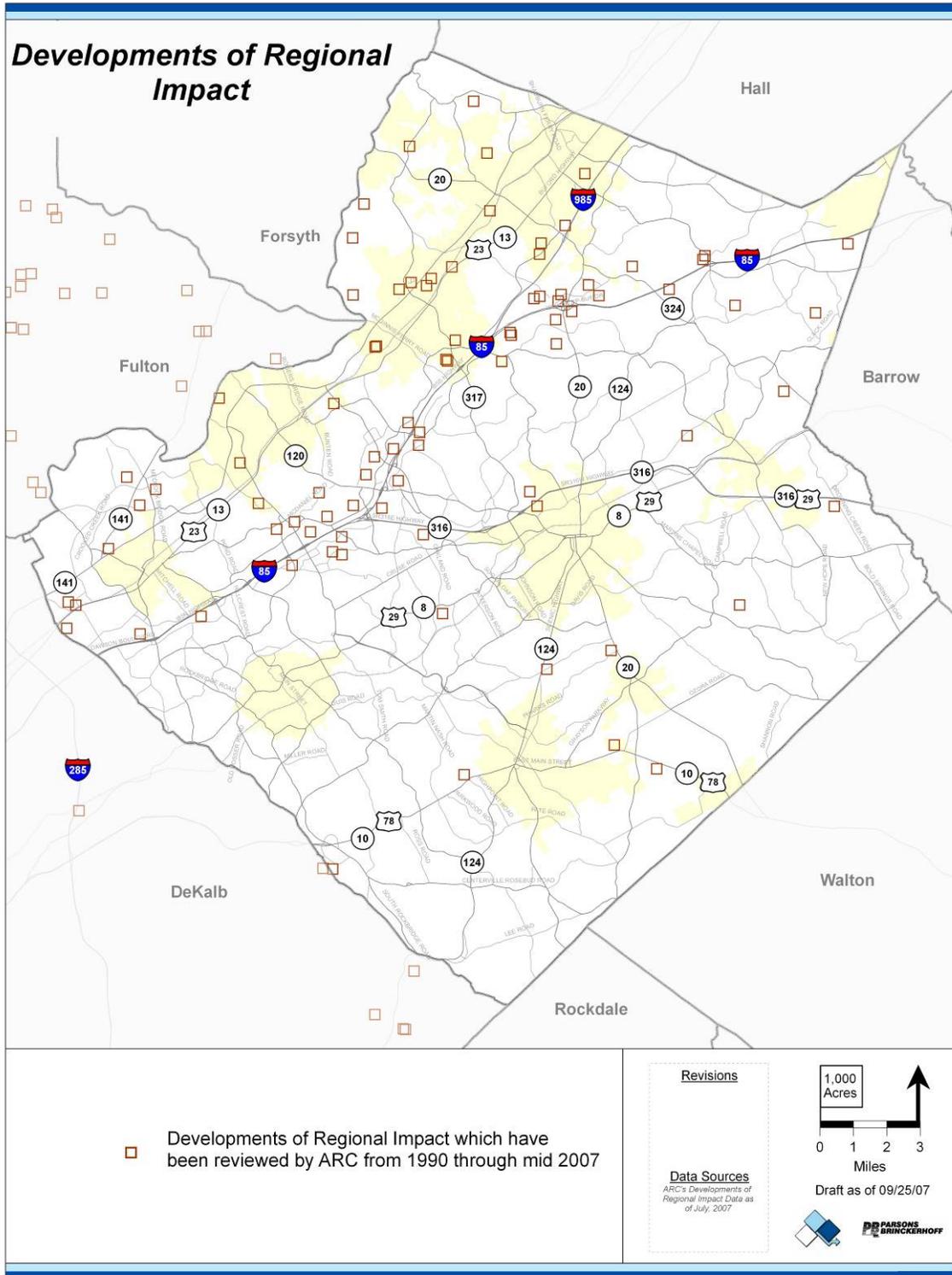


FIGURE 2-17: DEVELOPMENTS OF REGIONAL IMPACT

2.2.14 Livable Centers Initiatives

Seven areas in Gwinnett County have engaged in the ARC's Livable Centers Initiative (LCI) program. The primary goals of the LCI program are to encourage a diverse socioeconomic environment, provide access to alternative modes of transportation, and provide a means to reach out to stakeholders. Within the seven areas, five downtown areas, two corridors, and a major activity center have been studied, shown on Figure 2-18. These studies developed suggestions for transportation, land use, revitalization, and pedestrian improvements as well as action plans. Following is a summary of the recommendations from these studies. Some of the recommendations have already implemented. Information from the LCI program was obtained from ARC.

Norcross

- Land Use: Zoning Overlay District should allow mixed uses and provide standards for mixed -use development. The mixture of land uses should be coordinated with the design and implementation of transportation improvements.
- Roads: Instead of roadway capacity building projects, construct traffic calming measures.
- Pedestrian: Include sidewalk and other amenities in any overlay zoning districts, zoning code amendments or development regulations. Install pedestrian refuge islands.
- Parking: Install bicycle parking racks.
- Economic Development: Re-institute the Downtown Development Authority. Pursue more active support from the nonprofits in the area, such as civic associations, neighborhood associations, business associations, and historic preservation groups. Formalize organization of Norcross Livable Communities Initiative stakeholders, including citizens and business leaders that participated in the plan development process, as well as working to expand outreach efforts.

Duluth

- Land Use: Create a Mixed Use zoning classification. Increase allowable residential density downtown from 2.5 units per acre to 6-8 units per acre.
- Roads: Straighten/connect roads to form more of a grid system of streets.
- Pedestrian: Construct multi use trails to connect with downtown sidewalks. Implement traffic calming devices. Require buildings to be placed close to the street. Improve urban design and streetscape requirements.
- Parking: Implement parking maximums. Fund municipal parking garages in central locations. Implement shared parking.
- Economic Development: *None*

Suwanee

- Land Use: Use a comprehensive set of Smart Growth development standards aimed at encouraging more compact development in walkable settings. Master plan for a major new town center park and performance area at the corner of Buford Highway and Lawrenceville-Suwanee Road.
- Roads: *None*

- Pedestrian: Protect and improve a series of greenway trails and identify future additions to the system.
- Parking: Provide on street parking.
- Economic Development: Bond funds for the acquisition, preservation and enhancement of open space. City has acquired property for construction of the park and development of an adjacent town center using a combination of the open space bonds and urban redevelopment bonds.

Buford

- Land Use: Face primary building entrances to the public sidewalk and street. Require commercial uses to front the sidewalk with storefronts.
- Roads: *None*
- Pedestrian: Create a pedestrian friendly sidewalk environment.
- Parking: Limit curb cuts to one per development street frontage. Permit shared parking. Place all parking behind or to the side of buildings.
- Economic Development: *None*

Gwinnett Place

- Land Use: Include an LCI Activity Center Overlay district allowing for flexibility in building locations, streetscape standards, design standards, and parking standards. Create design standards for Transit Oriented Development and offer density bonuses for compatible development. Allow for density bonus for those a part of the TMA.
- Roads: Amend development regulations to allow for inter-parcel connections forming a grid street pattern. Require multi-modal access plans. New arterial to serve as alternative to Satellite Blvd. Additional I-85 crossings.
- Pedestrian: Retrofit outdated sidewalks. Identify and reserve system of greenways.
- Parking: Allow Development Authority to partner with CID to develop and finance parking structures.
- Economic Development: Create Economic Development entity to help attract business and housing activities. Form a Community Improvement District/Transportation Management Association.

Lilburn

- Land Use: Revitalize the Town Center area while preserving the small-town character. Expand downtown area. Coordinate Old Town development with proposed commuter rail.
- Roads: *None*
- Pedestrian: Expand park and link to greenway. Visible and convenient connection from downtown to proposed future commuter rail station location.
- Parking: *None*
- Economic Development: Downtown Development Authorities to facilitate development.

Hwy 78

- Land Use: Concentrate growth in nodes. Support flexibility in Mixed-Use Overlay District. Support Revitalization Task Force recommendations of smart growth, mixed-use, and transit supportive development. Examine incentives for affordable housing. Allow residential densities of up to 32 units per acre. Create revitalization zoning districts.
- Roads: Implement Access Management Plan that includes a median, reducing access points and sharing remaining access points.
- Pedestrian: Implement streetscaping projects to complement sidewalks being added by GDOT. Construct two multi-use paths.
- Parking: *None*
- Economic Development: Establish an identity for the corridor and promote the area as a destination. Build relationships with public and private sector to encourage desirable development.

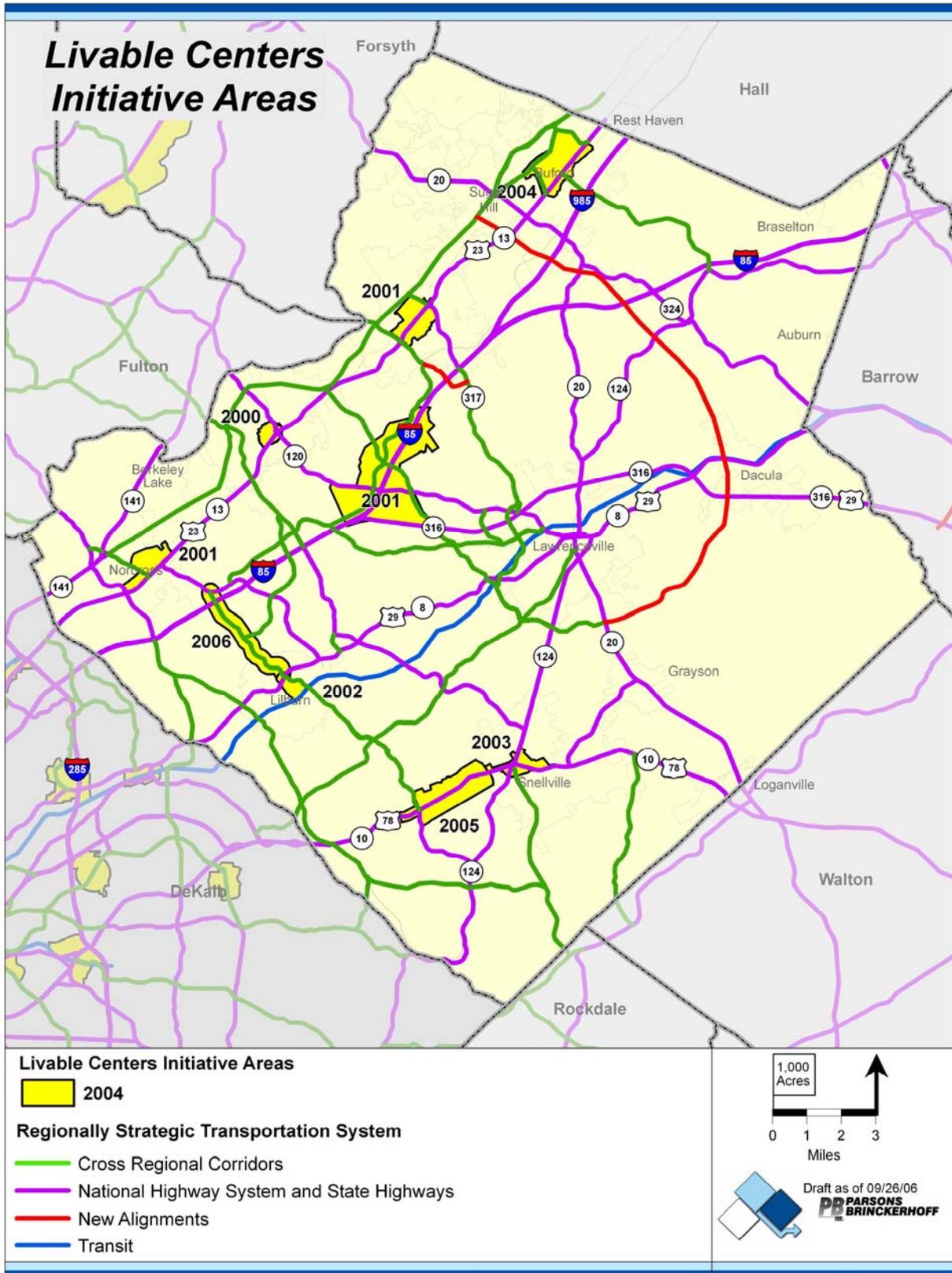


FIGURE 2-18: LIVABLE CENTERS INITIATIVES AREAS

3 Assessment of Current and Future Needs

The long term transportation planning process consists of four major steps: identification of needs, identification of candidate projects, project prioritization, and a funding analysis. Each of these steps is described below, and in more detail in subsequent sections.

3.1 Identification of Needs

An identification of needs based on an assessment of the existing system's performance is the first step of the transportation planning process. Both short- and long-term needs over the planning timeframe were established for the Gwinnett County CTP. The identification of needs incorporated community goals and objectives and performance measures. The project prioritization process also relies on these performance measures as a way of assigning relative weights to different desired outcomes. The long-term transportation planning process used goals and objectives in helping define desired directions for the County's transportation system (see Section 4). However, because congestion mitigation is such an important regional and community concern, the needs assessment process emphasized congestion reduction as one of the more important criteria for identifying project needs.

Congestion-related improvements were determined by comparing present day and interim and long-term horizon year system performance. Those roadways that demonstrated the worst congestion levels in 2005 (present day) and in 2015 (interim horizon year) as well as 2030 (long-term horizon year) were targeted for improvement by 2030. Three measures were used to gauge the level of congestion in both the base and horizon years--level of service (LOS), duration of congestion, and vehicle hours of delay. The measures are described in depth in later sections.

Although the identification of long-term needs had at its foundation the network analysis of congestion levels described above, other factors were considered in identifying needed transportation improvements in the County. Meetings were held with County staff, other stakeholder groups within the County, other transportation agencies in the region, along with a review of other County planning documents. Needs have been identified for the roadway, transit, and pedestrian/bicycle elements of the County's transportation system.

3.2 Future Transportation Conditions with Existing and Committed Improvements

The ARC travel demand model was used to examine present and future year congestion in Gwinnett County. Present day analysis used year 2005 household and employment data from ARC to test the performance of the 2005 roadway network. Year 2030 socioeconomic data developed for the Gwinnett Unified Plan was then used to test the performance of a baseline 2030 road network. This network included all existing roads as well as those roadway projects the County felt were likely to be completed by that time. Three quantitative measures, including afternoon peak hour level of service (LOS), daily duration of congestion, and afternoon vehicle hours of delay) were then calculated to examine and compare 2005 and 2030 congestion levels in Gwinnett County. Links that met specific thresholds for these three measures were identified as critical links. The results from this analysis are presented in Figure 3-1 through Figure 3-10.

These figures show that a significant increase in congestion is expected between 2005 and 2030 according to all three measures. Much of this increase appears in the southwestern part of the County. However, areas in less densely developed parts of Gwinnett also show worsening congestion over the 25-year period. Clearly, the roadway network does not have the capacity to absorb the forecasted growth of the County under the Middle-of-the-Pack scenario.

The figures show and the analysis clearly indicates that investment beyond that of the Existing plus Committed (E+C) scenario will be needed in Gwinnett County.

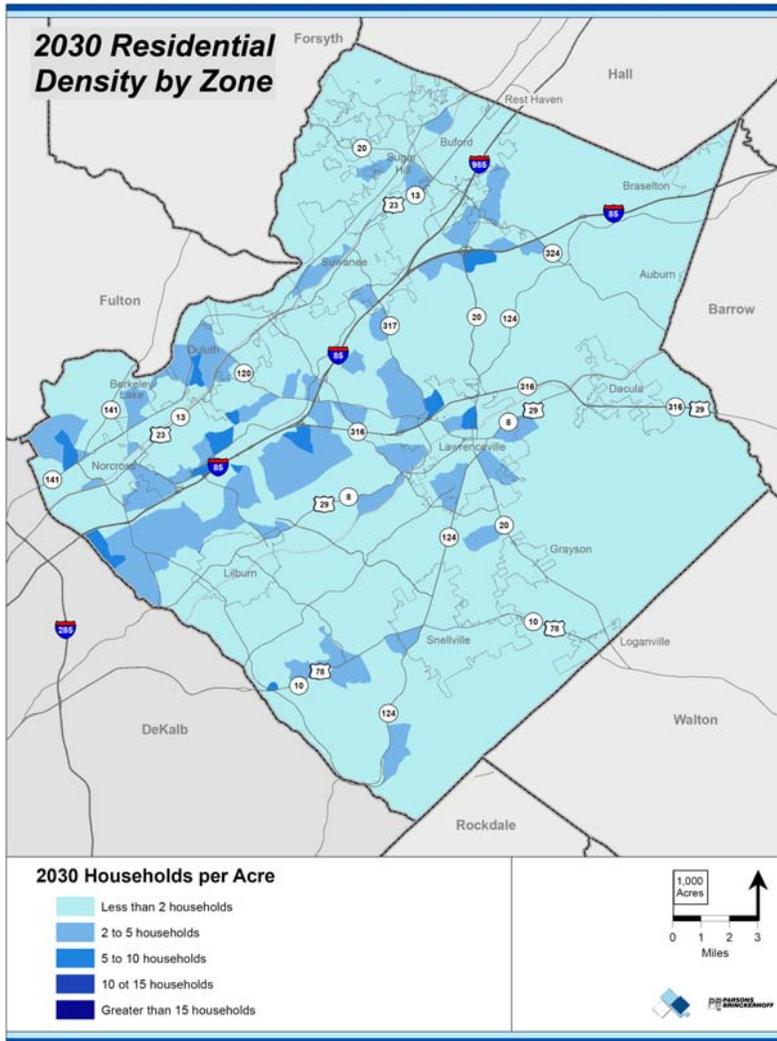


FIGURE 3-1: NET RESIDENTIAL DENSITY, GWINNETT COUNTY

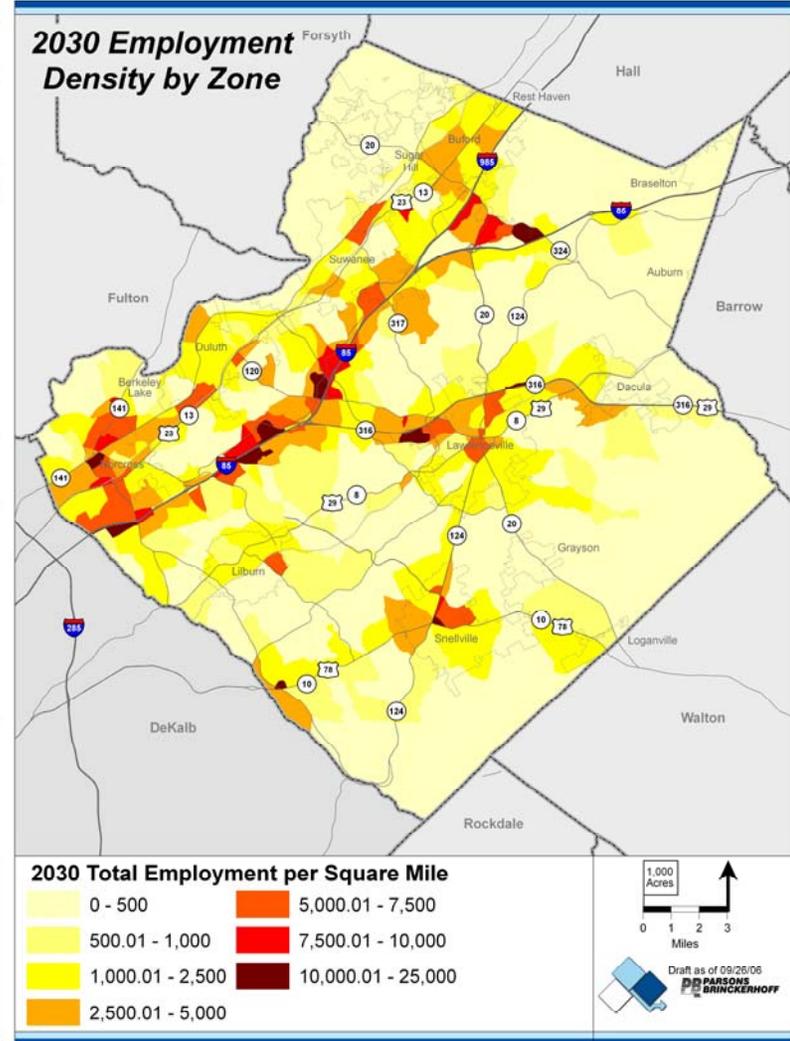


FIGURE 3-2: EMPLOYMENT DENSITY, GWINNETT COUNTY

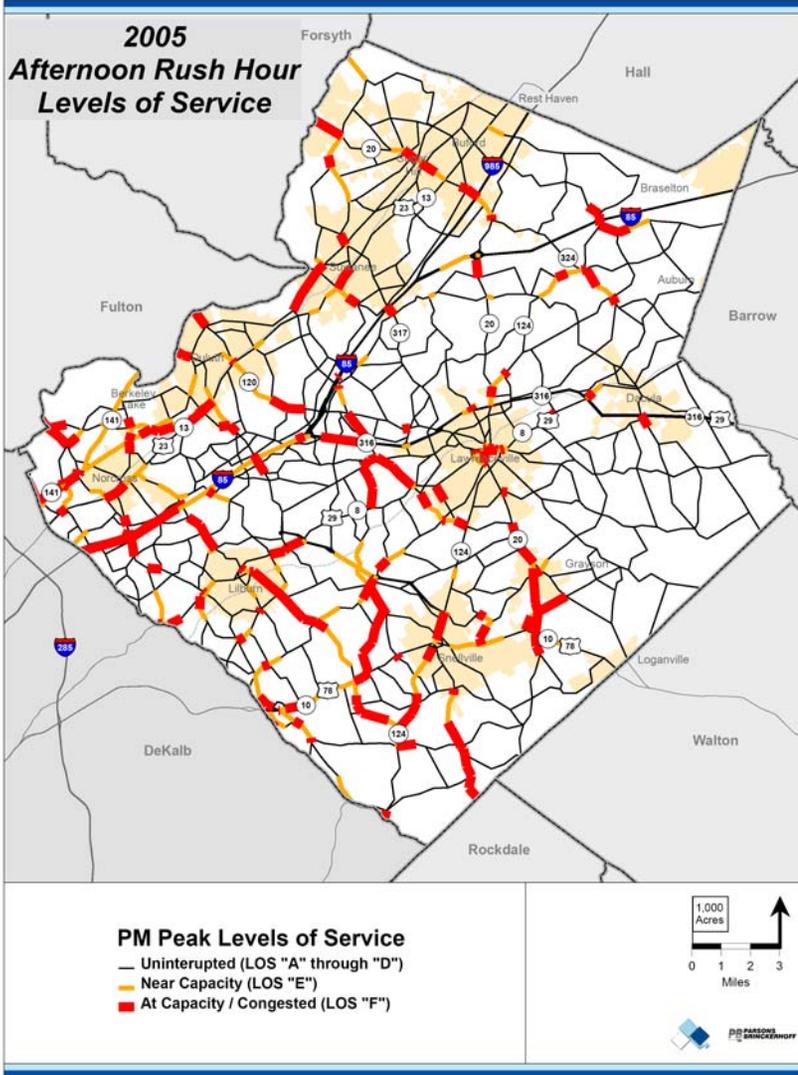


FIGURE 3-3: 2005 PM PEAK HOUR LEVEL OF SERVICE

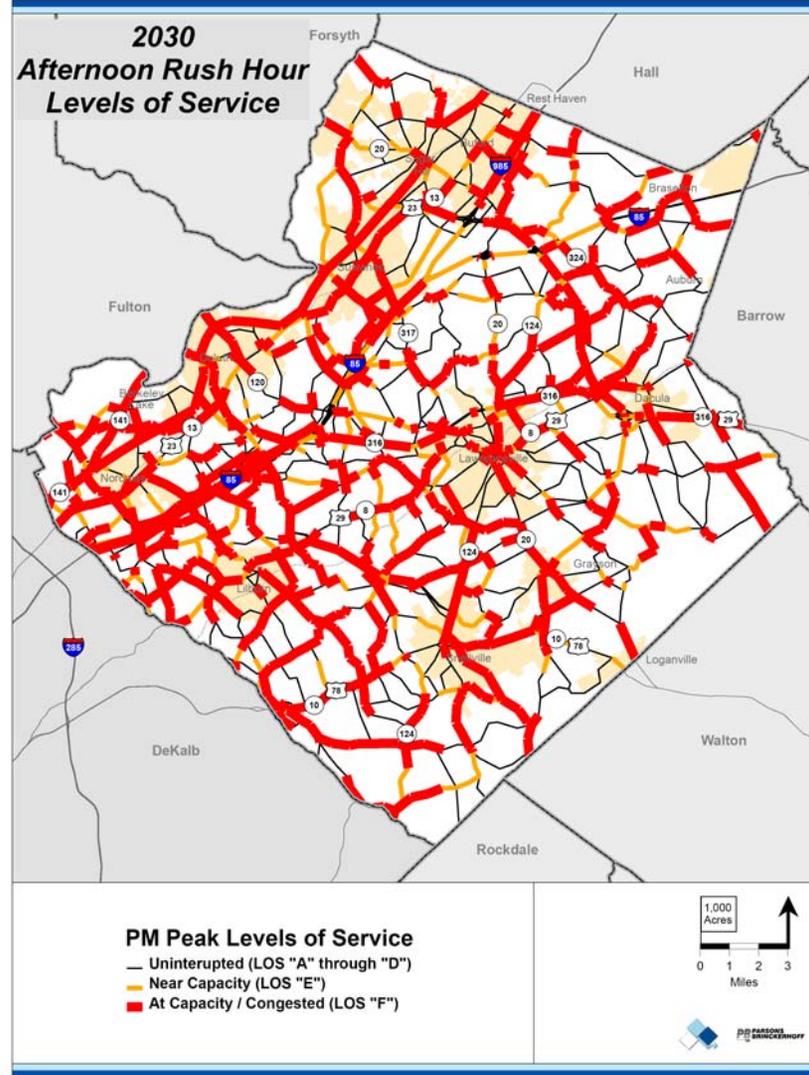


FIGURE 3-4: 2030 PM PEAK HOUR LEVEL OF SERVICE

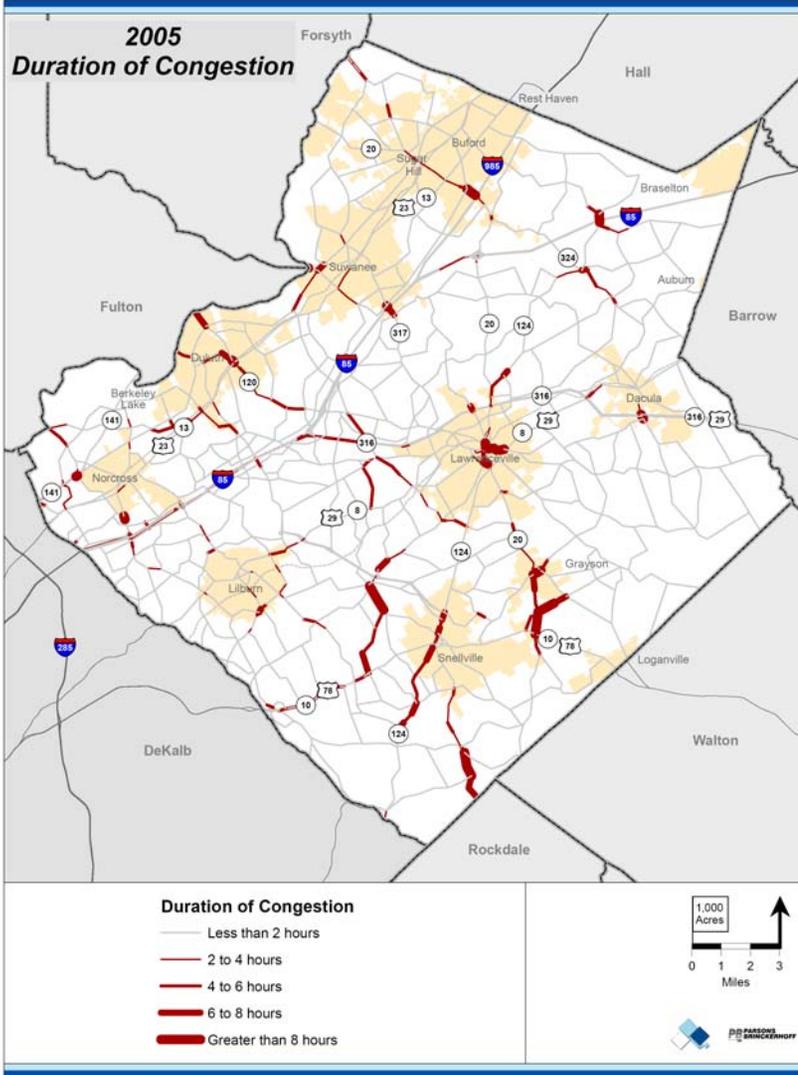


FIGURE 3-5: 2005 DURATION OF CONGESTION

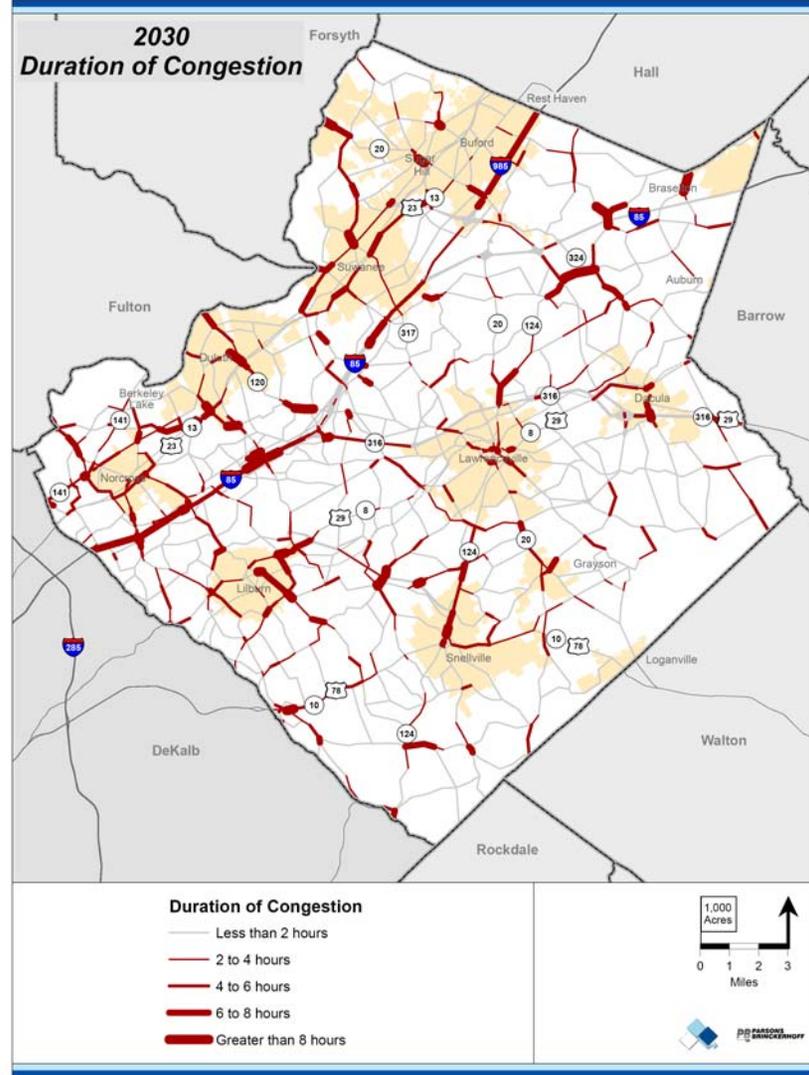


FIGURE 3-6: 2030 DURATION OF CONGESTION

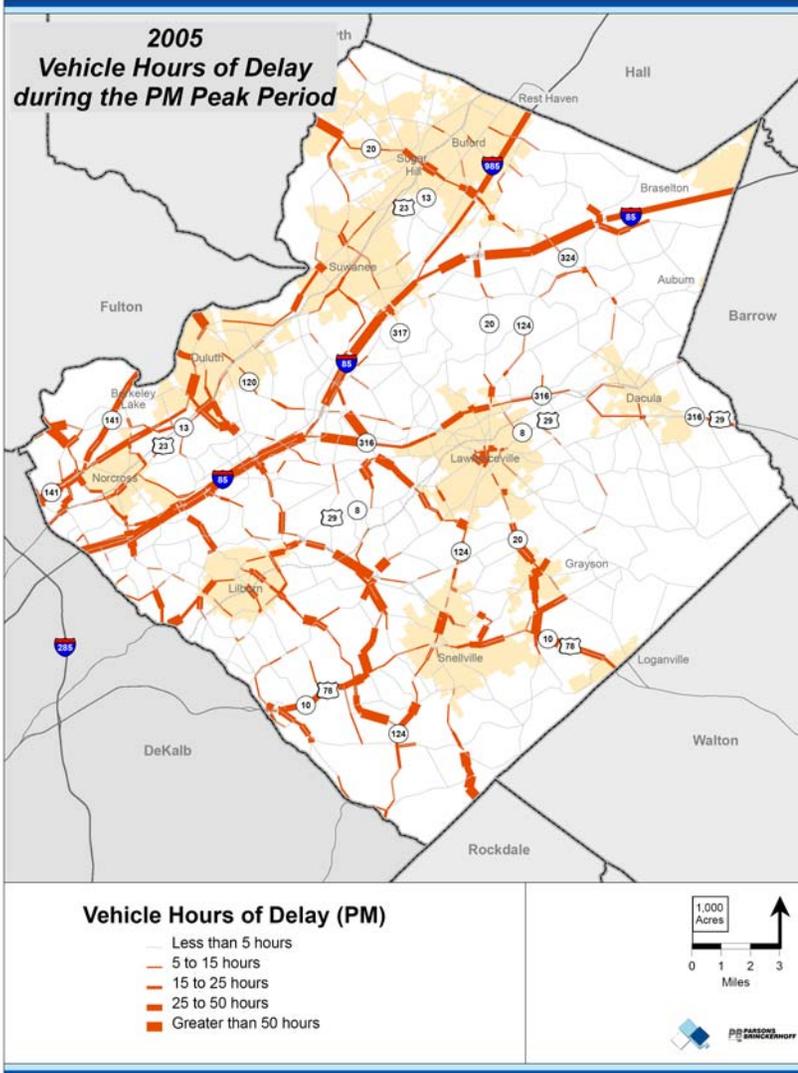


FIGURE 3-7: 2005 AFTERNOON VEHICLE HOURS OF DELAY

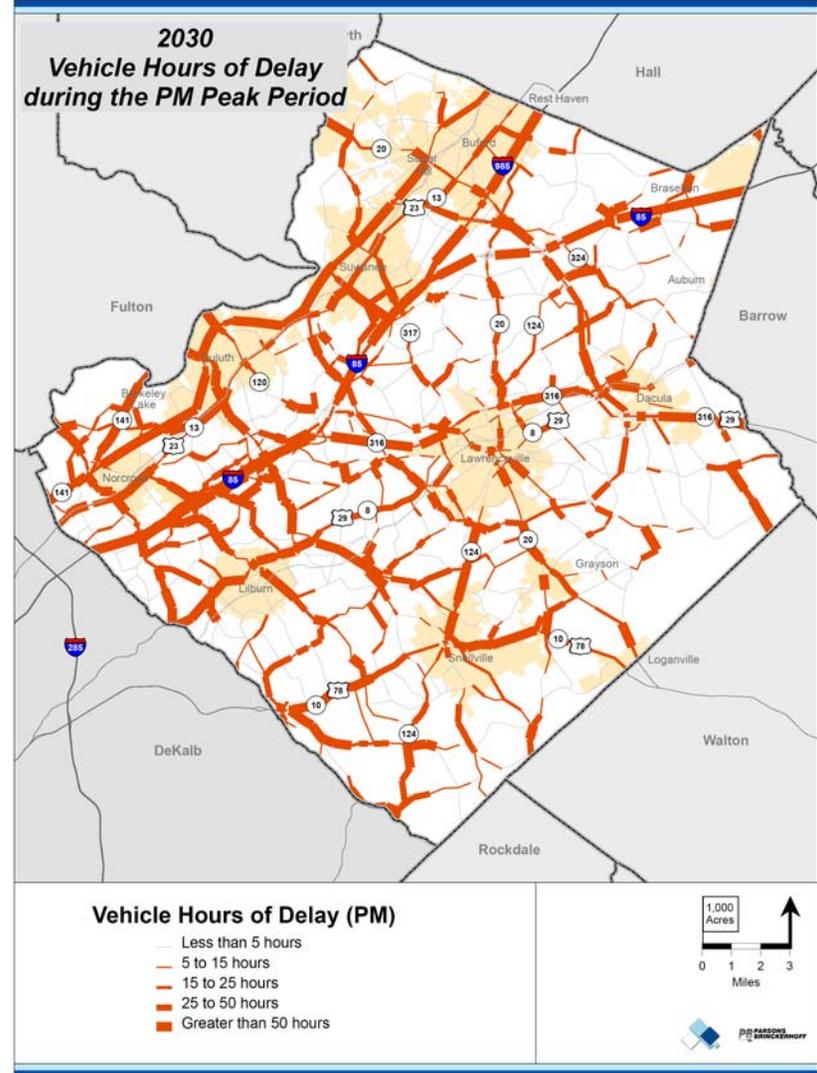


FIGURE 3-8: 2030 AFTERNOON VEHICLE HOURS OF DELAY

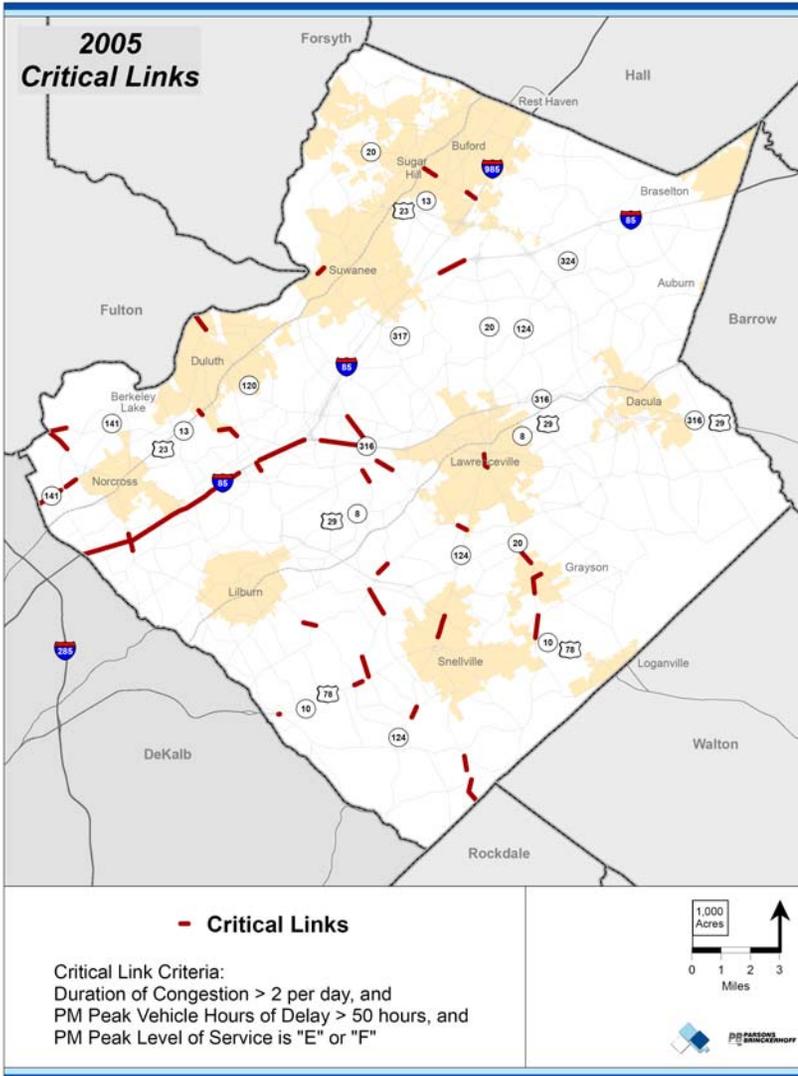


FIGURE 3-9: 2005 CRITICAL LINKS

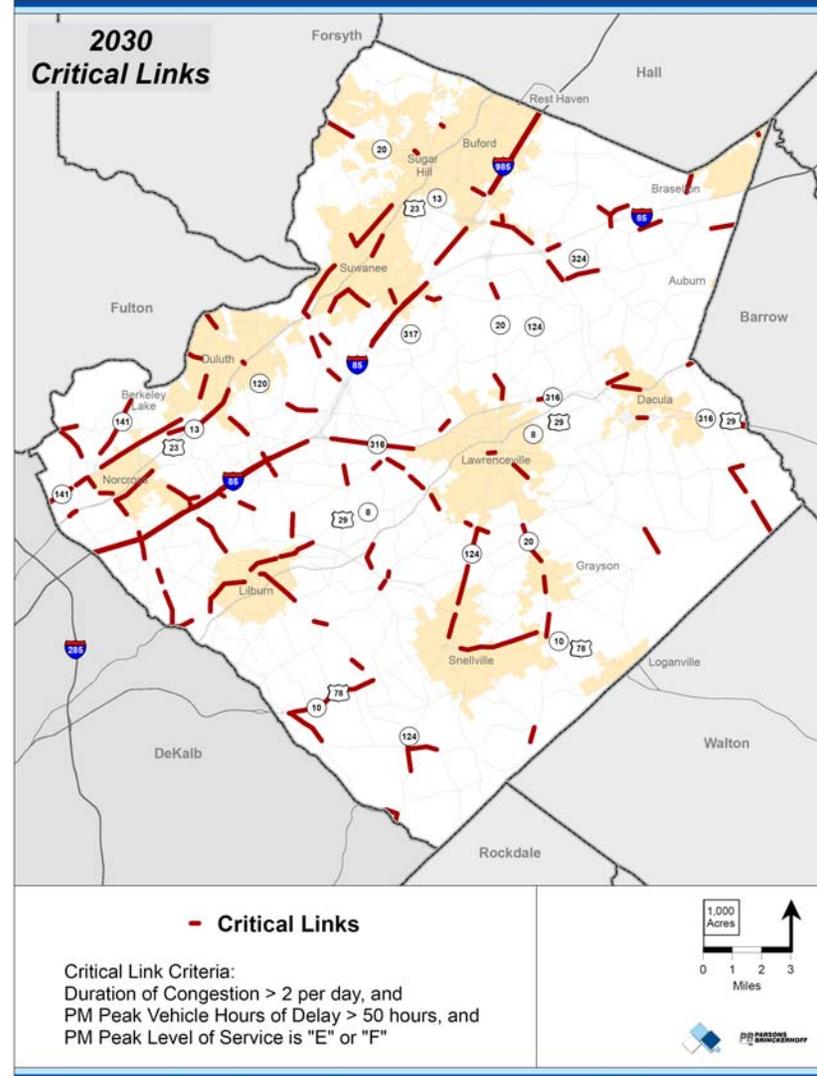


FIGURE 3-10: 2030 CRITICAL LINKS

4 Transportation Improvement Alternatives

4.1 Identification of Candidate Projects

A variety of sources were used to identify an initial list of candidate projects including the existing Transportation Improvement Program (TIP), capital project plans for the County and its cities, long range transportation plans (LRTP), discussions with County staff and with other stakeholders, and the results of the Existing and Future Conditions analysis. Candidate projects were identified for the 2030 horizon year for the CTP. Projects that provided the most congestion relief and improved mobility and accessibility opportunities to the County received primary consideration.

Candidate projects were also identified from ARC's current Regional Transportation Plan (RTP) called *Envision6*, the 2001 Gwinnett County Comprehensive Transportation Plan, and previous SPLOST programs. Additionally, those corridors currently or projected to be severely congested in 2030 were targeted for improvements either on the major route or on alternate routes. Traffic operational improvements were also identified based upon intersection crash history over a three year time frame (2003-2005), intersection approach volumes, and public and planning team input. Safety-related projects designed to mitigate high crash locations were developed based on this input.

Infrastructure projects considered for possible recommendation include the following categories:

- a. Road widening
- b. Extensions of existing roads, or new road alignments
- c. Grade separations and collector-distributor projects
- d. Other intersection improvements
- e. Access control

Other potential transportation and transportation-related improvements are outlined in later parts of this Section 4, along with projects specifically tested using the regional travel demand forecasting model.

4.1.1 Transportation Demand Management

Transportation Demand Management (TDM) strategies can help to reduce the volume and intensity of traffic on Gwinnett County's roadways. The objective of TDM strategies is to reduce or eliminate trip making, especially by vehicles carrying only one person. These strategies can also encourage trips to take place outside of the peak periods thus lessening the intensity and duration of congestion. By shifting the time of travel, TDM strategies effectively help to "smooth out" the travel demand peaks that typically occur at large trip generators, such as major employment centers, shopping malls, large schools, etc. Common examples of TDM strategies include community-based rideshare programs such as vanpools and carpools, transit services, walking, biking, variable work hours or telecommuting. Experience has shown that other actions are often necessary to make TDM strategies more effective, including such things as guaranteed ride home programs where for example a carpooler or transit rider can get a ride home during the middle of the day, often by a taxi or other service, in times of emergency.

Research has also shown that the most effective TDM strategies and programs, and ones that have the most positive impacts on the operation of the local transportation system, tend to be ones that are employer-based or sponsored.

TDM programs are not easily implemented or sustained and usually require working with individual employers or groups of employers where many workers are located. In many metropolitan areas, government-sponsored programs provide various levels of support for implementing TDM strategies (such as subsidizing the formation of new van pools). The Georgia Regional Transportation Authority (GRTA), for example, provides subsidies for new van pools formed in the Atlanta metropolitan area. In others, transportation management associations (TMAs) provide the focal point for employer-oriented TDM strategies. TMAs are nonprofit organizations usually formed by groups of employers and other stakeholders such as developers that work cooperatively and often provide funding to operate and maintain employer-based programs. Many TMAs in the country, for example, provide some of the support programs mentioned above such as a guaranteed ride home program. There are numerous TMAs already in the Atlanta metropolitan area.

The level of trip reduction impact from TDM strategies will vary widely. In particular, the percentage decrease in the number of trips using the road system will range depending on the location on the network. Thus, for example, the access and egress locations for specific activity centers could see anywhere from a 10% to 25% reduction in the volume accessing the site. However, the adjacent streets will not likely see such a reduction primarily because of the background traffic already using that street. To be effective at a sub area level, TDM strategies really need to be applied across a geographic scale that will truly make a difference on traffic levels using the street network.

One of the ways of providing this broader perspective is to work closely with TMAs in implementing strategies that can be applied to many different sites and employment locations. While the characteristics of suburban areas that are conducive to the formation of TMAs vary from one location to another; however, there are seven areas that seem promising for consideration of a TMA. These areas include:

- Peachtree Corners / Norcross
- Jimmy Carter Boulevard
- Gwinnett Place
- Discover Mills
- Mall of Georgia
- Lawrenceville
- Snellville

These areas were identified in previous planning studies and continue to be viable because they have the employment, residential, and travel volume characteristics to potentially support successful travel demand management and TMA efforts.

In addition to the supporting TMAs in major employment centers, Gwinnett County will pursue the following policies:

Managed Lanes – The County should explore market-based solutions beyond Interstate 85. Pricing policies that either divert discretionary trips or change traditional commuting patterns can have a substantial effect upon congestion. In addition to I-85, Peachtree Industrial Boulevard, SR 316 and U.S. 78 are potential corridors that may benefit from a priced-lane option.

TCC for TDM – A fully realized TCC would provide commuters and other travelers with real-time information in order to aid their trip making decisions. For example, a commuter could consult reliable, up-to-date trip time tables to determine when and if to make a certain trip. Unfortunately, without this knowledge, many commuters, who could otherwise adjust their schedule, end up ensnared on a congested interstate with few good options, thus literally having become part of the problem.

TDM through Economic Development – As mentioned several times throughout this plan, Gwinnett County’s past growth has been phenomenal. However, a slow-down in growth is inevitable. Recently, the county has determined that its best interest is served by trying to attract certain industries that will lead to a more balanced tax digest, among other benefits. Counties typically offer incentives, such as tax abatements, in exchange for a set number of full time jobs, long-term leases, or other commitments. In this negotiation process, large employers could agree to institute TDM strategies, such as offering employees flexible work schedules, or liberal “Tele-working” policies, or van pools.

Optimize Express Ridership – Since their inception, both Gwinnett Transit and GRTA express routes have proved to be popular. Most routes operate at or near capacity. However, a key difference between express riders and local bus patrons is that local bus riders are often transit dependent, whereas most express route users are not. Express buses are competing with other modes, usually a single-occupant vehicle. Therefore, transit agencies, including Gwinnett Transit, should make sure that vehicles, trip times, and overall convenience are attractive to those with a choice. Specifically, express buses should be comfortable and outfitted with modern amenities. Park & ride lots should be safe, convenient and offer desirable services. Variable tolling, if implemented, should be configured to ensure reliable, competitive travel times for express buses.

4.1.2 Management of Freight and Railroads

The movement of freight and goods in Gwinnett County is an important concern for those interested in the future economic health of the County. Freight movement relates to truck flows, rail service, and air cargo. The Atlanta Regional Commission recently completed a regional freight plan that outlined the importance of considering freight movement in local comprehensive planning efforts. As part of the ARC freight study, stakeholder interviews were used to identify specific bottlenecks and trouble spots that hinder efficient freight movement in and through the 20-county study area. A subjective list of issues brought forth through the interview process identified several locations that affect Gwinnett County: the I-285 and I-85N interchange otherwise referred to as Spaghetti Junction (“the worst in the city”); and GA 400. Importantly, the region’s warehouses and distribution centers are clustered in Fulton and Gwinnett counties, in the latter case in the I-85 corridor. Fulton and Gwinnett counties represent 28% and 22% of Atlanta’s warehouses and distribution centers, respectively, with Dekalb County representing the third largest share, at 12 percent.

As noted earlier, the CTP considers freight movement by evaluating in part how important a potential road improvement is for truck movement. Most importantly, the effectiveness of these projects on roadways used by trucks was an explicit part of the technical analysis discussed later.

Unfortunately, freight transportation needs are spread throughout the entire county, rather than limited to certain corridors. Warehouse and distribution facilities are located in the Peachtree Industrial Boulevard, Buford Highway, I-85, and SR 316 corridors. Major, active stone quarries operate in Norcross, Buford, Lawrenceville, Grayson and Dacula. Nevertheless, certain freight corridors have been identified as in need of special attention:

- SR 20 at SR 316
- US 78
- US 23
- I-85 at Jimmy Carter Boulevard

Safety

Safety is an important concern to both freight carriers and public officials. One of the more useful sources that can be used to identify areas of improvement is the record of road and intersection crashes, especially on roads that have large volumes of trucks. Regional crash data were used to identify locations with a large number of crashes. Multiple years of data were assessed to identify trends. In the Atlanta region, 62 percent of commercial vehicle crashes are caused by commercial vehicles themselves, and the number of commercial vehicle crashes has increased by 41 percent since 2000. Only one percent of commercial vehicles crashes resulted in fatalities; 68 percent involved tractor-trailer combination vehicles and three percent involved hazardous materials. Approximately one third of all commercial vehicle crashes occur at intersections.

The commercial vehicle crash data pinpointed several locations and corridors in Gwinnett County that were recommended for future attention including SR 20 at SR 316, US 78, and US 23. These corridors experience significant commercial vehicle volumes and crashes. Most of the crashes occurred in the more urbanized portions of the corridor.

At-Grade Rail Crossings

While at-grade crossings have been reduced in number within the region, they still continue to be an issue for the system as a whole and for the specific areas where they are located. Not only do rail crossings impact freight and passenger trips, adding delay to the system and causing spot congestion, they also create safety concerns to the traveling public. As rail freight is projected to increase in the Atlanta region by 37 percent in terms of tonnage and by 53 percent in terms of carloads or containers by 2030, the delays and safety concerns arising as a result of at-grade crossings will also continue to increase.

At-grade rail crossings are a type of specialized intersection. Geometric design and inadequate turning radii could be some of the reasons for crashes at these locations. Any improvements at these priority at-grade rails crossings, or others would be beneficial in terms of improving overall safety of the system and at that specific location.

Due to the high cost of converting an at-grade railway crossing to a grade-separated crossing, traffic and safety concerns are best addressed through less capital-intensive solutions. Historically, congestion due to rail traffic has been infrequent, and of short duration. However, due to projected increases in both vehicular traffic and rail traffic, even short traffic delays on some arterials could be unacceptable, especially if train traffic occurs during peak travel periods. The following crossings have been identified as first priority for future grade separation:

- Suwanee Dam Road at Norfolk Southern
- SR 120 at Norfolk Southern
- Harmony Grove Road at CSX

4.1.3 Intelligent Transportation Systems (ITS)

ITS strategies represent a group of systems monitoring and information communication technologies designed to make the existing transportation system operate more efficiently and to provide travelers with up-to-date and/or real time traveler information. Two basic market packages are included in this section, namely Advanced Traffic Management Systems (ATMS) and Advanced Traveler Information Systems (ATIS). Gwinnett County has made great strides in both areas, especially by having a Traffic Control Center (TCC).

The early vestiges of the TCC were implemented by GDOT in 1995. Much has changed in the ensuing 12-plus years in terms of growth in travel, changes in travel patterns and distributions and in technological advances. Recognizing this, the County implemented an updated TCC as part of the construction of the Gwinnett County DOT Central Maintenance Facility that was opened in 2007. The new TCC in this facility connects to the legacy systems in the existing TCC in the Gwinnett County Justice and Administration Center and performs all of the current functions of the existing TCC while upgrading operations to the current state of the art. The types of services that can be supported by this ITS infrastructure includes:

- Emergency/Incident Management,
- Arterial Management,
- Freeway Management,
- Traveler Information,
- Transit Management,
- Airport Management, and
- Maintenance and Construction Management.

As noted in the Gwinnett County Traffic Control Center (TCC) Master Plan, the purpose of a TCC is to create an environment within Gwinnett County that will allow for immediate and real-time transportation system operations. These operations will allow for safer roads, faster response to emergencies and incidents, and provide better quality of life to the motorists in Gwinnett County. The Gwinnett County TCC plan identified the system's goals and objectives as being related to safety, mobility, efficiency, reliability and sustainability.

The CTP has not identified any specific ITS improvement projects, primarily because the TCC master plan provides a good strategy for expanding the current excellent system. The CTP does however recognize the importance of operations in terms of managing a transportation system such as that found in Gwinnett. With limited funds available for physically expanding the transportation system, it seems clear that providing more efficient system operations will be one of the most important strategies available to transportation officials in the future. The County should take advantage of road operations improvements and capacity adding projects to incorporate, where appropriate, ITS technologies that will expand the system management capability of the County. Several ITS projects for Gwinnett County are in the 2008-2013 TIP; these types of projects should receive priority in future TIPs as well.

4.1.4 *Public Transportation*

Five public transportation alternatives were defined and tested, to determine what contributions they would make to overall mobility of the population, support of efficient land use, favorable environmental effects, or other values of benefit to Gwinnett County. All of the alternatives address regional transportation needs, although some would also have intra-county trip potential. The five alternatives, shown in Figure 4-1 through Figure 4-5, are:

- Added express bus services
- A light rail transit (LRT) route, with passenger transfer to the MARTA high-capacity transit route at the Perimeter Highway
- Extension of the existing MARTA high-capacity transit route from the Perimeter Highway to a terminus in Gwinnett County
- A commuter rail line along the CSX track through Gwinnett County, connecting downtown Atlanta with intermediate locations and terminating at Athens
- A commuter rail line along the Norfolk Southern track through Gwinnett County, connecting downtown Atlanta with intermediate locations and terminating at Gainesville

4.1.5 *Bicycles and Pedestrians*

This section of the report presents a brief overview of needs for bicycle, pedestrian, and multi-use path projects, based on the existing conditions inventory and a review of the gaps in the existing network. Projects are recommended to fill the gaps in the existing network.

There are 13 pedestrian and multi-use path projects in Gwinnett County that are included in the 2008-2013 TIP. All are scheduled for completion in 2009 or 2010. Additional needs are identified in this report. As noted earlier in this report, local bus service in Gwinnett County serves a largely transit dependent population with little or no access to an automobile. As such, many Gwinnett County Transit local bus patrons need pedestrian and bicycle facilities in order to use transit. A previous planning study identified locations where sidewalks and pedestrian facilities are not continuous or lacking. To address these issues, the County currently has an Open Space and Greenway Master Plan. The plan is a comprehensive document intended to inform and guide the County's ongoing greenspace preservation program. Bicycle and pedestrian planning is part of this master plan, and the Department of Parks and Recreation coordinates with the County DOT on elements affecting transportation.

Other needs for bicycle, pedestrian, and multi-use path facilities were identified as falling into three areas:

- Pedestrian linkages to existing bus services
- Pedestrian/bicycle linkages to the existing pedestrian/bicycle network and/or the gaps in the existing networks
- Pedestrian/bicycle linkages between parks and neighborhoods

These three categories of needs are intended to expand and enhance the existing pedestrian and bicycle network in Gwinnett County. Where feasible, the construction of such improvements should be coordinated with planned roadway improvements.

Figure 4-6 shows the projects recommended that meet the needs identified above. As shown, this figure indicates current projects that meet network needs and those that are recommended for future investment programs. The projects also are listed in Table 4-1.

TABLE 4-1: BICYCLE AND PEDESTRIAN PROJECTS

TYPE OF FACILITY	Street/Facility	From	To	Project Length (Miles)	Unit Cost Per Mile (\$)	Factor ¹	Total Cost (\$)
PLANNED FUTURE PROJECTS							
i) Projects that directly relate to defined needs							
PEDESTRIAN FACILITY	Peachtree Industrial Boulevard	Reps Miller Road	South Old Peachtree Road/Pickneyville Park	1.80	\$190,000	0.5	\$171,000
PEDESTRIAN FACILITY	Sugarloaf Parkway	Meadow Church Road	Satellite Boulevard	0.71	\$190,000	0.5	\$67,450
MULTI-USE TRAIL	Ivy Creek Greenway	Cherokee Trail	North Bogan Road	10.10	\$590,000		\$5,959,000
MULTI-USE TRAIL	Camp Creek Greenway & Trail	Harmony Grove Road	North River Drive	3.30	\$590,000		\$1,947,000
BICYCLE FACILITY	Old Peachtree Road	Rock Springs Road	Hog Mountain Road	5.83	\$190,000	0.5	\$553,850
BICYCLE/PEDESTRIAN FACILITY	Rogers Bridge Road/Old Peachtree Road	Peachtree Industrial Boulevard	Dean Road	5.89	\$190,000	0.5	\$559,550
BICYCLE FACILITY	Five Forks Trickum Road	Gwinnett County Line	Lawrenceville	11.55	\$190,000	0.5	\$1,097,250
PEDESTRIAN FACILITY	Lenora Church Road	Lee Road (park)	Springdale Road (park)	3.60	\$190,000	0.5	\$342,000
PEDESTRIAN FACILITY	North Road	East Main Street	Lakeview Road	1.51	\$190,000	0.5	\$143,450
PEDESTRIAN FACILITY	Ross Road	Bethany Church Road	Zoar Church Road	0.10	\$190,000	0.5	\$9,500
PEDESTRIAN FACILITY	Holcomb Bridge Rd	Spalding Drive	Buford Highway	3.52	\$190,000	0.5	\$334,400
PEDESTRIAN FACILITY	North Bogan Road	Hamilton Mill Road	Thompson Mill Road	1.10	\$190,000	0.5	\$104,500
BICYCLE FACILITY	Buford Highway	Rogers Bridge Road	Suwanee Creek Trail	3.23	\$190,000	0.5	\$306,850
BICYCLE FACILITY	Rogers Bridge Rd.	Peachtree Industrial Blvd.	Buford Hwy.	1.10	\$190,000	0.5	\$104,500
PEDESTRIAN FACILITY	Indian Trail Rd.	Singleton Road	Lawrenceville Hwy.	1.84	\$190,000		\$349,600
j) Sub-Total							\$12,049,900
ii) Projects indirectly relating to defined needs							
BICYCLE FACILITY	Langford Road/Old Norcross Road	Medlock Bridge Road	West Pike Street	12.88	\$190,000	0.5	\$1,223,600
BICYCLE FACILITY	Rockbridge Road	North Deshong Road	Lawrenceville Highway	6.63	\$190,000	0.5	\$629,850
PEDESTRIAN FACILITY	Killian Hill Road	Arcado Road	US 78	4.40	\$190,000		\$836,000
ii) Sub-Total							\$2,689,450
ADDITIONAL FUTURE PROJECTS BEING RECOMMENDED							
BICYCLE FACILITY	Gravel Springs Road	Ivy Creek Greenway	Dacula Road	4.20	\$190,000	0.5	\$399,000
BICYCLE FACILITY	Brogdon Road/North Price Road/Shadburn Avenue	Lawrenceville-Suwanee Road	Sawnee Avenue	4.20	\$190,000	0.5	\$399,000
PEDESTRIAN FACILITY	Lawrenceville Street	Howell Ferry Road circle	Buford Highway	0.55	\$190,000	0.5	\$52,250
PEDESTRIAN FACILITY	Pleasant Hill Road	Buford Highway	Old Norcross Road	1.61	\$190,000	0.5	\$152,950
Sub-Total							\$1,003,200
Total							\$15,742,550

¹ Factor of 0.5 indicates 5-ft of Pedestrian/Bicycle Facility on one side of roadway only



Areas with Potential Needs for Bicycle and Pedestrian Provisions

Over a long-term planning horizon, such as that for a comprehensive transportation plan, it is often difficult to identify specific pedestrian and bicycle projects that need to be implemented in the County. In such cases, it is important that the plan identify areas of the County where these types of investments should be considered over the next 20 years rather than specific projects themselves. These areas include mixed use development, residential sites with densities above certain thresholds and supported by infrastructure such as transit, that allows the use of alternative modes.

In addition, given the importance of convenient and safe access to transit service, potential areas where improved pedestrian facilities could be an important complement to more effective transit service include those areas served by local bus routes. The major potential transit trip generators in the County include the Buford Highway corridor and the apartment complexes in the I-85 corridor. Trip attractors in the County include Gwinnett Place Mall, Gwinnett County Government Center in Lawrenceville, the Buford Highway Corridor, and the industrial sections of the eastern and central portion of the County.

The downtown centers of Norcross, Lawrenceville, Duluth, Suwanee, Buford, and Lilburn, along with the Gwinnett Place Mall area and US 78 CID area, are also key areas where improved pedestrian and bicycle facilities potentially have great benefit.

Policies & Guidance

In order to accommodate the future needs for non-motorized transportation modes, the following policy actions typically are taken by local governments:

- Provide guidance to include bicycle, pedestrian, and other modes of transportation in roadway construction projects
- Provide guidance on land use planning to provide for better bicycle, pedestrian and multi-use path connections in residential areas
- Emphasize the importance of bicycle and pedestrian planning as well as develop and promote such consideration through education and awareness.

Unfortunately, the above actions sometimes result in only limited success. Some other local governments and counties have adopted more forceful policies that mandate the inclusion of bicycle and pedestrian facilities in all planning and design for new or reconstructed highways, sometimes called a “Complete Streets” initiative. Complete Streets are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

Creating Complete Streets means transportation agencies must change their orientation away from building primarily for cars and trucks, and instead routinely design and operate the entire right-of-way to enable safe access for all users. Places with Complete Streets policies are making sure that their streets and roads work for drivers, transit users, pedestrians, and bicyclists, as well as for older people, children, and people with disabilities. Conversion of an existing street to a Complete Street should include extensive public involvement and planning, especially if the project results in reduced capacity for vehicular traffic.

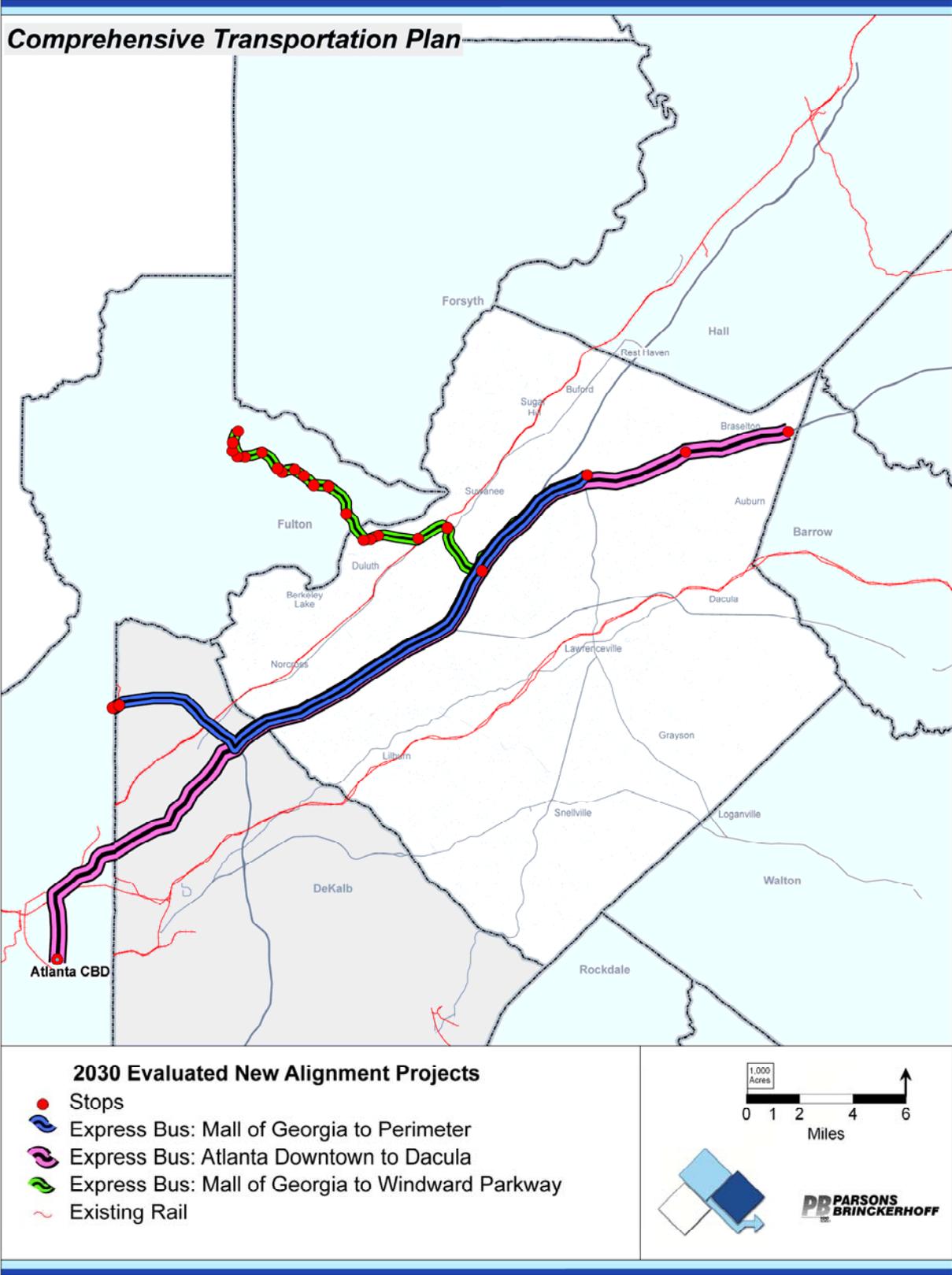


FIGURE 4-1: 2030 EXPRESS BUS SERVICE

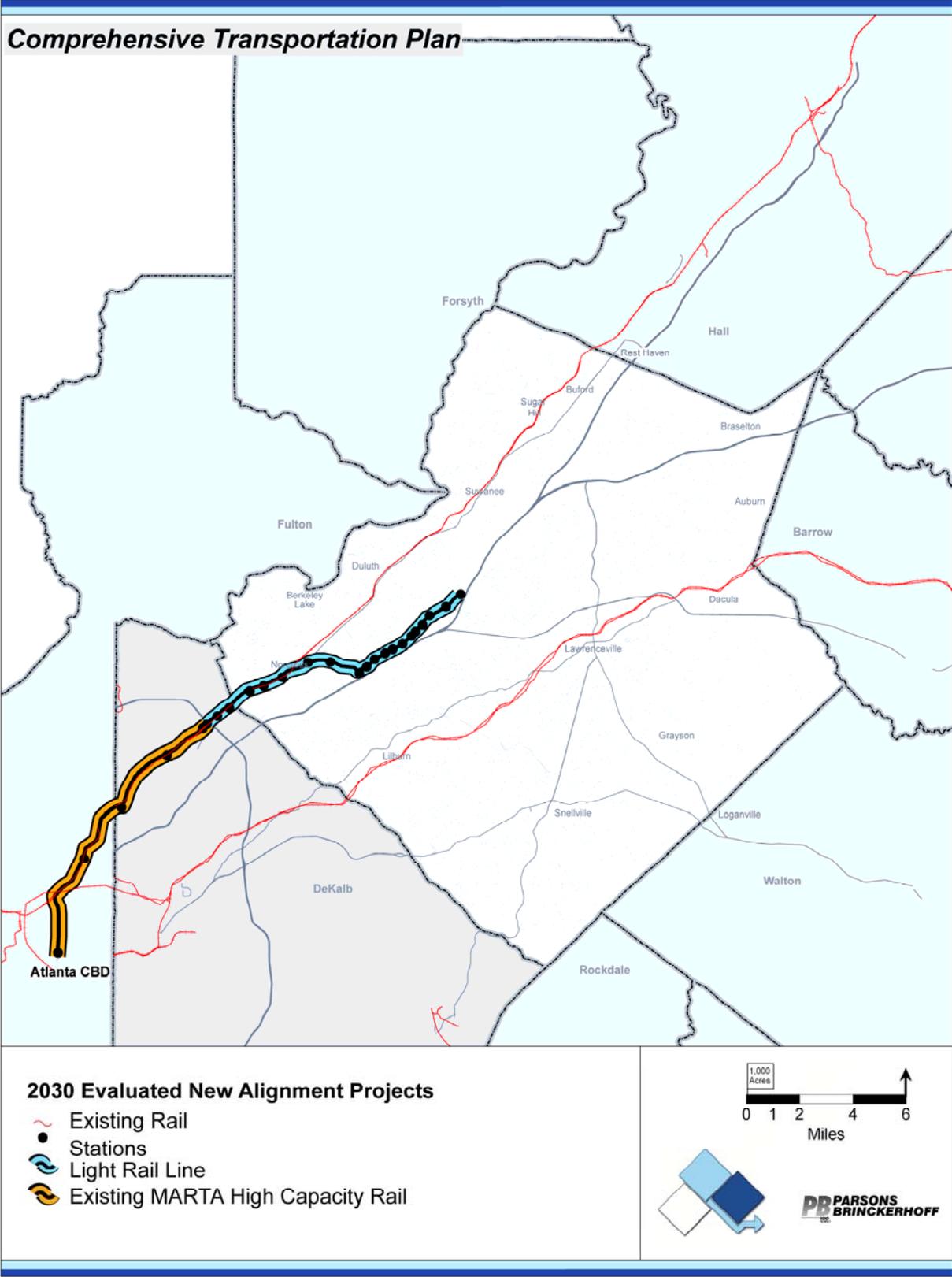


FIGURE 4-2: 2030 LIGHT RAIL TRANSIT

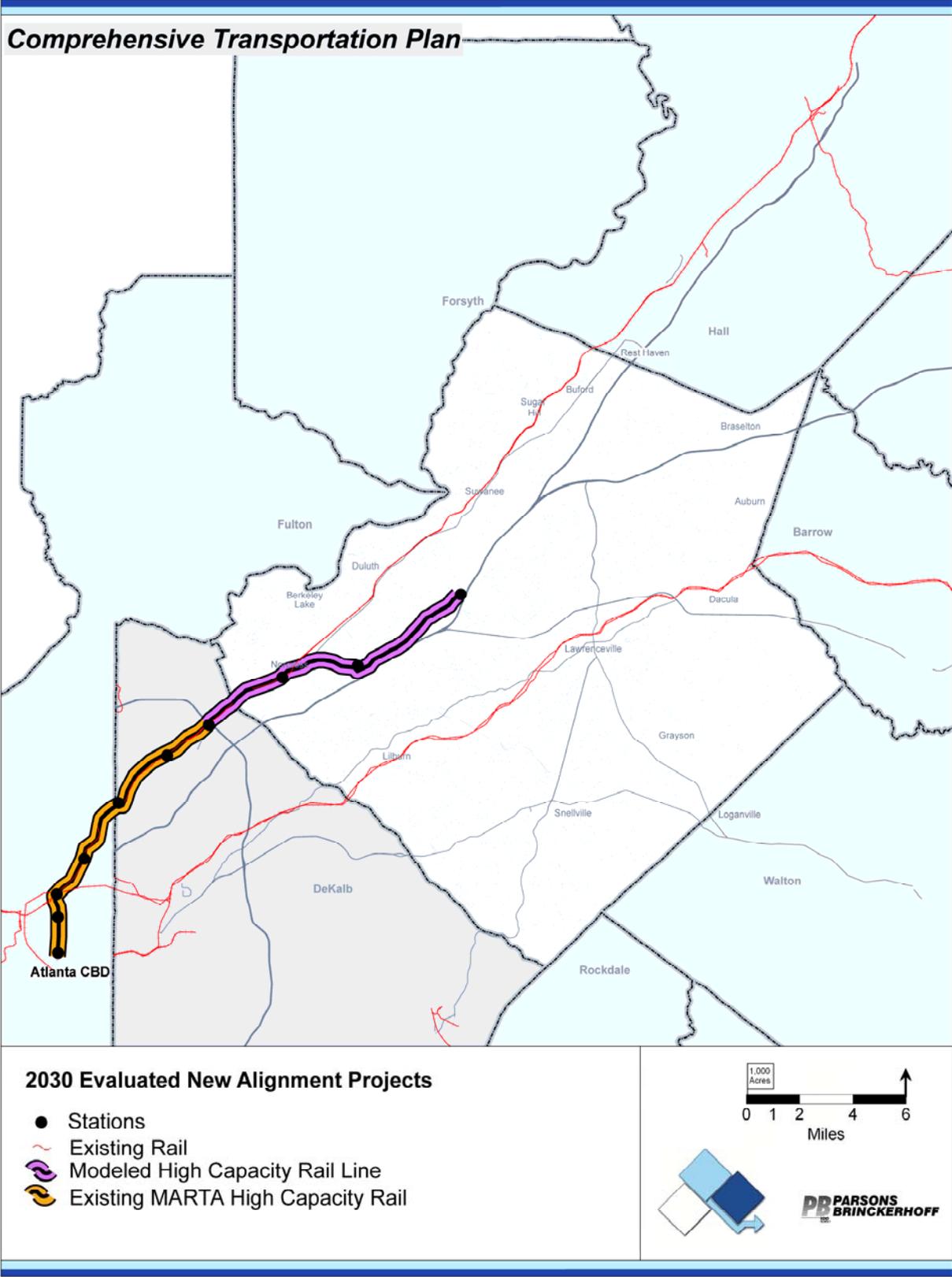


FIGURE 4-3: 2030 HIGH-CAPACITY TRANSIT ROUTE

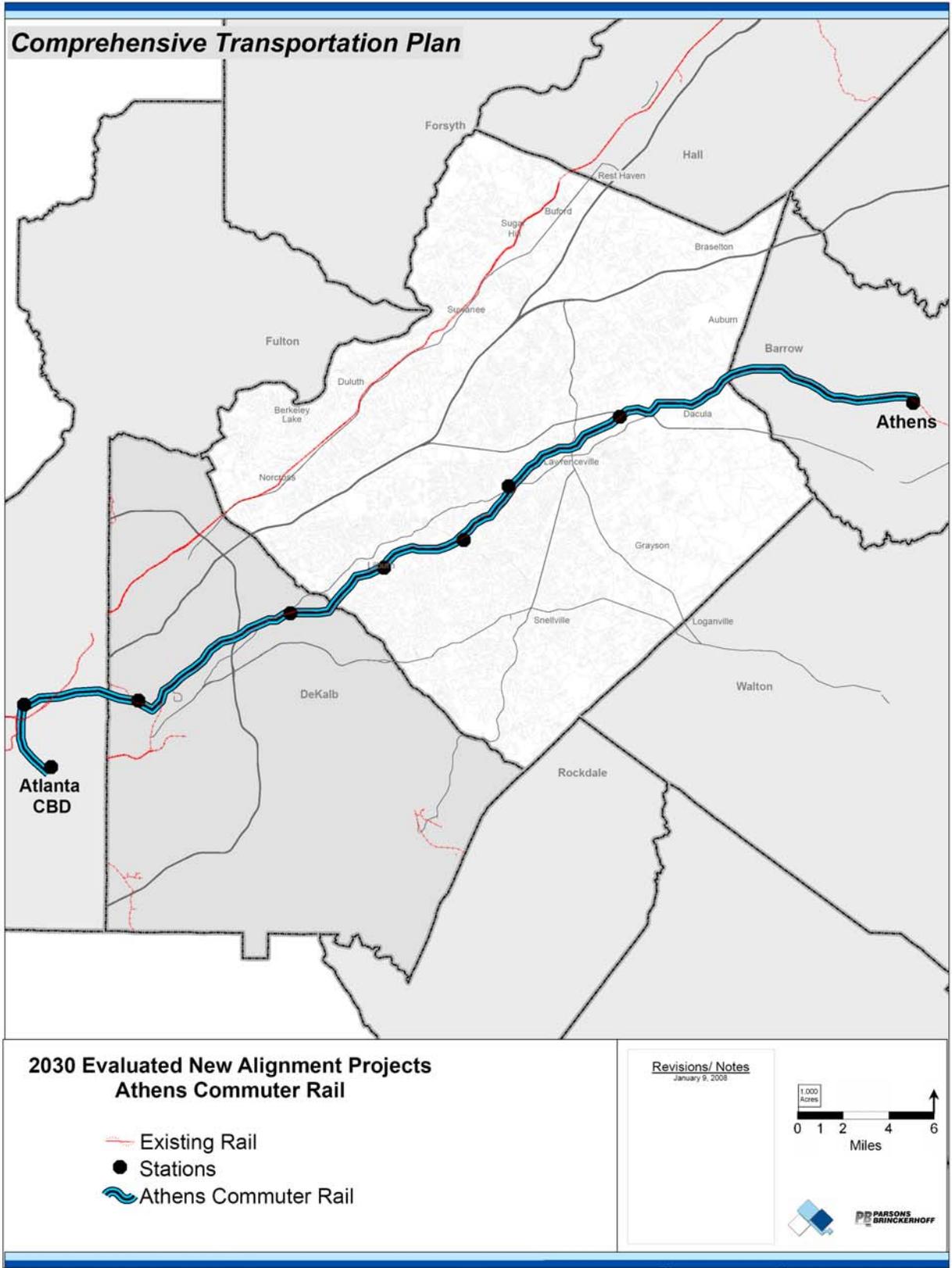


FIGURE 4-4: 2030 ATHENS COMMUTER RAIL

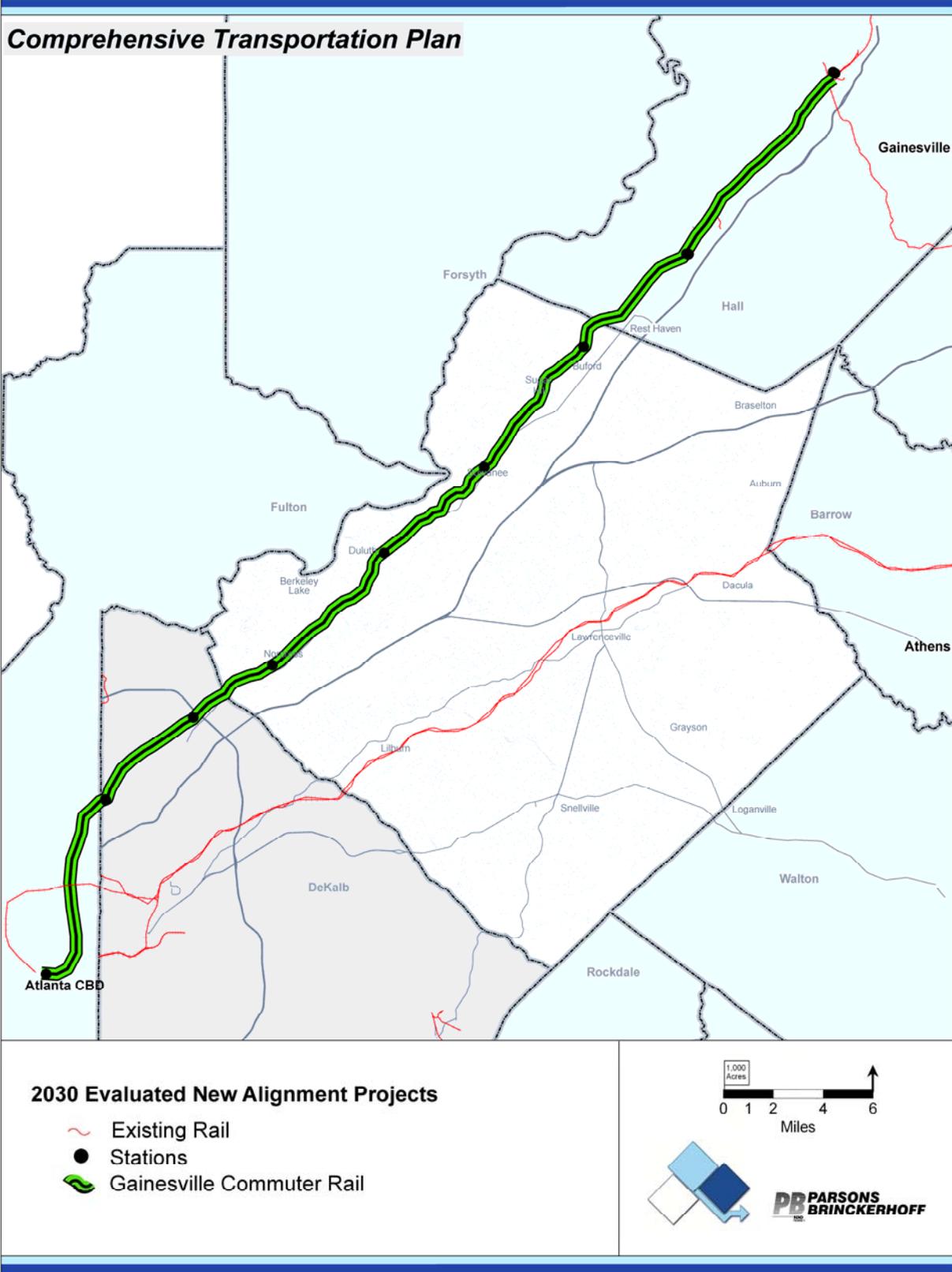


FIGURE 4-5: 2030 GAINESVILLE COMMUTER RAIL

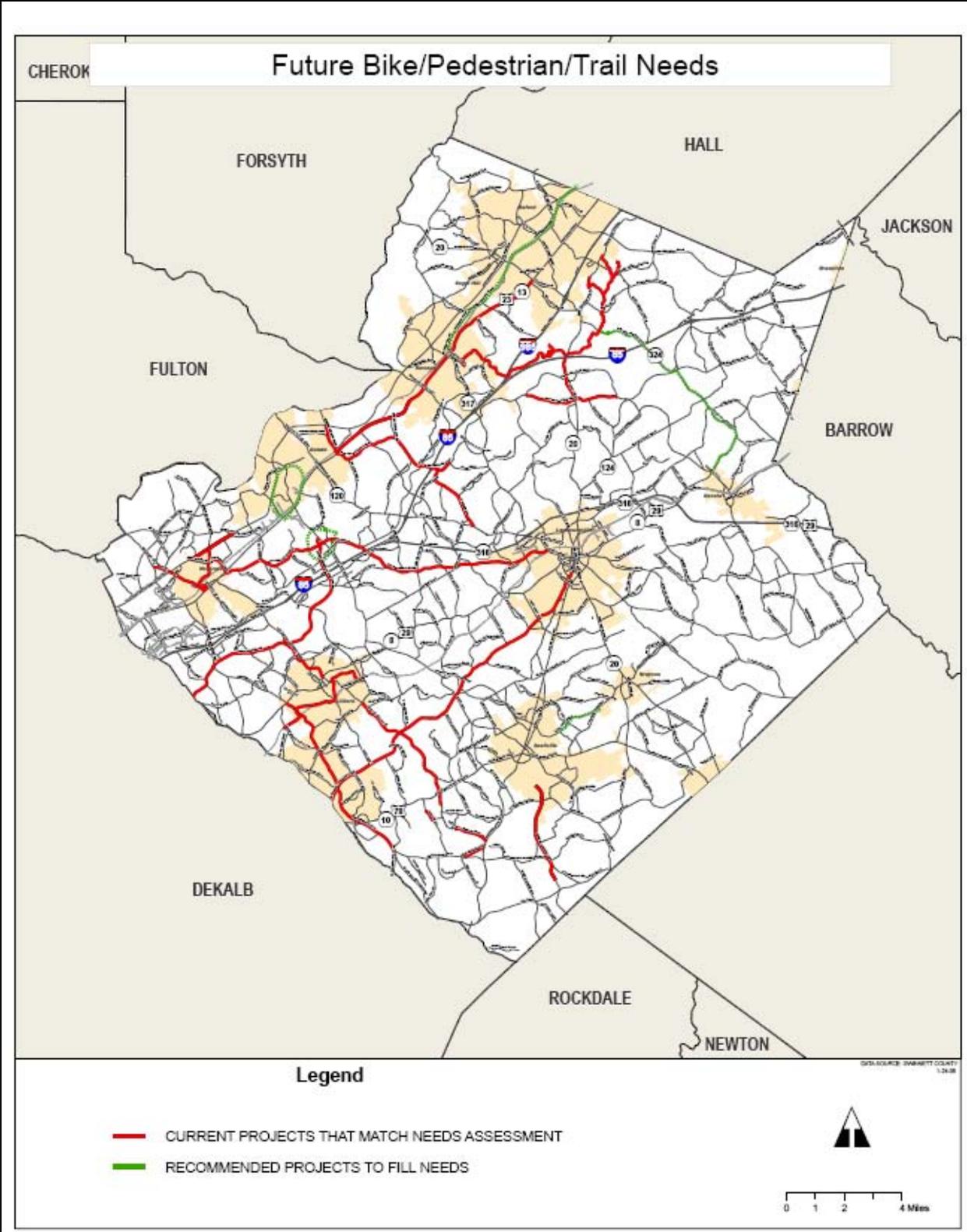


FIGURE 4-6: FUTURE BIKE / PEDESTRIAN / TRAIL PROJECTS

5 Testing the Alternatives

5.1 Goals and Evaluation Criteria

The CTP is focused on congestion relief over a 2030 planning horizon. Project priorities, however, should reflect the current range of community concerns with respect to desired system performance. As well, a broad range of performance goals indicates the type of strategies and transportation and land use policies that could be considered as part of the planning process.

The goals that guided this planning effort were defined through the public outreach effort and through interaction with key stakeholders. In addition, the CTP goals were considered in light of the goals adopted for other planning efforts in the region, such as those for *Envision6*. Although the focus of the goals is usually on the desired characteristics of the transportation system itself, the goals also often consider desired traits of the planning process used to develop a recommended set of actions. Such was the case in this planning effort.

The goals that guided the development of the CTP are:

- Provide mobility and accessibility for the movement of people and goods
- Promote a safe transportation system for all modes
- Promote a high quality of life for Gwinnett residents through transportation investments
- Consider innovative techniques and solutions
- Promote technological advances and alternative funding sources
- Create an opportunity for broad public outreach through various discussions and review.

The CTP has considered each of these goals as part of the plan development process and is also compatible with the overall vision of the Land Use element of the Unified Plan as well as its associated goals and objectives.

The goals have guided the evaluation of alternative transportation improvements, by providing the basis for evaluation criteria, which also are driven by the information that could be developed regarding the alternatives, and the time, money, and other constraints naturally imposed upon public infrastructure and service improvement programs.

The criteria include measures of transportation performance, contributions to mobility and accessibility, improvement of safety, quality of life, and project cost.

5.2 Evaluation Based on the Regional Forecasting Model

5.2.1 2030 Baseline Network

The 2030 baseline road network on which potential capacity improvements and new transit services were tested contains both existing and committed projects (E+C), which are listed in Table 5-1. The committed projects included in this network are those projects that are listed in ARC's Regional Transportation Plan (RTP) and that County staff thought were likely to be built by the year 2030. Types of projects include both roadway widenings and extensions that do not exist today.

5.2.2 2030 Alternative Networks

The following sections describe the tested alternatives that were part of the build scenarios for 2030.

Road Widening Projects

A total of 18 road widening projects, shown in Figure 5-1, were tested. The methodology used to prioritize these projects was as follows:

- Individual projects were added to the baseline network of existing and committed (E + C) projects one at a time for modeling purposes. The three congestion measures (operational level of service (LOS) during the evening peak period, duration of congestion expressed daily, and vehicle hours of delay during the evening peak period) were all calculated for the roadways under two scenarios - one with the improvement in place and one without. Results from these calculations were then compared. For example, if the average peak period level of service along a corridor improved from LOS E to C with the addition of the project, that project received a score of two, reflecting a change of two category levels in terms of LOS for that performance measure.
- The quantitative measures used in this analysis addressed congestion on the basis of three distinct measures. The level of service measure used the afternoon peak hour level of service, which is generally considered the most congested period of the day. The duration of congestion measure identified the total time over the course of a day in which a road would operate at level of service E or F. The vehicle hours of delay measure was calculated as the difference between peak period congested travel time and free flow travel time multiplied by the total traffic volume in the afternoon period. These three measures identified the intensity, duration, and extent of congestion, respectively.
- The projects were sorted for each of these measures and maximum points (three) were awarded to those with the greatest congestion improvement. Projects in the middle range were awarded two points; while those with the least improvement were given one point.
- Projects were overlaid with a map of roadway crash data. A normal outcome of roadway improvements is to decrease the likelihood of crashes. Therefore, points were awarded based on the number of current-level crashes found to occur within a 200-foot band along the centerline of each roadway project. Those with the highest number of crashes within the band received the highest score (three) for this measure. Those with mid-range numbers received a score of two, while those with the fewest crashes were awarded one point.
- The last qualitative measure was calculated based on a project's impact on freight movement. Projects were overlaid on a map of roads carrying major truck volumes. This map was created by evaluating the projected 2030 daily truck volumes of all the roadways in the highway network. Those roadways with the truck volumes in the upper quartile were identified as being heavily traveled by trucks. Those projects that carried the highest truck volume received the highest score (three); roads with lower truck volumes received scores of two or one.
- Finally, the scores for all measures were added and those projects with the highest scores were considered high priority. Those in the mid-range were mid priority, and those with the lowest scores were low priority. Table 5-2 outlines this general process.

TABLE 5-1: YEAR 2030 E + C (BASELINE) NETWORK CAPACITY IMPROVEMENTS

Reference ID	Project Name	Description	Project Limits	Source
GW-AR 926	I-85	Build Interchange	at SR 324	2008-2013 TIP
AR-H-500	SR 316 HOV	Build Managed Lanes	I-85 to SR 20	2008-2013 TIP
FN 003A	SR 120	Widen to 4 lanes	State Bridge (Fulton) to PIB	LR in RTP
FN-233C	McGinnis Fy. Rd. Bridge	Widen to 4 lanes	Over Chattahoochee River	2008-2013 TIP
FN 225	State Bridge Rd.	Widen to 6 lanes	SR 141 (Fulton) to PIB	LR in RTP
FN-233A	McGinnis Fy. Rd.	Widen to 4 lanes	Sergeant Rd. (Fulton) to PIB	2008-2013 TIP
GW 004	Five Forks Trickum Rd.	Widen to 4 lanes	Oak Rd. to Killian Hill Rd.	2008-2013 TIP
		Widen bridge to 4 lanes	Yellow River	
GW 020B	SR 20	Widen to 6 lanes	I-985 to SR 324	LR in RTP
GW 020C	SR 20	Widen to 8 lanes	SR 324 to I-85	LR in RTP
GW 020D	SR 20	Widen to 8 lanes	I-85 to Rock Springs Rd.	LR in RTP
GW 020E1	SR 20 Loganville Hwy.	Widen to 4 lanes	Plantation to Ozora	Let
GW 020E2	SR 20 Loganville Hwy.	Widen to 4 lanes	Plantation to Ozora	Let
GW 020F	SR 20 Loganville Hwy.	Widen to 4 lanes	Ozora to SR 81 (Walton)	2008-2013 TIP
GW 020A1	SR 20	Widen to 4 lanes	Burgess Rd. (Forsyth) to PIB	2008-2013 TIP
GW 088	SR 120	Widen to 4/6 lanes	Atkinson to Riverside	Let
GW 099A	SR 13 Buford Hwy.	Widen to 4 lanes	Old P'tree. to Sugarloaf Pkwy.	LR in RTP
GW 099C	SR 23 Buford Hwy.	Widen to 4 lanes	Thompson Mill Rd. to Friendship Rd. (Hall)	2008-2013 TIP
GW 119	McGinnis Fy. Rd. Ext.	Build 4 lanes	Satellite Blvd. to L'ville.-Suwanee	2008-2013 TIP
GW 254	SR 324 Gravel Spr Rd.	Widen to 4 lanes	SR 20 to I-85 N	Let
GW 255	SR 324 Gravel Spr Rd.	Widen to 4 lanes	I-85 N to SR 124	Let
GW 269	SR 124 Scenic Hwy.	Widen to 6 lanes	US 78 to Ronald Reagan	LR in RTP
GW 271B	Pleasant Hill Rd.	Widen to 6 lanes	Old Norcross to Chatt. River/PIB	LR in RTP
GW 020A2	SR 20 Bridge	Widen to 4 lanes	Over Chattahoochee River	2008-2013 TIP
GW 289	SR 324 Bridge	Widen to 4 lanes	Over I-85	2008-2013 TIP
GW 308A	Sugarloaf Pkwy. Ext.	Build 4 lanes	SR 20 Grayson Hwy. to SR 316	2008-2013 TIP
GW 308B	Sugarloaf Pkwy. Ext.	Build 4 lanes	SR 316 to SR 20 Buford Dr.	2008-2013 TIP
GW 308C	Sugarloaf Pkwy. Ext.	Build 4 lanes	SR 20 Buford Dr. to PIB	LR in RTP
GW 309	W. Liddell/Club Conn.	Build 4 lanes	Satellite Blvd. to Shackelford Rd.	
			I-85 Bridge at W. Liddell/Club Conn.	2008-2013 TIP
GW-AR 191	I-85	Widen to 6 lanes	I-985 to Hamilton Mill Rd.	2008-2013 TIP
GW-AR 192	I-85	Widen to 6 lanes	Hamilton Mill Rd. to SR 211	2008-2013 TIP
GW-AR 204A	SR 316	Widen to 6 lanes, Gr Sep, and CDs	Cedars Rd. to Drowning Creek Rd.	2008-2013 TIP
GW-AR 249B	SR 316	Widen to 6 lanes, Gr Sep, and CDs	E. of Walther Blvd. to E. of SR 20	LR in RTP
GW-AR 249A	SR 316	Widen to 6 lanes	Riverside Pkwy. to Walther Blvd.	LR in RTP
GW-AR 249C	SR 316	Widen to 6 lanes	E. of SR 20 to W. of Progress Ctr. Ave.	LR in RTP
GW-AR-250	I-85	Build Interchange	at McGinnis Fy. Rd. Ext.	LR in RTP
GW-AR 053 A&B	I-85	Interchange Reconstruction	at SR 316	Let
GW-AR-053	I-85	Interchange Reconstruction	at SR 316	Let
GW 316	I-85 Bridge	Build 4 lanes	at Hillcrest/Satellite Conn.	LR in RTP
CTP-7 (part of GW 119)	N'brook Pkwy/Old P'tree	Widen/Build 4 lanes	Old P'tree/N. Brown Rds to L'ville-Suwanee Rd/Horizon Dr	2008-2013 TIP
GW 279A&B	Pleasant Hill Rd.	Grade Separation	at Buford Hwy. and NS RR	Let

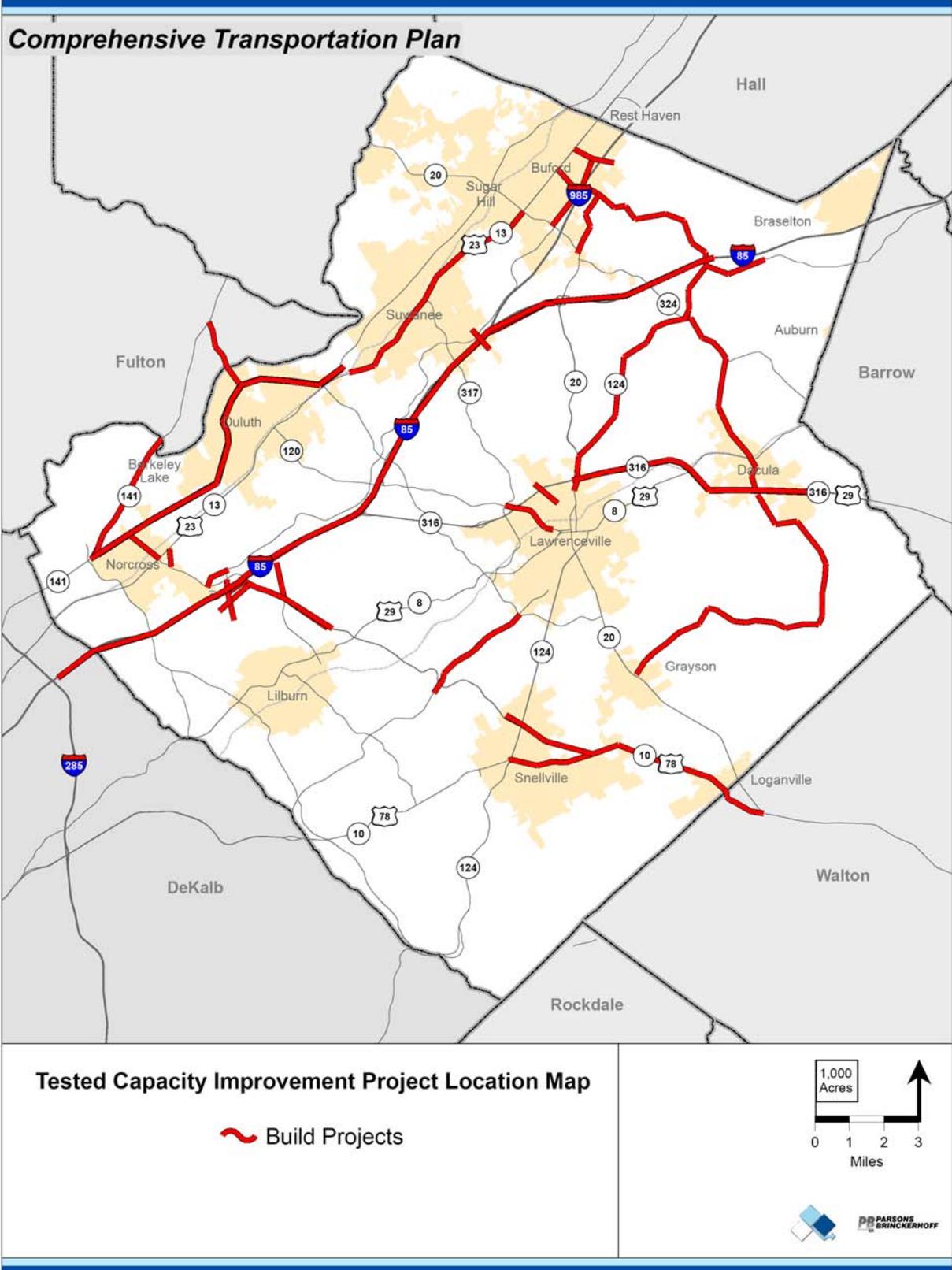


FIGURE 5-1: YEAR 2030 TESTED CAPACITY IMPROVEMENT PROJECTS

TABLE 5-2: SAMPLE ROAD WIDENING PROJECT SCORING

Road Widening Project	Quantitative Measures Ranked in Thirds**				Qualitative Measures		Total Points
	Change in Peak Hour LOS	Change in Typical Weekday Duration of Congestion	Change in Peak Period VHD (% change)	Change in Peak Period VHD	How much will it improve safety?	How much does it improve freight routes?	
Beaver Ruin Rd	2	2	3	3	2	3	15
Peachtree Pkwy Widening	3	2	3	3	2	1	14
SR 120	2	3	2	2	3	2	14
Abbotts Bridge Rd Widening	1	1	2	1	1	2	8

** Points assigned depend upon comparative level of improvement in each performance measure
 VHD: Vehicle Hours of Delay
 LOS: Level of Service

The potential score ranges from 6 to 18 points. In the analysis of all projects, scores ranged from a low of 6 to a high of 15. Approximately two-thirds of the possible points are derived from quantitative congestion measures. Each of the two qualitative measures accounts for about 17% of the total possible points. In Table 5-2, the Beaver Ruin Road project shows the highest point total (15), and therefore would be a candidate for the high priority category.

Once all the projects were scored, they were sorted by total points. Logical breaks in the scores were identified and each project was assigned to a priority group based upon these break points. In some cases, the difference in point totals between projects in different categories can be small. However, in this analysis three distinct priority groups emerged – high, mid-level, and low priority projects.

5.2.3 Road Extension Projects

A total of 14 roadway extension projects were ranked in a similar process, but based on the following three measures:

- Overall improvement in connectivity, a quantitative measure of the route’s ability to carry through traffic, defined as daily volume projections
- Potential to reduce crashes, a qualitative score for roadway safety
- Impact on freight movement, a qualitative measure of truck route improvement.

5.2.4 Grade Separation and CD Road Projects

Three grade separation and CD road projects were evaluated and ranked based on the same three measures as were used for the roadway extension projects.

5.3 Evaluation Based on Traffic and Safety

5.3.1 Intersection Improvements

Potential intersections for improvement projects were identified based on two criteria:

- county staff input
- 2030 projected daily traffic volume

The first criterion is based on knowledge of recent or projected development in the area, or previous citizen comments or concerns. In the cases where a series of intersections along a roadway are anticipated to have operational problems, corridor studies are recommended to verify the types of problems and range of potential solutions.

In Section 7 of this report, intersections identified for improvement, and the priorities assigned to them are presented.

5.4 Criteria: Costs

5.4.1 Introduction / Methodology

The ARC Costing Tool (2005 update) was used to estimate project costs for projects that had no previous cost estimates associated with them. Projects with already existing cost estimates have been adjusted using an inflation factor (5% per year, cumulative cost basis). This inflation factor was based on the number of years from the date the cost estimate (assumed to be the budget year) was originally developed and was inflated to FY 2008 to develop Present Day Cost (PDC) Estimates. All costs are presented at this current level. *Envision6* and TIP project costs were assumed to be PDC estimates and hence were not inflated.

Projects that involved new costs were categorized by improvement type, as follows:

- Intersection Capacity
- Interchange Capacity
- Roadway Capacity
- HOV Lanes
- Pedestrian Facilities (Sidewalks)
- Bicycle/Pedestrian Facilities (Multi-use Trails)

The following sections present the costs for each type of improvement.

5.4.2 Capacity Improvements

Intersection Capacity

Project costs for this type facility were estimated using the roadway classification categories in the GIS Centerline files applied to the base cost assumptions from the ARC costing tool summary for intersections. The following assumptions were made to translate the eight (8) road classifications used by Gwinnett County to the three road classifications used by the costing tool. The base cost assumptions in the model include \$160,000 for traffic signal upgrades and

were in 2010 dollars. For consistency, the Present Day Cost estimates were developed for a 2008 cost year for all projects.

<u>Centerline File Code</u>	<u>Model Category</u>
RSS- Residential Street	Local
MIC- Minor Collector	Collector
MJC- Major Collector	Collector
MIA- Minor Arterial	Arterial
MJA- Major Arterial	Arterial
PRA- Principal Arterial	Arterial
FRE- Freeway	Arterial
PVT- Private Road or Driveway	Local

Interchange Capacity

There were no interchange projects without previous cost estimates. All interchange project costs were derived by inflating existing cost estimates. The costing tool requires design-level detail for interchanges and was not used for any planned interchange projects.

Roadway Capacity

Roadway capacity project costs vary by the number of existing and proposed lanes and the number of intersections bisecting the widened length. Efforts were made to identify existing and proposed conditions from GIS mapping, a windshield survey and discussions with County representatives to determine the number of proposed lanes, typical sections – rural vs. urban, and new vs. widening. As per guidance from the County, all new roads in Gwinnett County are assumed to have urban cross sections. The model makes no distinction between costs for “with median” versus “without median”.

Base assumptions used by the model include:

- Surface Street New Construction Base and Pavement
- Cross Street Widening
- Cross Street Overlay
- Typical Driveways
- Typical E&S Control Temporary and Permanent
- Typical Earthwork
- Typical Drainage – Urban Section
- Curb & Gutter – both sides
- Signing & Marking
- Typical Clearing & Grubbing – 120 feet wide
- Typical Guardrail
- 20 Feet Raised Median + C&G (mile)
- Median Landscaping

- Sidewalks 5 feet each side (mile)
- Traffic Maintenance
- Right of Way Cost at \$750,000 (urban residential) per acre to \$1,000,000 (urban commercial) per acre

See cost estimates in Table 5-3 for CTP proposed road widening projects; and Table 5-4 for proposed new roads and road extension costs. Improvement costs for a list of un-signalized intersections were estimated at \$539,000 each for 22 three-leg intersections, \$760,000 each for 46 four-leg intersections, and \$961,000 each for two five-leg or similarly complex intersections. The resulting intersection improvement total, which makes no allowance for acquisition of additional right of way, is \$49,780,000.

TABLE 5-3: TOTAL WIDENING COSTS

Project Name	From	To	Improvement Type	Existing Lanes	Lanes added	Length (miles)	FY 08 Costs (\$1,000s)	Engineering Costs (\$1,000's)	ROW Costs (\$1,000)	Construction Costs (\$1,000)	
Abbotts Bridge Road	PIB	Medlock Bridge Rd (Fulton Co.)	Roadway Capacity	4	2	2.1	\$37,277	\$903	\$25,613	\$10,565	
Beaver Ruin Rd	Reagan Pkwy Ext. (West Fork)	I-85	Roadway Capacity	4	2	2.6	\$47,198	\$1,039	\$33,780	\$12,155	
Five Forks Trickum Rd	Oak Rd	Sugarloaf Parkway	Roadway Capacity	2	2	3.6	\$58,231	\$4,105	\$40,090	\$16,432	
Hillcrest Road/Tech Drive	Willow Trail Pkwy Extension	Singleton Road	Roadway Capacity	2	2	1.32	\$35,403	\$1,139	\$22,651	\$11,614	
I-85 North CD Lane	I-985	SR 20	Roadway Capacity		1	2.5	\$8,800	\$0	\$0	\$9,800	
Oakbrook Pkwy Extension	Indian Brook Way	Hillcrest Road	Roadway Capacity	2	2	0.44	\$14,994	\$664	\$7,550	\$6,779	
Peachtree Pkwy	PIB	Fulton County Line	Roadway Capacity	4	2	3.98	\$68,705	\$2,476	\$40,978	\$25,251	
S. Bogan Rd	Hamilton Mill Rd	SR 20	Roadway Capacity	2	2	2.5	\$44,877	\$960	\$32,480	\$11,229	
SR 120	Lawrenceville-Suwanee Rd	Langley Drive	Roadway Capacity	4	2	1.4	\$44,126	\$1,369	\$28,828	\$13,943	
SR 124	E of Hamilton Mill Rd.	Spout Springs Road	Roadway Capacity	2	2	1.9	\$30,613	\$732	\$21,159	\$8,564	
SR 124	SR 20	E of Hamilton Mill Rd	Roadway Capacity	2	2	7.6	\$121,600	\$2,862	\$84,635	\$33,484	
SR 13 Buford Hwy	Sugarloaf Pkwy	SR 20	Roadway Capacity	2	2	8.2	\$131,405	\$3,104	\$91,316	\$36,313	
SR 20	I-85	South of Old Peachtree Rd	Roadway Capacity	4	2	1.8	\$29,285	\$715	\$20,045	\$8,370	
SR 20	SR 124	Hurricane Shoals Road	Roadway Capacity	4	2	1	\$16,420	\$409	\$11,136	\$4,786	
SR 316	West of Progress Center Ave.	East of Cedars Road	Roadway Capacity	4	2	1.6	\$31,242	\$1,912	\$10,210	\$19,120	
SR 324	SR 124	Dacula Rd - Barrow County	Roadway Capacity	2	2	8.14	\$128,452	\$3,986	\$83,809	\$40,657	
Thompson Mill Road	Buford Hwy (SR 13)	North Bogan Rd	Roadway Capacity	2	2	1.3	\$21,286	\$527	\$14,477	\$6,168	
US 78/SR 10	SR 84	SR 81 Walton County	Roadway Capacity	4	2	5.5	\$30,392	\$2,075	\$7,567	\$20,750	
US 78/SR 10 Widen, Add Frontage Rds	SR 124	SR 84	Roadway Capacity	4	2	1.74	\$32,715	\$2,531	\$4,872	\$25,312	
Total Widening Costs							56.72	\$933,021	\$31,508	\$581,196	\$321,292

TABLE 5-4: TOTAL NEW ROADS OR EXTENSION COSTS

Project Name	From	To	Improvement Type	Existing Lanes	Lanes added	Length (miles)	FY 2008 Cost (\$1,000s)	Engineering Cost (\$1,000's)	ROW Costs (\$1,000)	Construction Costs (\$1,000)	
Beaver Ruin Rd Extension	Buford Highway	PIB	Roadway Capacity	0	4	1.1	\$7,605	\$587	\$1,029	\$5,988	
Beaver Ruin Road/Langford Rd Conn	Beaver Ruin Rd	Langford Rd	Roadway Capacity	0	2	1.2	\$9,768	\$587	\$3,191	\$5,988	
Hillcrest Rd/Satellite Conn Extension	Willow Trail Pkwy Extension	Beaver Ruin Road	Roadway Capacity	0	4	0.34	\$10,341	\$611	\$3,501	\$6,229	
I-85 HOV	SR 316	Hamilton Mill Rd	Roadway Capacity	0	2	13.8	\$48,980	\$4,180	\$3,000	\$41,800	
I-85 Managed Lanes	I-285	SR 316	Roadway Capacity	0	4	9.25	\$9,768	\$587	\$3,191	\$5,988	
Oakbrook Parkway Extension	Indian Brook Way	Hillcrest Road	Roadway Capacity	0	4	0.5	\$15,518	\$364	\$11,440	\$3,641	
PIB Grade Separation	Peachtree Pkwy	Sugarloaf Parkway	Roadway Capacity	0	4	11.8	\$194,878	\$6,148	\$126,023	\$62,707	
PIB CD System	Peachtree Pkwy	Sugarloaf Parkway	Roadway Capacity	0	4	11.8	\$7,927	\$533	\$1,956	\$5,438	
Reagan Parkway Extension	Pleasant Hill Rd	Beaver Ruin Road	Roadway Capacity	0	4	1.95	\$48,198	\$1,478	\$31,645	\$15,075	
Reagan/Club Conn	Reagan Pkwy Ext (North Fork)	Club Dr at Shackleford	Roadway Capacity	0	4	1.4	\$44,880	\$1,182	\$31,645	\$12,053	
Ronald Reagan Pkwy Ext.	SR 124	US 78	Roadway Capacity	0	4	1.4	\$8,001	\$530	\$2,059	\$5,411	
Satellite Blvd Super Arterial	Pleasant Hill Rd	SR 20	Roadway Capacity	0	2	14	\$44,126	\$1,369	\$28,828	\$13,943	
Satellite/Old Peachtree Conn.	Smithtown Rd/Sawmill Dr.	Horizon Dr./Old Peachtree Rd.	Roadway Capacity	0	4	0.7	\$15,934	\$350	\$12,012	\$3,505	
SR 316 HOV	SR 20	Drowning Creek Rd	Roadway Capacity	0	2	8.04	\$102,235	\$9,185	\$1,200	\$91,850	
Willow Trail Pkwy Extension	Hillcrest Road	Beaver Ruin Rd	Roadway Capacity	0	2	1.7	\$71,542	\$3,562	\$31,645	\$36,374	
Total New or Extension of Roadways Costs							78.98	\$639,701	\$31,253	\$292,365	\$315,990



5.4.3 HOV Lanes

The ARC model uses base assumptions that new HOV or TOT lanes are in the inside lane of the freeway with a physical barrier separating traffic flows. The average cost per mile of such a facility is estimated to be \$13.7 million, of which \$4.56 million is assumed as right-of-way cost. More precise cost estimates are possible for projects where more design detail is known.

5.4.4 Pedestrian Facilities (sidewalks)

The ARC costing tool spreadsheet for multi-use trails was modified for application to sidewalk projects, assuming the cost of asphalt for one 10' wide multi-use path was comparable to the cost of concrete for two 5' wide sidewalks. These modified base assumptions were applied to the project lengths documented for each project.

All pedestrian facilities were assumed to be on only one side of an existing roadway (with few notable exceptions). New sidewalk construction was assumed to comprise of:

- Five feet of new concrete
- Curb and Gutter
- Urban Drainage
- New Driveway Connections
- Erosion and Sediment Control
- Typical Earthwork for Shoulder Reconstruction
- Traffic Control for work adjacent to exiting traffic

Base assumptions inherent in the model reveal a cost of \$190,000 per mile for two 5' wide sidewalks (divide by half for one side of the street). It is important to note that the cost estimates for pedestrian projects did not include right-of-way costs and are only construction costs.

Bicycle/ Pedestrian Facilities (Multi-use Trails)

In the absence of design level detail, the base assumptions and unit costs inherent in the ARC costing model are assumed to be relevant for planning purposes. To determine project lengths where project descriptions did not provide such information, GIS data were used to measure point- to-point distances. Default cost items include:

- Surface Street Overlay
- Typical E&S Control, Temp & Perm
- Typical Earthwork
- Typical Drainage – Rural Section
- Signing & Marking
- Typical Clear & Grub – 120 ft. wide
- 10% Inflation for Preliminary Engineering
- 10% Inflation for Contingency Costs

Base assumptions from the cost model return a cost of \$590,000 per mile for 10' wide multi-use trails for a 2010 construction year. For consistency across project types, all costs were developed as Present Day Cost estimates. These cost estimates did not include any right-of-way costs.

5.4.5 Cost Summary

Because of the lack of more precise project and/or design details, some project costs, especially for multimodal projects (transit, HOV / HOT lanes, bike / pedestrian, TSM / TDM, formation of TMAs, implementing Access Management, etc.), are hard to determine. Costs for roadway projects; widenings, new roadways / extensions and intersection improvements are estimated above via the described methodologies. Overall, the CTP identified over \$1.62 billion worth of highway-related projects in an unconstrained list.

5.5 Evaluation and Results

Tables 5-5 through 5-7 and Figures 5-2 through 5-4 depict the projects that were prioritized. The three tables show the priority level for the 35 tested projects. Six of the 14 high-priority projects appear in the 2008-2013 TIP and five more are in the 2001 Gwinnett County CTP. Two currently programmed projects fall into the low priority tier: Five Forks Trickum from Oak Road to Killian Hill and US 78 from SR 84 to the Walton County Line.

Table 5-7 shows the priority level for the extension projects tested. In this case, the currently programmed projects came out of the analysis as high priority.

Figure 5-2 shows the locations and the priority levels of the widening projects. Figure 5-3 shows the locations and priority levels of the extension projects. Figure 5-4 shows the locations and priority levels of the grade separation and CD road projects.

Table 5-5: Road Capacity Priorities – Widening

Project ID	Reference ID	Project Name	Project Description	Priority
218	CTP-19	SR 20	Widen to 6 lanes. From SR 124 to Hurricane Shoals Rd	High
203	CTP-1	Beaver Ruin Rd	Widen to 6 lanes. From Reagan Pkwy. Ext. (West Fork) to I-85	High
232	CTP-102	Peachtree Pkwy Widening	Widen to 6 lanes. From PIB to Fulton County	High
215	CTP-13	SR 120	Widen to 6 lanes. From L'ville-Suwanee Rd to Langley Dr	High
204	GW 078D	US 78/SR 10	Widen to 6 lanes. From SR 124 to SR 84	High
207	GW-AR 249D	SR 316	Widen to 6 lanes. From W. of Progress Ctr. Ave. to E. of Cedars Rd.	High
205	GW 078E	US 78/SR 10	Widen to 6 lanes. From SR 84 to SR 81	Medium
216	CTP-14	SR 124	Widen to 4 lanes. From Pine Road to Spout Springs Road	Medium
220	CTP-26	Thompson Mill Rd	Widen to 4 lanes. From Buford Hwy (SR13) to N. Bogan Rd	Medium
219	CTP-20	SR 324	Widen to 4 lanes. From SR 124 to Dacula Rd	Medium
245	CTP-113	Dacula Rd/Harbins Rd/New Hope Rd Widening	Widen to 4 lanes. From Auburn Rd to Loganville Hwy	Medium
233	CTP-103	Abbotts Bridge Rd Widening	Widen to 6 lanes. From PIB to Medlock Bridge Road	Medium
217	CTP-15	SR 124	Widen to 4 lanes. From SR 20 to e. of Hamilton Mill Rd	Low
206	GW 099B	SR 23 Buford Hwy.	Widen to 4 lanes. From Sugarloaf Pkwy. To SR 20	Low
213	CTP-35	S. Bogan Rd.	Upgrade. From Hamilton Mill Rd to SR 20	Low
234	CTP-104	Five Fork Trickum Widening	Widen to 4 lanes. From Oak Rd. to Sugarloaf Parkway	Low
246	CTP-114	Hamilton Mill Rd Widening	Widen to 4 lanes. From Buford Hwy to SR 124	Low
208	CTP-3	Hillcrest Rd/Tech Dr	Widen to 4 lanes. From Willow Trail Pkwy to Singleton Rd	Low

TABLE 5-6: ROAD CAPACITY PRIORITIES – EXTENSIONS

Project ID	Reference ID	Project Name	Project Description	Priority
237	CTP-107	Beaver Ruin Rd Extension	Build 4 lanes. From Buford Hwy to PIB	High
235	CTP-105	Ronald Reagan Pkwy Extension	Build 4 lanes. From SR 124 to US 78	High
210	CTP-8	Oakbrook Pkwy Ext.	Widen/Build 4 lanes. From Indian Brook Way to Hillcrest Rd	High
214	CTP-11	Satellite/Old P'tree Conn	Build 4 lanes. From Smithtown/Sawmill Rds to Horizon Dr/Old P'tree Rd	High
211	CTP-10	Ronald Reagan Pkwy	Build 4 lanes. From Pleasant Hill Road to Beaver Ruin Road	High
209	CTP-2	Hillcrest/Satellite Conn	Build 4 lanes. From Willow Trail Pkwy to Beaver Ruin Road	High
241	CTP-10Toll	Ronald Reagan Pkwy.	Build 4 lanes. From Pleasant Hill Road to Beaver Ruin Road	Medium
221	CTP-24	Willow Trail Pkwy	Build 2 lanes. From Hillcrest Rd to Beaver Ruin Rd	Medium
247	CTP115	Satellite Blvd Extension	Build 4 lanes. From Buford Dr (SR 20) to Thompson Mill Rd	Medium
252	CTP-120	Satellite Blvd/Indian Trail Rd Connection	Build 4 lanes. From Satellite Blvd to Indian Trail Road	Medium
212	CTP-9	Ronald Reagan Parkway/Club Drive Connector	Build 4 lanes. From Reagan Pkwy. Ext. (North Fork) to Club Dr at Shackleford	Low
236	CTP-106	Beaver Ruin Rd/Langford Rd Connector	Build 2 lanes. From Beaver Ruin Rd to Langord Rd	Low
231	CTP-101	I-85 North CD Lane	Add 1 CD lane (NB only). From I-985 to SR 20	Low
250	CTP-118	Collins Industrial Way/Hillcrest Green Dr Connection	Build 2 lanes. From Collins Industrial Way to Hillcrest Green Dr. (Grade separation over SR 316)	Low

TABLE 5-7: ROAD CAPACITY PRIORITIES – GRADE SEPARATIONS AND CD ROADS

Project ID	Reference ID	Project Name	Project Description	Priority
239	CTP-107	PIB CD System and Grade Separation	Build 4 CD lanes. From Peachtree Pkwy to Sugarloaf Pkwy	High
242	CTP-105	PIB CD System and Grade Separation	Build 4 CD lanes Toll mainline. PIB becomes a "pipeline" roadway. From Peachtree Pkwy to Sugarloaf Pkwy	High
243	CTP-8	Satellite Blvd Super-arterial	Build 2 CD lanes Make Satellite Blvd limited access roadway. From Pleasant Hill Road to SR 20	Low

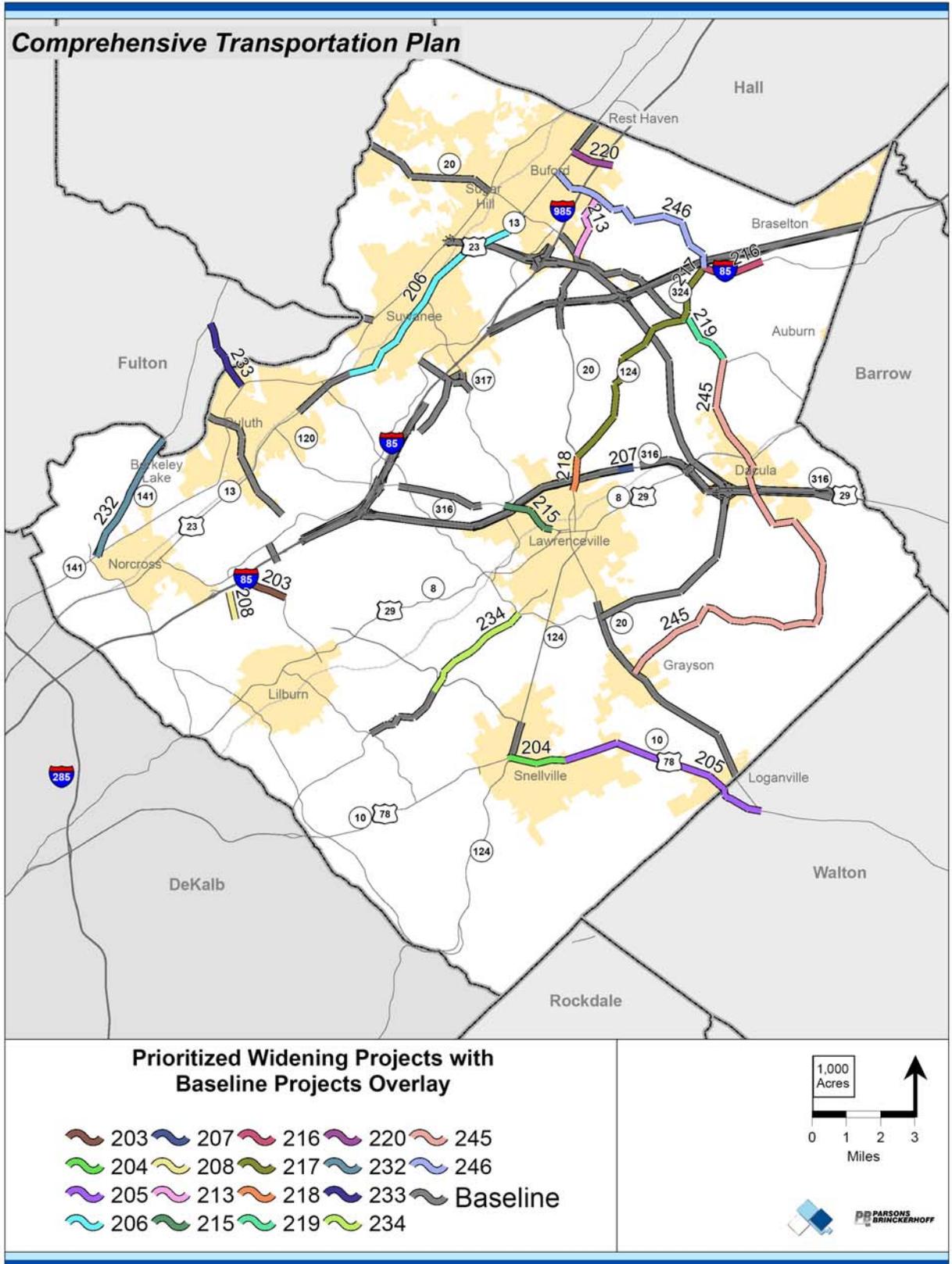


FIGURE 5-2: PRIORITIZED ROAD WIDENING PROJECTS

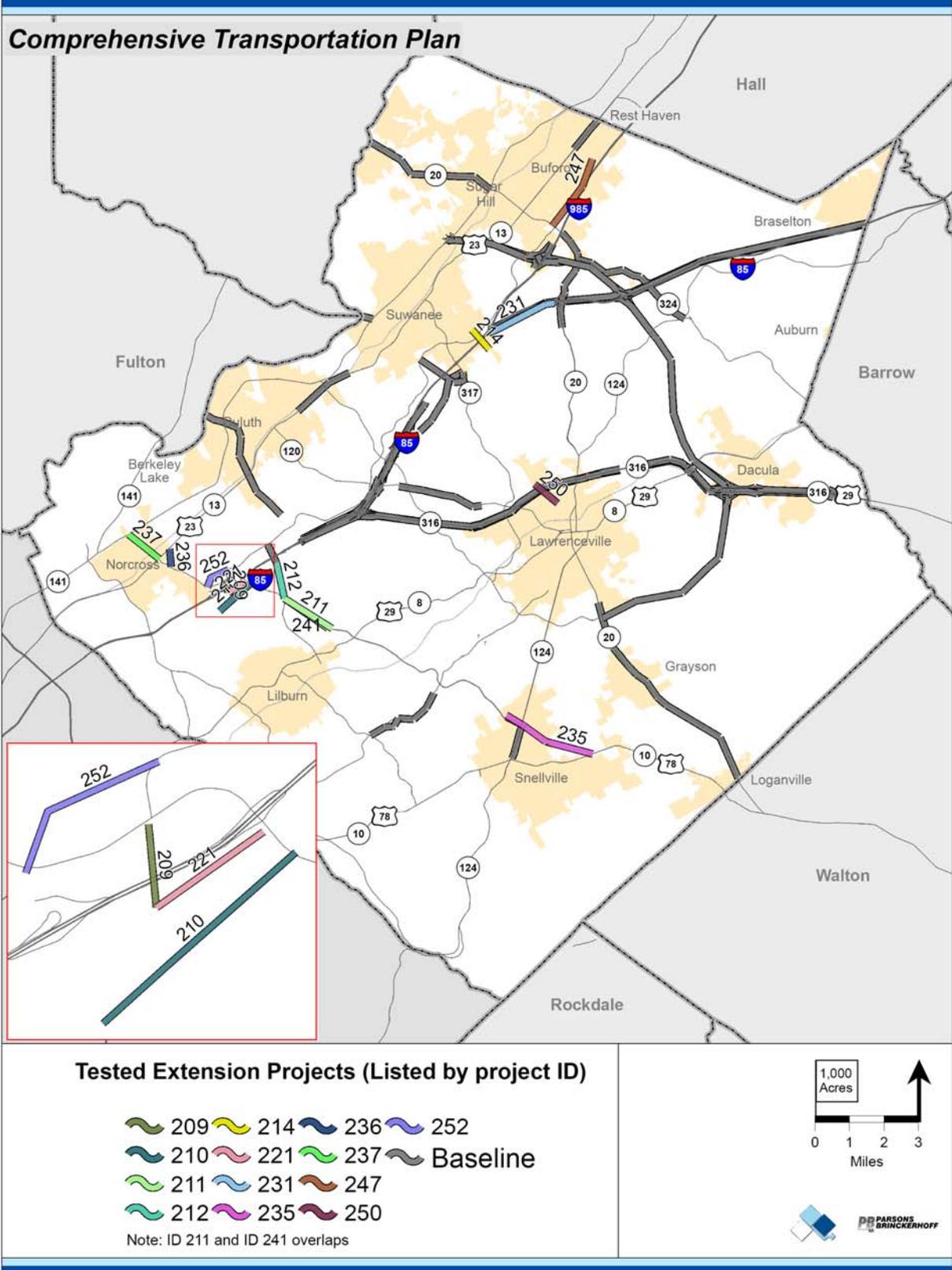


FIGURE 5-3: PRIORITIZED ROAD EXTENSION PROJECTS

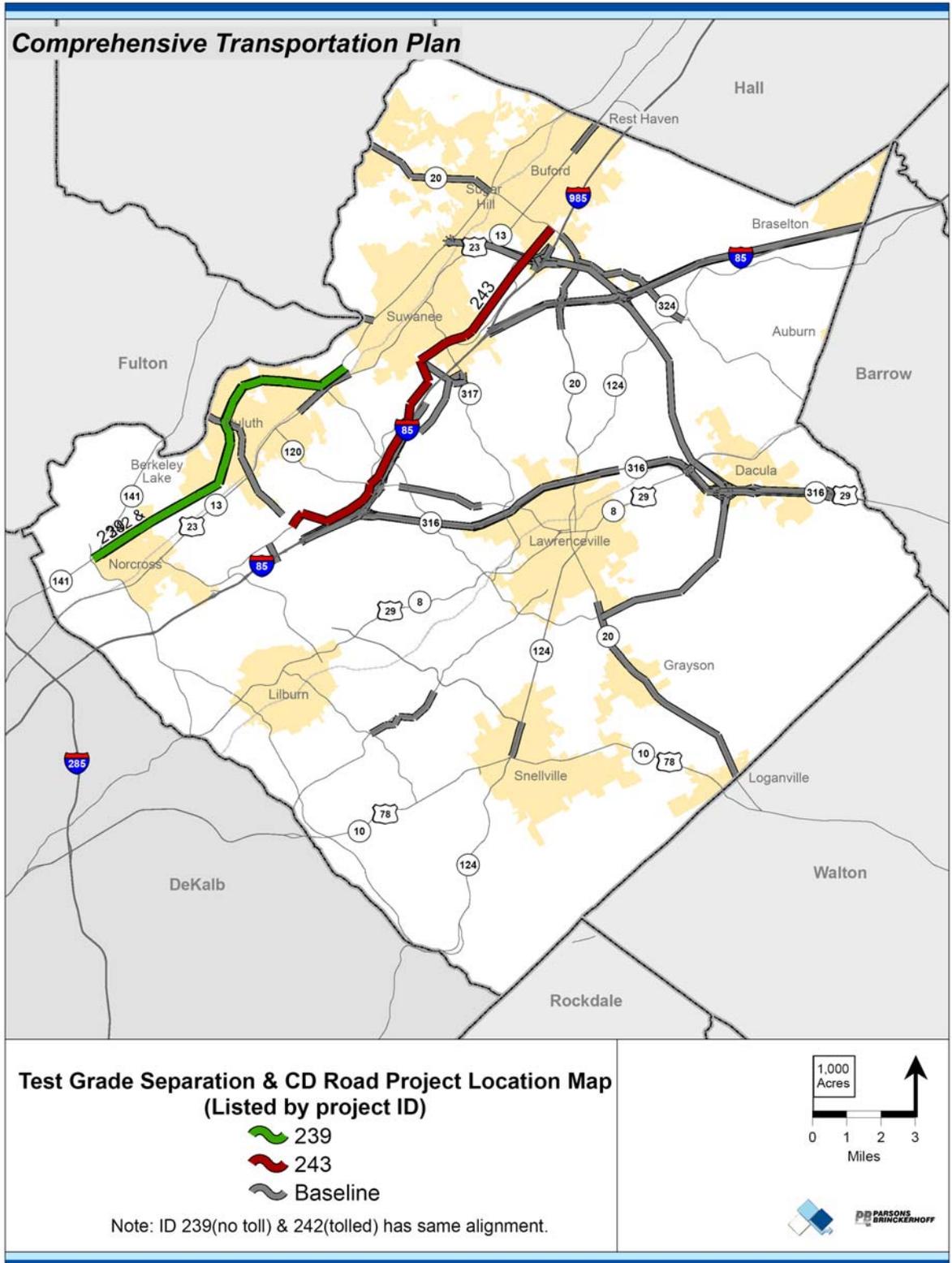


FIGURE 5-4: PRIORITIZED GRADE SEPARATION & COLLECTOR / DISTRIBUTOR (CD) ROAD PROJECTS

5.6 Results of the Intersections Analysis

The intersections identified for improvement are shown in Figure 5-5, and tabulated in Section 7 of this report. These are currently non-signalized intersections, without assigned priorities for improvement. Criteria for prioritization may include those that are along parallel arterials on either side of I-85. Improving these intersections will improve the level of service of traffic operation on parallel arterials that serve as alternate routes of I-85.

Other criteria can include the crash history of these intersections. Finally, it is recommended that the best approach is to categorize those intersections with medium and low priorities by corridor and assess improvements at the corridor level.

5.7 Results of the Transit Analysis

For purposes of this plan, two performance measures were used: (1) impact on the daily transit person trips in Gwinnett County and in the Atlanta region, and (2) total daily transit boardings. These forecasting model results are indicative of transportation and mobility benefits of the potential improvements, including time savings for existing transit users who have an advantage in using the new routes and services, and time and cost savings to persons who change modes, from travel by private automobile to public transportation. They also provide a general indication of broader benefits to the County, including contributions to air quality improvement, and encouragement of more efficient land use including Transit Oriented Development.

Table 5-8 shows that the light rail transit service would have the biggest impact on transit ridership in Gwinnett County and near the same impact on transit ridership in the region. Although high capacity rail transit service is projected to have the biggest increase in the daily transit trips in the region at a high level of service (five-minute headway), the increase in the number of transit trips diminishes as the level of service deteriorates. The reason for a reduction in transit trips is due to the assumption in one analysis scenario that the modeled level of service is lower than that in the Baseline, thus resulting in fewer transit trips in the region.

The commuter rail lines are projected to increase daily transit person trips by 830 for the Gainesville line and 1,020 for the Athens line in Gwinnett County with an assumed headway of five minutes, which is a very optimistic assumption. This was done to see what maximum number of new riders might be attracted given the best possible service characteristics. The resulting increases translate to about a four to five percent increase in the number of transit trips in Gwinnett County. At the regional level, the increase in transit person trips is 2,050 and 2,200 per day for the Gainesville line and Athens line, respectively. At the modeled multi-county regional level, the impact of either commuter rail line on regional travel characteristics is minimal. This is due to the fact that although a premium type service is offered, it is not attractive enough to commuters given other mode choices, namely the automobile, to entice workers to change their mode of travel.

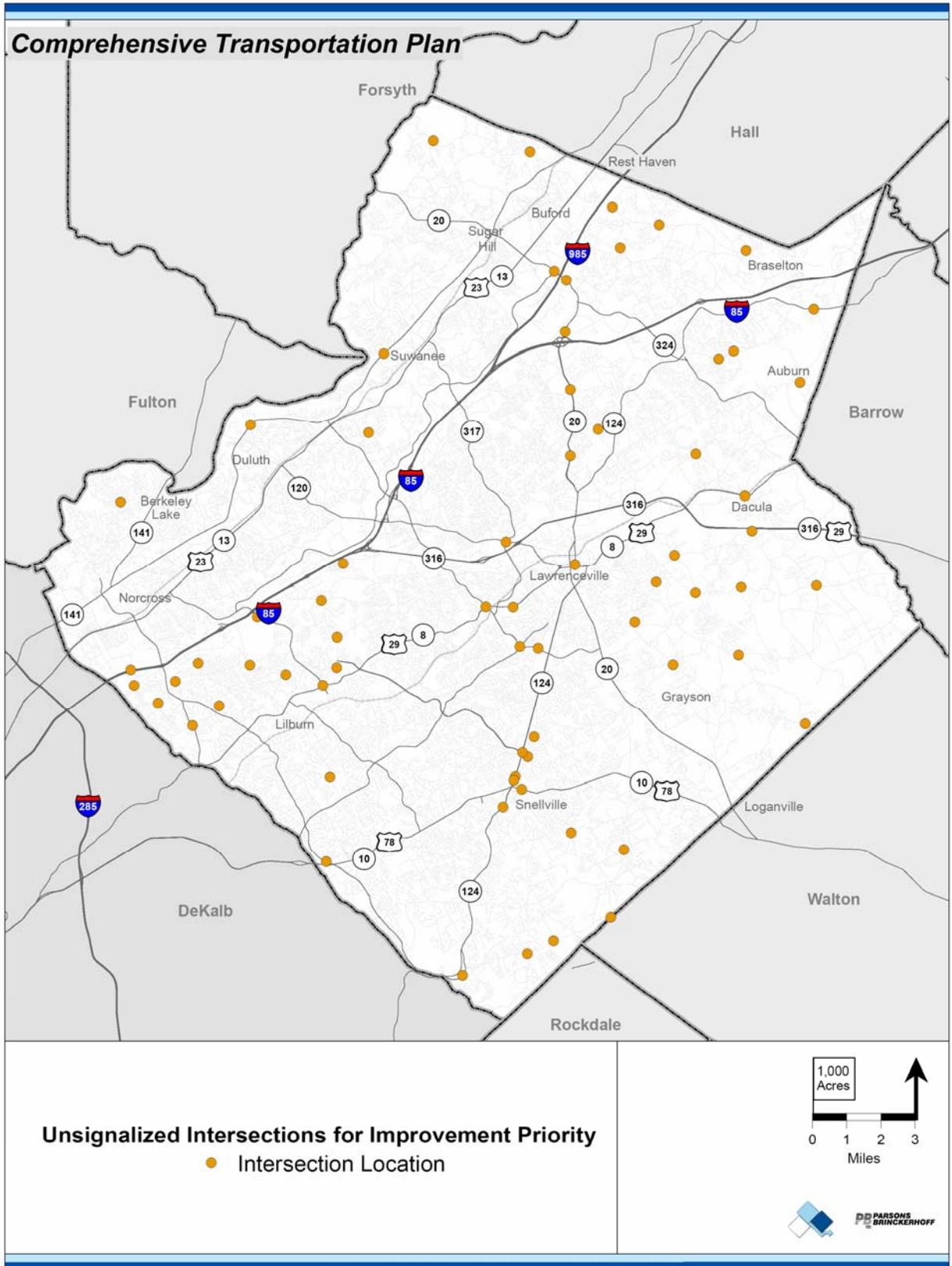


FIGURE 5-5: INTERSECTIONS FOR IMPROVEMENT PRIORITIZATION

TABLE 5-8: COMPARISON OF DAILY TRANSIT PERSON TRIPS

		Daily Transit Trips		Change in Daily Transit Trips		Percent Change in Daily Transit Trips	
		Gwinnett	Region	Gwinnett	Region	Gwinnett	Region
Athens Commuter Rail							
5/na	min headway	19,600	477,640	1,020	2,200	5%	0%
15/na	min headway	19,170	476,520	590	1,080	3%	0%
40/na	min headway	18,840	475,970	260	530	1%	0%
Gainesville Commuter Rail							
5/na	min headway	19,410	477,490	830	2,050	4%	0%
15/na	min headway	18,860	476,540	280	1,100	2%	0%
40/na	min headway	18,800	476,480	220	1,040	1%	0%
High Capacity Rail							
5/10	min headway	29,810	494,510	11,230	19,070	60%	4%
10/15	min headway	27,070	484,520	8,490	9,080	46%	2%
20/30	min headway	23,450	470,470	4,870	(4,970)	26%	-1%
LRT							
5/10	min headway	31,120	490,680	12,540	15,240	67%	3%
10/15	min headway	28,800	487,910	10,220	12,470	55%	3%
15/30	min headway	26,040	484,550	7,460	9,110	40%	2%
Express Bus							
5/10	min headway	19,140	476,650	560	1,210	3%	0%
15/30	min headway	18,810	476,340	230	900	1%	0%
30/60	min headway	18,710	476,140	130	700	1%	0%
Baseline							
		18,580	475,440				

Note: x/xx – peak/non-peak headways

For express bus services, the best possible service frequency (five minute headways) results in an increase of 560 daily transit trips in Gwinnett County and 1,210 daily transit trips in the region. A more likely service scenario, providing either a 15- or 30-minute peak period headway, results in a 230 and 130 transit ridership increase, respectively for Gwinnett County.

Total daily transit boardings are summarized in Table 5-9. These figures provide some general ideas of patronage and its relationship to varying levels of service.

Transit concepts vary in nature and the transit markets vary. Table 5-10 presents the transit markets for trips with at least one end of the trip taking place inside Gwinnett County. The share of the transit market is very similar among the two commuter rail concepts and the express bus concept. This is because the nature of these services favors commute trips.

The high capacity rail line is projected to have a slightly larger share of trips traveling to and from Gwinnett County compared to other concepts because of its connection with the MARTA line, which greatly benefits accessibility to other areas in the region (such as the airport). The share of travel within Gwinnett for the LRT service is projected to be higher compared to other

concepts. This result is reasonable because the LRT is assumed to travel in areas with high employment density.

TABLE 5-9: DAILY TRANSIT BOARDINGS

		Daily Boardings
Athens Commuter Rail		
5/na	min headway	10,548
15/na	min headway	5,463
40/na	min headway	1,959
Gainesville Commuter Rail		
5/na	min headway	13,023
15/na	min headway	4,187
40/na	min headway	1,346
High Capacity Rail*		
5/10	min headway	196,616
10/15	min headway	156,152
20/30	min headway	98,154
LRT		
5/10	min headway	30,864
10/15	min headway	26,836
15.30	min headway	22,056
Express Bus		
5/10	min headway	10,280
15/30	min headway	3,585
30/60	min headway	2,131
* The daily boardings include the existing MARTA stations		
Note: x/xx – peak/non-peak headways		

TABLE 5-10: PERCENT TRANSIT RIDERSHIP BY TRANSIT MARKET

	Travel to/from Gwinnett	Travel within Gwinnett
Gainesville Commuter Rail	82%	18%
Athens Commuter Rail	82%	18%
LRT	72%	28%
High Capacity Rail	85%	15%
Express Bus	82%	18%

Note: Assumes a 5-minute peak headway

5.8 Access Management Plan

5.8.1 Introduction & Background

Access management is much more than driveway regulation. It is the systematic control of the location, spacing, design and operation of driveways, median openings, interchanges, and street connections. It also encompasses roadway design treatments such as medians and auxiliary lanes, and the appropriate spacing of traffic signals. Access management guidelines are developed to maintain traffic flow on the network so each roadway can provide its functional duties while providing adequate access for private properties to the transportation network. This harmonization of access and mobility is the keystone to effective access management.

With fewer new arterial roadways being built, the need for effective systems management strategies is greater than ever before. Access management is particularly significant as it offers a variety of benefits to a broad range of stakeholders. By managing roadway access, Gwinnett County can increase public safety, extend the life of major roadways, reduce traffic congestion, support alternative transportation modes, and even improve the appearance and quality of the built environment.

Without access management, the function and character of major roadway corridors can deteriorate rapidly. Failure to manage access is associated with the following adverse social, economic, and environmental impacts:

- An increase in vehicular crashes,
- More collisions involving pedestrians and cyclists,
- Accelerated reduction in roadway efficiency,
- Unsightly commercial strip development,
- Degradation of scenic landscapes,
- More cut-through traffic in residential areas due to overburdened arterials,
- Homes and businesses adversely impacted by a continuous cycle of widening roads, and
- Increased commute times, fuel consumption, and vehicular emissions as numerous driveways and traffic signals intensify congestion and delays along major roads.

Not only is this costly for Gwinnett County and the public, but it also adversely affects corridor businesses. Closely spaced and poorly designed driveways make it more difficult for customers to enter and exit businesses safely. Access to corner businesses may be blocked by queuing traffic. Customers begin to patronize businesses with safer, more convenient access and avoid businesses in areas of poor access design. Gradually the older developed areas begin to deteriorate due to access and aesthetic problems, and investment moves to newer better-managed corridors.

Several Community Improvement Districts (CIDs) have been established in Gwinnett County in recent years, i.e., Evermore CID in Snellville, Gwinnett Place CID in the Gwinnett Place Mall area, and the Gwinnett Village CID in the Norcross area centered about Jimmy Carter Boulevard. Tax revenues on commercial properties in the various areas financially support these CIDs. Access management applications along major routes in the CIDs would necessitate

cooperation and participation by property owners. The CIDs jointly working with Gwinnett County could be the catalyst to encourage understanding and usage of access management techniques.

After access problems have been created, they are difficult to solve. Reconstructing an arterial roadway is costly and disruptive to the public and abutting homes and businesses. Access management programs can help stop the cycle of functional obsolescence, thereby protecting both the public and private investment in major roadway corridors. Since the roadway network in Gwinnett County is approaching a state of being built-out, the majority of this section will explore how the county may effectively apply access management techniques.

5.8.2 Principles of Access Management

Access management programs seek to limit and consolidate access along major roadways, while promoting a supporting street system and unified access and circulation systems for development. The result is a roadway that functions safely and efficiently for its useful life, and a more attractive corridor. The goals of access management are accomplished by applying the following principles:

- Provide a Specialized Roadway System
- Limit Direct Access to Major Roadways
- Promote Intersection Hierarchy
- Locate Signals to Favor Through Movements
- Preserve the Functional Area of Intersections and Interchanges
- Limit the Number of Conflict Points
- Separate Conflict Areas
- Remove Turning Vehicles from Through Traffic Lanes
- Use Non-traversable Medians to Manage Left-Turn Movements
- Provide a Supporting Street and Circulation System

5.8.3 Access Control

Access management requires a wide range of regulatory and design techniques to ensure that both access to property and regional mobility are provided by roadway facilities. Degrees of access control that influence access management, and their relationship to different roadway types, are described below.

A consideration in access management is the concept of access control. Access Control defines the degree to which properties are connected to a roadway.

The following degrees of access control are possible:

- **Limited Access** – Freeways or other major arterials where access to the roadway is limited to interchange points. Some examples of limited access roadways in Gwinnett County include State Route 316 and Interstate 85.
- **Controlled Access** – Typically, arterials where intersections are widely spaced and driveway connections are limited (often to right-in, right-out operations or widely spaced

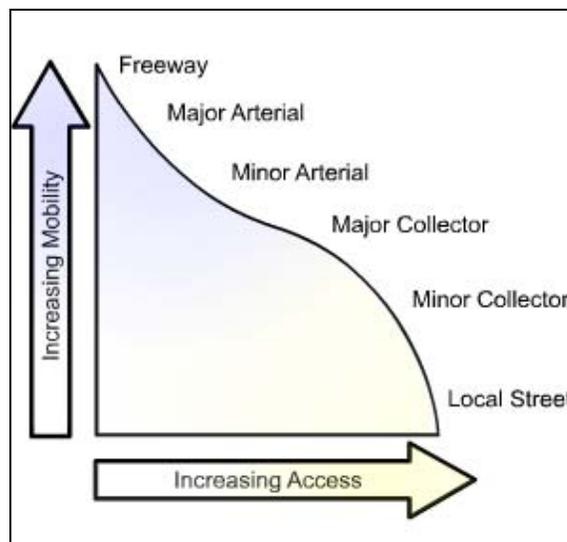
signalized intersections). Driveways to properties may be consolidated to limit connections to the roadway. Major intersecting streets may be signalized. Minor intersecting streets may be limited to right-turn in right-turn out operations or may be grade-separated. In Gwinnett County, sections of Peachtree Industrial Boulevard are examples of a controlled access roadway.

- **Full Access** – Typically arterials or collectors where access is provided to adjoining properties without restrictions on turning movements. Driveway spacing and other design guidelines are typically applied. Intersecting streets usually provide the full complement of turning movements.
- **Uncontrolled** – Typically collectors and local roads where access controls are not employed.

5.8.4 Access Management and Functional Classification

Often, access management plans are developed for arterial roadways that serve local and regional travel and freight movement as part of a corridor upgrade or planning study. Although most commonly applied to arterials, access management techniques are also applicable to collectors that carry higher speed, higher volume flows. Access management tools are infrequently applied on local streets. Access management can be an integral part of planning for safety or addressing high crash locations on all types of facilities.

Access management can be used to improve the relation between adjacent land use and the functional classification of the road. The designer may have the ability to design access points that are consistent with the roadway’s functional classification, as described below. Figure 5-6 presents the relationship between roadway functional hierarchy and the mobility along the roadways.



Source: FHWA

FIGURE 5-6: CONCEPTUAL ROADWAY FUNCTIONAL HIERARCHY

5.8.5 The Georgia Department of Transportation’s Role in Managing Access

The Official Code of Georgia Annotated (OCGA) § 32-6-111 and OCGA § 32-6-112 give GDOT authority to regulate public access rights to and from properties abutting state highway facilities. These regulations generally are categorized as full control of access or partial control of access

and can be referenced in the *GDOT Design Policy Manual-2007* and *GDOT Transportation Online Policy and Procedure System (TOPPS)*.

State statute gives GDOT access control and subdivision review authority. The GDOT's access control policies are based on the purchase of access rights along designated limited access roads and permit authority for commercial driveways on all state highways. The Department can also address land development impacts by reviewing proposals for land subdivisions along state highways. Based on this review, which must consider the adequacy of the developer's plans for dedicating land for future highway expansions and providing for traffic safety, GDOT recommends approval or rejection of the proposal to the local planning body.

Effective planning requires a joint effort between GDOT and appropriate communities. While GDOT is responsible for providing safe transportation network, local jurisdictions are responsible for the orderly growth patterns that minimize the impacts of land use on the transportation system.

5.8.6 Suggested Policies for Gwinnett County

The following are some of the policies that might be pursued further so access management can be implemented with good results in Gwinnett County:

- Grandfather Existing Non-Conforming Access
- Roadway Classification and Access Categories
- Access Management Overlay Districts
- Access Management Ordinance
- Limited Driveway Permits
- Retrofitting Corridors
- Acquire Limits of Access
- Raised Medians
- Multi-Jurisdictional Approach to Access Management
- Public Involvement in Access Management

5.8.7 Typical Access Management Techniques

A. Interconnecting Driveways/Interparcel Access. Projects subject to subdivision review shall provide interconnecting driveways/interparcel access or easements for future construction of driveways that will provide and promote vehicular and pedestrian access between adjacent lots, without accessing the highway.

B. Access To Lots With Multiple Frontages. Lots with frontage on both an arterial highway and an adjacent or intersecting road shall not be permitted to access the arterial highway, except where it can be proven that other potential access points would cause greater environmental or traffic impacts.

C. Corner Clearances. Lots with frontage on an arterial highway and an adjacent or intersecting road, which, due to environmental or traffic impacts cannot access the adjacent or intersecting streets shall comply with the following standards:

Minimum Standards for Corner Clearance

Distance	Signalized Intersection - feet	Stop Sign Controlled Intersection - Feet
A	230	115
B	115	115
C	230	85
D	250	115

The above dimensions assume a 30 mph operating speed. For rural and other high speed roads, clearances shall be two times as great as the numbers shown.

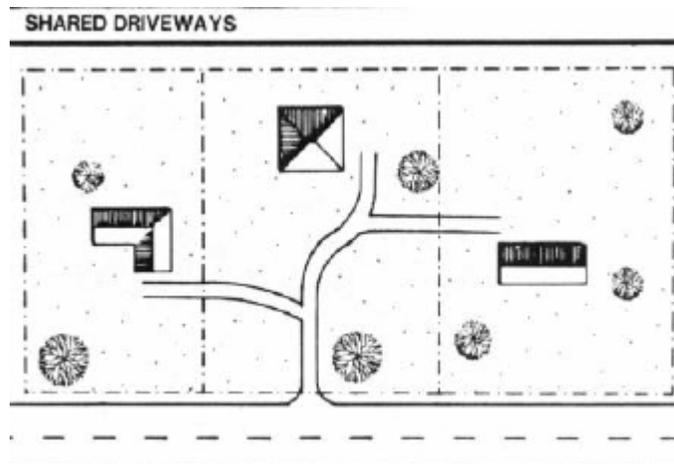
Source: "Transportation and Land Development," Institute of Transportation Engineers, 1988.

D. Minimum Distance Between Driveways. The minimum distance between driveways on the same and opposing side of an arterial highway (unless otherwise specified in section 1 next below), including all road intersections shall be measured from the centerline of the driveways at the right-of-way line and shall be a function of the posted speed in accordance with the following table:

MINIMUM DISTANCE BETWEEN DRIVEWAYS	
Highway Speed	Minimum Spacing
35	150 feet
40	185 feet
45	230 feet
50	275 feet

Source: *Access Management for Streets and Highways*, FHWA, 1982

E. Shared Driveways. In order to minimize the number of driveways along arterial highways, shared driveways shall be encouraged for adjacent residential sites.



5.8.8 Potential Access Management Applications for Priority Roadway Improvement Projects

The following matrix shows the potential access management applications for priority roadway improvement projects in Gwinnett County:

5.9 Functional Class Potential Access Example Roadways

5.9.1 Management Technique

Arterial	Raised Median Inter-parcel Access Multiple Frontages Corner Clearances Driveway Spacing Shared Driveways Signal Spacing Turn Lanes	Killian Hill Road McGinnis Ferry Road Bethany Church Road Harbins/New Hope Road Beaver Ruin Road Five Forks Trickum Road Hamilton Mill Road Peachtree Industrial Blvd. Old Norcross Road West Liddell Road Old Peachtree Road
Collector	Inter-parcel Access Driveway Spacing Shared Driveways Signal Spacing Turn Lanes Raised Median	Rosebud Road Rockbridge Road Arcado Road Thompson Mill Road Hillcrest Road Oak Road Hurricane Shoals Road Oakbrook Parkway Willow Trail Parkway

Note: The above table of priority improvement projects in the Comprehensive Transportation Plan omits projects on the State Highway System. Access Management applications on these projects to be developed jointly by GDOT and Gwinnett County. It is important to note that a single access management technique and/or a combination of techniques could be applied on the roadways identified in the table.

Prior to implementing the access management techniques on key roadways, it is recommended that Gwinnett County take the following steps:

- Conduct additional research on the access management principles and best practices that are most applicable to the County
- Draft enabling language / ordinances
- Draft statutory and administrative regulations
- Train County development, planning and DOT staff members who will administer the regulations
- Interact with the CIDs and the development community to make them aware of the impending regulations and to perhaps solicit their feedback on the regulations.

6 Funding Analysis

In order to evaluate the available transportation funding over the life of the CTP, an analysis was performed on the level of transportation funding projected to be available for Gwinnett County's discretionary use. This analysis included an evaluation of funding allotted in *Envision6* for Gwinnett County through the 2030 horizon year. In particular the analysis focused on funding that could be shifted to other similar projects if greater benefit occurred from the replacement project. An evaluation of SPLOST revenue projections was also performed to provide some level of expectation of the amount of revenues that would be available for transportation projects from this funding source. Finally, some examples of innovative funding strategies were also examined.

6.1 Funding Sources

Estimating the level of funding available for a transportation investment program is a critical step in any transportation planning process. The estimation process is a challenging task given the many different sources of potential funding as well as the uncertainty associated with the underlying basis for some revenue sources (such as a local sales tax with some dedication for transportation purposes). Funding may originate from a variety of sources—the Georgia Department of Transportation (GDOT) funds that are programmed by GDOT itself; state transportation funds (with possible federal reimbursement) that are programmed by the Atlanta Regional Commission (ARC); local funds that come from county and city general revenues; special purpose revenues that might result from voter-approved initiatives (such as SPLOST); and other revenue sources that are available to county and local governments, such as revenues from impact fees, but which often have restrictions on their use. The level of uncertainty is even greater today than in the past because of transportation funding cutbacks at the state level, concern over the solvency of the federal Highway Trust Fund, and on the positive side the possibility of a regionally dedicated transportation funding source.

The purpose of this section is to estimate the level of transportation funding that will likely be available over the life of the Gwinnett Comprehensive Transportation Plan. This analysis assumes that the largest sum of dollars “available” to Gwinnett County will come from funds that are programmed in the Regional Transportation Plan, *Envision6* over the plan's time horizon. The Interim Transportation Plan undertook a similar analysis based on the *Envision6* projects, up to the 2015 horizon date. As is typical of many long range transportation plans, the level of detail for projects in the 15 to 20 year timeframe is much less than that for projects in the near term. Thus, it should be noted upfront that the level of uncertainty associated with the *Envision6* revenues for Gwinnett County is quite high. It is also clear from recent ARC actions that any new projects added to the Gwinnett County transportation program will most likely need a substantial local contribution.

6.2 Data and Assumptions

6.2.1 Data Sources

The information provided in this section comes from a variety of sources. As noted above, the ARC's *Envision6* plan, which lists projects by jurisdiction, was the source of information concerning the long-range funding of major projects in the County. Gwinnett County has provided SPLOST data, SPLOST projections, as well as general guidance on the forecasting of

local revenues. SPLOST data has been calibrated against data gathered from the Georgia Department of Revenue.

6.2.2 Assumptions

Financial forecasting necessarily requires the analyst to make assumptions about future funding programs and economic conditions that might relate to potential revenues (such as future retail sales that would influence sales tax revenues). For example, the availability of federal funding for transportation projects technically cannot be estimated beyond the authorization period of the latest federal transportation legislation (in the most recent case, four years). However, given the federal requirement for regional transportation plans to be fiscally constrained, it is necessary for some assumptions to be made concerning the availability of federal transportation funds over the life of the plan (in the ARC's case, 25 years). Federal guidance on how to make such estimation is very simple. An evaluation of historical funding growth rates to estimate what increased federal funding could be assumed over the longer term is all that is necessary. This approach has been adopted in this analysis as well. Note that this approach does not take into account the possibility of major increases or decreases in federal funding, but rather focuses on the historical trend.

The County needs to be aware that the current federal environment for highway funding is very uncertain. The balance of the Highway Trust Fund is expected to go negative for the first time in history in the latter part of 2009. Reauthorization of the federal transportation legislation, SAFETEA-LU, is already beginning, but if recent history is any guide, this reauthorization process could last for some time. With a new president and Congress in 2009, it is questionable whether the federal government will be able to take concrete steps to increase the level of federal transportation funding in the next two to three years. Thus, the federal funding forecasts in this plan are conservative; they err on the side of caution. However, the project prioritization process that has been used for this planning process has developed a ranking scheme for projects that provide some sense of project priority in the event that additional transportation funding does become available.

Although federal funding for the Atlanta region is estimated with the approach described above, there is no guarantee that any jurisdiction will receive any of these funds, even though historically, every county in the region does receive some portion of the federal dollars. *Envision6* provides an estimate of the funds that are either programmed or expected to be spent in each jurisdiction. It is assumed that the funding levels allocated for Gwinnett County projects in *Envision6* will remain as the minimally specified funding level in future Regional Transportation Plans (RTPs). Many of the projects, however, have funds defined for a specific project type. Thus, whereas an arterial improvement project could be replaced with another arterial improvement project if it was shown that the new project was more beneficial, different projects could not be substituted for a project such as adding a lane to I-85 or implementing the Athens to Atlanta Commuter Rail project. It is thus assumed that much of the funding that is available to Gwinnett County in *Envision6* is targeted to projects for which there is no possibility of substitution.

Gwinnett County has been one of the region's leaders in raising its own funds for a variety of governmental purposes. For transportation, this has primarily been in the areas of a special purpose local option sales tax (SPLOST). Thus, for purposes of estimating future revenues from these sources, the historical growth rates for sales tax revenues and development have also been used as an approximation for the expected increase in economic activity that serves as the basis for potential revenues.

6.3 Envision6 Funding Levels

For purposes of this analysis, highway projects include expenditures for such things as interchange improvements, bridge replacements, and roadway capacity upgrades. Transit expenditures include the costs for purchasing transit vehicles, building transit facilities, and maintaining vehicles and facilities. Other transportation expenditures include the costs associated with building bicycle and pedestrian facilities (transportation-related studies are not included). It should be noted that the *Envision6* expenditures summarized below do not include projects that are defined as “regional” or “multicounty” in the plan. Some of these funds would undoubtedly benefit Gwinnett County, but it is not clear whether any of these funds would be spent in Gwinnett County.

Funding allocated through *Envision6* is organized in this analysis into time periods. The first of these periods from 2008-2013 is known as the Transportation Improvement Program or TIP. Longer term funding allocations are divided into medium range expenditures from 2014-2020 and long range expenditures from 2021-2030. The distribution of funding by period reflects the latest TIP amendment (January 8, 2008) made by the Atlanta Regional Commission. The total transportation funding for Gwinnett County in *Envision6* through the planning horizon of 2030 is almost \$1.6 billion. This includes large-budget projects such as a \$347 million managed lanes project on SR 316, as well as lump sums of \$106 million for locally funded roadway operational improvements. Federal and local transit support was also included only up to 2013 in the estimated expenditures. The estimated funding by time period is \$560 million for the TIP period; \$369 million for the period 2014 to 2020 (however, the SR 316 project itself during this time period is valued at \$347 million of this total amount); and \$686 million for the 2021 to 2030 period.

The expenditures can also be broken down into a federal contribution of approximately \$704 million; a state contribution of \$133 million; a local contribution of \$382 million; and monies coming from the state’s bond program of approximately \$452 million. As can be seen from these numbers, *Envision6* assumes a significant contribution of local funds to the investment program. In fact, in the TIP and 2021 to 2030 time period, approximately 20 percent of Gwinnett County’s investment as identified in *Envision6* comes from local funds.

For the period of time over which transit funding is estimated, the level of highway funding in the County is just over ten times the level of funding for transit and other modes. It is also interesting to note that if one removes the SR 316 managed lanes project from the 2014 to 2020 time period, the remaining funds allocated for Gwinnett County in *Envision6* total an estimated \$21 million, a substantial decrease from the funding found in the TIP period, and much less than that found in the 2021 to 2030 time period.

6.4 Envision6 Funding By Project Type

A key challenge in developing a finance element for a transportation plan is determining which funding can be shifted to new priorities. Projects in the TIP have already been approved as described in the latest TIP document, and thus it is assumed that there is very little discretion in transferring funds from these projects to other projects in the County. In order to determine the degree to which Gwinnett County has discretion in reallocating *Envision6* dollars to other projects in the County beyond the TIP period, this analysis identifies *Envision6* projects in the following categories: interstate highways, bridges, state and local roads, intelligent transportation system, transit, and bicycle/pedestrian expenditures. The interstate highway classification includes any money spent on interstate highways, whether the investment is to

fund widening the road or making improvements at interchanges. The bridge category includes expenditures to replace functionally and/or structurally obsolete bridges. The state arterial road class includes capacity and operational improvements on all state routes. The local road class includes all expenses related to changes in local roads from capacity upgrades to intersection realignments. The funding sources for these projects could be the County, cities or a CID. Intelligent Transportation System (ITS) refers to all monitoring systems or system optimizers such as signal control systems. Transit covers all transit expenses and the bicycle/pedestrian category includes all projects for non-motorized transportation. The resulting expenditures by type and time period are shown in Table 6-1.

Since each of these funding categories is subject to strict guidelines on how the funds should be spent, it has been assumed that funds cannot be transferred from one category to another. However, it is assumed that funding within a category may be transferred to another project within the category with justification. Interstate, bridge and state ITS projects are assumed to be under the jurisdiction of the Georgia Department of Transportation. In total, approximately \$303 million has been allotted to local roads and \$706 million to state arterials beyond the TIP period.

Further details of the Envision6 funds are provided in Table 6-2 and Table 6-3.

TABLE 6-1: TOTAL FUNDS IN ENVISION6 ALLOCATED BY PROJECT TYPE BY TIME PERIOD (CONSTANT \$2008 FOR 2014 TO 2030; YEAR OF EXPENDITURE FOR 2008 TO 2013)

RTP Period	Local Roads	State Arterial	Interstate	Bridges	ITS	Transit ¹	Bicycle/Pedestrian
2008 – 2013	\$207,233,275	\$38,031,801	\$212,023,000	\$28,526,000	\$7,013,750	\$55,076,116	\$12,005,909
2014 – 2020	\$6,308,000	\$355,015,520	\$0	\$7,494,020	\$0	\$0	\$0
2021 – 2030	\$283,635,000	\$336,933,200	\$52,500,000	\$12,700,000	\$0	\$0	\$0
Total	\$497,176,275	\$729,980,521	\$264,523,000	\$48,720,020	\$7,013,750	\$55,076,116	\$12,005,909

¹ All transit funds beyond the TIP period are aggregated into a regional sum and thus not identifiable by jurisdiction

TABLE 6-2: TOTAL FUNDS IN ENVISION6 ALLOCATED FOR LOCAL ROADS BY SOURCE BY TIME PERIOD (CONSTANT \$2008 FOR 2014 TO 2030; YEAR OF EXPENDITURE FOR 2008 TO 2013)

RTP Period	Federal	State	Local	Bonds
2008 – 2013	\$24,295,100	\$4,321,200	\$178,616,975	\$0
2014 – 2020	\$4,224,000	\$1,056,000	\$1,028,000	\$0
2021 – 2030	\$131,640,800	\$27,400,000	\$124,510,200	\$0
Total	\$160,159,900	\$32,777,200	\$304,155,175	\$0

TABLE 6-3: TOTAL FUNDS IN ENVISION6 ALLOCATED FOR STATE ARTERIALS BY SOURCE BY TIME PERIOD (CONSTANT \$2008 FOR 2014 TO 2030; YEAR OF EXPENDITURE FOR 2008 TO 2013)

RTP Period	Federal	State	Local	Bonds
2008 – 2013	\$17,037,600	\$3,056,000	\$12,778,201	\$5,260,000
2014 – 2020	\$96,856,400	\$11,587,120	\$0	\$246,572,000
2021 – 2030	\$268,346,560	\$63,249,200	\$5,337,440	\$0
Total	\$382,240,560	\$77,892,320	\$18,115,641	\$251,832,000

6.5 SPLOST Funds

Special purpose local option sales tax (SPLOST) revenues are an important source of funding for Gwinnett County, and in many ways represent the most important source of discretionary funding available to the County. Given that SPLOST revenues are correlated to the levels of sales tax revenues in the County, future forecasts of SPLOST revenues are necessarily linked to assumptions regarding the future robustness of the economy. The Interim Transportation Plan forecast SPLOST collections up to 2015 based on projections developed by the County's Department of Financial Services, which assumed a slightly more than 5% annual growth rate in SPLOST collections. Historical data on SPLOST revenue collections were used to verify the County projections, which showed that the actual annual rate of increase was in fact greater than the rates assumed by the County. For example, since 1985, when the SPLOST was first used as a source of transportation funds, SPLOST collections have increased at just over an 8% annual rate. Thus, it seems that the projections made by the County are conservative in terms of the expected future revenues.

Projecting SPLOST revenues beyond 2015, the planning horizon for the Interim Transportation Plan, is even more challenging given that the analysis is now dealing with expected states of the economy 15 to 20 years in the future. Sales tax receipts will depend on the level of population and employment that will be present in the County over this time period, the amount of visitors that stop in the County, and the overall state of the economy. In light of the uncertainty that is associated with all of these factors, this analysis assumes that the growth in SPLOST revenue collections beyond 2015, the planning horizon for the Interim Transportation Plan, will increase at a 5% annual growth rate. Given inflation, this 5% annual growth rate does not reflect the actual purchasing power of the dollars being collected. In looking at the history of inflation rates over the past 10 years, and accounting for the short term increase that occurred following Hurricane Katrina, it is assumed that a 4% annual rate of inflation will occur over the life of the Comprehensive Transportation Plan.

For purposes of this financial analysis, it is also assumed that a SPLOST program, and thus SPLOST revenues, will exist throughout the planning horizon of the Comprehensive Transportation Plan, although this will be determined ultimately by the voters. In addition, the current 33% use of the SPLOST revenues for transportation purposes is assumed to continue. Table 6-4 shows the expected SPLOST revenues by time period.

TABLE 6-4: SPLOST FUNDS POTENTIALLY AVAILABLE FOR TRANSPORTATION PURPOSES (2008 - 2030)

RTP Period	SPLOST
2008 – 2013	\$320,654,322
2014 – 2020	\$401,508,796
2021 – 2030	\$621,945,207
Total	\$1,344,108,325

6.6 Innovative Sources of Funding

Many local governments around the nation are examining a variety of strategies for augmenting the level of funding they obtain from traditional transportation revenue sources. Thus, for example, many counties have negotiated with developers in obtaining a level of financial support for transportation mitigation strategies or right-of-way donations at individual development sites. Others have implemented a development impact fee designed to collect revenues that are commensurate with the level of impact a development is expected to cause on the community. Some have developed road utility districts, similar in concept to a public utility in which users pay a monthly fee.

The type and feasibility of individual strategies will depend on local willingness to consider different mechanisms for raising revenues for transportation purposes, as well as on the level of overall revenues likely to be raised by each strategy. Some of the more innovative approaches to local transportation financing have been found in Texas. In 2001, Texas voters passed Proposition 15, an amendment to the state constitution that enables counties to form regional mobility authorities (RMAs), a new kind of political subdivision with authority to finance, acquire, design, construct, operate, maintain, or expand transportation projects. RMAs are empowered to develop transportation projects, issue revenue bonds, establish tolls, acquire or condemn property for transportation projects, use surplus revenue to finance other transportation projects, enter into development agreements, apply for federal highway and rail funds, enter into contracts with other government entities and Mexico, apply for loans from the State Infrastructure Bank (SIB), maintain a feasibility fund, and set speed and weight limits according to state guidelines.

Another innovative approach to raising transportation revenues comes from the Dallas-Ft. Worth area in which a tollway authority has successfully bid on a concession for a tolled facility in the region. The interesting aspect of this strategy is that the concession fee and the excess revenues (over the capitalized cost and operations/maintenance costs) provide the region with approximately \$2.8 billion over the planning horizon for projects anywhere in the region. The net revenues are distributed into county accounts based on the proportion of tollway users coming from each county. The concept of forming a tollway authority at the county level, in particular for parkway extensions or other roads where tolls are feasible, is an idea worthy of consideration for Gwinnett County.

In sum, although the majority of transportation funding in Gwinnett County will come from the traditional sources of funds (federal, state and SPLOST funding), it is recommended that the County look seriously at alternative strategies for augmenting its transportation funding portfolio including the use of public – private partnerships, franchising, etc.

6.7 Financial Summary

Over the life of the Comprehensive Transportation Plan, Gwinnett County is projected to receive nearly \$1.287 billion in transportation funding from federal, state and bond sources. According to *Envision6*, funding at the level of \$382 million is also expected from local sources, where this would include county, city and CID funding. SPLOST revenues over the life of the Plan are estimated to be \$1.344 billion. These three sources together are projected to provide a total of \$3.013 billion.

Another way of looking at the financial resources available to the County is to examine funding revenue streams beyond the TIP (2008-2013) time period. As noted earlier, TIP projects usually have a firm commitment to their implementation, so it is highly unlikely that funds allocated to projects in the TIP can be switched to other projects. This is likely true of many of the other projects as well (for example, it is hard to imagine that the \$347 million managed lanes project on SR 316 would be used for other purposes in Gwinnett County). However, looking at the time periods beyond the TIP and solely for state arterials and local roads, \$290 million in local road projects is listed in *Envision6*; and \$792 million is provided for state arterial roads.

7 Recommendations

7.1 Selecting Priorities

Candidate projects were evaluated and given priorities. Four major categories of road projects were considered in this process:

- Arterial roadway widenings,
- Arterial roadway extensions or new alignments,
- Intersections, and
- Grade separation and collector / distributor (CD) road projects.

Major improvements to limited access facilities such as I-85, I-985 and SR 316, which are the responsibility of the Georgia Department of Transportation, are addressed through other regional planning efforts and were thus not given priorities in the CTP. Priorities for arterial road widening projects considered the improvement to baseline performance conditions on the roadway. Several dimensions of roadway performance, including quantitative congestion measures as well as qualitative measures, were considered. As noted in the previous section, the primary quantitative performance measure was congestion mitigation, in which this was defined with three terms--level of service, duration of congestion, and vehicle hours of delay. The qualitative measures included designation as a truck route and the potential for safety benefits (although considered a qualitative measure, the number of crashes along the road was used to determine a sense of the level of safety benefit for a particular project).

Arterial roadway extension priorities were based upon the projected benefits to overall mobility. In particular, the measures used to determine priorities for arterial roadway extensions included the following:

- Overall improvement to connectivity (a quantitative measure of the route's ability to move through traffic indicated by daily volume projections).
- Potential to reduce crashes (a qualitative score for roadway safety).
- Impact to freight corridors that were identified as roadways projected to have heavy truck volumes (a qualitative measure of truck route improvement).

Congested intersections were first identified by the number of vehicles traveling through the intersection in a day. Because severe congestion along major corridors in Gwinnett County greatly impacts the operation of adjacent intersections, highly congested intersections were, in general, recommended for additional study as part of a larger corridor effort. Priorities for the candidate intersections were based on their locations and crash history. Congested intersections are more likely to experience crashes (regardless of operation or design) while uncongested intersections with high crash volumes are likely to be amenable to crash-reduction strategies. It is also likely that a congested intersection is located in the I-85 corridor. Improving these intersections might help the flow movement on I-85.

Improvement strategies were recommended based on congestion levels and typical treatment from the perspective of traffic operation. These strategies include at-grade intersection improvements and grade-separation. Grade separation and CD projects were considered as

road extension projects. In some cases, where GDOT has clear jurisdiction for a project, the project was not prioritized as part of this planning study.

Non-highway projects, including transit, bicycle/pedestrian, intelligent transportation systems (ITS), congestion management policies, and transportation demand management (TDM) strategies were also identified as part of the recommendations. In terms of transit, candidate improvements included commuter rail lines, extended express bus routes from Gwinnett County to MARTA stations and downtown Atlanta, bus rapid transit (BRT) and more local bus service. These as well as the highway projects are detailed in the sections that follow.

The above sections outline a course of action for a wide range of multimodal projects that are tied to the overall goals and objectives of the CTP and the vision of the Unified Plan. Each project represents an investment that is linked to the overall future vision for the County, the goals and objectives of the CTP and is intended to work individually and collectively to provide needed and critical improvements to satisfy the identified performance measures beyond the performance of the E + C network. The E + C network of projects will not provide enough capacity to alleviate the current operational deficiencies and accommodate the expected growth in traffic. That network would be even more deficient if the new land use pattern envisioned by the Unified Plan.

The CTP planning document identifies three groups of projects:

- **A Five-Year Constrained Action Plan** – a subset of the above projects that can be and should be accomplished in an immediate five-year time frame. This set of projects consists mostly of intersection and operational improvements, as well as ITS market packages, TDM activities, selected bicycle and pedestrian projects, and some readily-implementable policy-related initiatives.
- **CTP-related projects** – including the Five-Year Constrained Action Plan totaling approximately \$1.6 billion. The projects are multimodal and financially constrained, and would have positive effects for the County. These projects include highway, bicycle / pedestrian, TDM, ITS, freight system improvements and transportation policy recommendations and are found in previous sections.
- **An aspirations plan** – including those projects above and beyond the two groups mentioned above. Primarily these projects support the International Gateway land use / Unified Plan Scenario. These projects are a mixture of highway and other multimodal projects. The cost estimate for this group of projects is not available at this time.

Approximately \$3.0 billion is expected to be generated from all revenue streams by 2030. That can be expected to pay for all the CTP-related projects including the 5-Year Constrained Action plan, as needed and justified in terms of anticipated transportation system improvement results. As noted previously, the \$1.6 billion only includes road widening, new roads or extensions, and intersection improvements. Other projects such as bicycle / pedestrian improvements, ITS, and other policy strategies have not been priced although they are generally expected to prove worthwhile for inclusion. Their cost will be added to the \$1.6 billion identified. None of the tested transit alternatives are recommended for implementation through the 5-Year Action Plan or the CTP-related projects.

7.2 Aspirations Plan

The entire list of projects previously articulated, along with all the identified multimodal improvements (bicycle / pedestrian, ITS, transit, etc.), as well as the projects identified in support of the International Gateway Scenario, constitute the Aspirations Plan. The Aspirations Plan is not constrained by a budget or dollar figure for monies likely to be available to fund the plan-

The following table depicts the projects by type, ranked by priority and planning horizon. Figure 7-1 also shows graphically the International Gateway related projects. The priority is characterized as high, medium, or low; while the planning horizon is 1 (2008 – 2015), 2 (2016 – 2023) or 3, (2024 – 2030). Note that cost estimates are not available for the International Gateway Scenario projects which are outlined in burgundy. These projects are beyond the current Middle-of-the-Pack Scenario and assume more robust growth and market conditions which may or may not come to fruition.

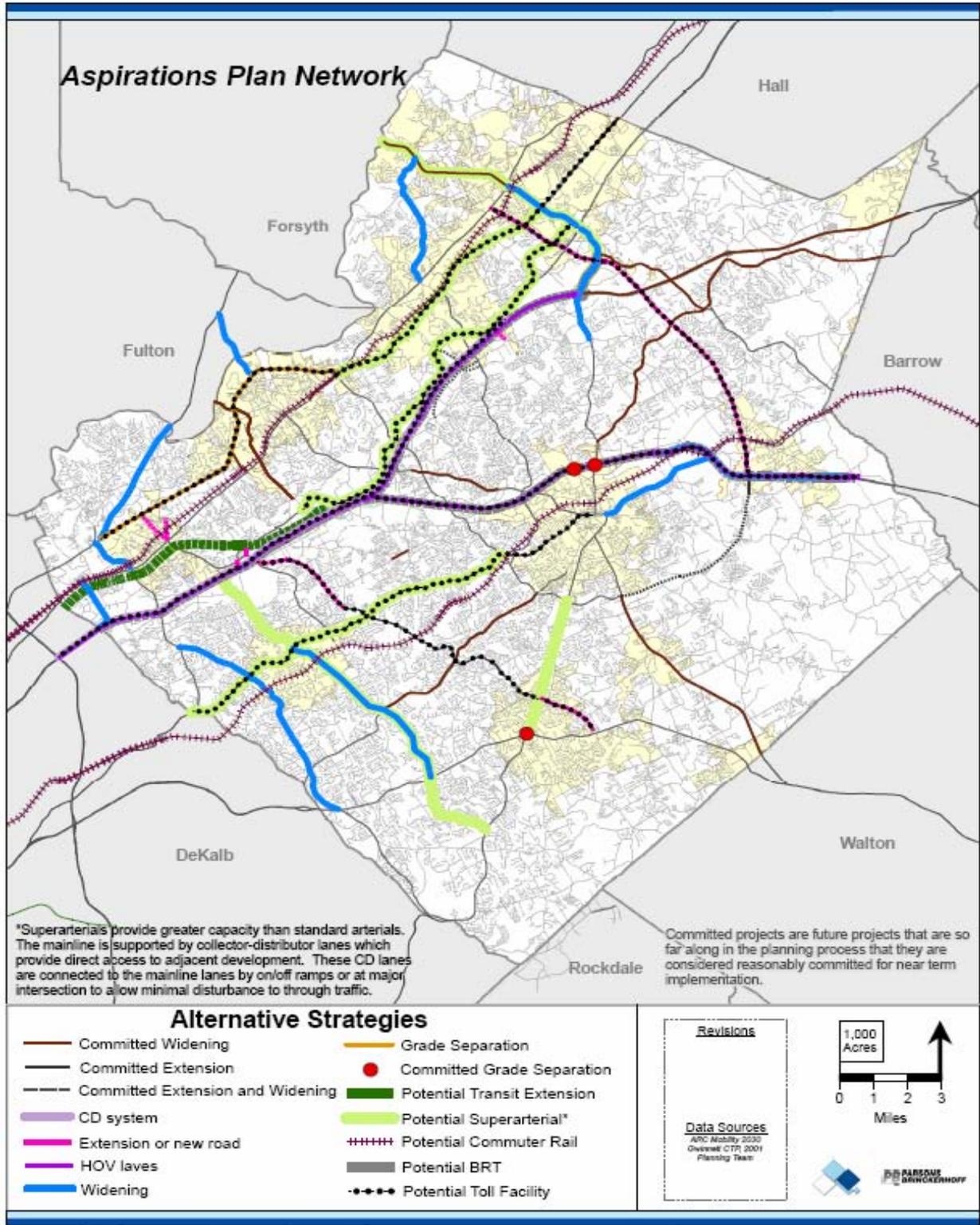


FIGURE 7-1: ASPIRATIONS PLAN NETWORK PROJECTS

TABLE 7-1: ASPIRATIONS PLAN LIST

Project Name	From	To	Improvement Type	Priority	Time Frame*	Funding Source	FY 08 Total Est. Costs (\$1,000s)
Widenings							
Abbott's Bridge Road	PIB	Medlock Bridge Rd (Fulton Co.)	Roadway Capacity	Medium	2		\$37,277
Beaver Ruin Rd	Reagan Pkwy Ext. (West Fork)	I-85	Roadway Capacity	High	2		\$47,198
Five Forks Trickum Rd	Oak Rd	Sugarloaf Parkway	Roadway Capacity	Low	2		\$58,231
Hillcrest Road/Tech Drive	Willow Trail Pkwy Extension	Singleton Road	Roadway Capacity	Low	1		\$35,403
I-85 North CD Lane	I-985	SR 20	Roadway Capacity	Low	3		\$8,800
Oakbrook Pkwy Extension	Indian Brook Way	Hillcrest Road	Roadway Capacity	Medium	1		\$14,994
Peachtree Pkwy	PIB	Fulton County Line	Roadway Capacity	High	3		\$68,705
S. Bogan Rd	Hamilton Mill Rd	SR 20	Roadway Capacity	Low	2		\$44,877
SR 120	Lawrenceville-Suwanee Rd	Langley Drive	Roadway Capacity	High	1		\$44,126
SR 124	E of Hamilton Mill Rd.	Spout Springs Road	Roadway Capacity	Medium	1		\$30,613
SR 124	SR 20	E of Hamilton Mill Rd	Roadway Capacity	Medium	3		\$121,600
SR 23 Buford Hwy	Sugarloaf Pkwy	SR 20	Roadway Capacity	Low	3		\$131,405
SR 20	I-85	South of Old Peachtree Rd	Roadway Capacity	High	1		\$29,285
SR 20	SR 124	Hurricane Shoals Road	Roadway Capacity	High	1		\$16,420
SR 316	West of Progress Center Ave.	East of Cedars Road	Roadway Capacity	High	1		\$31,242
SR 324	SR 124	Dacula Rd - Barrow County	Roadway Capacity	Medium	3		\$128,452
Thompson Mill Road	Buford Hwy (SR 13)	North Bogan Rd	Roadway Capacity	Medium	1		\$21,286
US 78/SR 10	SR 84	SR 81 Walton County	Roadway Capacity	Medium	3		\$30,392
US 78/SR 10 Widen, Add Frontage Rds	SR 124	SR 84	Roadway Capacity	Medium	1		\$32,715

New Extensions

Beaver Ruin Rd Extension	Buford Highway	PIB	Roadway Capacity	High	1		\$7,605
Beaver Ruin Road/Langford Rd Conn	Beaver Ruin Rd	Landford Rd	Roadway Capacity	Low	1		\$9,768
Hillcrest Rd/Satellite Conn Extension	Willow Trail Pkwy Extension	Beaver Ruin Road	Roadway Capacity	High	1		\$10,341
I-85 HOV	SR 316	Hamilton Mill Rd	Roadway Capacity	Low	3		\$48,980
I-85 Managed Lanes	I-285	SR 316	Roadway Capacity	Low	3		\$9,768
Oakbrook Parkway Extension	Indian Brook Way	Hillcrest Road	Roadway Capacity	High	1		\$15,518
PIB Grade Separation	Peachtree Pkwy	Sugarloaf Parkway	Roadway Capacity	High	3		\$194,878
PIB CD System	Peachtree Pkwy	Sugarloaf Parkway	Roadway Capacity	High	3		\$7,927
Reagan Parkway Extension	Pleasant Hill Rd	Beaver Ruin Road	Roadway Capacity	High	2		\$48,198
Reagan/Club Conn	Reagan Pkwy Ext (North Fork)	Club Dr at Shackleford	Roadway Capacity	Low	1		\$44,880
Ronald Reagan Pkwy Ext.	SR 124	US 78	Roadway Capacity	High	1		\$8,001
Satellite Blvd Super Arterial	Pleasant Hill Rd	SR 20	Roadway Capacity	High	3		\$44,126

7.3 Five-Year Action Plan

A Five-Year Action Plan is a list of projects and companion policies and other actions that the County can take to get a head start on the overall CTP projects, its goals and objectives and in the achievement and fulfillment of the Vision and goals of the Unified Plan. The projects are those that are short-term in nature and are mostly intersection improvements, since they are more likely to be implemented in a five-year time frame. Those intersection improvements along with certain bike / pedestrian projects and perhaps some others (ITS, etc.) can form the basis of the 5-Year Action Plan.

7.3.1 Candidate Intersections

Whereas a regional travel demand model can aid in the identification of deficient corridors, identification of potential intersections for improvement requires analysis beyond the scope of this plan. In addition, intersections identified from the model would only include the intersections that are included in the model's network. Before an intersection project should be considered for some sort of micro-analysis, and thus assigned a priority, several factors should be explored. In some cases, further improvements to a particular intersection may be impractical or ineffective. A site visit to each intersection by an experienced traffic engineer is required in order to sort those intersections that would benefit from an intervention. Then, once candidates have been identified, a micro analysis could be done to help determine which improvement projects will yield the greatest results.

Table 7-2 lists intersections that were identified by the County Staff, citizens and other stakeholders as candidates for further analysis. These have priority, not further divided as to urgency, for improvement as part of the Five-Year Action Plan.

TABLE 7-2: PRELIMINARY PRIORITIZATION OF UNSIGNALIZED INTERSECTIONS FOR IMPROVEMENTS

First Street	Second Street
Buford Dam Road	Shadburn Ferry Drive
Callie Still Road	New Hope Road
Callie Still Road	Ozora Road
Clack Road	Fence Road
Cole Drive	Miller Road
Crescent Drive	Nancy Hanks Drive
Ewing Chapel Road	Brooks Road
Harbins Road	Pirkle Road
Hurricane Shoals Road	Old Peachtree Road
Lee Road	Lenora Church Road
Lee Road	Mink Livsey Road
North Bogan Road	Thompson Mill Road
Sardis Church Road	Thompson Mill Road
Skyland Drive	Temple Johnson Road
Tug Drive	Williams Road
Anderson-Livsey Lane	Lee Road
Bramlett Shoals Road	Brooks Road
Braselton Highway	Mount Moriah Road
Cedars Road	Hurricane Shoals Road
Centerville-Rosebud Road	Rosebud Road
Hamilton Mill Parkway	Hog Mountain Road
Harbins Road	New Hope Road



TABLE 7-2: PRELIMINARY PRIORITIZATION OF UNSIGNALIZED INTERSECTIONS FOR IMPROVEMENTS

First Street	Second Street
Hiram Davis Road-Paper Mill Road	Simonton Road
Jones Bridge Circle (south end)	West Jones Bridge Road
North Road	Pinehurst Road
Old Loganville Road	Rosebud Road
Old Peachtree Road	South Scales Road
Ridge Road	Thompson Mill Road
Alcovy Road	Bramlett Shoals Road
Alcovy Road	Harbins Road
Ashworth Lake Road	Scenic Highway
Azalea Drive	Ridge Road
Bart Johnson Road	Hamilton Mill Road
Buford Dam Road	Suwannee Dam Road
Burns Road	Dickens Road (northeastern end)
Chandler Road	Grayson-New Hope Road
Chandler Road	New Hope Road
Graves Road	McDonough Drive
Hog Mountain Road	Jim Moore Road
North Road	Pharrs Road
Beaver Ruin Road	Shackleford Road
Buford Drive	Buford Mill Drive
Harbour Oaks Drive – Wisteria Drive	Scenic Highway
Buford Drive	Old Peachtree Road
Buford Drive-Buford Drive	Russell Road-Ridge Road
Buford Highway-Buford Highway	S. Berkeley Lake Road-Simpson Circle
Dacula Road	Winder Highway
Henry Clower Boulevard	Main Street East
Johnson Road	Lawrenceville Highway
Oak Road	Scenic Highway
Old Snellville Highway	Sugarloaf Parkway
Singleton Road	Thompson Parkway
Breckinridge Boulevard	Old Norcross Road
Buford Drive	Satellite Boulevard
East Park Place Boulevard-West Park Place Blvd.	Rockbridge Road
Graves Road-Park Colony Drive	South Norcross-Tucker Road
Bob Hannah Circle-Cruse Road	Pleasant Hill Road
Britt Road-Williams Road	Jimmy Carter Boulevard
Burns Road	Pleasant Hill Road
Duluth Highway	Lawrenceville-Suwanee Road
Eva Kennedy Road-Moore Road	Peachtree Industrial Boulevard
Five Forks Trickum Road	Sugarloaf Parkway
Abbotts Bridge Road	Peachtree Industrial Boulevard
Arcado Road-Beaver Ruin Road	Lawrenceville Highway
Buford Drive	East Pike Street
Buford Drive	Mall of Georgia Boulevard
Club Drive	Pleasant Hill Road
Indian Trail-Lilburn Road	Steve Reynolds Boulevard-Singleton Road
Lawrenceville Highway	Sugarloaf Parkway
Pinehurst Road-Ronald Reagan Parkway	Scenic Highway

Note: Table continued from previous page

7.3.2 ITS, TDM, Safety Improvements, and Land Use Actions

In addition to the above projects, the County should also strive to undertake other projects including expanding the ITS system to include more devices (cameras, VMS, speed detectors, etc.) to increase the efficiency of the existing TCC, TDM projects (carpool / vanpool options) that are employer based and establishing one or more TMAs at select locations. In addition, certain safety improvements like addressing signal timing, sight distance issues, vertical and horizontal curves, protective / permissive left turns, left turn bays, etc., should be implemented at high crash locations.

In addition to transportation projects, the 5-Year Action Plan also includes Land Use actions. The priority land use related 5-Year Action Plan outlined below is the result of an evaluation process conducted by the County over several months. They relate to the five themes of the Unified Plan that were used to structure its major goals and are compatible with the identified transportation projects. Together the projects and the actions below represent the 5-year constrained action plan.

Theme: Maintain Economic Development and Fiscal Health

Promote major mixed use developments

If Gwinnett is to develop its own regional “centers” or “focal points”, which have a civic character as well as a “sense of place”, then the above places are the obvious candidates. Yet such centers will emerge from today’s conventionally suburban environments only through:

- Proactive investment by the county (e.g., parking structures via a new County Parking Authority, landscaping, building civic uses etc.),
- Revised zoning that permits more by right uses and higher densities in designated Mixed Use centers and
- A less complicated, easier to execute approval process (e.g., specified standards, if met, mean automatic, administrative approval for allowed uses).

These regional centers will all grow by transforming existing nodes. Many incentives for creating such mixed use centers through alterations of today’s characteristics are mentioned in the Redevelopment section below.

Increasing the number of major mixed use developments could reduce travel demand on major arterial through more internal trip capture and as people would have more opportunities to participate in more activities without using a private motor vehicle.

Protect large, well-located parcels/areas for office use through proactive rezoning

Too often the best located sites are dominated by uses that are not the “highest and best” uses with regard to their ultimate economic development potential which in Gwinnett and its regional neighbors is generally some form of office employment. The culprit is often zoning that allows too broad a range of possible uses at a time when the strongest markets are for such activities as commercial retail, light industry, warehousing and distribution or flex space “industrial parks”.

The long term economic health of Gwinnett hinges in large part on its ability to attract a larger share of the regional office market. To succeed in the long run, the County should initiate a comprehensive zoning plan that better protects the best sites for office development. Area-wide zoning actions have a strong presumption of validity and are an effective way to implement

policy. The decision to proactively adopt area wide re-zonings must be the result of study and analysis and may apply to large sections of the County.

Reserve sewer capacity for key employment locations

Proactive zoning should be accompanied by other key measures to protect Gwinnett's economic development potential. Reserving sewer capacity for key employment locations is perhaps the most important. Sewer transmission system expansions will be needed in the major employment or mixed use areas and any gaps in capacity and demand that arise while this process is underway should be managed in part by making employment the preferred user. In this way, any problems increasing sewer system capacities will be less likely to impede major employment growth.

Create transit-oriented development (TOD) at appropriate sites through proactive rezoning

A modern transit system can be a valuable support for achieving more urban, mixed use development centers in Gwinnett. The provision of some type of rapid transit and the attendant option of living in a walkable, mixed use community near transit (Transit Oriented Development) can help make this Plan's economic development strategy more sustainable.

TOD is part of the recipe for attracting and retaining many types of urban-acclimated professionals, tech workers and other types of households (e.g., empty nesters) by offering a wider choice of living environments. A growing segment of the population is attracted to the urbane lifestyles associated with well-designed TODs whose density and use mix as well as lessened auto dependency is a plus for them. (Well designed TODs also increase a transit systems potential ridership.)

While Gwinnett does not yet have a robust transit network, the County could increase its capacity for a future system by siting and building TODs in advance of specific transit program in locations targeted by the count and Cities for such uses along likely candidate transit lines and at likely stops.

Use Tax Allocation Districts (TADs)

TADs (also known elsewhere as TIFs) are a powerful way of implementing Mixed Use Development (MXD) growth or redevelopment as well as maintaining the long term quality of a local area by leveraging future tax increases to get a revenue stream for improvements within a specified targeted location. Such improvements include parking structures, improved Storm Water Management (SWM), support for local development corporations, marketing and recruiting efforts, environmental enhancements or remediation, shared open space or civic spaces, and other public realm improvements. TADs could also be used to fund local, small-scale transportation improvements such as intersection or access management improvements.

Limit sewer extensions in East

Retaining a more "rural" eastern edge within the county may help promote Gwinnett as a desirable place to live for those seeking "estate housing" lifestyles based on low-density, large-lot environments. Establishing such opportunities fits in with the economic development goal of attracting high quality, high paying jobs to Gwinnett (see section C below). Even if this area does not see development of executive housing enclaves, holding back sewer extension in eastern Gwinnett is still worth doing as part of the County's fiscal health strategy, because the costs of servicing a relatively less dense Eastern Gwinnett County will considerably outweigh any tax revenues such developments will generate. Low density housing of average value costs the county more than it returns in revenue, unlike higher density, mixed-use environments.

By limiting development in the eastern part of the County, there is reduced need for transportation infrastructure in the area, and the resources that would have been used to build new roads or widen existing roads could be used to make transportation investments in parts of the County that are already built up.

Theme: Foster Redevelopment

Institute a variety of redevelopment incentives and bonuses (codes, zoning, parking authority, infrastructure, taxes)

Incentives and bonuses may include allowing denser but more varied attached/multifamily redevelopment projects plus limited commercial to replace older multifamily projects so as to ensure their redevelopment viability. Successful widespread redevelopment may require that other tax related incentives beyond current provisions will need to be set up, (e.g., Tax rebates, deferred reassessments).

Encouraging redevelopment of existing areas can reduce transportation costs as there is less need to build new or widen existing roads in undeveloped areas.

Reduce future retail on corridors - Convert obsolete retail to mixed use or housing

Large segments of Gwinnett are over-served by conventional retail developments. (Gwinnett has the lowest dollar per square foot yield on retail in the region.) The current pattern of obsolescing strip malls along major arterial corridors must be slowed and then reversed.

To check any future oversupply, more restrictive zoning policies and conditions on such uses (e.g., their phasing in with supporting residential development or even a market need test) are warranted. There are two basic ways to make older, surplus retail strip centers candidates for redevelopment. The first would use an overlay or floating zone that allows larger (e.g., more than 10 acres) parcels to be redeveloped for a wider mix of retail/office/residential uses. The second would be more prescriptive in that selected areas could be designated for rezoning to residential or MXD uses as part of the proactive rezoning mentioned earlier.

Theme: Maintain Mobility and Accessibility

Manage access on arterials through minimum block length, shared access ways, inter-parcel connections, etc.

Many jurisdictions have Access Management Policies and actively tie them to development codes to manage access onto roadways. This can be done on arterials or other types of roadways via an overlay district that, depending on the roadway classification, limits block lengths between access roads, requires shared access ways and inter-parcel connections, may require frontage roads or rear access, limits curb cuts and so forth. These measures greatly conserve valuable roadway capacity and improve safety.

Redevelopment of land uses along such arterials may provide easy opportunities to implement such access improvements but such changes should fit into an overall strategy for each arterial and much public sector initiated change will still be needed.

Theme: Program Management

Effective program management is based on monitoring the progress of projects that have been programmed or that have been put into the CTP. A process to monitor program implementation and project progress is thus recommended for implementing the CTP. This can be done with a simple reporting process (most often done on a quarterly basis) that records the status of project implementation and any reasons for delay. The County already has a good project

information system that can serve as the basis of CTP monitoring. It is recommended that the projects highlighted as high priority in the CTP be added to the project information system and be reported to Gwinnett County DOT management on a periodic basis.