

# **Cobb County Transit Implementation Study**

**Report: Work Element 2  
Transportation Demand Forecast  
and Impact Analysis (*Initial Findings*)**

*Submitted to*  
**Cobb County Department of Transportation  
Cumberland Community Improvement District  
Town Center Area Community Improvement District**

*Submitted by*  
**Bechtel Infrastructure Corporation  
Mayes, Sudderth & Etheredge, Inc.**

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FTA Section 5309 New Starts Evaluation Templates

**Acronyms List**

ARC	Atlanta Regional Commission
CAAA	Clean Air Act Amendments
CCT	Cobb County Transit
CCTM	Cobb County Transit Model
CCCTP	Cobb County Comprehensive Transportation Plan
CID	Community Improvement District
EPD	Georgia Environmental Protection Division
FGT	Fixed Guideway Transit
FONSI	Findings of No Significant Impact
FTA	Federal Transit Administration
GRETA	Georgia Regional Transportation Authority
HOV	High Occupancy Vehicles
LPA	Locally Preferred Alternative
MARTA	Metropolitan Atlanta Regional Transportation Authority
MPO	Metropolitan Planning Organization
MSE	Mayes, Sudderth & Etheredge, Inc
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
PE	Preliminary Engineering
PNR	Park and Ride
ROW	Right of Way
RTP	Regional Transportation Plan
SIP	State Implementation Plan
TAZ	Transportation Demand Management
TEA 21	Transportation Efficiency Act for the 21 <sup>st</sup> Century
TIP	Transportation Improvement Program
VMT	Vehicle miles traveled

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## **Executive Summary**

## **Executive Summary**

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### **ES-1 INTRODUCTION/PROJECT CONTEXT**

The Cobb County Transit Implementation Study is a third step in sequence of studies, and is preceded by the Cobb County Comprehensive Transportation Plan, and the Regional Transportation Plan (RTP) prepared by Atlanta Regional Commission (ARC).

This study follows the Federal Transit Administration (FTA) technical guidance and prepares appropriate information that is required to advance the project toward implementation.

Addressing the planning requirement of the study, technical information is presented that addresses Cobb County transit patronage potential, at three levels of analysis:

- The Study Corridor from Cumberland Community Improvement District (CID) to Town Center CID
- All of Cobb County
- All of the Atlanta Region

The next step in project development of the proposed Cobb County Transit (CCT) Systems is preparation of a FTA sponsored "Alternatives Analysis" – which seeks to achieve a "local consensus" on a preferred plan for implementation. This study is mindful of the requirements of the Alternatives Analysis.

### **ES-2 STATEMENT OF PURPOSE AND NEED**

This Study follows a traditional transportation planning process establishing the basis for a thorough evaluation of the proposed transit fixed guideway system.

The first step in the planning process is the evaluation of existing conditions. Information developed for the recent Cobb County Comprehensive Transportation Plan provides these findings:

- The transportation system in Cobb County and in the study corridor is severely constrained, exhibiting chronic peak period traffic congestion.
- The Cumberland Area and Town Center Area comprise significant major activity centers and generators of traffic in the corridor, county and region.
- Only about half of 1 percent of the daily 2.1 million person trips generated in Cobb County are made using the available CCT services.
- Cobb County generated trips show a low vehicle occupancy rate of 1.21 persons per vehicle.
- Transit service in Cobb County is limited today, linking only major activity centers in Marietta, Cumberland Area, and Town Center Area, with some service to key transit stations in Atlanta.

## Executive Summary

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- The Atlanta regional air quality conformity problem threatens opportunity for growth in the study corridor and region, unless traffic congestion is curtailed through car pooling and transit use.

Today's traffic problems are detrimental to the quality of life in Cobb County and the Atlanta region. Recognizing this, the RTP lays forth a bold solution to meet the future mobility needs of the corridor and region.

In their plan, ARC as the Metropolitan Planning Organization places significant emphasis on development of a comprehensive regional transit system. Major RTP findings relevant to the development of Cobb County Transit Systems, include:

- The region's growth between 1990 and 2025 – is projected to exceed the rates of growth for the State of Georgia, and the United States as a whole.
- Growth projections for counties in the Atlanta region assume that major new transit facilities will be built, including the Cobb County Trunkline rail system, and the Cumberland fixed-guideway Circulator.
- Cobb County is projected to increase by 169,000 people and 132,000 job positions by 2025.
- Much of Cobb County's growth in people and jobs is projected within close proximity to the proposed Trunkline and Circulator transit systems.

This future perspective presented in the RTP sets forth a vision and priority on developing Cobb County Transit Systems to meet transportation needs in the I-75 North Corridor, linking the Cumberland and Town Center CIDs.

The strategic objective benefits of the proposed Cobb County Transit Systems are:

- Serve Cobb County and regional travel demand needs
- Support existing and future land use
- Provide for environmental benefits to regional air quality
- Seek transportation efficiency and equity through mobility improvements
- Manage growth and improve quality of life

Recognizing the need and identifying solutions are the beginning steps. The next step is confirmation that the proposed transit projects are viable and justified for implementation.

This study follows the FTA guidance and evaluates the proposed project alternative against two other less costly alternatives.

### **ES-3 ALTERNATIVES CONSIDERED IN COBB TRANSIT PROJECT PLANNING**

In preparation for the next step – Alternatives Analysis – this study evaluates the proposed Cobb County fixed guideway system (Build Alternative) compared against two other alternatives, namely a TSM Alternative and a No Build Alternative. These alternatives are described as follows:

- *Build Alternative* – represents the proposed fixed guideway Trunkline and Circulator systems, the regional transportation systems assumed in the RTP, and an expanded Cobb countywide bus transit system.
- *TSM Alternative* – represents a “transportation system management” alternative eliminating investment in fixed guideway systems, retaining extensive bus systems assumed under the Build Alternative.
- *No Build Alternative* – represents an aggressive expansion of the existing CCT bus services to other key areas of the county, and linkages to areas in Atlanta.

The definition and analysis of the Build, TSM and No Build Alternatives as prepared in the study will offer a good starting point for completion of the whole corridor assessment during the formal Alternatives Analysis to follow in the next steps of implementation.

### **ES-4 MARSHALLING OF TECHNICAL METHODS**

The study takes advantage of technical tools and methods appropriate to the study objectives. Emphasis is placed on adaptation and use of the ARC regional transportation model and growth projections into a framework consistent with federal guidelines for fixed guideway studies.

Features of the technical methods applied in this study, include:

- The Cobb County Travel Model (CCTM) used for the study is a version of the ARC regional travel demand model.
- Through use of the CCTM comprehensive travel demand and transit patronage forecast were prepared in a format acceptable to FTA review.
- The forecasts include future year representation of the transit and highway systems included in the RTP.
- The travel demand forecasts use as input, socio-economic growth projections for population, employment and households by income group, as prepared by ARC for year 2025.

Forecast results prepared through the study methods take advantage of the best technical resources available in the Atlanta region.

## ES-5 TRAVEL DEMAND FORECAST RESULTS, YEAR 2025

Transit patronage forecasts presented in this report allow for an initial review of the potential ridership on the Cobb County transit systems for the proposed fixed guideway projects (Build Alternative) and for two other comparative alternatives.

The forecasts results for year 2025 reveal these findings:

- Cobb County's share of all daily regional transit trips will grow from about 1.8% today to more than 19% in year 2025, under the Build Alternative, with more than 172,000 daily transit trip boardings.
- Mode share countywide and for key areas within Cobb County show promising demand potential ranging from 9.4% (Cumberland) to 1% (Powder Springs).
- The Build Alternative would generate more than twice as many daily transit trip boardings as the TSM and No Build Alternatives.
- Of the total daily transit trip boardings under the Build Alternative, forecasts show a balanced and highly integrated transit system with good patronage potential on the Trunkline, Circulators, and countywide local and express bus services.
- The net increase in transit boardings forecast under the Build Alternative, versus the TSM and No Build Alternatives, supports justification for the fixed guideway systems.
- The Build Alternative shows a transit system with direct service and less need for transfers, serving a greater number of households and job sites than under the other two alternatives.
- Patronage results for virtually all transit stations assumed under the Build Alternative, show promising demand potential, representing transit access by walk, transfer from buses, and drive to park-and-ride facilities.
- Rail-to-rail transfers between the Trunkline and the Cumberland Area and Town Center Area Circulators would be strong, reflecting a highly integrated system with many transit-linked trips.
- Select-link analysis results show the geographic origin of transit users at different locations along the Trunkline system, revealing that more than 72% of transit patronage on the Trunkline would be residents or workers in Cobb County.
- Implementation of the Cobb County transit systems across all three alternatives would result in a reduction in vehicle traffic in Cobb County and the Atlanta region.
- Comparison to ARC year 2025 patronage forecast for the Trunkline rail system and Cumberland Circulator show comparable results.

Overall, these findings summarize key transportation demand results presented in the report in tables and figures, in a format consistent with information presented in federal sponsored fixed-guideway transit studies.

**ES-6 TRANSPORTATION IMPACT ANALYSIS, PROJECT ALTERNATIVES YEAR 2025**

A preliminary discussion of the potential impacts and benefits of the proposed transit systems is presented. The mobility benefits from implementation of the proposed Cobb County Transit System under the Build Alternative, include transit service coverage, travel time savings and low-income households served. The opportunity for transit service integration within existing and future land use are also direct benefits of the project. Potential transportation impacts include station access traffic, park-and-ride facility requirements, traffic signal systems, and roadway modifications.

**Section 1**  
**Introduction**

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This report is second in a series documenting the *Cobb County Transit Implementation Study*. The report documents the results of a comprehensive transportation planning analysis prepared under Work Element 2. The report addresses the purpose and need for the proposed transit system, and is based on preparation of regional transportation demand forecasts, and transportation impact and benefit analysis, generally following guidelines of the Federal Transit Administration.

The study is being conducted by an engineering consultant team combining the integrated resources of Mayes, Sudderth & Etheredge, Inc. (MSE) of Cobb County, Georgia, and Bechtel Infrastructure Corporation, an international engineering and construction company, with headquarters in San Francisco, California.

The primary purpose for the study is:

- Development of a conceptual engineering solution for the insertion of two transit circulators within the Cumberland and Town Center Community Improvement Districts (CID), connected by a Trunkline Connector transit system
- Preparation of an implementation plan which includes a process, funding, and an organization capable of securing the approval and acceptance of federal, state, and regional agencies, as well as the business and public community of Cobb County

This introductory section presents brief overview of the study process, a review of transportation planning in Cobb County, a review of the importance of the Regional Transportation Plan update, and a discussion of the purpose and content of this report.

## **1.1 STUDY CONTEXT**

The Cobb County Transit Implementation Study follows closely in coordination and sequence with two important local and regional transportation planning efforts:

- **Cobb County Comprehensive Transportation Plan (CCCTP).** Non-published draft January 1999. Information is summarized in the earlier Work Element 1 Report, and is briefly discussed in the context of project needs and future perspective, in Section 2 below.
- The **Regional Transportation Plan (RTP).** Final draft February, 2000, prepared by the Atlanta Regional Commission (ARC), the Metropolitan Planning Organization for the Atlanta Region. Upon adoption, the RTP establishes a blueprint for implementation of transportation projects in the Atlanta region over the next twenty-five years.

These two transportation plans establish momentum and context for the Cobb County Transit Implementation Study, as briefly discussed in the following sections.

### 1.1.1 Comprehensive Transportation Planning in Cobb County

The draft CCCTP is a comprehensive inventory of existing transportation conditions, a forecast of future conditions under alternative concept plans, an evaluation of alternative plans for transportation improvements over the next twenty years, and preliminary costing of specific transportation projects. Most importantly, the CCCTP provides a beginning definition for a concept transit system in Cobb County, including rail transit, express and local buses, and park-and-ride facilities.

The concept transit system and other transportation improvements identified and evaluated in the draft CCCTP represented Cobb County proposed projects submitted to ARC for inclusion in the RTP update.

The transit system projects identified are:

- A concept Trunkline light rail service extending from the Town Center Mall to the Atlanta Arts Center station, generally running along the U.S. 41/Cobb Parkway corridor, with frequent station spacing in Cobb County
- Two area Fixed Guideway Transit (FGT) Circulators, serving both the Cumberland and Town Center Area Community Improvement Districts (CID)

Expanded countywide express and local bus system, directly feeding the proposed Trunkline light rail service and two area FGT circulators.

The substantial work accomplished for the CCCTP is the beginning point for transit concept refinement underway in the current Cobb County Transit Implementation Study.

### 1.1.2 Role of the Regional Transportation Plan Update

The RTP is a comprehensive assessment of the regional transportation needs and transportation investment program for the Atlanta region identified to meet regional transportation and air quality goals over the next twenty-five years at a cost of \$36 billion.

The RTP is established on the basis of four goals:

1. Accessibility and mobility for people and goods
2. Attain regional air quality goals
3. Improve and maintain system performance and system preservation
4. Protect and improve the environment and quality of life

Each RTP of the goals include specific objectives. For the goal to promote accessibility and mobility, emphasis is placed on developing intermodal passenger connections, implementing transit and land use changes to support transit/pedestrian oriented developments, and increasing accessibility and mobility options available to people and for freight.

Projects identified and evaluated in the RTP, as part of these specific service objectives, are the foundations of the RTP investment plan, comprising identified five-year implementation programs.

Most importantly for Cobb County, the RTP calls for specific actions:

- Implementation of a generally defined light rail line as proposed in the CCCTP, extending service between the Arts Center in Midtown Atlanta and the Cumberland Center, by or before year 2010
- An extension of the light rail line north from the Cumberland Center to the Town Center Area by or before 2015
- Development of a Cumberland Area FGT Circulator
- Expanded countywide local and express bus service

Furthermore, upon adoption of the RTP in Spring 2000, funding is made available to proceed with Cobb County transit system development. This includes funds to complete concept planning, preparation of an alternatives analysis and environmental studies, and to begin preliminary engineering for what will become the “locally-approved transit project”.

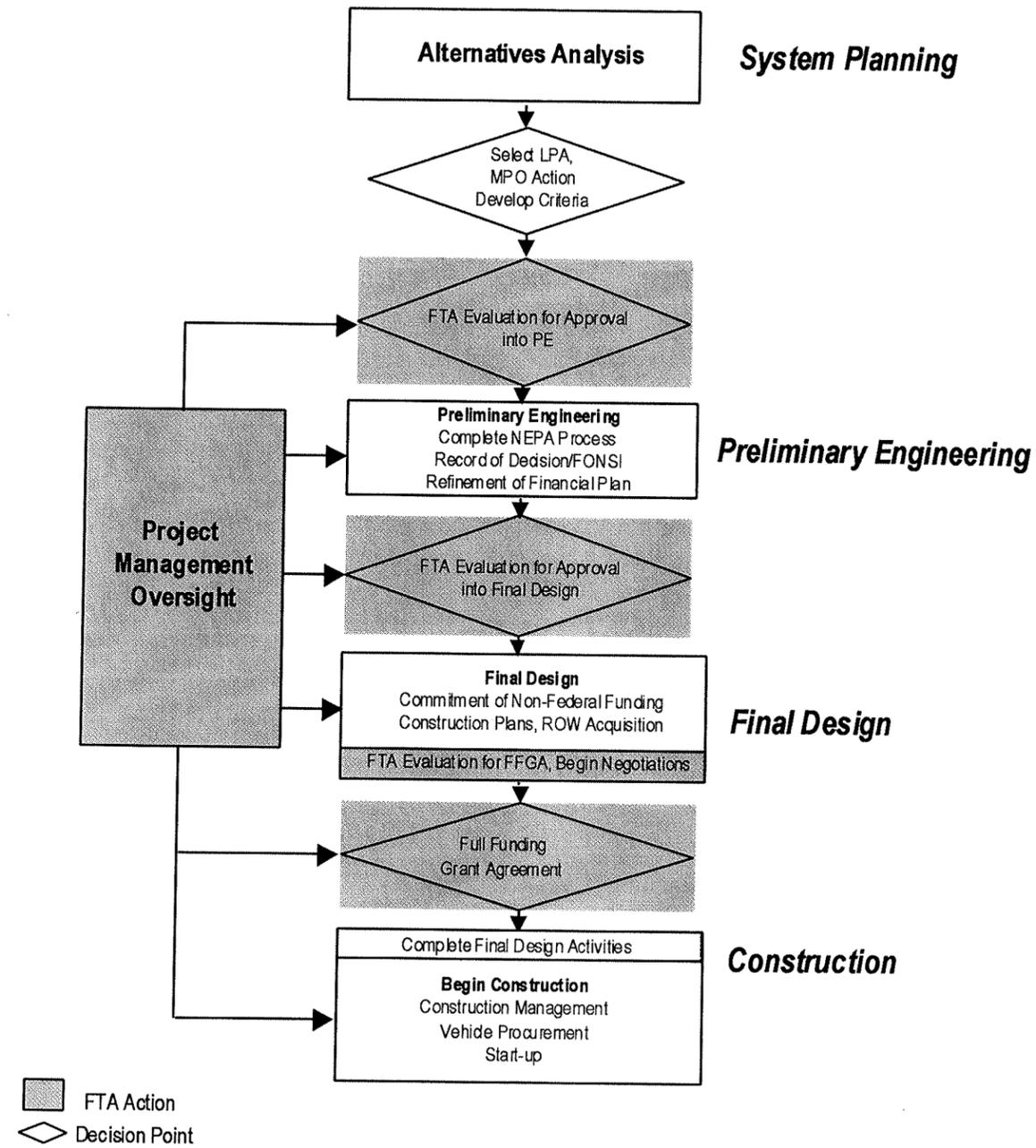
In summary, the RTP has established the need for the Cobb County transit systems as part of the regional planning needs assessment, and provides for a funding to take the project from the concept stage through the next stages of project implementation.

### **1.1.3 The Federal Process for Development of Fixed Guideway Transit Systems**

The proposed implementation of Cobb County Transit system projects identified in the RTP may be eligible for Federal Transit Administration (FTA) “New Starts” funding, assuming careful attention is given to the technical planning process requirements.

A major objective of this current Cobb County Transit Implementation Study is to establish a solid technical information basis which identifies the need for the transit systems, and a “baseline project” definition that will immediately advance the concept transit project to further necessary steps to meet eligibility requirements for federal funding support.

Figure 1-1 shows the major steps in the FTA Systems Planning and Development Process. Following this study, the proposed project will proceed into the first stage, a formal “Alternatives Analysis”, a straight-forward but detailed examination of study alternatives, a public involvement process, and thorough documentation of project benefits and costs. The alternatives analysis completes the systems planning stage, resulting in formulation of a “locally preferred alternative” (LPA). Upon formal FTA evaluation and approval the project is then advanced into the next stage – Preliminary Engineering (PE).



**Figure 1-1 FTA Systems Planning and Project Development Process**

During, PE the design concepts are prepared to a level of detailed design (approximately 30 percent completion) necessary to evaluate the project costs and impacts, as the NEPA environmental clearance process is also completed during this phase. The results of the PE stage include a Record of Decision/Finding of No Significant Impacts (FONSI), preliminary engineering designs, and a detailed financial plan for the project. Again, FTA evaluation and approval is made before the project can advance into the next stage – Final Design.

During final design, the project is made ready to secure a “Full Funding Grant Agreement” from the federal government upon completion of Final Design, commitment of non-federal, the preparation of construction plans, and Right-of-Way (ROW) acquisition.

Construction is the final stage of the federal project development process. Completion of final design activities, construction management, vehicle procurement, and startup activities are completed during the construction stage.

The federal project development process places great importance on what is called the “locally preferred alternative” defining a project that is accepted by a consensus of the communities it impacts. With this in mind, during this study coordination is underway to obtain input and begin to build an acceptable project amongst the following project Stakeholders:

- Cumberland CID
- Town Center CID
- Cobb County Department of Transportation
- Georgia Department of Transportation
- Georgia Regional Transportation Authority (GRETA)
- Atlanta Regional Commission (ARC)
- Federal Transit Administration (FTA)
- Cobb County and regional residents and businesses

## **1.2 PURPOSE AND CONTENT OF THE REPORT**

This report presents the results of a preliminary evaluation of the proposed transit systems in Cobb County. The steps taken in this evaluation generally follow the technical guidance for a federal study, as referenced above. The information presented is the beginning database of information required for a complete alternatives analysis to cover the portion of the proposed transit system in Cobb County.

The tasks accomplished and documented in this Work Element 2 Report include the following:

- A discussion of purpose and need for the proposed transit system (Section 2)
- A review of transit system alternatives considered in the corridor (Section 3)
- An overview of the technical methods utilized in the study (Section 4)

- Travel demand forecast results for year 2025 (Section 5)
- Transportation Impact Analysis for Project Alternatives, Year 2025 (Section 6)

The study team's application of the ARC and Cobb County Models to represent specific characteristics of the proposed fixed guideway transit systems was accomplished concurrently with the physical planning for these systems. In order to proceed with the modeling work, certain alignment and station assumptions were made for the fixed guideway transit systems. These assumptions formed the basis for transportation model runs and for the preliminary forecast results presented in this report.

Once final alignment and station locations for the fixed guideway systems are set (expected by May 2000) it is our plan to rerun the modeling using these updated project plans to produce the final patronage forecasts. The final patronage forecasts will likely differ from the preliminary forecasts presented in this report. The final patronage forecasts will be included in the study Final Report.

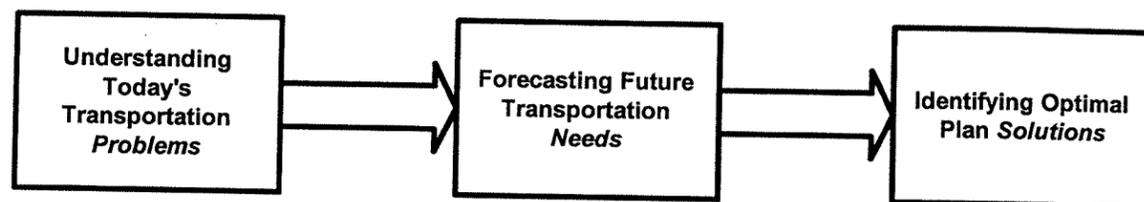
**Section 2**  
**Statement of Purpose and Need**

## Section 2

## Statement of Purpose and Need

This section presents a summary of current and future projected conditions in Cobb County and the Atlanta region, establishing the basis for a purpose and need for the proposed transit systems. First a summary of existing transportation system constraints is presented, followed by an overview of the future transportation system perspectives taken from various recent studies. Key objectives for the proposed transit system are then presented.

The work accomplished under Work Element 2 follows a traditional comprehensive transportation planning assessment, as show below.



The overall focus of this study is concept design and implementation strategies for transit solutions within Cobb County, specifically fixed Guideway transit, linking and serving the Cumberland and Town Center Area CIDs, and addressing travel demand needs in the I-75 North Corridor. To understand and forecast the purpose and need for the proposed transit solutions, the study takes into account an assessment of travel demand patterns within Cobb County, and for the entire Atlanta region.

Figure 2-1 illustrates the three analysis perspectives taken in this study: 1) the primary corridor including the Town Center Area and Cumberland CIDs; 2) all of Cobb County; and 3) the Atlanta region. Analyses throughout the study address different findings at each of the three analysis perspectives.

### 2.1 EXISTING TRANSPORTATION SYSTEM CONSTRAINTS

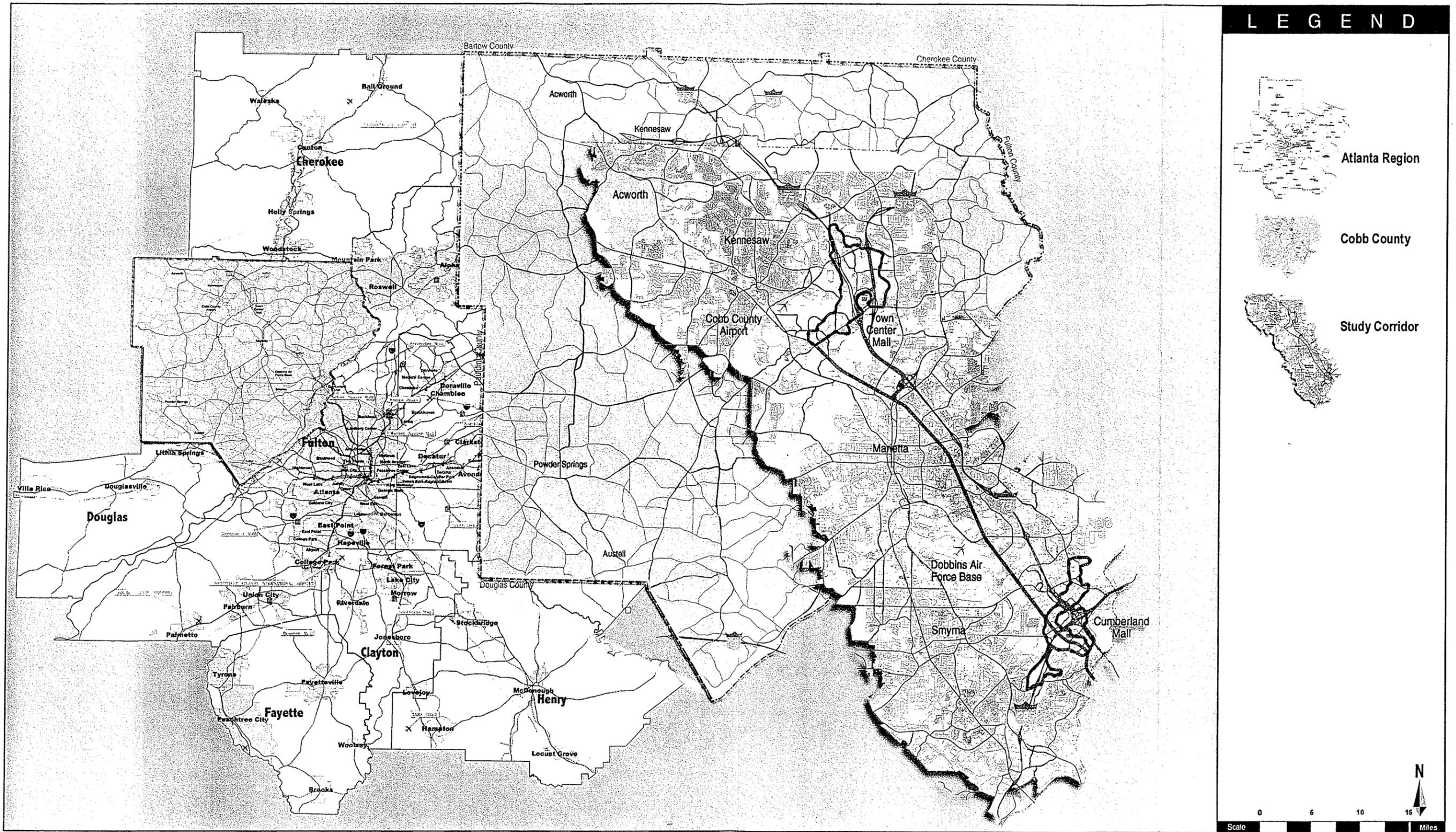
This section highlights the existing transportation problems within the primary study corridor.

#### 2.1.1 CORRIDOR CONGESTION AND MEASURES OF TRAVEL DEMAND

The roadway network within the study corridor experiences chronic high levels of congestion. Several recent studies have provided information regarding the existing and forecasted levels of congestion in the area. The travel patterns within the study corridor are dominated by:

- The north-south travel along I-75, I-575, and Cobb Parkway (US 41); east-west travel along I-285
- The circulation within the Cumberland and Town Center major activity centers.





I-75 is the primary north-south corridor in Cobb County and in the adjacent Counties. The cross-section of I-75 varies from 6 to 14 lanes in the County. I-575 is a four lane highway and branches off of I-75 north of Bells Ferry Road. This highway serves East Cobb and Cherokee County to the north. Cobb Parkway is a major north-south arterial located west of I-75, extending from Bartow County to the north, to Fulton County to the south. The cross-section of Cobb Parkway is typically two lanes in each direction separated by a center turn lane, or a median with left and right turn lanes.

I-285 is the primary east-west corridor within the County and allows access to the Cumberland area and major points throughout the Atlanta region. These roadways experience significant congestion during the peak travel times. The performance levels of these roadway segments was evaluated in the Draft Cobb County Comprehensive Transportation Plan.

Table 2-1 provides a summary of traffic condition ratings on key Cobb County roadways based on 1995 traffic volumes.

**Table 2-1**  
**Major Traffic Bottlenecks**

Congested Segments	Planning Rating
I-75 - North of Chattahoochee River	Failure
I-575 - Cherokee County to I-75	Marginal
I-285 - Throughout Cobb County	Marginal
Cobb Parkway (US 41) – Throughout Cobb County	Marginal to Failure

Source: *Draft Cobb County Comprehensive Transportation Plan*, Cobb County Department of Transportation, December 1999.

The Cumberland Area includes substantial commercial office and retail development and residential development. As a result, the area serves as a major employment center in Cobb County and the Atlanta region. The area is intersected by I-75 in a north-south direction and I-285 in an east-west direction. The area is further served by multiple arterials in both the north-south and east-west directions.

The *Cumberland-Galleria Subarea Existing Conditions Report* stated that 17 of the 40 (or 43%) of the major roadway segments have traffic volumes that approach or exceed the capacity of the segment based on 1995 traffic volumes. Table 2-2 provides a listing of the major roadways in the area that were considered deficient.

The *Report* further stated that 36 of the 69 (or 52%) signalized intersections within the area operated with major or excessive delays and were classified as marginal or failing. Table 2-3 provides a listing of the deficient intersections.

**Table 2-2  
Summary of Roadway Deficiencies  
Cumberland Area**

Roadway	From	To	Rating
I-75	Chattahoochee River	I-285	Failure
I-75	I-285	Windy Hill Road	Failure
Cobb Parkway	I-285	Windy Hill Road	Failure
I-285	Paces Ferry Road	Cobb Parkway	Failure
I-285	I-75	Powers Ferry Road	Failure
Delk Road	I-75	Powers Ferry Road	Failure
Windy Hill Road	Village Parkway	Cobb Parkway	Failure
Paces Ferry Road	I-285	Paces Ferry Road	Failure
Powers Ferry Road	Windy Hill Road	Terrell Mill Road	Marginal
I-75	Windy Hill Road	Delk Road	Marginal
Akers Mill Road	Professional Parkway	Power Ferry Road	Marginal
Cobb Parkway	Windy Hill Road	Delk Road	Marginal
I-285	South Cobb Drive	Atlanta Road	Marginal
I-285	Atlanta Road	Paces Ferry Road	Marginal
I-285	Cobb Parkway	I-75	Marginal
South Cobb Drive	Church Road	Cooper Lake Road	Marginal
Windy Hill Road	Cobb Parkway	I-75	Marginal

**Table 2-3  
Summary of Intersection Deficiencies  
Cumberland Area**

Street	Intersection At	Rating
Powers Ferry Road	Delk Road	Failure
Terrell Mill Road	Delk Road	Failure
Powers Ferry Road	Terrell Mill Road	Failure
Powers Ferry Road	Governors Ridge/Wildwood Parkway	Failure
Cobb Parkway	Windy Hill Road	Failure
Windy Hill Road	Leland Drive	Failure
Powers Ferry Road	Windy Hill Road	Failure
Powers Ferry Road	Shadowood Parkway	Failure
Powers Ferry Road	Interstate North Parkway	Failure
Powers Ferry Road	Akers Mill Road	Failure
South Cobb Parkway	Loehmanns Plaza	Failure
South Cobb Parkway	N. Hargrove/Herodian Way	Failure
Spring Road	Cumberland Circle/Hargrove	Failure
South Cobb Parkway	Spring Road/Circle 75	Failure
South Cobb Parkway	I-285 w/B	Failure
South Cobb Parkway	Akers Mill Road	Failure
Cumberland Circle	Cumberland Parkway	Failure
Atlanta Road	Paces Ferry Road	Failure
Paces Ferry Road	I-285 S/B	Failure
Paces Ferry Road	I-285 N/B	Failure
Paces Ferry Road	Cumberland Parkway	Failure
Windy Hill Road	S. Park Place	Marginal
Windy Hill Road	Circle 75/I-75 S/B off & S/B on	Marginal
Windy Hill Road	I-75 N/B	Marginal
Windy Hill Road	Interstate North Parkway/Spectrum	Marginal
South Cobb Parkway	Lake Park Drive/Richway Drive	Marginal
Powers Ferry Road	Parkwood Circle	Marginal
Cumberland Circle	Spring Hill parkway	Marginal
South Cobb Parkway	I-285 E/B	Marginal
South Cobb Parkway	Galleria Road	Marginal
Paces Ferry Road	Paces West	Marginal
Paces Ferry Road	Overlook Parkway	Marginal
Atlanta Road	I-285 E/B (N/B)	Marginal
S. Cobb Drive	Highlands Parkway	Marginal
S. Cobb Drive	I-285 w/b (SB) Ramps	Marginal
S. Cobb Drive	I-285 e/b (NB) Ramps	Marginal

The Town Center Area contains a mix of commercial retail, office, and residential development. The area has experienced tremendous growth in the recent past, which should continue for the foreseeable future. The area is served by both I-75 and I-575 in the north-south direction. In addition, Chastain Road and Barrett Parkway serve as the major east-west thoroughfares in the area. The traffic congestion in this area was studied as part of the *Town Center Subarea Existing Conditions Report*. Table 2-4 provides a summary of the roadway segments that were reported to operate deficiently based on 1995 traffic volumes.

**Table 2-4**  
**Summary of Roadway Deficiencies**  
**Town Center Area**

Roadway Segment	From	To	Rating
Barrett Parkway	I-75	Roberts Court/Busbee Parkway	Failure
Barrett Parkway	Barrett Lakes Boulevard	I-75	Failure
Chastain Road	I-75	Busbee Parkway	Failure
Chastain Road	Frey Road	I-75	Failure
Frey Road	Chastain Road	Shiloh Road	Failure
George Busbee Parkway	Big Shanty Road	Chastain Road	Failure
Barrett Parkway	I-575	Bells Ferry Road	Marginal
Barrett Parkway	North Cobb Parkway. (US 41)	Barrett Lakes Road	Marginal
Barrett Parkway	Roberts Court/Busbee Parkway	I-575	Marginal
George Busbee Parkway	Barrett Parkway	Big Shanty Road	Marginal
I-575	I-75	Barrett Parkway	Marginal
I-575	Bells Ferry Road	Cherokee County Line	Marginal
I-575	Chastain Road	Bells Ferry Road	Marginal
I-575	Barrett Parkway	Chastain Road	Marginal
I-75	Barrett Parkway	Chastain Road	Marginal
I-75	Chastain Road	Wade Green Road	Marginal
I-75	Canton Road	I-575	Marginal
I-75	I-575	Barrett Pkwy	Marginal
McCollum Parkway	North Cobb Parkway (US 41)	Old 41 Highway	Marginal
McCollum Parkway	Old 41 Highway	Duncan Road	Marginal
North Cobb Parkway (US 41)	Old 41 Highway	McCollum Parkway	Marginal
North Cobb Parkway (US 41)	Barrett Parkway	Old 41 Highway	Marginal
North Cobb Parkway (US 41)	Bells Ferry Road	Barrett Parkway	Marginal
Old 41 Highway	North Cobb Parkway (US 41)	McCollum Parkway	Marginal

The *Report* also identified several intersections in the Town Center Area that were classified as operating at a marginal or failure level. Table 2-5 provides a summary of the deficient intersections.

**Table 2-5  
Summary of Intersection Deficiencies  
Town Center Area**

Street	Intersection Street	Rating
Barrett Parkway	Mall Boulevard	Failure
Barrett Parkway	George Busbee Parkway/Roberts Court	Failure
Barrett Pkwy	I-75 NB Ramp	Failure
Bells Ferry Road	I-575 NB Ramp	Failure
Chastain Road	I-75 NB Ramp	Failure
Chastain Road	George Busbee Parkway	Failure
Chastain Road	Frey Road/Barrett Lakes Road	Failure
North Cobb Parkway (US 41)	Barrett Parkway	Marginal

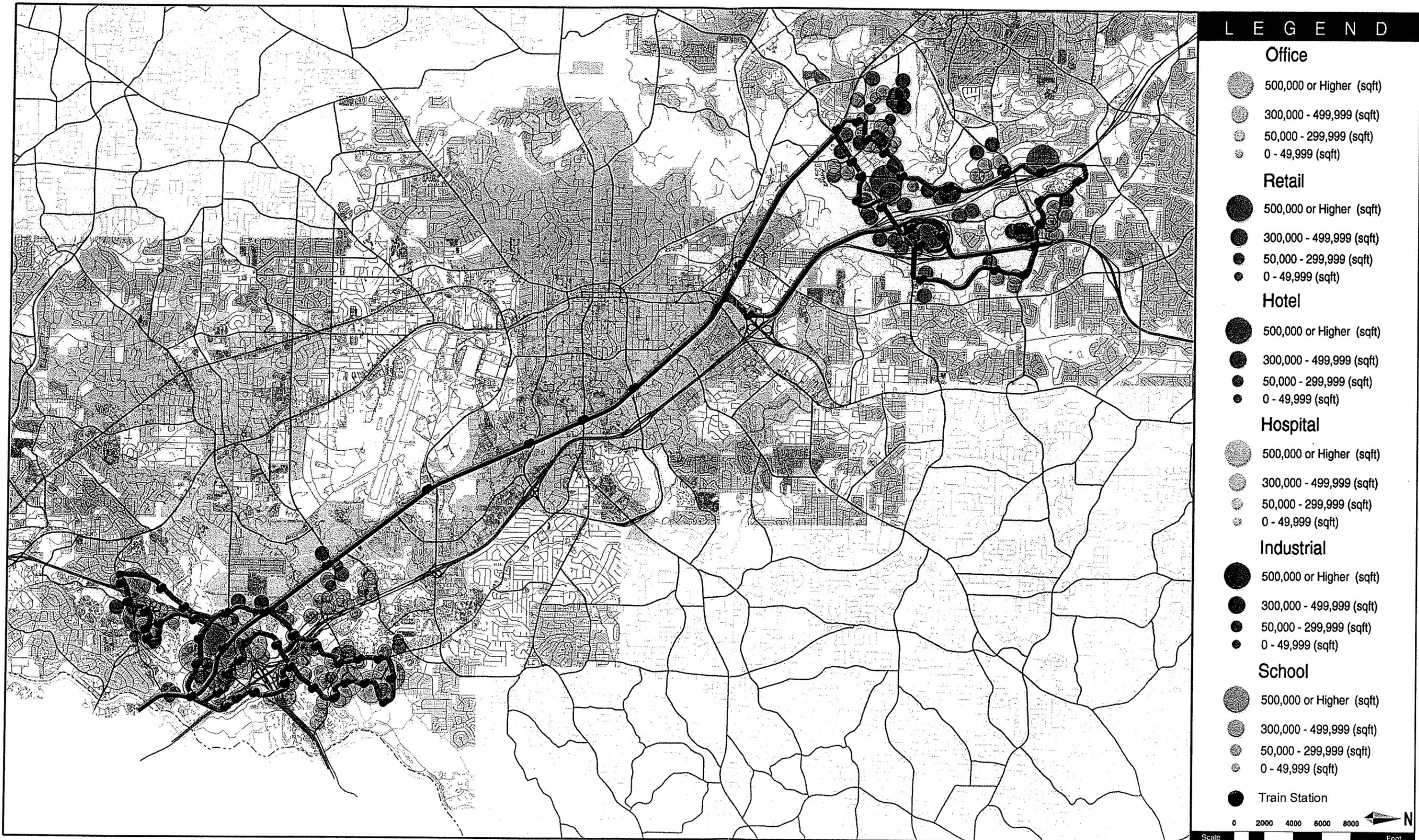
The presiding summaries of traffic conditions in the Cumberland Area and Town Center Area CIDs, reveal chronic congestion is occurring on a daily basis. Traffic bottleneck conditions along key roadway segments, and over capacity conditions at most signalized intersections, create widespread delays and contribute to the regional air quality problem.

Furthermore, the current traffic situation is directly impacting the marketability and growth potential of both CIDs. In order for further development plans to become reality, traffic and accessibility issues must be solved.

### **2.12 Major Activity Centers and Accessibility Needs in the Corridor**

The Cumberland and Town Center Area CIDs comprise the major activity centers in the study corridor. Both of these areas contain substantial existing development and will continue to experience significant growth. The areas serve as major employment and retail centers for Cobb County and the entire Atlanta region. Figure 2-2 shows the location of major travel demand generators in both the Cumberland Area and Town Center Area, in relationship to the fixed guideway system.

The Cumberland Area contains several existing high-density office developments including: Wildwood, Interstate North, Circle 75, Overlook, and the Home Depot. In addition, the area contains the Cumberland Mall and Galleria retail developments and the Galleria Convention Center. There is currently 3.5 million sf of retail space, 17.9 million sf of office space, and 14.4 thousand residential units in the area.

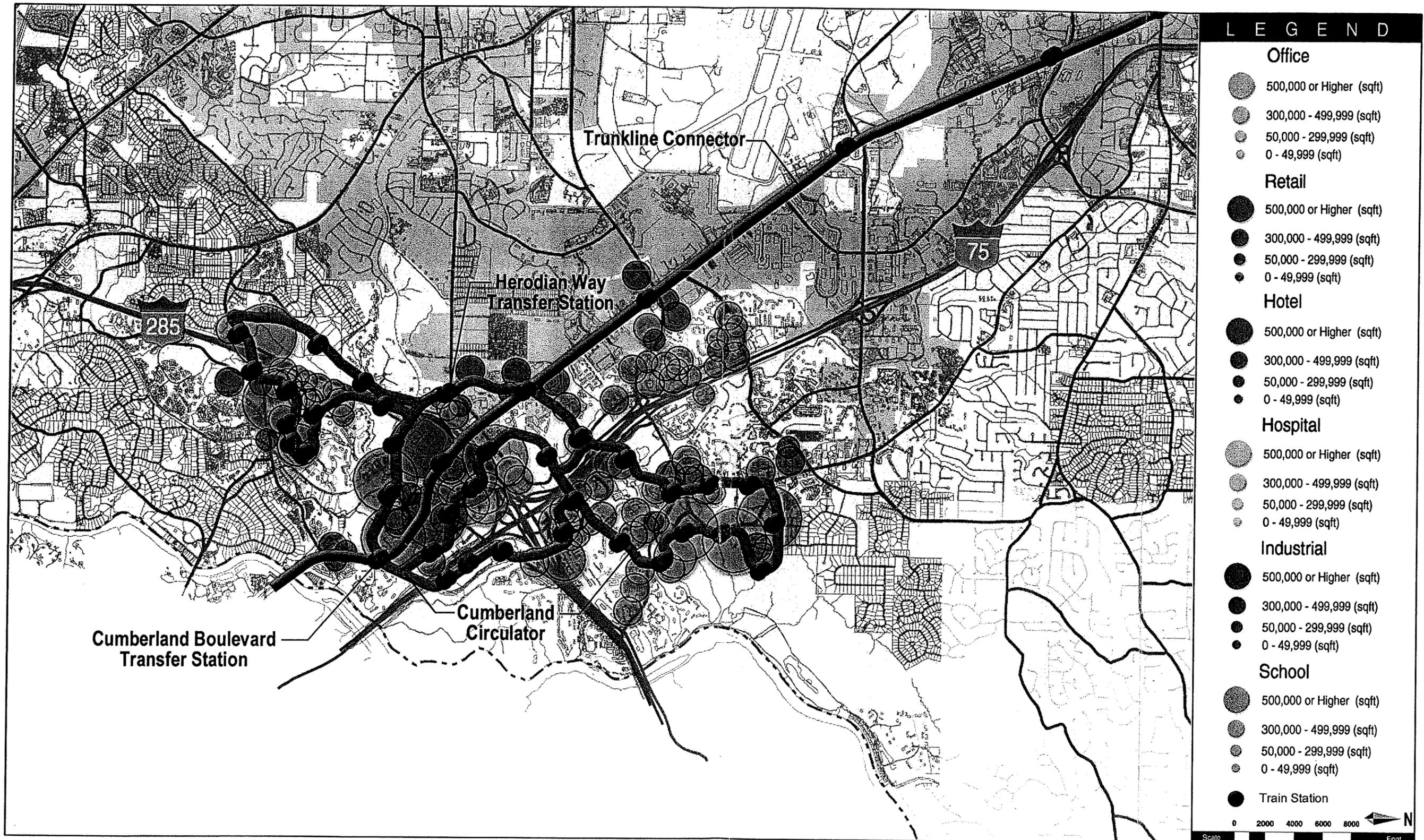


**FIGURE 2-2 STUDY CORRIDOR, EXISTING MAJOR TRAVEL DEMAND GENERATORS**

Appendix A-1 provides a complete listing of the largest office, retail, and residential developments in the Cumberland Area. An estimate of the number of employees, daily patrons, or residents is included in the table. Figure 2-3 shows the locations of these developments on Cumberland Area map.

The Town Center Area contains a mix of retail, office and residential developments. In addition, the campus of Kennesaw State University is located within this area. The major retail developments in the area includes the Town Center Mall. There is currently 4.8 million sf of retail space, 7.1 million sf of office space, and 3 thousand residential units in the area.

Appendix A-2 provides a listing of the largest developments in the Town Center Area. In addition, the table includes an estimate of the number of daily patrons, employees, students, or residents in the development. Figure 2-4 shows the locations of these developments on a Town Center area map.



**LEGEND**

**Office**

- 500,000 or Higher (sqft)
- 300,000 - 499,999 (sqft)
- 50,000 - 299,999 (sqft)
- 0 - 49,999 (sqft)

**Retail**

- 500,000 or Higher (sqft)
- 300,000 - 499,999 (sqft)
- 50,000 - 299,999 (sqft)
- 0 - 49,999 (sqft)

**Hotel**

- 500,000 or Higher (sqft)
- 300,000 - 499,999 (sqft)
- 50,000 - 299,999 (sqft)
- 0 - 49,999 (sqft)

**Hospital**

- 500,000 or Higher (sqft)
- 300,000 - 499,999 (sqft)
- 50,000 - 299,999 (sqft)
- 0 - 49,999 (sqft)

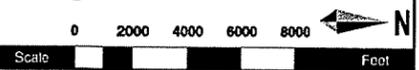
**Industrial**

- 500,000 or Higher (sqft)
- 300,000 - 499,999 (sqft)
- 50,000 - 299,999 (sqft)
- 0 - 49,999 (sqft)

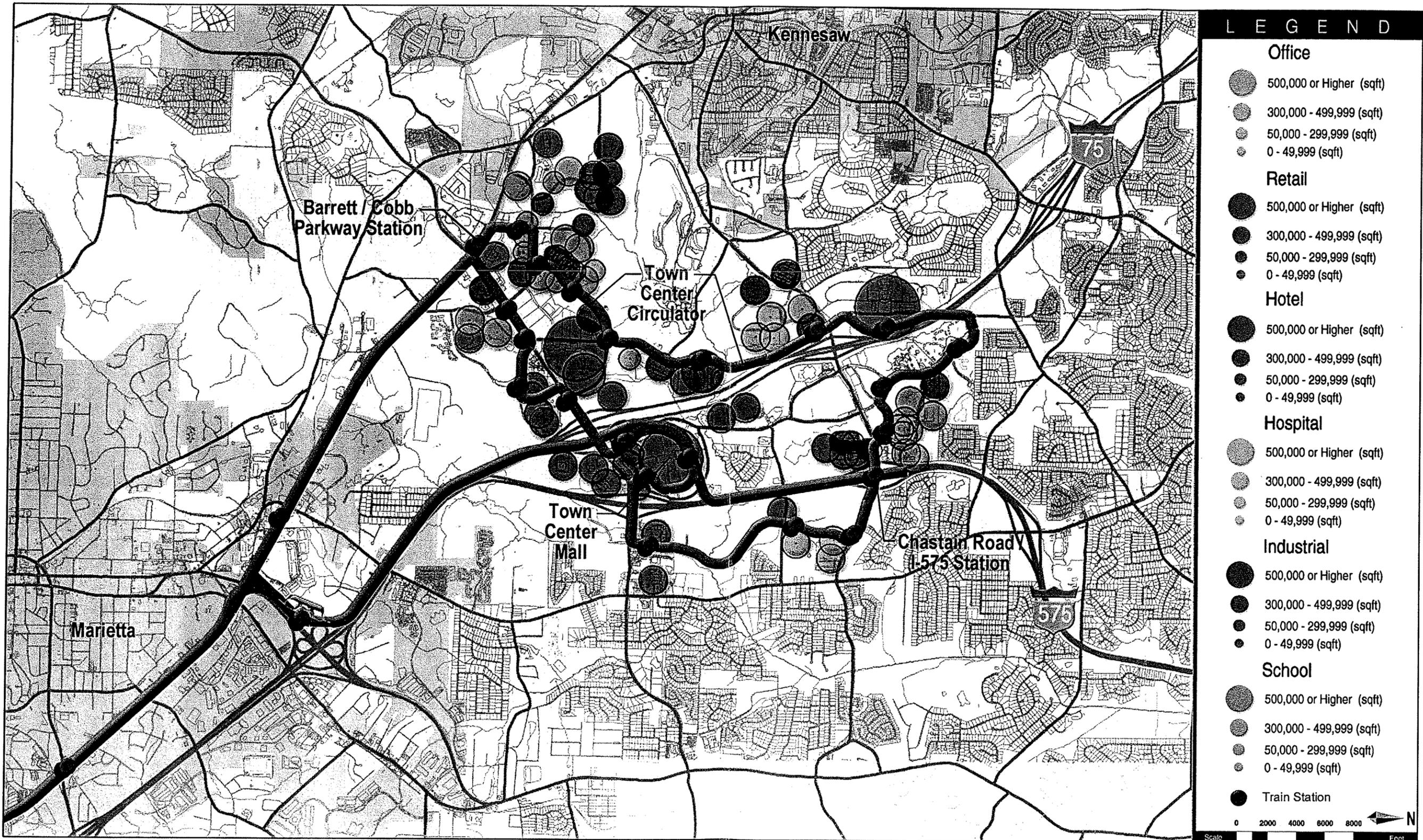
**School**

- 500,000 or Higher (sqft)
- 300,000 - 499,999 (sqft)
- 50,000 - 299,999 (sqft)
- 0 - 49,999 (sqft)

- Train Station



**FIGURE 2-3 CUMBERLAND AREA, EXISTING MAJOR TRAVEL DEMAND GENERATORS**



**FIGURE 2-4 TOWN CENTER AREA, EXISTING MAJOR TRAVEL DEMAND GENERATORS**

### 2.13 Mode Share and Auto Occupancy

The *Cobb County Model Documentation* report includes an analysis of existing travel by mode in the County and the region. The findings show that Cobb County accounts for 2.1 million person trips, which amounts to 21% of the daily trips in the region. In addition, less than 1% of the Cobb County trips are made using public transit. By comparison, approximately 2.5% of the trips in the entire region were made using public transit.

The analysis further shows a very low vehicle occupancy rate (1.21 persons/vehicle) for Cobb County trips. Table 2-6 provides a summary of the daily travel characteristics for the County and region.

**Table 2-6**  
**Cobb County and Atlanta Region**  
**Daily Travel Characteristics, 1995**

Trip Category	Cobb County Share	Atlanta Region Total	% of Total Cobb County
Total Person Trips	2,123,100	10,080,900	21.0
Total Auto Trips	1,756,000	8,253,000	21.1
Total Auto Person Trips	2,116,600	9,835,000	21.5
Auto Percent Mode Share	99.6%	97.5%	-
Average Vehicle Occupancy	1.21	1.19	-
Total Transit Trips	6,842 <sup>(1)</sup>	245,841 <sup>(2)</sup>	-
Transit Percent Mode Share	.32%	2.4%	-

Source: *Cobb County Model Documentation and Users Manual*, prepared for Cobb County Department of Transportation, by Post, Buckley, Schuh & Jernigan, Inc., December 1997.

### 2.14 Cobb COMMUNITY TRANSIT

Cobb Community Transit (CCT) currently provides an efficient, but limited, local bus, express bus, and paratransit system. The system includes 13 local and 2 express routes. The existing fleet includes 53 fixed route buses and 15 paratransit vans. Table 2-7 provides a summary of the key performance characteristics of the CCT system.

**Table 2-7**  
**Existing Characteristics of Cobb Community Transit**

System Characteristics	Base Year 1995 Existing CCT System Performance
Transit Ridership (Weekday) Total Bus	10,200
Transit Ridership (Annual Unlinked Passenger Trips) Total Bus	2,879,504
Weekday Revenue Hours Local/Express Bus	349
Transit Vehicle Fleet Size Local/Express Bus	53
Annual Vehicle Revenue Miles Local/Express Bus	1,714,606
Costs Per Vehicle Revenue Miles Local Bus Express Bus	\$2.74 included above
Costs Per Vehicle Revenue Hours Local Bus Express Bus	\$46.80 included above
Unlinked Passenger Trips Per Vehicle Revenue Hours Local Bus Express Bus	28.70 included in above

Source: *Draft Cobb County Comprehensive Transportation Plan*, Cobb County Department of Transportation, December 1999.

### 2.1.5 Connections To Other Regional Transit Services

Currently, CCT provides connections to the Metropolitan Atlanta Rapid Transit System (MARTA) system along four local routes and two express routes. Three local bus routes and the two express bus routes stop at MARTA stations in downtown Atlanta. The fourth local bus route stops at the MARTA Dunwoody Station. Table 2-8 provides a listing of the links from CCT to MARTA facilities.

**Table 2-8  
CCT Service to MARTA Facilities**

CCT Bus Routes	MARTA Facilities Connecting
Express Route 100	MARTA Civic Center MARTA Peachtree Center MARTA Five Points
Express Route 101	MARTA Civic Center MARTA Peachtree Center MARTA Five Points
Local Route 10	MARTA Arts Center
Local Route 10A	MARTA Arts Center MARTA Civic Center MARTA Peachtree Center MARTA Five Points
Local Route 10B	MARTA Arts Center MARTA Civic Center MARTA Peachtree Center MARTA Five Points
Local Route 60	MARTA Dunwoody Station

### 2.1.6 Atlanta Regional Air Quality Conformity Problem

The federal Clean Air Act Amendments (CAAA) of 1990 mandate that states must meet federal clean air standards to continue to be eligible for federal transportation program funding. Areas not meeting one or more National Ambient Air Quality Standards (NAAQS) were ranked according to the severity of their air pollution problems. Based on recent ARC reporting, thirteen counties in the Atlanta area were classified as a serious ozone nonattainment area for not meeting federal air quality standards.<sup>1</sup>

The Atlanta region ozone problem results from the chemical reaction of nitrogen oxide (NOx) with reactive volatile organic compounds (VOCs) in the presence of an abundance of sunlight. In 1990, the Georgia Environmental Protection Division (EPD) developed a baseline inventory of VOC and NOx for the 13-county area. The inventory recorded the proportional contributions to the ozone problem by mobile and stationary point sources. The inventory shows that mobile source (light-duty vehicles and heavy-duty trucks) contributed 58 percent of the VOCs and 56 percent of the NOx in the emissions inventory.

<sup>1</sup> Atlanta Regional Commission, Transportation Planning Fact Book, December 1998.

A number of Transportation Demand Management (TDM) programs and actions are underway by ARC that may benefit regional air quality by reducing vehicle trips and emissions. These programs include carpooling, transit, bike and pedestrian facilities, alternative work arrangements, and telecommuting. Furthermore, the updated RTP places emphasis on a balanced transportation network to eliminate bottlenecks and inefficiencies in the transportation system, increase transit mode share, and minimize vehicle trips.

The proposed Cobb County transit system conforms to ARC RTP policy direction. The adopted RTP includes a concept Cobb County rail system as a proposed project for funding. The Cobb County rail system project is envisioned to address chronic congestion in the I-75 north corridor within Cobb County and to the north in Cherokee County. The project is expected to directly benefit the ozone problem in the counties directly served by it and the region overall.

### **2.1.7 Identified Transportation System Improvements**

As the designated metropolitan planning organization for the Atlanta Region, ARC must prepare a Transportation Improvement Program (TIP) at least every 2 years in order for agencies to authorize the use of federal transportation funds in the region. The projects included in the TIP are taken from the RTP, which outlines the transportation improvements needed over the next 20 years. The RTP and TIP in the Atlanta region must demonstrate conformance to the air quality standards in the State Implementation Plan (SIP), before adoption by ARC. The ARC adopted the 2001-2003 TIP on March 22, 2000.

In 1985, 1990, and 1994, Cobb County voters passed sales tax referendums that allowed the County to implement TIP projects.

## **2.2 FUTURE TRANSPORTATION SYSTEM PERSPECTIVES**

This section review future transportation system perspectives outlined in the Cobb County Comprehensive Transportation Plan (CCCTP) and the Regional Transportation Plan (RTP).

### **2.2.1 Draft Cobb County Comprehensive Transportation Plan, Forecast Year 2020**

Cobb County conducted planning activities entitled "Future Focus – Transportation 2020" to combat the growing transportation problems facing the county. The activities sought to integrate the county's transportation facilities to create a coordinated, multi-modal system that introduces the use of new transportation technologies in the county.<sup>2</sup> The development of the *Draft Cobb County Comprehensive Transportation Plan* was begun in late 1996 to advance the concepts developed in the "Future Focus" activities and define the preferred transportation system in the county for the year 2020<sup>1</sup>. The study included a detailed analysis of the existing transportation conditions in the county, as well as future growth, to study short-term and long-term transportation improvements. The long range transportation system plan proposed in the

<sup>2</sup> *Cobb County Comprehensive Transportation Plan*, prepared by Barton-Aschman Associates, Inc., dated January 1999, pg. 1-1, 1-2

Comprehensive Plan shifted the focus from increasing highway capacity to developing a multimodal transportation system, with an increased emphasis on public transportation.

The plan evaluated several alternatives for the future transportation system. The preferred alternative that emerged included the development of a fixed-guideway transit (FGT) to serve the Cumberland/Galleria and Town Center areas. The system would provide connectivity to the MARTA Arts Center Station in downtown Atlanta. The alternative also proposed an expansion of the local bus service, with access throughout the county and connections to the FGT. In addition, commuter rail lines, an east-west light rail line, dedicated busways, and pedestrian and bikeway improvements are proposed.

### **2.2.2 Atlanta Regional Transportation Plan, Forecast Year 2025**

The Atlanta Regional Commission (ARC) adopted the *Transportation Solutions for a New Century Document Set* on March 22, 2000. The set contained:

Volume I – 2025 Regional Transportation Plan (RTP)

Volume II – 2001-2003 Transportation Improvement Plan (TIP)

Volume III – Conformity Determination Report – 2025 RTP/2001-2003 TIP

Volume IV – Public Comments & Responses, Addenda

Appendices I-III – Project Listing and Justification

Appendices IV-V – Model Documentation & Output

The development of the RTP was guided by goals developed during ARC's *VISION 2020* planning effort. The RTP development was also guided by federal transportation planning guidance, including the Transportation Efficiency Act for the 21<sup>st</sup> Century (TEA-21).<sup>3</sup> A major focus of the development of the RTP and the TIP was insuring that the plan would bring the region into conformity for air quality. Table 2-9 lists the RTP goals and objectives.

The RTP and TIP provide a dramatic shift in transportation investment policy in the region towards the development of additional transit facilities. The RTP includes a total investment of \$36 billion dollars over 25, years with 55% of those funds for transit projects, including the subject rail extension in Cobb County. Less than 5% of the funds in the RTP are dedicated for new roadway construction. The RTP also provides for the construction of 212 new HOV lane

<sup>3</sup> *Draft Regional Transportation Plan*, prepared by Atlanta Regional Commission, dated January 2000

**Table 2-9**  
**RTP Goals and Objectives**

RTP Goal		Objective
1	Accessibility and mobility for people and goods	Develop intermodal passenger connections and equalize accessibility
		Implement transit/land use changes to support transit/pedestrian development
		Increase the accessibility and mobility options available to people and for freight
		Enhance the integration and connectivity of the transportation system across and between modes for people and freight
2	Attain regional air quality goals	Meet air quality attainment target for NOX = 224
		Meet air quality attainment target for VOC = 132
		Protect and enhance the environment, promote energy conservation and improve quality of life
3	Improve and maintain system performance and system preservation	Improve connections between truck, rail and air freight facilities
		Promote efficient system management and operation
		Emphasize the preservation of the existing transportation system
		Promote energy conservation
4	Protect and improve the environment and the quality of life	Preserve historic resources
		Minimize community and environmental impacts
		Create incentives and regional policies to promote livable cities
		Protect and enhance the environment, promote energy conservation and improve the quality of life
		Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency
		Increase the safety and security of the transportation system for motorized and non-motorized users
		Improve connectivity between low income and minority populations and major employment and activity centers
		Improve social and environmental equity for all the region's citizens

Source: *Draft Regional Transportation Plan*, prepared by Atlanta Regional Commission, dated January 2000, pg. 1-3

miles in the region, as well as expansion of regional bike and pedestrian systems. The TIP provides a \$1.9 billion dollar investment over three years, with 40% of the funds for transit projects. According to the ARC, this will be the first TIP which meets the mobile emissions budget for the region since 1995.

### **2.2.3 Projected Levels of Growth and Development**

The ARC projects that the Atlanta region will continue to experience extraordinary growth in both population and employment between 2000 and 2025. According to the RTP, the population for the 13-county non-attainment area was 2.7 million people in 1990. By 2025, the population in the area is projected to increase by 2.1 million people to 4.8 million people. As shown on Figure 2-3, the rate of population growth in the region far exceeds the rates of growth for the State, and the Country.

The forecasted population growth between 2000 and 2025 for the counties within the region is shown on Table 2-10. The greatest increases in population within the region will occur in Fulton, DeKalb, Gwinnett, and Cobb Counties. The population increase in these counties will account for approximately 67% of the increase in the region. By the year 2025, these counties will contain approximately 74% of the region's population.

More than half of the increase in population is attributed to in-migration due to the continued economic expansion in the area. By 2025, the region's employment is projected to reach 2.8 million, which is an increase of more than 1.3 million since 1990.

The forecasted employment growth between 2000 and 2025 for the counties within the region is shown on Table 2-11. The greatest increases in employment within the region will occur in Fulton, and Cobb Counties.

Figures 2-5 and 2-6 illustrate where growth will occur within Cobb County in terms of population and employment density, respectively. For population and employment, the highest concentration and densities would be in areas directly served by the planned transit systems.

**Table 2-10**  
**Projected Population Growth by Area, 2000-2025**

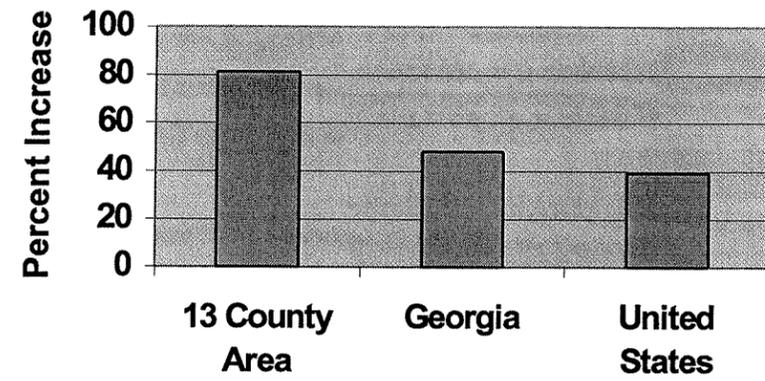
Area	2000 Population	2025 Population	Change 2000-2025
Cherokee	132,260	216,407	84,147
Clayton	209,298	260,313	51,015
Cobb	542,070	711,944	169,874
DeKalb	593,213	831,954	238,741
Douglas	96,274	169,252	72,978
Fayette	91,740	160,135	68,395
Fulton	756,988	1,027,954	270,966
Gwinnett	527,923	720,919	192,996
Henry	113,459	210,741	97,282
Rockdale	71,373	129,353	57,980
Coweta, Forsyth, & Paulding	231,802	374,627	142,825
Totals	3,366,400	4,813,600	1,447,200

Source: *Draft Regional Transportation Plan*, prepared by Atlanta Regional Commission, dated January 2000, pg. 2-4

**Table 2-11**  
**Projected Employment Growth by Area, 2000-2025**

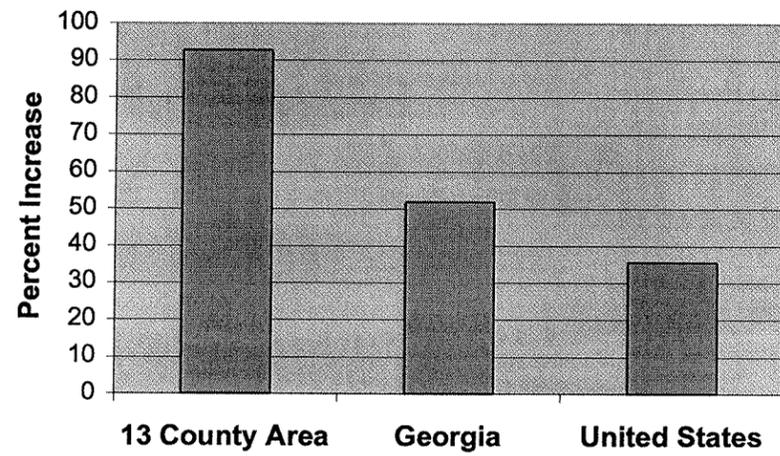
Area	2000 Employment	202 Employment	Change 2000-2025
Cherokee	35,169	82,051	46,882
Clayton	126,134	161,912	35,778
Cobb	287,526	420,512	132,986
DeKalb	343,763	431,566	87,803
Douglas	34,950	62,800	27,850
Fayette	34,637	53,840	19,203
Fulton	673,429	968,757	295,328
Gwinnett	274,245	385,658	111,413
Henry	32,843	61,681	28,838
Rockdale	38,646	61,725	23,079
Coweta, Forsyth, & Paulding	89,744	150,994	59,106
Totals	1,947,000	2,815,300	868,300

Source: *Draft Regional Transportation Plan*, prepared by Atlanta Regional Commission, dated January 2000, pg. 2-4

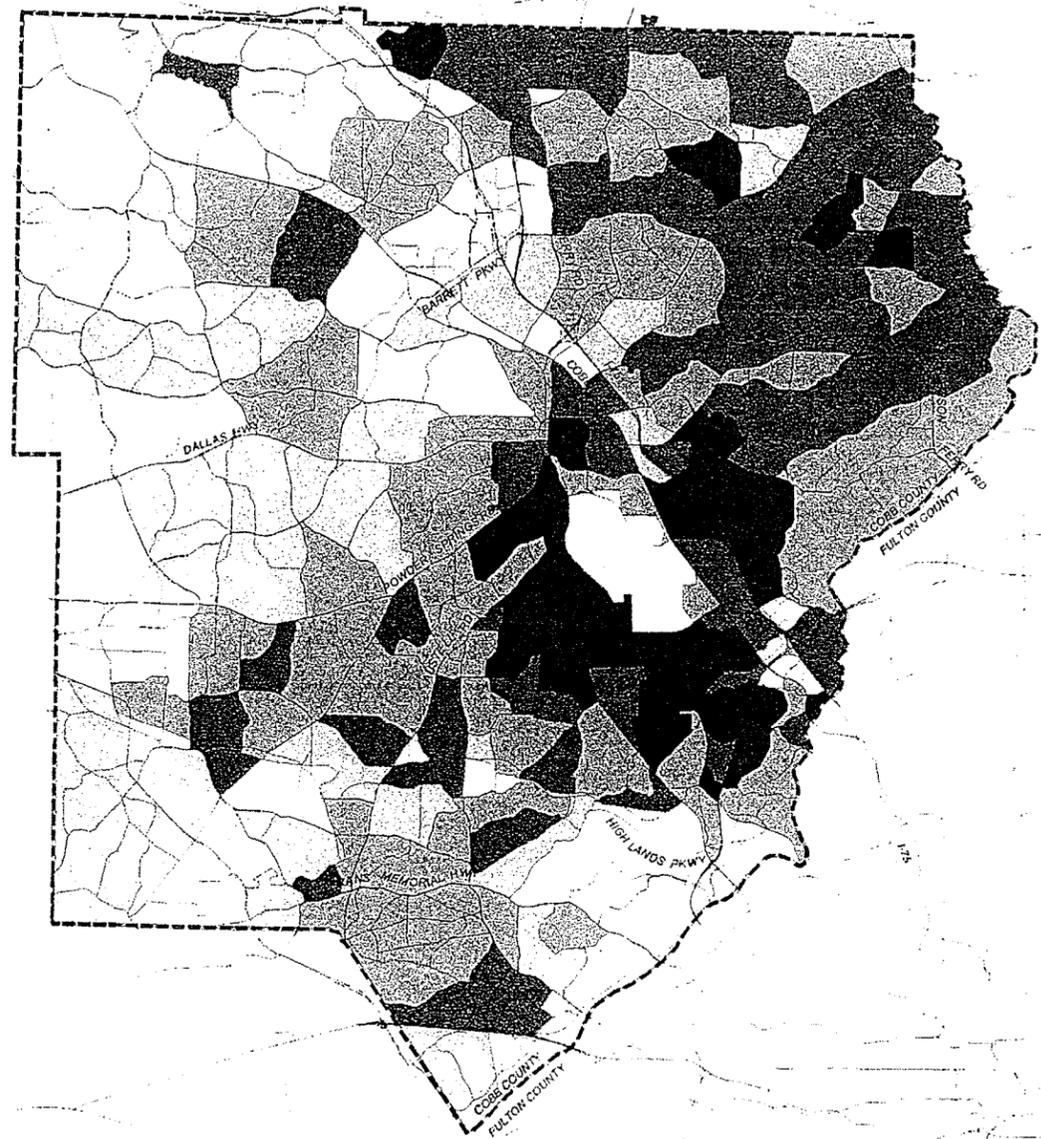


**Figure 2-5 Projected Percentage of Population Growth, 1990-2025**

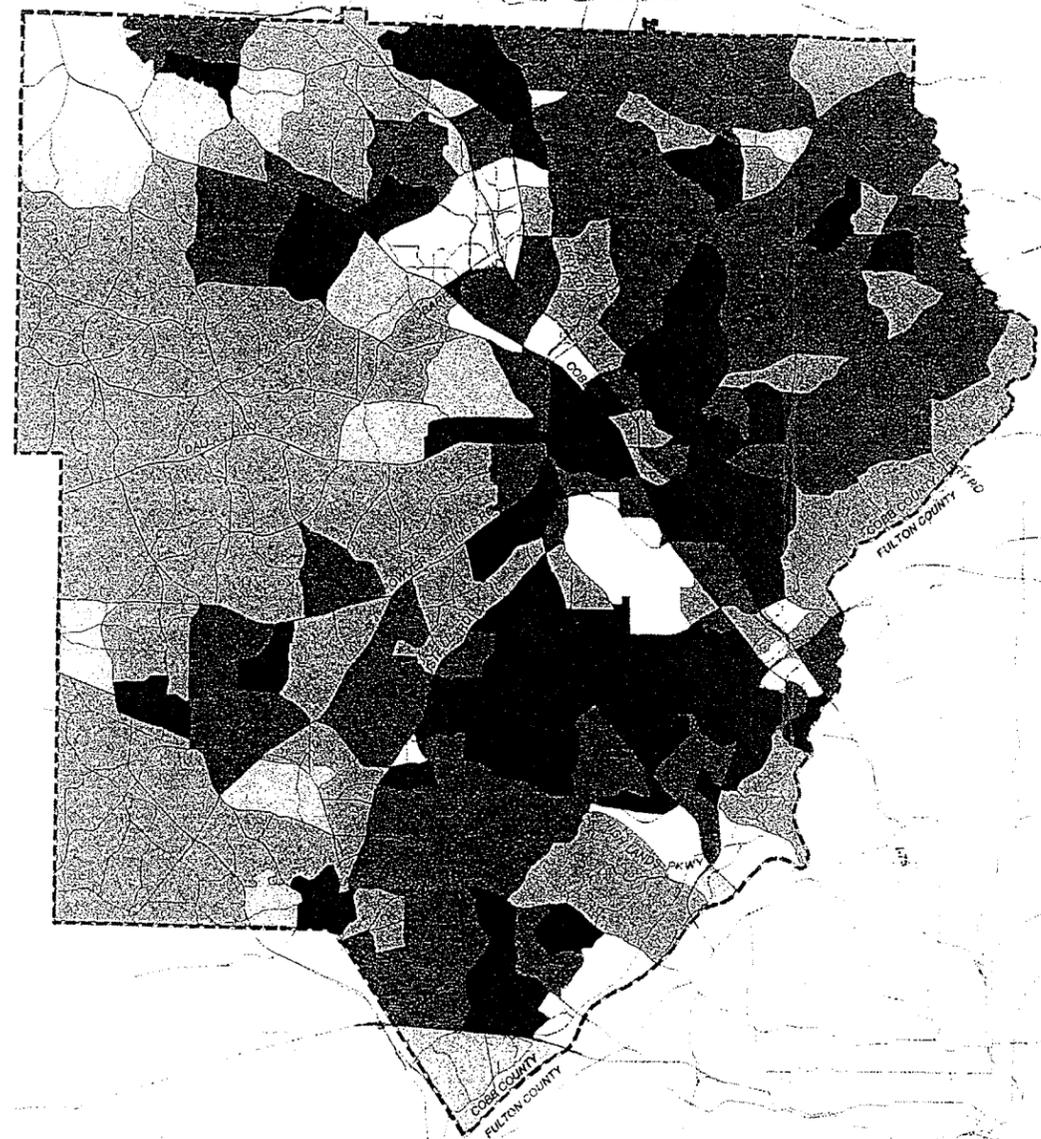
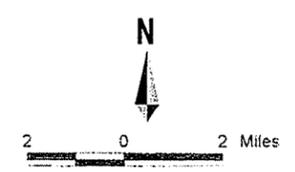
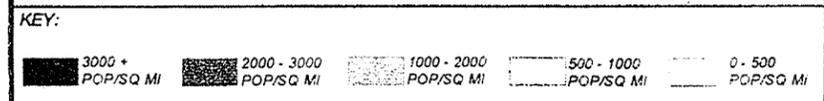
Source: *Draft Regional Transportation Plan*, prepared by Atlanta Regional Commission, dated January 2000, pg. 2-3



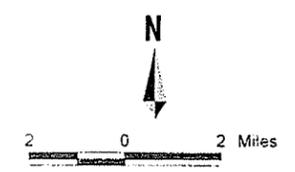
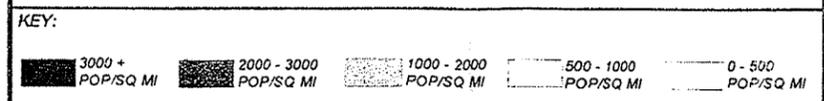
**Figure 2-6 Projected Percentage of Employment Growth, 1990-2025**



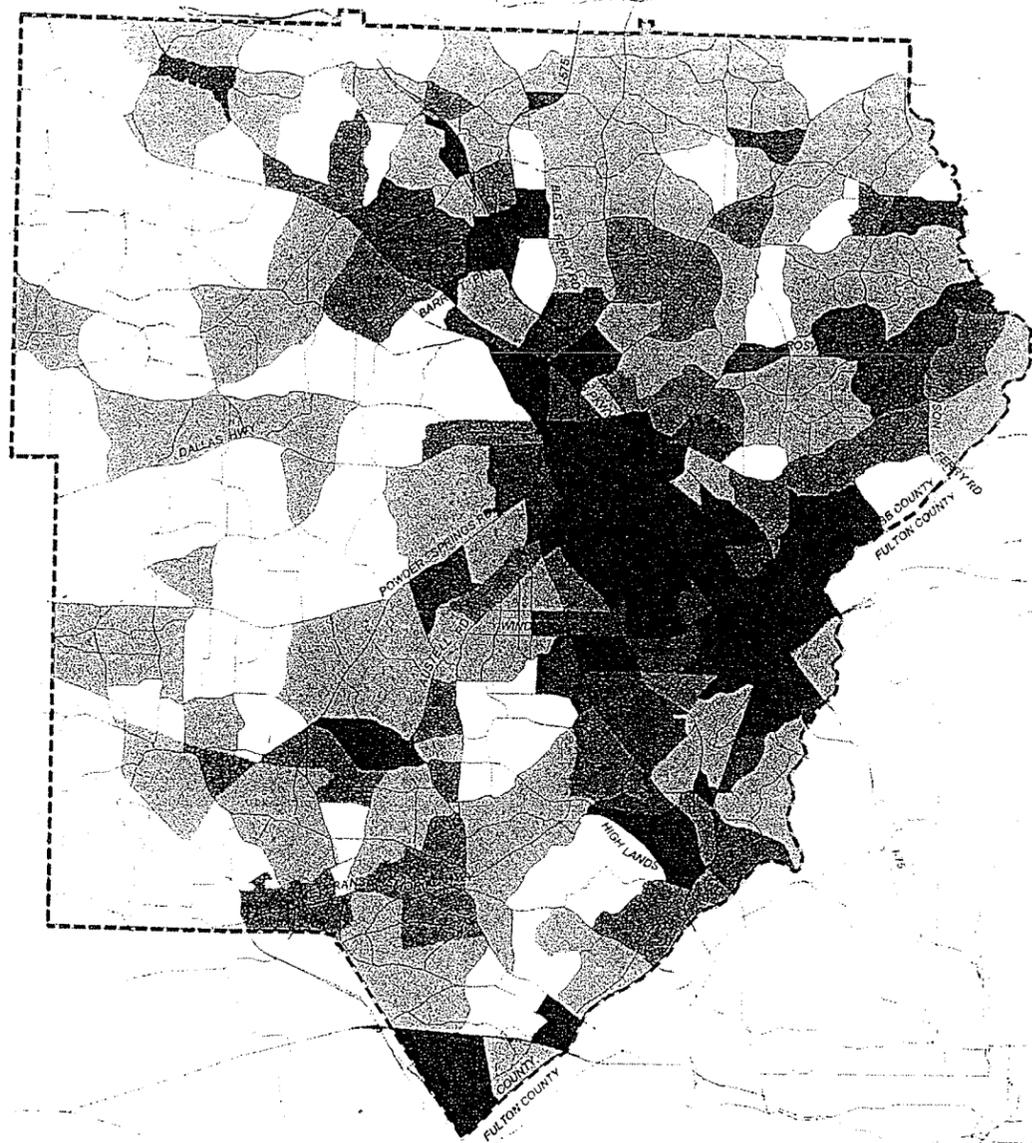
**POPULATION DENSITY 1995**



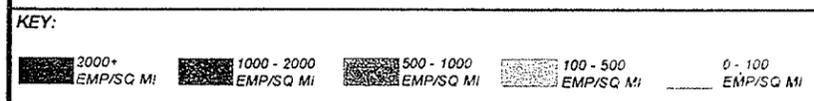
**POPULATION DENSITY 2025**



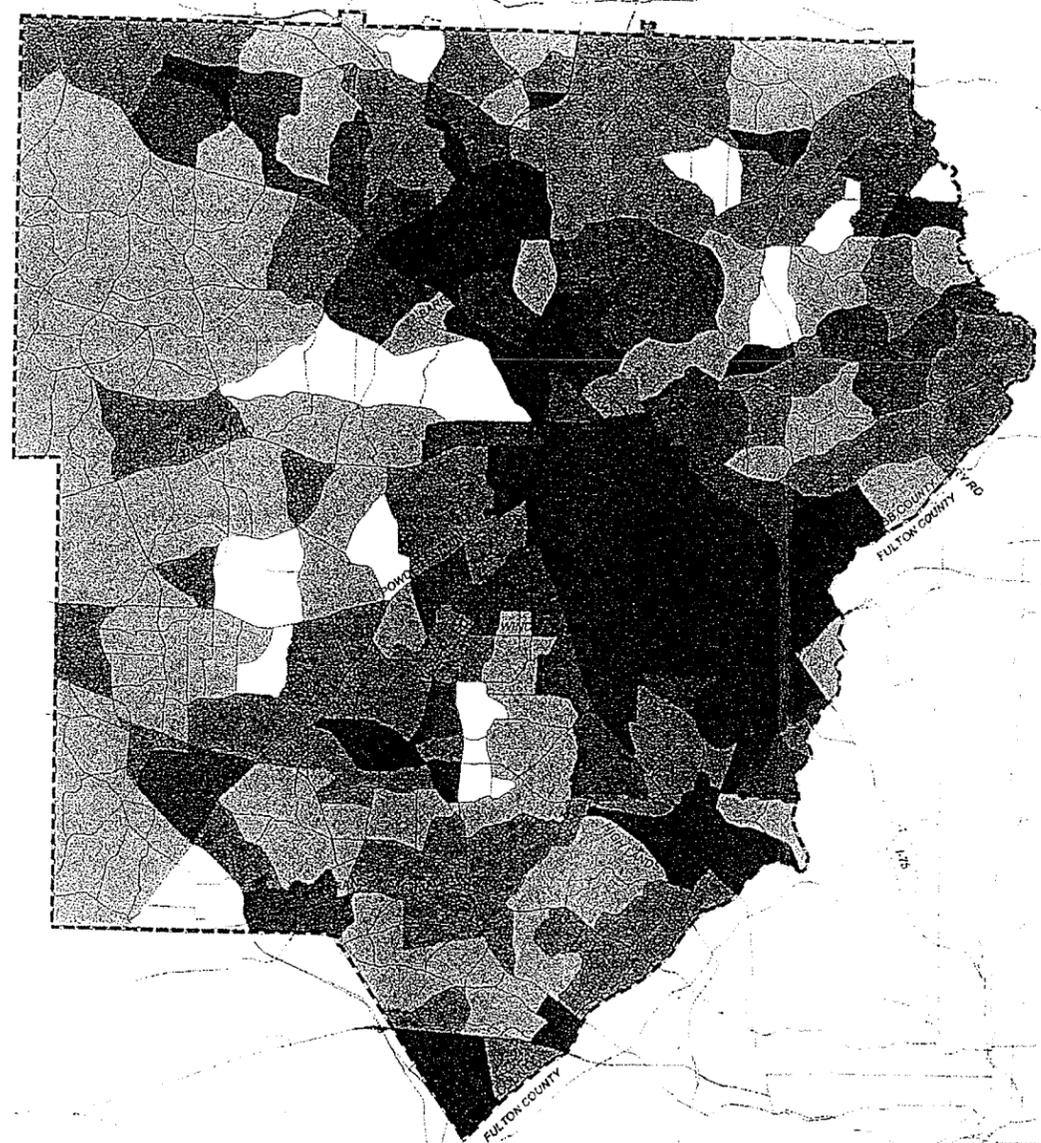
**FIG 2-7 POPULATION DENSITY IN COBB COUNTY, 1995 AND 2025**  
Cobb County Transit Implementation Study



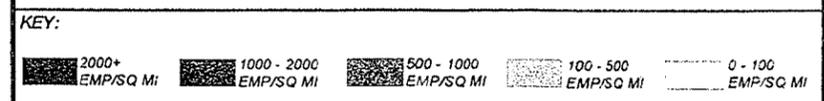
**EMPLOYMENT DENSITY 1995**



2 0 2 Miles



**EMPLOYMENT DENSITY 2025**



2 0 2 Miles

**FIG 2-8 EMPLOYMENT DENSITY IN COBB COUNTY, 1995 AND 2025**  
*Cobb County Transit Implementation Study*

### 2.3 OBJECTIVE BENEFITS OF PROPOSED COBB COUNTY TRANSIT SYSTEMS

The presiding summary of existing transportation conditions and the projection of future conditions clearly shows the need for transportation solutions in the corridor and throughout the Atlanta region. Quality of life and economic stability in the region are at risk if the mobility needs of the population are not strategically addressed.

The focus of the adopted RTP and the local county plan seek multimodal and transit system solutions. Rail and other fixed guideway systems, together with expanded express and local bus services, provide opportunity for development of an integrated transit system with benefits to Cobb County residents and for travelers throughout the region.

Table 2-12 is a summary of the stated objective benefits from the Cobb County transit systems being considered in this study. Following below is a brief discussion of each of these issues.

#### 2.3.1 Serving County and Regional Travel Demand Needs

A principal objective benefit from the proposed transit system is improvement to travel options in Cobb County and I-75 North Corridor. The RTP goal number one is “accessibility and mobility for people and goods.”

The study results present a comparison of three levels of transit system investment in the corridor:

- The “Build Alternative” is the highest level of investment, representing the proposed Trunkline rail system, two area FGT circulators, and expanded countywide bus services.
- The “TSM<sup>4</sup> Alternative” would include the expanded countywide bus system and express buses on the I-75 corridor, without the rail systems.
- The “No Build Alternative” represents a modest expansion of the existing Cobb Community Transit service to serve areas not currently served.

By comparing the travel demand characteristics of each alternative, the evaluation presents the benefits and impacts of meeting county and regional travel demand needs in the corridor under different investment policies.

#### 2.3.2 Supporting Existing and Future Land Use

This objective benefit from the proposed transit system is already considered in the regional planning process and demographic forecasts, which take into consideration the improvement in accessibility resulting from the Cobb County transit systems. These regional demographic forecasts prepared by ARC are a direct input to the travel demand forecasts prepared for the alternatives evaluated in this study.

<sup>4</sup> TSM stands for Transportation System Management and refers to transportation solutions relying on cost-effective existing technology and services. Generally, for transit the TSM Alternative relies principally on buses, express buses and HOV lanes.

**Table 2-12**  
**Objective Benefits of Proposed Cobb County Transit Systems**

Objective	Within Cobb County	To Region
Serving County and Regional Travel Demand Needs	<ul style="list-style-type: none"> <li>▪ Reduce peak congestion</li> <li>▪ Less travel time between major activity centers</li> <li>▪ Transit now available to choice markets</li> <li>▪ Offset need for roadway expansion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Link county to mid-town Atlanta</li> <li>▪ Diversion of auto traffic to rail transit users, reduces though traffic congestion</li> <li>▪ Less travel time to center during peak travel conditions</li> </ul>
Supporting Existing and Future Land Use	<ul style="list-style-type: none"> <li>▪ Permit planned growth to occur in CIDs</li> <li>▪ Reduce bottleneck conditions within CIDs</li> <li>▪ Allow for strategic densification</li> <li>▪ Integration of transit/pedestrian oriented development</li> </ul>	<ul style="list-style-type: none"> <li>▪ Allow Cobb County to absorb share of regional growth</li> <li>▪ Reduce sprawl to other areas within region</li> <li>▪ Help solidify Cobb CIDs as functioning business centers, important in hierarchy of regional development</li> </ul>
Environmental Benefits to Regional Air Quality	<ul style="list-style-type: none"> <li>▪ Reduction in auto trips within county</li> <li>▪ Support regional air quality goals</li> </ul>	<ul style="list-style-type: none"> <li>▪ Integration with regional transit systems, reduces auto trips throughout region</li> </ul>
Transportation Efficiency and Equity	<ul style="list-style-type: none"> <li>▪ Transit service made available to minority and transit dependent populations</li> <li>▪ Directly links job sites within county</li> </ul>	<ul style="list-style-type: none"> <li>▪ Link to job sites and populations within region by expanded transit services</li> <li>▪ Part of balanced multi-modal transportation system</li> </ul>
Growth and Quality of Life Factors	<ul style="list-style-type: none"> <li>▪ Balanced transportation system creates opportunity for sustainable communities</li> <li>▪ Pedestrian and transit oriented development shown to create healthy and prosperous environments</li> </ul>	<ul style="list-style-type: none"> <li>▪ Opportunity for regional growth absorption with minimal detrimental effects of sprawl</li> </ul>

Measures of travel time and mode share are key indicators of how well new development areas are served by the proposed transit systems.

### 2.3.3 Environmental Benefits to Regional Air Quality

Goal number two of the RTP is “attain regional air quality goals”. The air quality conformity issue threatens to stall all new transportation improvement projects and, if the proposed plans fail to show significant potential to reduce mobile source emissions, development could also be stalled.

The use of the Cobb County Transportation Model, a focused version of the regional model, allows for region-wide computation of travel speeds, vehicle trips and other inputs to the regional air quality conformity measures. At a regional level the study can address these

important issues using the ARC emission factors. The computation of regional emissions for study alternatives shows the direct benefits to be derived from the proposed transit systems.

### **2.3.4 Transportation Efficiency and Equity**

The objective benefit seeking transportation efficiency and equity falls under the RTP goal to “protect and improve the environment and the quality of life”. How the proposed transit systems improves connectivity between low-income and minority populations and major employment and activity centers is assessed.

For the study, the evaluation directly addresses these issues early on through identifying the countywide bus system that feeds the Trunkline rail stations and FGT circulators. Special attention was given to areas of low to moderate income and minority populations. In the analysis of the project alternatives, results also directly address how well the service benefits these areas within the county.

### **2.3.5 Growth and Quality of Life Factors**

The study is evaluating the projected growth in the corridor that may be induced or directly supported through implementation of the Cobb County transit systems. Through direct interaction with developers in the corridor, project planners are identifying detail changes in the form and composition of proposed development plans that may fully integrate with the transit system. These changes hold the potential to transform contemporary suburban complexes into more vibrant traditional mixed-use districts.

Improved pedestrian systems, planned open spaces and reduced vehicular traffic all can result from the integrated planning of the transit system and future development along the corridor.

**Section 3**  
**Alternatives Considered in**  
**Cobb Transit Project Planning**

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## Section 3

# Alternatives Considered in Cobb County Transit Project Planning

This section presents a summary of the alternatives prepared in the transportation impact analysis and travel demand forecasts. First, information is presented highlighting the guidance provided by the Federal Transit Administration (FTA). Then, following sections present the Build, TSM and No Build Alternatives considered in the study.

The team is conducting the study with intention to ready the project for federal funding eligibility. Particular focus is on the “New Starts<sup>1</sup>” funding program and specific systems planning requirements. The alternatives considered in this study place focus on comparing the project alternative called the “Build Alternative,” against two other less capital intensive future alternatives, called the “TSM” and “No Build” alternatives. Each of these alternatives represent potential investments in Cobb County and regional transit systems, and are defined and represented in the planning analysis in a format consistent with the direction and definitions provided by FTA.

The results of the careful approach taken in the study to define the alternatives and the technical methods used to forecast results, is considered a “Pre-Alternatives Analysis” for the portion of the transit system and corridor in Cobb County. The intent is to further refine the alternatives considered in this study during the immediate next step of project implementation. The formal federal “Alternatives Analysis” is conducted for the entire project corridor from Arts Center to Town Center.

### 3.1 FEDERAL TRANSIT ADMINISTRATION GUIDANCE

The FTA has established an evolving process for assisting local agencies and evaluating projects eligible for Major Transit Capital Investments (New Starts)<sup>2</sup>. Project evaluation criteria includes two categories:

- Project Justification
- Local Financial Commitment

The focus of this report is on developing information that addresses the project justification criteria. Reports 3 and 4 of this study address the local financial commitment criteria.

#### 3.1.1 Goals and Objectives for Transportation Improvements

As stated in the Technical Guidance on Section 5309 New Starts draft report:

“...criteria provide FTA with a consistent framework for evaluating, rating, and recommending major transit investments for Federal discretionary funding under the Section 5309 New Starts program.”

<sup>1</sup> Federal Transit Administration, Technical Guidance on Section 5309 New Starts Criteria, draft report, July 1999.

<sup>2</sup> Federal Transit Administration, Notice of Proposed Rulemaking (NPRM), Appendix A: April 7, 1999 (Volume 64, Number 66) Federal Register Notice Pages 17061- 17071.

Although the New Starts program has over 190 potential projects potentially eligible for funding, the amount of authorized funding currently is considered much less than demand for major transit investment funding. Therefore, project justification and local financial commitment criteria are critical to the FTA's "means of comparing at a national level the relative merits of those projects in the New Start pipeline at any given time".

The FTA guidance report also states that the New Starts criteria for rating potential transit investments are distinct from local evaluation criteria used to select preferred investment strategies. At the local level, investment strategies should result from developing goal and objectives for a specific corridor or sub-area of study. As further stated by FTA: "these goals and objectives reflect the specific transportation problems a local agency is attempting to solve, and the measures of effectiveness are used to evaluate the extent to which each transportation improvement alternative under study can achieve the established goals and objectives".

The Cobb County transit systems being evaluated and further defined in this study, as stated in Section 1, evolved from a comprehensive local transportation planning process. First, the Cobb County Comprehensive Transportation Plan, evaluated the proposed transit system projects and recommended their inclusion in the ARC RTP update. As part of the RTP update, the Cobb Transit projects were further considered against the goals, objectives, and performance measures in the plan evaluation. As part of the I-75 North Corridor area, the Trunkline rail system and Cumberland area circulator were found to contribute significantly to the plan meeting performance measures specified in the analysis.

In this study, the evaluation now takes the next steps in project development by beginning to apply the federal evaluation criteria to prepare the study for the project justification and local financial commitment criteria.

### 3.1.2 Project Justification Criteria

Table 3-1 presents a summary of the project justification criteria and data worksheets required for evaluation by the FTA New Starts program. It is the intention of this study to prepare a preliminary completion of these required data. In order to prepare these project evaluation worksheets, it is implicitly required that the evaluation is based on a comparison of a defined Build Alternative, with results compared against two other baselines, namely the TSM and No Build Alternatives.

**Table 3-1**  
**FTA New Starts Information Guidance**  
**Evaluation Measures for New Start Projects**

Reporting Item
<b>General</b>
Project Description Worksheet
Project Maps
Certification of Technical Assumptions
<b>Mobility Improvements</b>
Travel Time Savings Worksheet
Low Income Households Served Worksheet
<b>Environmental Benefits</b>
Change in Criteria Pollutant and Precursor Emissions Worksheet
Change in Criteria Pollutant and Precursor Emissions Supplemental Worksheet
Change in Greenhouse Gas Emissions Worksheet
Change in Regional Energy Consumption Worksheet
Current Regional Air Quality Designation
<b>Operating Efficiencies</b>
Change in Operating Cost per Passenger Mile Worksheet
<b>Cost Effectiveness</b>
Incremental Cost per Incremental Passenger Worksheet
Incremental Cost per Incremental Passenger Supplemental Worksheet
<b>Other Factors</b>
Other Factors, as appropriate
<b>Transit Supportive Existing Land Use and Future Patterns</b>
Land Use Documentation and Supporting Information
Quantitative Land Use Data Worksheet
Additional Supporting Documentation
<b>Local Financial Commitment</b>
Project Finance Worksheet
Additional Supporting Documentation

FTA provides the following definition for preparation of the study alternatives<sup>3</sup>:

- Assuming identical highway and transit networks outside the corridor for the No Build, the TSM, and the Build Alternatives for the travel demand forecasts;
- Defining the Build Alternative as the project for which we are seeking FTA New Starts funding ;
- Developing ridership forecasts for the New Starts project that are based on the same set of growth forecasts and land use assumptions that are used to estimate ridership for the No Build and TSM alternatives;
- Allocating the population and employment growth on the basis of locally-adopted land use plans;
- Analyzing the Build, TSM and No Build Alternatives within the same basic policy setting, (i.e., the model assumptions, parameters, and inputs are the same for all alternatives except for changes in the transportation network or other data that are directly attributable to each alternative.)
- Reporting the New Starts criteria and specific measures only for the Section 5309 New Starts transit investment and not for the complete build alternative.

Applying these FTA guidelines, the study team defined and prepared Build, TSM and No Build alternatives, developed ridership forecasts based on regional growth plans, analyzed the results using consistent methods, and prepared the results presented in this report.

### 3.1.3 Organizing Technical Data

The technical forecasts and data prepared under Work Element 2 comprise a beginning database of reliable technical information necessary to complete the FTA project justification and local financial commitment worksheets. Beyond providing input to the completion of these FTA worksheets, the information feeds a number of other study objectives, including physical planning, conceptual engineering, revenue forecasting, technology assessment and operations planning.

### 3.1.4 Meeting Federal Requirements

The technical information prepared in this study, while extensive, is incomplete until a study of the portion of the proposed rail system from the south Cobb County line to the Arts Center in midtown Atlanta is completed to the same level of detail. The definition and analysis of the Build, TSM and No Build Alternatives as prepared in this study will offer a good starting point for completion of the whole corridor assessment during the formal Alternatives Analysis to follow in the next steps of implementation.

<sup>3</sup> Technical Guidance on Section 5309, page 30, July 1999.

## 3.2 STUDY ALTERNATIVES

A series of workshop meetings were held in November 1999, with participation of the consultants and staff from Cobb County Department of Transportation, and Cobb Community Transit. The study team evaluated basic assumptions, transit network and service features, and other issues related to defining three transit system alternatives. The Build and TSM Alternatives were influenced significantly from work prepared for the recent Cobb County Comprehensive Transportation Plan

The sections below discuss the details of the Build, TSM and No Build Alternatives, respectively.

### 3.2.1 Transit System Assumptions

The Build Alternative represents the highest level of funding for transit systems in Cobb County in the year 2025. As with all three alternatives considered in this study, the regional network outside Cobb County is the same, and includes all transit and highways system expansions represented in the RTP.

Within Cobb County, the Build Alternative represents the closest match to the RTP, however, with some refinements or differences to the stations, alignments and service frequency for the proposed Cobb County Transit systems.

#### 3.2.1.1 Basic Transit System Assumptions - Build Alternative

The Build Alternative represents a high-investment transit system, comprising fixed rail, buses and park-and-ride facilities. The policy represented in the Build Alternative is directly consistent with the multi-modal focus implicit in the RTP, and the focus of recent Cobb County comprehensive transportation planning.

As input to definition of the Build Alternative, the team prepared preliminary functional objectives and performance characteristics for fixed guideway systems for Cobb County. These criteria evolved from the concepts developed for the county plan and concept engineering underway in this study.

The *functional objectives* of the Trunkline system include:

- Provide fast, convenient, frequent, and comfortable rapid transit service between the Town Center and Cumberland CIDs, with connection to midtown Atlanta
- Intercept vehicular traffic at strategically located park/ride facilities and deliver passengers close to their final destinations
- Reduce vehicular traffic on I-75, Cobb Parkway, and other parallel roads, thus improving traffic flows and air quality in the region
- Act as a catalyst for intensive and dense commercial and office developments along the entire Trunkline corridor, and particularly at park/ride stations

The *performance characteristics* of the Trunkline system, include:

- Completely grade separated and segregated system
- Frequent service at not less than 7.5 minutes during peak periods and 15 minutes during off-peak periods
- Vehicles and stations compatible with ADA requirements
- Adequate park/ride, kiss/ride, bus transfer, pedestrian access, and circulation facilities at all stations
- Intersect each of the CID Circulators at least at one common station

The *functional objectives* of the Circulators, include:

- Intercept vehicular traffic at strategically located park/ride facilities at the peripheries of the CID's and transport passengers safely and close to their final destinations
- Promote the safe and quick personal movements between individual employment and activity centers within the CID's
- Facilitate the personal movements between major activity centers within the CID's, park/ride facilities and the Trunkline Connector
- Reduce traffic/pedestrian activities throughout the CID's to help promote a safer and cleaner environment
- Act as a catalyst for the development of contiguous and dense commercial/business facilities, afforded by reduced need for parking and the availability of high capacity people moving facility

The *performance characteristics* of the Circulators, include:

- Completely grade separated and segregated from vehicular and pedestrian traffic
- Frequent service at not more than 3 minutes during peak periods and 10 minutes during off peak periods
- Vehicles and stations conform to ADA requirements
- Stations spaced at no more than one-half mile intervals
- One level transfer to Trunkline Connector stations

Each of these functional objectives and performance characteristics to the extent possible were addressed in the preparation of the model representation of the transit systems included under the Build Alternative.

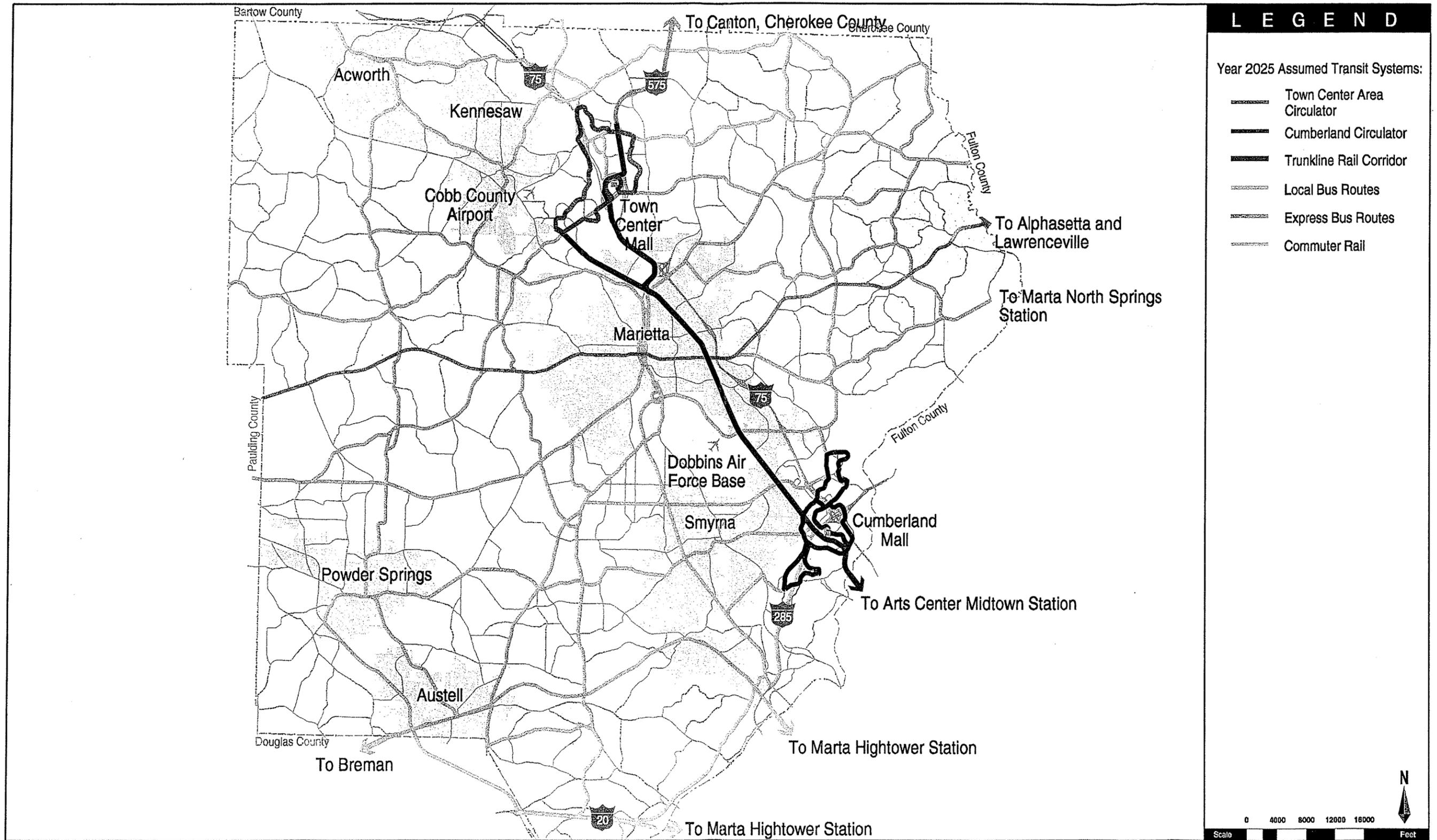
The Build Alternative represents the following basic assumptions:

- *The Regional Transportation System* – the Build Alternative, and all other alternatives considered in this study, assume that transportation systems outside Cobb County will develop as proposed in the RTP, including expansion of HOV lanes throughout the region, and along the entire length of I-75 in Cobb County; development of a mature rail network including MARTA extensions, Commuter Rail, and light rail systems; expansion

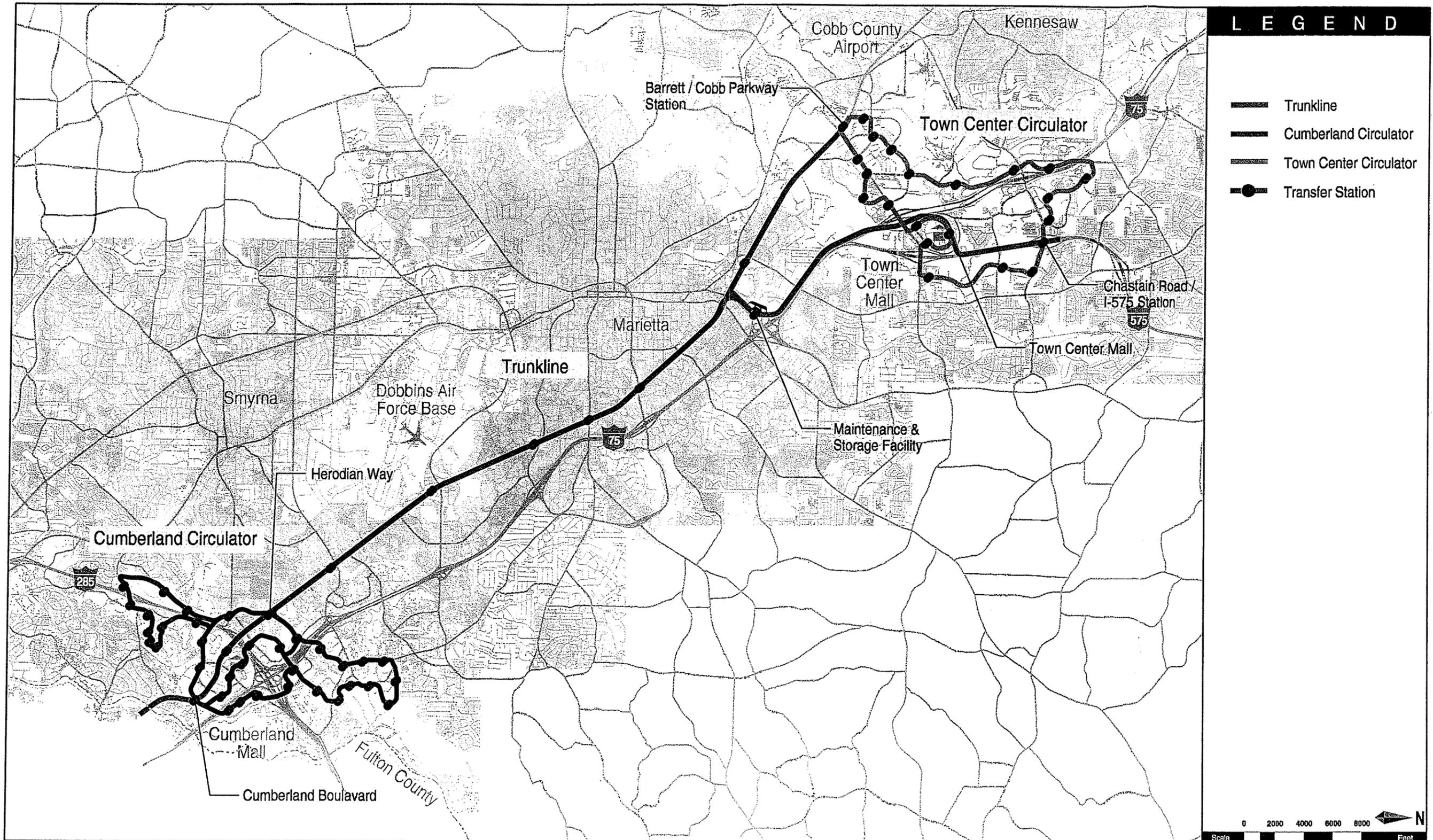
of bus service throughout the region, and to all suburban counties; and expansion of park-and-ride facilities and transfer stations.

- *Cobb County Fixed Guideway System* – the Build Alternative represents a Trunkline light rail system as proposed in the RTP, with differences in alignment, stations, service frequency and technology, based on current physical planning underway in Work Element 3 of this study. In addition to the Trunkline rail system, two area fixed guideway circulators are assumed: the Cumberland Area Circulator and the Town Center Area Circulator. The RTP assumes only the Cumberland Area Circulator by year 2025. The basic framework of the RTP proposed transit system, is however assumed in the Build Alternative, with the Trunkline serving the travel market from the Town Center area south to the Midtown Atlanta MARTA Station. The two area circulators would have transfer stations at key stations along the Trunkline rail system, and to be served by other transit services.
- *Express Bus System* – the Build Alternative represented in the study, reduces the express bus system assumed in the RTP. Given the high investment in the assumed Trunkline fixed guideway system, express buses running along I-75 in the planned HOV lanes to downtown Atlanta are considered replaced by the Trunkline rail service, which provides a higher level of frequency and reduces travel time to Midtown Atlanta. Two express bus services are included in the Build Alternative, namely a Cherokee County express bus service to the north terminal station along the Trunkline at the Chastain Road Station; and an express bus service serving along GA-120 and Northpointe Parkway in Cobb County and other facilities outside Cobb County, connecting West Cobb with Alpharetta in Fulton County, and Lawrenceville in Gwinnett County. This east-west corridor is currently under study for consideration of a rail service, however, since it is not included in the RTP, an express bus service is assumed in the Build Alternative.
- *Local Bus System* – the Build Alternative represents a countywide expansion of the Cobb Community Transit System, providing service to virtually all population and employment areas in the county, and along all major travel corridors. The expanded countywide bus system would link east-west transit service, with planned transfer stations along the north-south Trunkline rail system. It is assumed that if the local bus service is customized to provide a high and accessible level of service, that a portion of the travel market will use the bus service to access the connecting rail service.
- *Park-and-Ride/Multimodal Stations* –the Build Alternative represents assumed Park-and-Ride (PNR) and Multimodal Station transfer facilities. The PNR facilities are assumed in various locations throughout the county, at major highway intersections and key city locations. The Multimodal Stations are located at stations along the Trunkline rail system.

Figure 3-1 shows the Build Alternative for Cobb County Transit Systems. Figure 3-2 shows the Build Alternative Fixed Guideway System Elements.

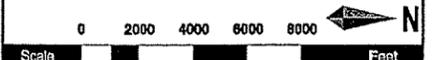


**FIGURE 3-1 BUILD ALTERNATIVE FOR COBB COUNTY TRANSIT SYSTEM**



**LEGEND**

-  Trunkline
-  Cumberland Circulator
-  Town Center Circulator
-  Transfer Station



**FIGURE 3-2 BUILD ALTERNATIVE - FIXED GUIDEWAY SYSTEM ELEMENTS**  
 Cobb County Transit Implementation Study

**3.2.12 Basic Transit System Assumptions – TSM Alternative**

The TSM Alternative represents a mid-level investment transit system, replacing the Build Alternative proposed fixed rail, with express buses and park-and-ride facilities. The policy represented in the TSM Alternative represents a less capital intensive future than proposed for Cobb County in the RTP. Essentially all the other elements of the Build Alternative are represented in the TSM Alternative, except for deletion of the fixed guideway systems, and expansion of express bus service.

The TSM Alternative represents the following basic assumptions:

- *The Regional Transportation System* – the TSM Alternative, and all other alternatives considered in this study, assume that transportation systems outside Cobb County will develop as proposed in the RTP, including expansion of HOV lanes throughout the region, and along the entire length of I-75 in Cobb County; development of a mature rail network including MARTA extensions, Commuter Rail, and light rail systems; expansion of bus service throughout the region, and to all suburban counties; and expansion of park-and-ride facilities and transfer stations.
- *Cobb County Fixed Guideway System* – the TSM Alternative assumes no fixed guideway transit systems in Cobb County.
- *Express Bus System* – the TSM Alternative represented in the study, replaces the proposed fixed guideway rail system in the Build Alternative. Express buses running along I-75 would take advantage of the planned HOV lanes to downtown and Midtown Atlanta. Express bus services in the TSM Alternative, include a Cherokee County express bus service to the Town Center Mall area, with a connecting service to Atlanta. Express bus service is also provided linking the Marietta Transfer Center, the Cumberland Transfer Center, and Midtown Atlanta. As with the Build Alternative, the TSM Alternative assumes express bus service along GA-120 and Northpointe Parkway in Cobb County, and other facilities outside Cobb County, connecting West Cobb with Alpharetta in Fulton County, and Lawrenceville in Gwinnett County. This east-west corridor is currently under separate study for future implementation of a light rail line; however, since it is not included in the RTP, rather an express bus service is assumed in the both the TSM and Build Alternatives.
- *Local Bus System* – the TSM Alternative is identical to the Build Alternative in representing the same countywide expansion of the Cobb Community Transit System, providing service to virtually all population and employment areas in the county, and along all major travel corridors. The expanded countywide bus system would link east-west transit service, with planned transfer stations along the north-south Trunkline rail system. It is assumed that if the local bus service is customized to provide a high and accessible level of service, that a portion of the travel market will use the bus service to access the connecting rail service.

- *Park-and-Ride/Multimodal Stations*: the TSM Alternative is identical to the Build Alternative, and represents the same assumed Park-and-Ride (PNR) and Multimodal Station transfer facilities. The PNR facilities are assumed in various locations throughout the county, at major highway intersections and key city locations. The Multimodal Stations are located at stations along the Trunkline rail system.

Figure 3-3 depicts the TSM Alternative for Cobb County Transportation.

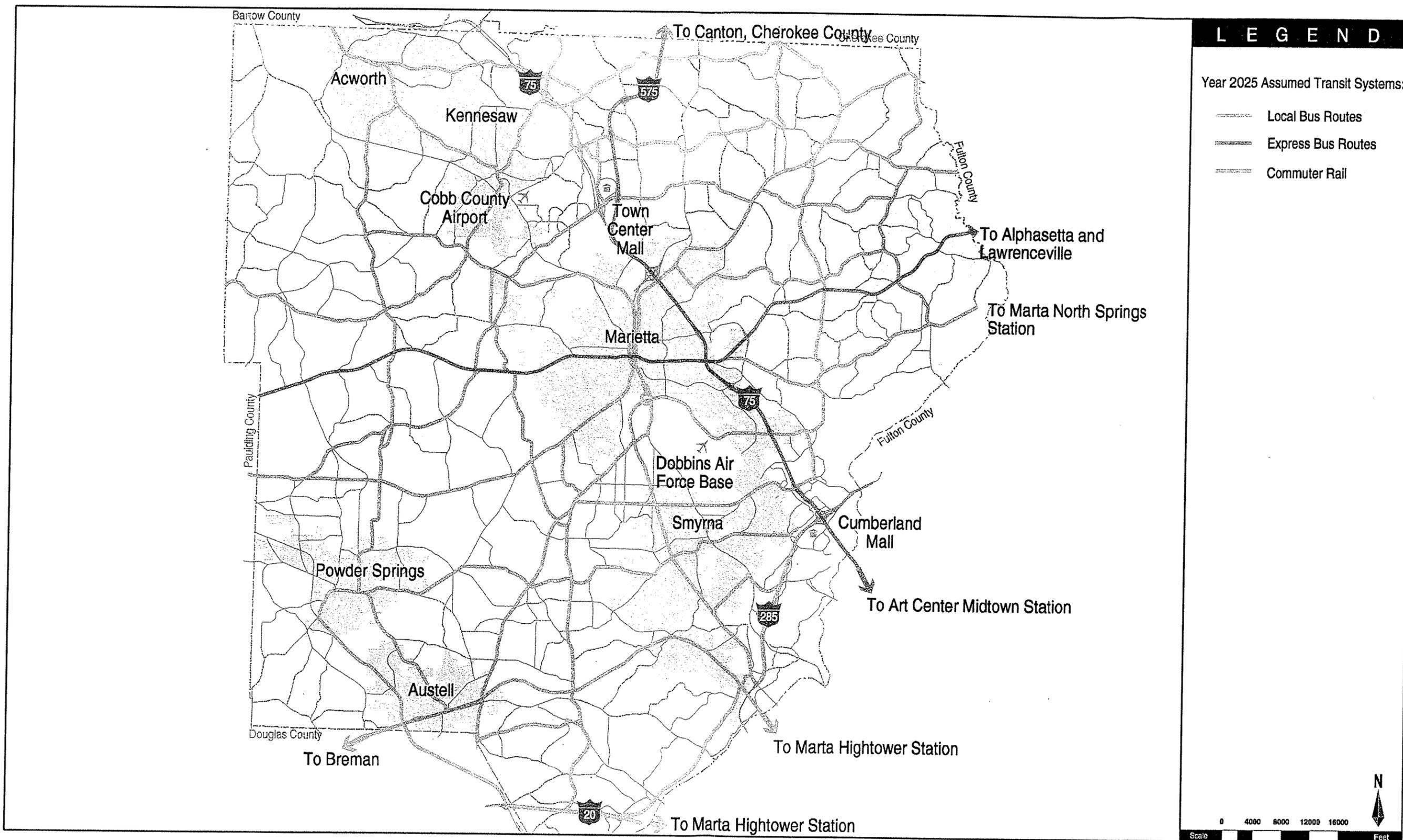
### **3.2.13 Basic Transit System Assumptions – No Build Alternative**

The No Build Alternative represents a low-level investment transit system, on the basis of expansion of the current CCT service. The policy represented in the No Build Alternative, is a much less capital intensive transit system than proposed for Cobb County in the RTP.

In some studies, the No Build Alternative is essentially the existing transit system assumed in the future. For this study, however, the study team identified a No Build Alternative that logically expands upon the current CCT service to address growth in population and employment.

The No Build Alternative represents the following basic assumptions:

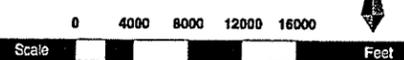
- *The Regional Transportation System* – the No Build Alternative, and all other alternatives considered in this study, assume that transportation systems outside Cobb County will develop as proposed in the RTP, including expansion of HOV lanes throughout the region, and along the entire length of I-75 in Cobb County; development of a mature rail network including MARTA extensions, Commuter Rail, and light rail systems; expansion of bus service throughout the region, and to all suburban counties; and expansion of park-and-ride facilities and transfer stations.
- *Cobb County Fixed Guideway System* – the No Build Alternative assumes no fixed guideway transit systems in Cobb County.
- *Express Bus System* – the No Build Alternative represented in the study, replaces the proposed fixed guideway rail system in the Build Alternative. Existing express bus service, running along I-75 would take advantage of the planned HOV lanes to downtown and Midtown Atlanta. Express bus services in the No Build Alternative, include a Cherokee County express bus service to the Town Center Mall area, with a connecting service to Atlanta. Express bus service is also provided linking the Marietta Transfer Center, the Cumberland Transfer Center, and Midtown Atlanta.
- *Local Bus System* – the No Build Alternative is considered a strategic expansion of the current CCT bus system. New express and local service is added to reinforce the basic backbone system that exists today. The express routes would focus on extending new Cobb County direct service and connections to MARTA stations at Six Flags, North Springs, Arts Center and Dunwoody. In contrast to the local system proposed for the Build and TSM Alternatives, orientation in the No Build Alternative is direct service to



**LEGEND**

Year 2025 Assumed Transit Systems:

-  Local Bus Routes
-  Express Bus Routes
-  Commuter Rail



**FIGURE 3-3 TSM ALTERNATIVE FOR COBB COUNTY TRANSIT SYSTEM**

*Cobb County Transit Implementation Study*

locations outside the county, rather than transfers to a high frequency north-south corridor service provided by rail or express buses. Within the county new local service remains oriented to connections to/from the existing Marietta Bus Transfer Center and the Cumberland Bus Transfer Center.

- *Park-and-Ride/Multimodal Stations* – the No Build Alternative assumes no new PNR or Multimodal Station facilities, but rather expansion of the current facilities to accommodate more bus transfer activity.

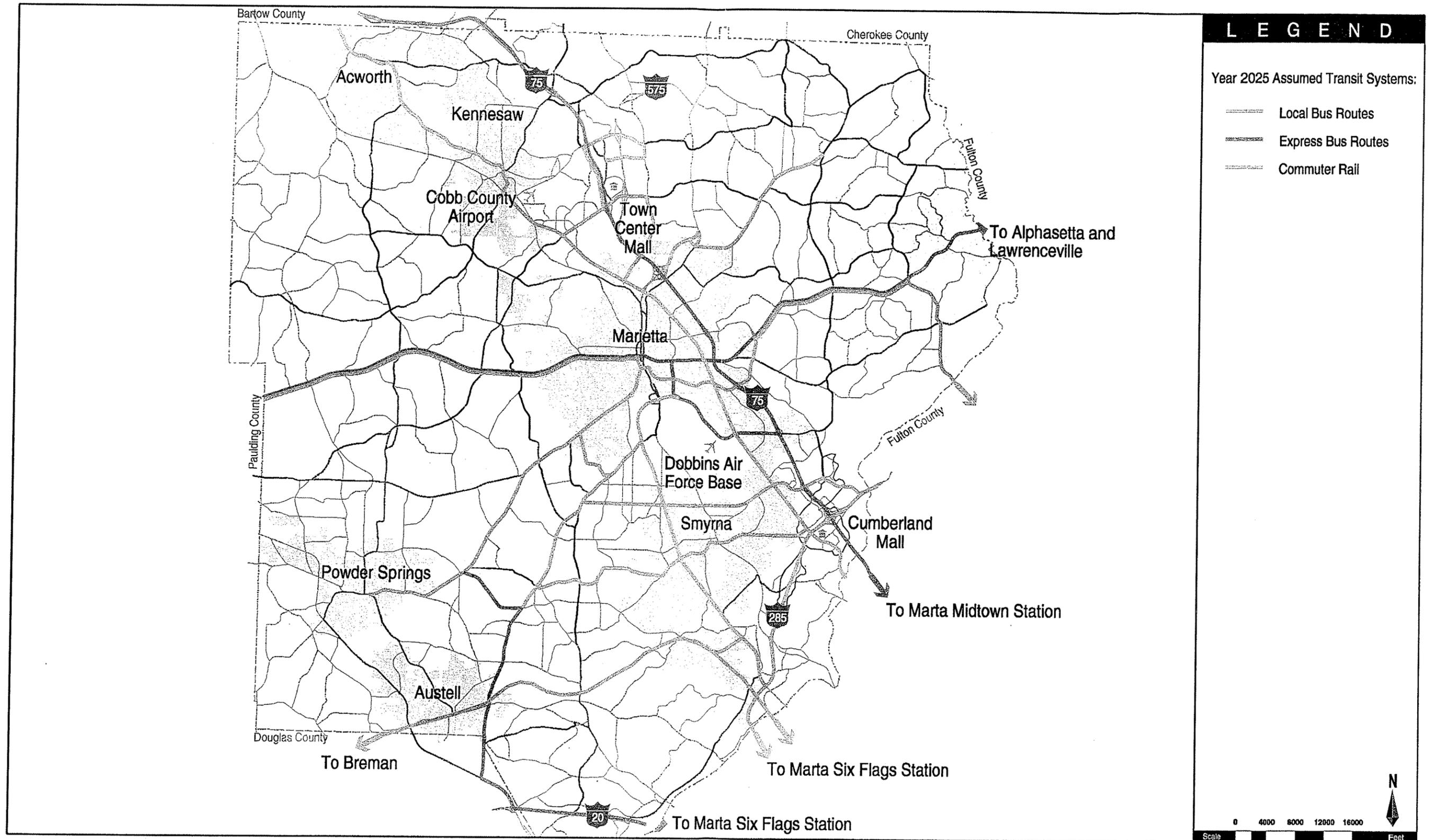
Figure 3-4 shows the No Build Alternative for Cobb County Transit System.

### 3.3 SUMMARY COMPARISON OF STUDY ALTERNATIVES

Table 3-2 provides a summary of the three study alternatives.

In summary, the Build Alternative would provide the highest level of service frequency and capacity in the highly congested I-75 and US 41 north-south travel corridors. The local bus system serving countywide and connecting services connecting to the Trunkline Rail and Fixed Guideway Systems in the Build Alternative, and connecting to Express Bus services in the I-75 corridor in the TSM Alternative, is identical. Also, the number of new PNR facilities are identical between the Build and TSM Alternatives.

In the No Build Alternative, there is significant difference in the overall transit systems service plan for Cobb County, in terms of routes, markets served, capacity and frequency of service. The No Build Alternative represents a strategic expansion of existing service to provide new service to markets already identified as yielding a high potential number of transit users, based on current trends in travel demand.



**FIGURE 3-4 NO BUILD ALTERNATIVE FOR COBB COUNTY TRANSIT SYSTEM**

**Table 3-2  
Summary of Study Alternatives Considered<sup>4</sup>**

System Elements	Build Alternative	TSM Alternative	No Build Alternative
Regional Transportation Network Outside Cobb County	<ul style="list-style-type: none"> <li>Same in all Three Alternatives</li> <li>RTP network of highway, HOV lanes, Commuter and Heavy Rail, Light Rail and bus system expansion</li> </ul>	<ul style="list-style-type: none"> <li>Same in all Three Alternatives</li> <li>RTP network of highway, HOV lanes, Commuter and Heavy Rail, Light Rail and bus system expansion</li> </ul>	<ul style="list-style-type: none"> <li>Same in all Three Alternatives</li> <li>RTP network of highway, HOV lanes, Commuter and Heavy Rail, Light Rail, and bus system expansion</li> </ul>
Fixed Guideway Transit Systems	<ul style="list-style-type: none"> <li>Trunkline rail system including, 17 stations and 22 miles in length, with 7.5 minute frequency</li> <li>Cumberland Circulator – 13 to 23 stations, and 6 to 13 miles in length, with 2.5 minute frequency</li> <li>Town Center Circulator – 7 to 22 stations, and 5 to 11 miles in length, with 2.5 minute frequency</li> </ul>	<ul style="list-style-type: none"> <li>No Fixed Guideway Transit Systems assumed for Cobb County</li> </ul>	<ul style="list-style-type: none"> <li>No Fixed Guideway Transit Systems assumed for Cobb County</li> </ul>
Express Bus Services	<ul style="list-style-type: none"> <li>Two (2) Express Bus services: North-South service connecting Cobb County to Cherokee county, and East-West service connecting from West Cobb to Lawrenceville in Gwinnett County</li> <li>Service with 12 to 30 minute frequency</li> </ul>	<ul style="list-style-type: none"> <li>Four (4) bi-directional Express Bus connecting services: including Build Alternative services, plus I-75 service from Town Center to Arts Center, and connecting service from Marietta and Cumberland Transfer Centers, to Mid-Town Atlanta</li> <li>Service with 12 to 30 minute frequency</li> </ul>	<ul style="list-style-type: none"> <li>Ten (10) directional peak period market-specific and connecting services, including connections to MARTA at Arts Center, North Springs, Six Flags, and Dunwoody stations, with transfer stations at Marietta and Cumberland Transit Centers</li> <li>Service with 15 to 30 minute frequency</li> </ul>
Local Bus Services	<ul style="list-style-type: none"> <li>Nineteen (19) Local Bus lines extending service countywide and serving all major population and employment areas</li> <li>Service oriented to feed Trunkline rail stations with 15 to 30 minute frequency</li> </ul>	<ul style="list-style-type: none"> <li>Nineteen (19) Local Bus lines extending service countywide and serving all major population and employment areas</li> <li>Service with 15 to 30 minute frequency</li> </ul>	<ul style="list-style-type: none"> <li>Nine (9) local bus lines with 15 to 30 minute frequency</li> <li>Eight (8) new local bus lines with 15 to 30 minute frequency</li> </ul>
Park-and-Ride and Multimodal Station Facilities	<ul style="list-style-type: none"> <li>Eight (8) new PNR facilities away from Trunkline Rail and fixed guideway corridor.</li> <li>Multimodal and PNR facilities at virtually all 17 Trunkline rail stations</li> </ul>	<ul style="list-style-type: none"> <li>Eight (8) new PNR facilities away from Trunkline Rail and fixed guideway corridor.</li> </ul>	<ul style="list-style-type: none"> <li>No new PNR facilities, retains existing Marietta and Cumberland Bus Transit Centers.</li> </ul>

<sup>4</sup> The study focuses planning and concept design for the portion of the corridor in Cobb County. The planning and forecast analysis documented in this Work Element 2 Report, however, takes into account the entire corridor from Arts Center station in Atlanta, north to the Town Center Area in Cobb County. The above summary includes the stations and total mileage along the Trunkline system, inclusive of the portion within Fulton County. The forecasts presented in Section 5, represent the initial forecasts only for the minimum Cumberland and Town Center Circulators, in terms of number of stations and lengths shown above.

**Section 4**  
**Marshalling of Technical Methods**

This section presents a description of the technical planning tools used in the study to develop travel demand forecasts and inputs to the transportation impact analysis. First, a general overview of the ARC and Cobb County models gives a general background to these primary study resources. Second, a description is presented of specific technical methods used to prepare the inputs to the forecast, and the preparation of study results.

#### **4.1 DESCRIPTION OF TRAVEL DEMAND FORECAST MODELS**

The Atlanta Regional Commission (ARC), as the designated Metropolitan Planning Organization (MPO) for the Atlanta region, maintains a comprehensive transportation planning process, develops plans and transportation strategies for the region, sets priorities on project funding, and coordinates the ongoing process with federal, state and local government agencies. The Regional Transportation Plan (RTP) development process is a primary activity of the ARC, and is a planning requirement to assure the Atlanta region's share of federal funding for transportation and air quality programs.

To prepare the RTP, and for ongoing analysis of transportation demand and air quality issues, the ARC develops and implements a regional travel demand modeling system. In Cobb County, the ARC model is further developed and implemented to strategically address travel demand analysis within the county to a finer level of detail.

##### **4.1.1 ARC Travel Demand and Demographic Models**

The ARC regional travel demand modeling system includes the traditional four-step travel demand modeling process: trip generation, trip distribution, mode (choice) split and network assignment. In addition, ARC prepares regional forecasts of socio-economic variables, including population, households and employment, using a regional demographic forecasting model. The demographic forecasts are a primary input to the trip generation phase, the first step in the travel demand models. The outputs from the model include forecasts of highway demand which are used in regional emissions analysis, a requirement for air quality conformity documentation.

The ARC travel demand model is a comprehensive representation of the Atlanta region's roadway and transit systems, in both today's terms and for future year assumptions. The current networks closely match the draft RTP for each five-year increment, from 2000 through 2025.

Outputs from the ARC travel demand model forecasts include travel time, roadway speeds, transit ridership, and highway traffic volumes. The ARC travel demand model is particularly useful for scenario testing of alternative transportation networks and services. For the RTP regional planning process, the ARC travel demand model was used as a primary forecasting tool to evaluate and test alternative strategies and to evaluate transportation investments against performance goals.

#### 4.1.2 Cobb County Transportation Model (CCTM)

The CCTM is an application of the ARC regional model with refinements to level of detail within Cobb County, and increased capability to address local transportation issues. In the travel demand modeling vernacular, the CCTM is considered a “focused” application of the ARC model.

Both the ARC model and the CCTM divide the region and county into geographic areas called Transportation Analysis Zones (TAZ). In the CCTM used for this study, the number of TAZ within Cobb County is significantly greater than represented in the ARC model (see Table 4-1). This allows for better detailing of the roadways and transit services within Cobb County that represent future network assumptions. As a result, the CCTM is used for transportation system and project planning, addressing transportation infrastructure within Cobb County.

The overall modeling steps and inputs to apply the ARC and CCTM models are basically the same. The Cobb County staff coordinate with ARC concerning ongoing technical modeling issues, and assure that the models are generally consistent in terms of inputs and results.

It is important to mention that the use of the CCTM to develop travel demand and transit ridership forecasts for this study are consistent with the procedures recommended by the FTA.

The CCTM was created as part of the Cobb County Comprehensive Transportation Plan work, conducted between 1998 and 1999. In the county study, the team used the CCTM to prepare travel demand forecasts for the proposed Cobb County transit systems, which serve as the beginning point of reference to forecasts prepared in this study.

Table 4-1 provides a summary of the travel demand models used in this study. It shows a general overview of the major elements of the ARC model and how they are used or modified in our CCTM application.

**Table 4-1  
Transportation Modeling for COBB County Transit Implementation Study**

Model Element	ARC Regional Mode	Cobb DOT Model
<p><b>Network Representation –</b> Consistency with the RTP Scenario 4, highway and transit systems and new planned projects, for entire regional network, representing year 2025</p>	<ul style="list-style-type: none"> <li>▪ All freeways, highways, primary arterials and county roads.</li> <li>▪ MARTA rail and bus, CCT bus and proposed rail systems, other county bus, HOV lanes with express bus, and commuter rail.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Entire ARC network with more detail added within Cobb County.</li> <li>▪ Refined specificity of Cobb Rail system in terms of number of stations, locations and access modes.</li> <li>▪ Expand CCT Bus system to countywide coverage</li> <li>▪ Three (3) alternative Year 2025 networks</li> </ul>
<p><b>Growth Projections –</b> Applying ARC land use projections of population, employment and households for year 2025</p>	<ul style="list-style-type: none"> <li>▪ Growth projections for 948 transportation analysis zones (TAZs) comprising the entire region.</li> <li>▪ Cobb County represented by 147 TAZs.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Growth projections for 1212 transportation analysis zones (TAZs) comprising the entire region.</li> <li>▪ Cobb County represented in greater detail, by 257 TAZs.</li> </ul>
<p><b>Trip Generation, Trip Distribution</b></p>	<ul style="list-style-type: none"> <li>▪ Trip rates by household and employment stratification, activity type</li> <li>▪ Basic Gravity Model theory</li> </ul>	<ul style="list-style-type: none"> <li>▪ Apply ARC trip generation, trip distribution models same as ARC</li> </ul>
<p><b>Mode Choice, Network Assignment Process –</b> The ARC mode choice model is a basic logit model calculating the probable share of total travel demand for all zone to zone trips, amongst three competing modes: 1) transit, 2) one or single occupant private vehicles, and 3) group or multiple occupant private vehicles. Key inputs include zonal socio-economic characteristics, network accessibility measurements, and travel cost assumptions. Costs for competing modes highway versus transit are based on skimming the network paths within the modeling system, and calculating the total travel time (cost). Equilibrium highway and minimum path transit network assignment procedures.</p>	<p>Key Inputs to ARC Mode Choice Model:</p> <ul style="list-style-type: none"> <li>▪ Households by income class</li> <li>▪ Transit walk time</li> <li>▪ Transit Initial Waiting Time</li> <li>▪ Transit Transfer Waiting Time</li> <li>▪ Transit Running Time for Rail</li> <li>▪ Transit Running Time for other transit</li> <li>▪ Transit Fare</li> <li>▪ Highway running time for One Mode</li> <li>▪ Highway running time for Group Mode</li> <li>▪ Highway Terminal time for One Mode</li> <li>▪ Highway Terminal time for Group Mode</li> <li>▪ Parking Cost for One Mode</li> <li>▪ Parking Cost for Group Mode</li> <li>▪ % zone households within walk accessibility (.4 miles)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Use the ARC mode choice model with refined networks and zonal input files for Cobb County.</li> <li>▪ Percent of walk access updated for study per ARC regional plan updates and new service assumptions in Cobb County.</li> <li>▪ Network coding of walk connectors to rail stations re-coded within corridor along the rail lines</li> <li>▪ Network path building and assignment procedures consistent with ARC parameters.</li> </ul>

## **4.2 PREPARATION OF YEAR 2025 TRANSIT FORECASTS**

Preparation of travel demand forecasts using the CCTM in this study represents cooperation and coordination between ARC staff, the Cobb County Department of Transportation staff, and the consultant team. The forecast results are the best and most reliable to date for the proposed Cobb County transit systems.

### **4.2.1 Consistency with ARC and RTP Forecasts**

The steps taken to prepare the CCTM for this study advanced in parallel to the work underway on the RTP update. Efforts were made to assure consistency in network assumptions, modeling inputs, and procedures used, in preparation of the 2025 alternatives.

Three areas of consistency were sought in coordination with ARC to ensure that:

1. ARC model RTP regional network, outside Cobb County, is identical to the CCTM model network in the Build, TSM and No Build Alternatives
2. Socio-economic forecasts for year 2025 are consistent with the RTP
3. Model input parameters and procedures are consistent with the ARC modeling

Important input parameters include fare matrices, transit path-building parameters, network speeds, and percent of zone within walk access to transit. These inputs directly affect the mode choice model results.

### **4.2.2 Socio-Economic Forecasts, Year 2025**

In early November 1999, ARC provided the study team with year 2025 demographic forecasts based on ARC's regional demographic forecast model. The demographic forecast model takes into account the future transportation network as one of many inputs in a "top-down" allocation of regional growth. Areas of the region with a functional transportation system and reasonable accessibility to activity centers share an advantage, and will grow faster than other areas lacking these conditions. The results of the ARC demographic model are projections of population, households and employment by category, summarized for all transportation analysis zones in the Atlanta region.

The data received from ARC was distributed in Cobb County from the ARC zone definition to the more focused CCTM zones. Therefore, the socio-economic projections used in the CCTM are consistent with the data reported in the final draft RTP.

The socio-economic forecasts are a primary input to the travel demand forecasts. It should be understood that transportation demand grows directly proportional to the increase in population, households and employment.

The ability of the North I-75 Corridor and for Cobb County to continue to grow is based on the assumed new transportation systems to be built in this corridor. These new transportation facilities, include the Cobb County transit systems and the addition of a High Occupancy Vehicle (HOV) lane in each direction on I-75 throughout Cobb County. Without these new transportation systems, growth in the corridor and in Cobb County could be significantly stifled.

#### **4.2.3 Network Coding for the Build, TSM and No Build Alternatives**

The transportation modeling involved intensive and careful network preparation of the three study alternatives described in the preceding section. To the extent possible within the transportation modeling software capabilities, each alternative network was “coded” to reflect the service characteristics, drive and walk access connectivity, transfer stations, and objective travel times along the transit services. Each alternative started from the same background regional network and only varies within Cobb County.

Also for each alternative, the same regional and local highway network was used, consistent with the RTP, as an input to each transit forecast. The mode choice sub-model compares the relative travel time and accessibility of highway versus transit networks to predict the share of each zone-to-zone trips that potentially are made by transit.

#### **4.2.4 Post Processing Forecast Results**

The analysis of the travel demand forecasts include a significant effort in “post-processing” the forecast outputs. The basic outputs of a travel demand forecast include mode specific trip-tables, travel time and distance matrices, and “loaded” network indicating the number of vehicles and transit riders on each segment of the transportation network.

The post-processing includes peak and daily summaries, district level summaries of transit trips and mode share, systemwide and selected-link outputs, and summaries of the highway system.

**Section 5**  
**Travel Demand Forecast Results, Year 2025**

This section presents results from the travel demand forecasts prepared under Work Element 2. First, transit patronage results are presented in terms of transit-linked trips, mode share, transit boarding/alighting, number of transfers, walk, and drive access market summaries. The next subsection presents more specific area and corridor summaries, including transit and person trip ends, transit boarding for proposed Cobb transit lines, parking demand at transit stations, transit transfers, and select link analysis. Then, a summary of system-wide and corridor roadway travel forecasts is presented. Finally, a summary is presented comparing these study results against recent ARC forecasts prepared for the final draft RTP.

For each set of results, comparison is made for each of the three study alternatives. A brief analysis for each set of results is presented. Section 6 covers a more thorough analysis of overall transportation impacts of the proposed Cobb County transit systems.

## **5.1 SYSTEMWIDE TRANSIT PATRONAGE SUMMARY**

The prepared systemwide transit patronage summaries are commonly used transit measures. For each of these measures, comparisons are made across the three study alternatives.

### **5.1.1 Transit-Linked Trips**

Transit-linked trips represent a key measure of patronage expressed in terms of total trip interchanges by transit. An individual transit-linked trip can include more than one boarding, representing the entire zone-to-zone trip. The Cobb County Transportation Model (CCTM), consistent with the ARC Model, generates six different transit trip tables representing walk and drive to transit access modes, stratified for three basic trip purposes, which includes, home base work, home base non-work and non-home base.

Table 5-1 compare existing 1995, and 2025 transit-linked trips for the three study alternatives for the whole region. Given the transportation network in each alternative varies by definition only in Cobb County, the difference between the Build, versus the TSM and the No Build Alternatives, represents daily transit-linked trips with origin or destination in Cobb County.

The results indicate the following important findings:

- Total daily transit-linked trips under the Build Alternative would be over 35,000 more than under the TSM Alternative, and about 48,000 more than under the No Build Alternative.
- The percentage of drive and walk access transit-linked trips varies only slightly across the three study alternatives. For the Build Alternative, 50 percent of daily transit-linked trips are walk to transit, home base work purpose; and 13 percent of daily transit-linked trips are drive to transit, home base work purpose. Together, the home base work purpose represents 63 percent of daily transit-linked trips.

**Table 5-1  
Atlanta Region Forecast Daily Transit-Linked Trips**

	Estimate	Year 2025	Year 2025	Year 2025
	1995*	Build Alternative	TSM Alternative	No Build Alternative
Walk to Transit (home base work)	135,231	252,758	231,051	230,325
	55.0%	50.0%	49.1%	48.7%
Drive to Transit (home base work)	4,069	65,864	65,121	70,619
	1.7%	13.0%	13.9%	14.9%
Walk to Transit (home base non-work)	79,571	109,120	100,683	97,785
	32.4%	21.6%	21.4%	20.7%
Drive to Transit (home base non-work)	1,169	22,696	22,270	23,826
	0.5%	4.5%	4.7%	5.0%
Walk to Transit (non-home base)	25,293	47,652	43,294	42,265
	10.3%	9.4%	9.2%	9%
Drive to Transit (non-home based)	508	7,680	7,740	8,068
	0.2%	1.5%	1.6%	1.7%
<b>Total - Atlanta Region</b>	<b>245,841</b>	<b>505,771</b>	<b>470,159</b>	<b>472,887</b>
	100%	100%	100%	100%
<b>Net Increase, 1995 to 2025</b>		<b>259,930</b>	<b>224,318</b>	<b>227,046</b>

\* Estimate for 1995 transit-linked trips, prepared from modeling work for Cobb County Comprehensive Transportation Plan, 1997-1999

- It is important to note the 1995 estimates show that about 57% of daily transit-linked trips were home base work purpose. The number of home base work trips in the 2025 network show a significant increase in drive to transit home base work trips, increasing from about 4,000 in 1995 to more than 65,000 in the 2025 Build Alternative. These home base work purpose trips occur during the most congested travel times. This increase would result from improved accessibility of the expanded regional transit network in Cobb County and throughout the region, household and employment growth, and improved drive to transit station accessibility in the most congested transit served corridors.
- For home base non-work and non-home base transit-linked trips, drive access trips will also increase, although not as significantly as for home base work trips. Most of these non-work trips occur during off-peak times of day and afternoon peak.

Additional information on transit-linked trips within Cobb County districts is provided in the next section under the discussion of transit mode share.

## 5.1.2 Mode Share

Travel by transit as a percentage of total travel is another important measure of patronage across the study alternatives. Transit mode share is important to examine on a district basis as well as for the entire region. For the region, the ARC seeks a transit mode share goal of 10 percent for all daily home base work trips. No specific transit mode share goals are set for home base non-work and non-home base purposes, although generally they fall in the 1 to 3 percent range.

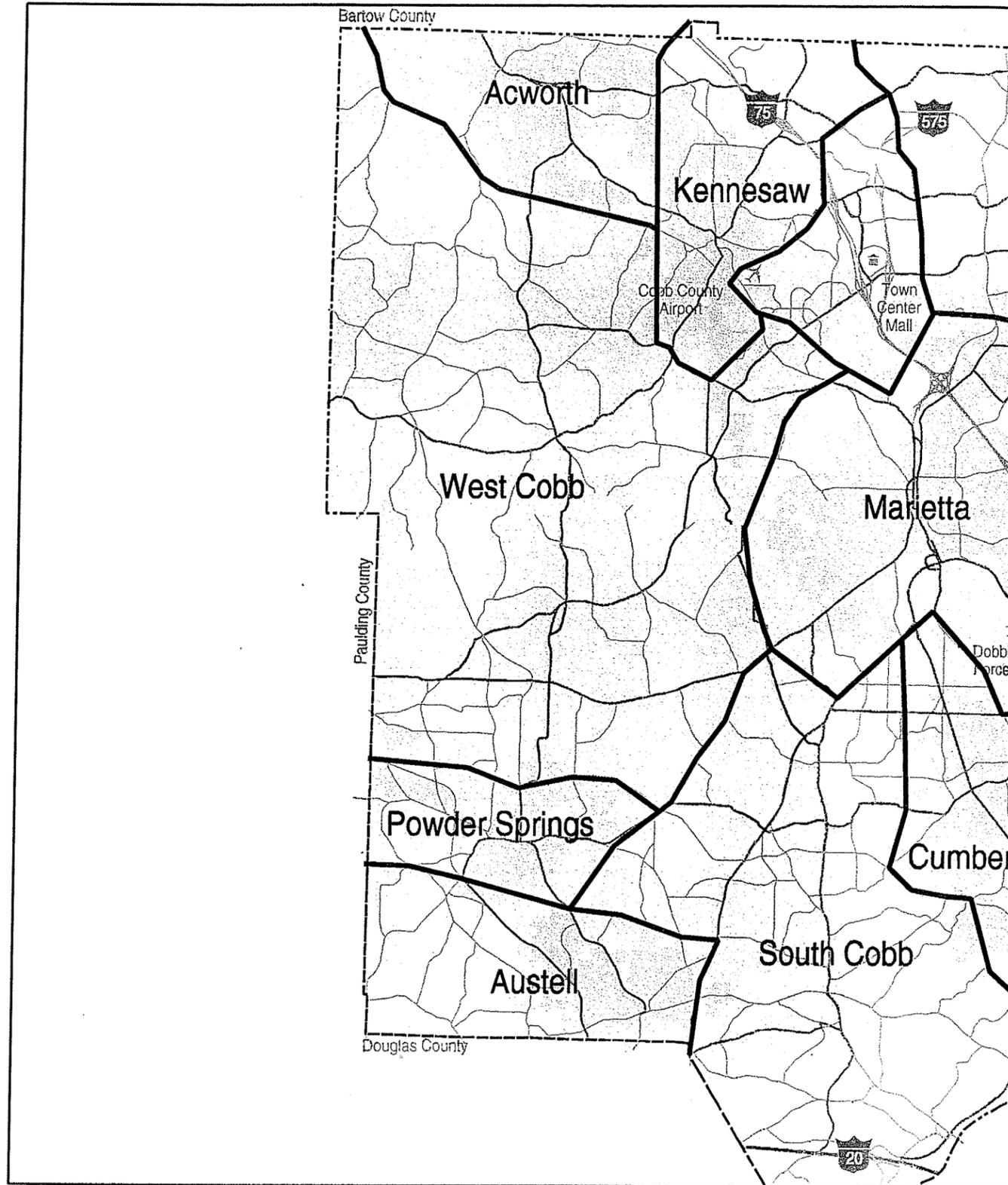
Today transit mode share in Cobb County is well below 1 percent of total daily linked trips by all travel modes. The proposed transit systems addressed in this study, seek to significantly increase the share of daily trips taken by transit, particularly in the north-south corridor serving the CIDs.

Table 5-2 shows total daily transit-linked trips and transit mode share for the study alternatives, and summarized by area planning district within Cobb County, Figure 5-1. The results show the highest transit mode shares in the Build Alternative, although all three alternatives show promising transit mode share results.

For the Build Alternative, transit mode share as a percentage of total daily linked-trips show a low of less than 1 percent for the Powder Springs district, to highs of 9 percent for Town Center and 9.4 percent for Cumberland districts. Other districts with significant transit mode shares include Marietta (5.9%), Smyrna (4%), and South Cobb (2.7%).

**Table 5-2**  
**Daily Transit Linked-Trips and Mode Share by Districts**

District	Location	Build Alternative		TSM Alternative		No Build Alternative	
		Transit-Linked Trips	% Transit	Transit-Linked Trips	% Transit	Transit-Linked Trips	% Transit
1	Marietta	19,760	5.9%	8,529	2.5%	9,314	2.8%
2	Smyrna	10,190	4.0%	7,849	3.1%	8,001	3.1%
3	South Cobb	7,686	2.7%	7,276	2.5%	7,317	2.5%
4	Austell	1,218	1.2%	1,173	1.2%	1,207	1.2%
5	Powder Springs	1,020	0.9%	893	0.8%	939	0.8%
6	West Cobb	3,984	1.3%	3,122	1.0%	3,627	1.2%
7	Ackworth	1,890	2.4%	1,649	2.1%	1,631	2.0%
8	Kennesaw	2,831	2.0%	1,983	1.4%	2,147	1.5%
9	Town Center	6,710	9.0%	4,474	6.1%	4,877	6.5%
10	East Cobb	10,331	2.0%	8,214	1.6%	9,143	1.7%
11	Cumberland	17,144	9.4%	11,946	6.6%	11,792	6.5%
	All Region	505,771	3.2%	470,159	3.0%	472,887	3.0%
	<b>Cobb County</b>	<b>82,764</b>	<b>3.2%</b>	<b>57,108</b>	<b>3.0%</b>	<b>59,995</b>	<b>3.0 %</b>



Considering all Cobb County daily linked trips, transit mode shares range from 3.2 percent for the Build Alternative, to 3 percent for the TSM and No Build Alternatives, respectively. These patronage forecasts are comparable to similar forecasts prepared by ARC for the RTP report.

Furthermore, as a percentage of all daily transit-linked trips in the Atlanta region in 2025, Cobb County would contribute 16 percent under the Build Alternative, 12 percent under the TSM Alternative, and 13 percent under the No Build Alternative.

These forecast results for transit mode share by district suggest the following:

- The north-south corridor serving the Cumberland and Town Center areas would yield the highest transit patronage, resulting from the density concentration of development and the competitive travel times of transit service assumed in the Build Alternative. These results make a strong statement for concentrating further development in the Cumberland and Town Center districts, and implementing high quality transit services
- Both Marietta and Smyrna districts also show good transit mode share potential. The greatest potential is shown under the Build Alternatives, whereby both of these areas would be served directly and indirectly by the rail service and connecting bus transit services. For example, the Marietta district is forecast to generate nearly 20,000 daily transit-linked trips and a mode share of nearly 6 percent of total daily trips. By comparison, under the Build Alternative, the Smyrna district would generate 10,000 daily transit-linked trips and a mode share of 4 percent of total daily trips.
- Transit mode shares for areas currently not served by Cobb Community Transit services today, including West Cobb, East Cobb, Austell and Ackworth, generally show rather conservative patronage potential in year 2025, ranging from 1 to 2 percent of total daily linked trips. This assumes new services under the Build Alternative. Transit mode share potential in these areas is considered highly dependent on the ability of the service to penetrate into neighborhoods providing a quality service, that competes with the advantages and preference given the private automobile.

The transit mode share potential will be further examined and updated in the final study forecasts, which will take into account the full transit circulator system and increased development assumed along the proposed rail corridors.

### 5.13 Transit Boardings

Total transit boardings are a measure of the number of individual transit routes or different transit services used for each zone-to-zone transit-linked trip. As compared to the number of transit-linked trips, transit boardings indicate the convenience of the transit service, and are used in the computation of the number of transfers and transfer rate per transit-linked trips.

Table 5-3 shows the existing and forecast daily transit boardings for the Atlanta region and Cobb County across the study alternatives. The forecasts show that the Build Alternative will far exceed the TSM and No Build alternatives in daily transit boardings, producing about 172,100

and 19.6 percent of the daily transit boardings in the Atlanta Region, in 2025. The TSM Alternative is forecast to generate nearly 50 percent less, with 83,500 and about 10.6 percent of the regions daily transit boardings. The No Build Alternative is forecast to generate 76,900 and 10 percent of the regions daily transit boardings.

**Table 5-3  
Daily Transit Trip Boardings**

	Year 2000	Year 2025	Year 2025	Year 2025
	Existing	Build Alternative	TSM Alternative	No Build Alternative
Atlanta Region, Daily Total Transit Trip Boardings	544,000	876,700	786,600	767,700
Cobb County, Daily Transit Trip Boardings	10,000	172,100	83,500	76,900
% of Regional Daily Transit Trip Boardings, Cobb County Transit Systems	1.8%	19.6%	10.6%	10.0%

Table 5-4 is a further summary of transit boarding results. It shows that the significant difference in daily transit trip boardings forecast for the Build Alternative, versus the TSM and No Build alternatives are boardings generated on the Trunkline and Circulator rail systems.

Under the Build Alternative, the number of local and express bus boardings are about 6,000 less than under the TSM Alternative, and slightly higher than under the No Build Alternative. However, under the Build Alternative, the patronage forecasts include 66,700 daily boardings on the Trunkline rail; 20,200 on the Cumberland Circulator; and 7,500 on the Town Center Circulator. Although a portion of the transit boardings on the rail systems are linked-transit trips, which include both a bus and rail boarding, many are also transit trips directly served by the rail. Furthermore, a portion of the transit boardings on the Trunkline, include transfers to the Circulator systems, and thus represent a transit-linked trip with a boarding on each system. (More information is discussed on transfer activity in the next section).

**Table 5-4  
Daily Boardings by System Element**

System Element	Existing CCT Service	Year 2025 Build Alternative	Year 2025 TSM Alternative	Year 2025 No Built Alternative
Local/Express Bus	10,000	77,700	83,500	76,900
Trunkline Rail		66,700		
Cumberland Circulator*		20,200		
Town Center Circulator*		7,500		
Total	10,000	172,100	83,500	76,900

\* Note: These preliminary system forecasts for the Build Alternative, represent only a portion of the Circulator transit systems. Final study patronage forecasts will fully represent all stations planned in the study physical planning work, and therefore, patronage forecasts are expected to be significantly higher for the Circulator system elements.

Table 5-5 compares daily and peak transit boardings under the Build Alternative. The procedures used in the travel demand forecasts produces results, for a two hour A.M. peak period, as a primary measure of transit peak patronage demand. Given experience in transit planning shows that most people make their modal choice to use transit or drive based on the trip they make in the morning, these peak forecasts are being used as input to subsequent analysis of peak load point and operations service planning.

The A.M. peak results show the two-hour peak for all Cobb County daily transit boardings represent about 19 percent of all daily transit boardings, considering all system elements. For the Trunkline rail system, represents about 21 percent of daily transit boardings. Generally, the P.M. peak is often slightly higher than the A.M. peak, as more non-work and non-home base transit usage combines with home base work trips.

#### **5.14 Systemwide Transfer Rate**

The number of systemwide transfers is a measure of transit convenience, or the extent that transit services directly serve zone-to-zone travel demand. Generally speaking, one or more transfers occur for each transit-linked trip, and a transfer rate is computed by dividing the number of transit-linked trips by the number of transit boardings. Since wait time resulting from transfers is commonly cited as a major disadvantage to using transit, the objective of transit system planning is to identify a service plan that works to minimize the systemwide transfer rate.

**Table 5-5**  
**Comparison of Daily and A.M. Peak\***  
**Transit Boardings, Build Alternative**

System Element	Existing Daily CCT Service	Year 2025 Daily	Year 2025 A.M. Peak*
Local/Express Bus	10,000	77,700	13,100
Trunkline Rail		66,700	13,700
Cumberland Circulator		20,200	3,900
Town Center Circulator		7,500	1,300
Total	10,000	172,100	32,000

\* Peak period represents 2 hour A.M. period

Table 5-6 shows a summary of the systemwide forecast transfer rates for the project alternatives. The forecasts show only slight variation in systemwide transfers due to the consistent transit network assumed outside Cobb County, whereby the three alternatives vary as described in Section 3. The computed transfer rate for the Build Alternative suggest that about 58 percent of transit users would require a transfer for each transit-linked trip.

More information is provided in the next section, discussing transfer activity at stations along the proposed Cobb County rail transit corridor.

### 5.15 Transit Walk Access Market

The Cobb County and ARC travel demand models provide forecasts of transit travel demand based on a key input that relates to the propensity of the population to walk to a transit stop or station. This input is referred to as the “transit walk access market” which is a computation made for each of the Cobb County and regional transportation analysis zones (TAZ), separately for each alternative based on the assumed transit systems. The criteria for the transit walk access market is a calculated percentage of each zone that is within (0.4 miles) walking distance to a transit bus stop or rail station.

Table 5-7 and Figure 5-2 summarize population, employment and the percentage of all Cobb County TAZ calculated within the transit walk access market for these two socioeconomic measures. These measures show that the Build Alternative provides the best transit walk accessibility across the three alternatives, for both population and employment. Generally, the percent of population within the transit walk access market is much lower than the percent of employment within the walk access market, across all alternatives. This reflects the transit systems focus to serve the highest density employment areas within each CID and generally along the I-75/US-41 corridors.

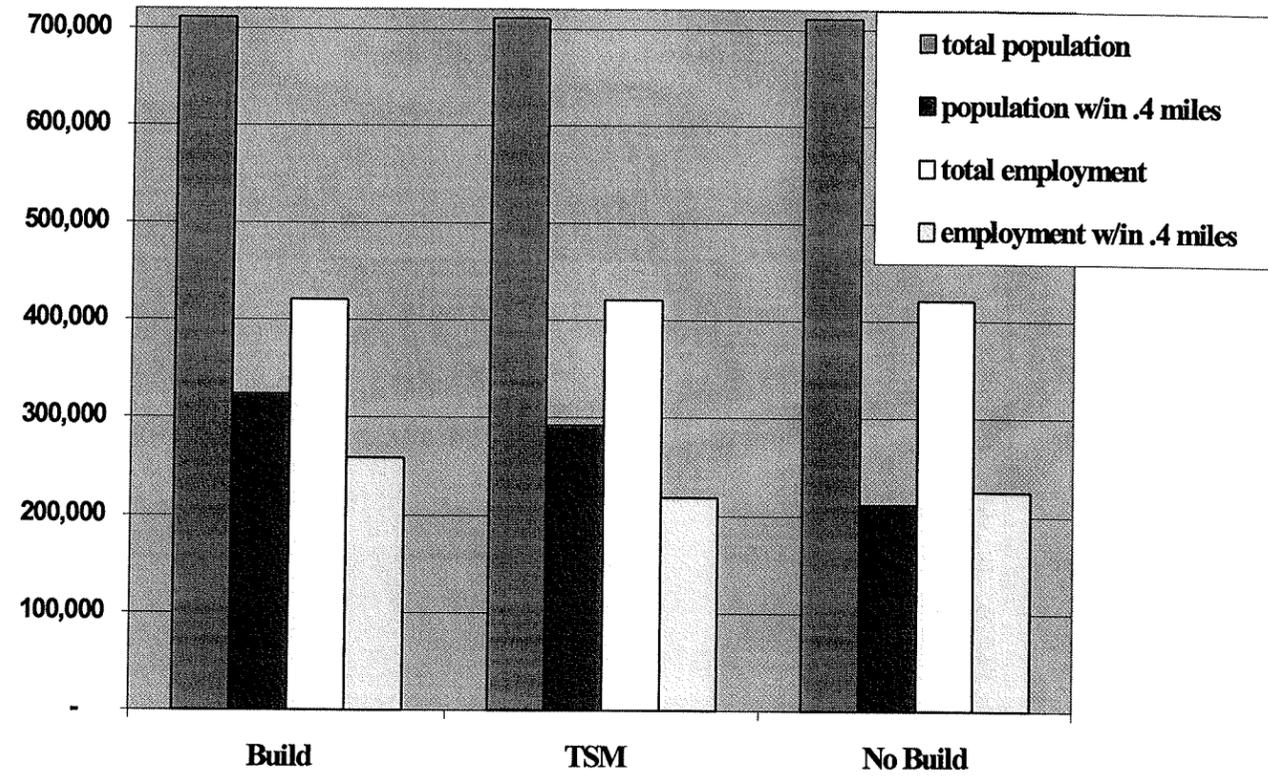
**Table 5-6  
Comparison Forecast  
Daily Transit Transfers**

	Year 2025	Year 2025	Year 2025
	Build Alternative	TSM Alternative	No Build Alternative
Total transit trip boardings	876,700	786,600	767,700
Total transit-linked trips	505,771	470,159	472,887
Transfer rate (percent of linked-transit trips with a transfer)	58%	60%	62%

**Table 5-7  
Cobb County – Share of Population and Employment  
Within Transit Walk Access Market, Year 2025,**

	Build	TSM	No Build
Total Population	711,258	711,258	711,258
Population Within .4 Miles	323,419	291,764	211,517
Percent of Population Within Transit Walk Access Market	45%	41%	30%
Total Employment	420,558	420,558	420,558
Employment Within .4 Miles	258,663	218,568	224,978
Percent of Employment Within Transit Walk Access Market	62%	52%	53%

The percentage of population with the transit walk access market for Cobb County ranges from 45 percent for the Build Alternative, to 41 percent for the TSM Alternative, to 30 percent for the No Build Alternative. The higher transit walk access for the Build and TSM Alternatives reflect the comprehensive countywide transit system serving all major corridors, as shown in the exhibits presented in Section 3. Under the Build Alternative, more than 323,000 people would be within a close proximity to a bus stop or rail station.



**Figure 5-2 Cobb County Projected Year 2025 Population and Employment and Share Within 0.4 Miles of Transit Service**

The percentage of employment within the transit walk access market for Cobb County ranges from 65 percent for the Build Alternative, to 52 percent for the TSM Alternative, to 53 percent for the No Build Alternative. The focus of the transit systems assumed under the Build Alternative would directly serve employment sites throughout Town Center and Cumberland CID with high quality fixed guideway systems. Under the Build Alternative, more than 258,000 employees would be within a close proximity to a bus stop or rail station.

### **5.1.6 Transit Drive Access Market**

The Cobb County and ARC travel demand models provide forecasts of transit travel demand based on a key input that relates to the propensity of the population to drive to transit park-and-ride facilities. Generally, for all stations whereby park-and-ride is assumed, all TAZ within 10 miles are considered within the drive access market to these stations. Travel times to reach each transit park-and-ride station are based on the peak congested speeds along the roadway network.

## **5.2 AREA AND CORRIDOR TRANSIT PATRONAGE SUMMARY**

This section presents more detailed area and corridor specific transit patronage for each of the study alternatives, including transit boardings on Cobb County Lines, station access and parking demand at transit stations, transfers at transit stations, and select link analysis for Trunkline rail segments.

### **5.2.1 Transit Boardings by Cobb County Lines**

The number of 2025 transit boardings and lightings by station are a measure of transit patronage potential that deals specifically with station and line loading service levels. These forecasts provide the most understandable level of transit patronage and are used in the comparison of alternatives and as inputs to physical and operations planning. Since the Build Alternative exclusively includes the Trunkline Rail, Town Center and Cumberland Circulators, more information is provided for station boardings under the Build Alternative. However, information on daily and peak bus boardings is compared across the three study alternatives.

It is important to note that these patronage forecasts for the Trunkline rail system, match well the ongoing physical planning for this study, representing the alignment and stations, except for the branch to Barrett Parkway. However, these preliminary patronage forecasts represent only a portion of the Cumberland and Town Center Circulators as envisioned in ongoing physical planning.

Table 5-8 provides a summary of daily and peak period transit boardings for the Trunkline rail system. Transit boardings for the Trunkline show results for the 17 stations assumed under the Build Alternative. Along the Trunkline system, 12 stations would be located within Cobb County. The remaining stations would be located in the Fulton County, at locations consistent with the ARC Regional Transportation Plan. Transfer stations are assumed between the Trunkline rail service, and the Cumberland and Town Center Circulators, at two transfer points within each CID.

**Table 5-8**  
**Build Alternative – Trunkline Rail Station Boardings, Year 2025**

Station	Daily Boardings	Peak Boardings*
Chastain Road/I-575***	3,900	1,400
Town Center Mall***	2,100	400
Bells Ferry Road/I-75	1,600	500
Canton Road	3,100	800
North Marietta Parkway/Loop 120	1,300	400
Roswell Road/Route 120	4,200	1,100
S. Marietta Parkway/Loop 120	3,300	800
Delk Road/South Cobb Parkway	2,700	700
Herodian Way**	3,600	800
Windy Hill Road	2,300	400
Cumberland Mall/Galleria	4,600	700
Cumberland Blvd./Cobb Parkway**	4,600	1,000
Atlanta Road	1,000	400
Moores Mill Road	3,400	1,000
Howell Mill Road	3,500	700
Atlantic Steel	2,200	500
Atlanta Arts Center	20,200	3,000
Totals	67,600	14,600

\* Peak period represents 2 hour A.M. period;

\*\* Transfer station with the Cumberland Circulator

\*\*\* Transfer station with Town Center Circulator

Patronage forecasts for the Trunkline rail system, reveal these findings:

- Trunkline forecasts show promising ridership potential at virtually all Cobb County stations along the rail corridor. Of the 67,600 total daily, station boardings range from a low of 1,300 (North Marietta Parkway) to high of 4,600 (Cumberland Mall/Galleria and Cumberland Boulevard/Cobb Parkway).
- The Atlanta Arts Center, the southern-most terminal station for the Trunkline service, is a major destination station for transit trips generated along the Trunkline system. More than 20,000 daily transit boardings are forecast for the Atlanta Arts Center station. During the A.M. peak period only 3,000 boardings are generated in the “reverse commute” or northbound direction, most of these would occur in the afternoon, as people return home from work to home destination stations along the corridor. (More discussion on this topic is provided under the select link analysis to follow).
- The A.M. peak forecasts shows about 22 percent or nearly 15,000 transit boardings would occur during a two hour morning peak period. It is expected that considering the fringes of the peak period, say during a morning three hour peak (6 to 9 A.M.) about 30 percent of the daily boardings would occur, and combined with the afternoon peak period, peak period demand would represent about 60 to 65 percent of daily patronage on the Trunkline system.

These preliminary forecasts for the Trunkline system, although promising, may actually understate patronage potential, considering that Cumberland and Town Center Circulators are not fully represented in the forecasts, and that a high degree of transfers or transit-linked trips would occur between the Trunkline and Circulators. In the final study patronage forecasts the full system identified in the ongoing physical planning will be assumed.

Table 5-9 provides a summary of daily and peak period transit boardings for the Cumberland Circulator stations. Transit boardings for the Cumberland Circulator show results for 13 stations assumed under the preliminary Build Alternative. Transfers to Trunkline are assumed at the Terrill Mill Road and Cumberland Boulevard/Cobb Parkway stations.

Patronage forecasts for the Cumberland Circulator, reveal these findings:

- Of the more than 20,000 daily boardings forecast for the Cumberland Circulator, significant station demand is forecast for all but two of the stations considered in the model. The two stations with low demand were not well represented in the model details and therefore probably understate full demand potential.
- The two transfer stations with the Trunkline would yield the highest number of daily boardings. The north transfer station near Terrill Mill and Cobb Parkway shows more than 4,000 daily transit boardings, and the south transfer station near Cumberland Boulevard and Cobb Parkway shows more than 3,000 daily boardings. These results reveal a high number of transit-linked trips would use both the Trunkline and Cumberland Circulator.

- The Cumberland Mall station shows a significant demand with a forecast of more than 3,000 daily transit boardings.

**Table 5-9  
Build Alternative – Cumberland Circulator Station Boardings, Year 2025**

Station	Daily Boardings	Peak Boardings*
Herodian Way*	4,100	870
Terrill Mill E. I-75	1,170	260
Terrill Mill Area E. Powers Ferry	1,620	510
Windy Hill Area E. Powers Ferry	1,140	150
Windy Ridge Parkway/Powers Ferry	2,030	210
Windy Ridge Parkway Near I-75	480	60
Circle 75 Parkway West I-75	770	40
Galleria Mall/Waverly Hotel Complex	250	40
Cumberland Blvd./Cobb Parkway*	3,330	350
Cumberland Mall	3,160	940
Cumberland Parkway/Overlook	190	10
West Pace Ferry/Vinings Area	1,290	350
Home Depot	680	190
Totals	20,210	3,980

\* Transfer station with the Trunkline

Table 5-10 provides a summary of daily and peak period transit boardings for the Town Center Circulator stations. Transit boardings for the Town Center Circulator show results for only eight stations assumed under the preliminary Build Alternative. Transfers to Trunkline are assumed at the Chastain Road/I-575 and Town Center Mall stations.

Patronage forecasts for the Town Center Circulator, reveal these findings:

- Of the more than 7,000 daily boardings forecast for the Town Center Circulator, the most significant demand is forecast for the KSU/I-75, Chastain Road/I-575 and Town Center Mall stations.
- Overall these preliminary forecasts for the Town Center Circulator are considered incomplete, since they represent less than half the stations currently identified in physical planning for the study.

**Table 5-10  
Build Alternative – Town Center Circulator Station Boardings, Year 2025**

Station	Daily Boardings	Peak Boardings*
KSU/I-75	1,350	250
Town Park Business Park	810	230
Chastain Road/I-575**	1,900	290
Town Center Village	770	70
Town Center Mall**	1,020	210
Barrett Parkway East	450	70
Barrett Parkway West	630	90
Barrett Lakes Blvd.	590	140
Totals	7,520	1,350

\* Peak period represents 2 hour A.M. period

\*\* Transfer station with Trunkline

Note: These forecasts represent only a portion of the Town Center Circulator stations, currently identified in physical planning for the project. Revised forecasts will be prepared taking into account the full system.

Table 5-11 provides comparative bus transit boardings for all three study alternatives, representing forecast of local and express bus patronage.

**Table 5-11  
Comparison of Forecast, Cobb County Bus Transit Boardings, Year 2025**

Cobb County Routes	Build Alternative		TSM Alternative		No Build Alternative	
	Daily Boardings	Peak Boardings*	Daily Boardings	Peak Boardings*	Daily Boardings	Peak Boardings*
Local Routes	58,950	9,680	69,740	11,860	49,850	8,580
Express Routes	18,760	3,380	13,790	2,530	27,090	5,290
Totals	77,710	13,060	83,530	14,390	76,940	13,870

\* Peak period represents 2 hour A.M. period

As described in Section 3, the local and express bus services vary across the alternatives. The Build and TSM Alternatives would provide similar countywide local bus coverage, although under the TSM Alternative, fixed guideway systems are replaced by local and express bus routes. The No Build Alternative represents an expansion of existing Cobb Community Transit bus routes, to provide express bus service connections to Atlanta, the Perimeter area and various MARTA rail stations. The No Build Alternative also includes expanded local services connecting cities within Cobb County not currently served by transit.

Patronage forecasts for the local and express bus services, reveal these findings:

- The TSM Alternative would generate the greatest number of total bus boardings, about 6,000 above the Build Alternative. To a large extent these additional bus boardings are transit-linked trips served by the Trunkline and Circulator rails systems, under the Build Alternative.
- Bus transit boardings under the Build and TSM Alternative would essentially serve the same travel markets within Cobb County, providing countywide coverage and service to the dense employment areas within the two CIDs.
- The No Build Alternative local bus patronage is forecast significantly lower than for either the Build and No Build Alternatives. This is understandable since it lacks the countywide coverage provided in these other alternatives. The service is more oriented to the regional network.
- The No Build Alternative shows the highest level of patronage on the express bus services. Since the No Build expands upon the existing CCT system, adding many new express services, it indicates the potential over the next 25 years to grow express bus patronage from about 5 thousand daily today, to more than 27,000 in year 2025.

The transit patronage results for the local and express bus services, provides transit planners critical insight into how best to integrate the proposed rail transit systems, with local and express bus services. Local and express bus services can feed and supplement the fixed guideway systems.

The definition and prepared transit patronage forecasts for these three study alternatives, has established an important beginning point for the formal federal “alternative analysis” to follow. Follow-up work will fine-tune these transit alternatives and forecasts, to evaluate the best transit system for acceptance by the local communities in the corridor.

## 5.2.2 Parking Demand at Transit Stations

The transportation impact analysis to be considered during the upcoming Alternative Analysis, will carefully evaluate the access and parking demand directly related to park-and-ride facilities at stations along the Trunkline system. The assumptions and forecast results will be input to the planning and development of facilities at each station, so as to encourage use of the transit system and at the same time, minimize traffic impacts.

Table 5-12 is a preliminary forecast of the percentage and share of total daily forecast demand at each Trunkline station. This information is being carefully studied and compared against other rail systems in the region and nationally.

The station demand forecasts show that in Cobb County the largest amount of daily transit users would walk (44%) to the stations along the Trunkline. About the same amount of transit users would access the Trunkline stations by bus (22%) and drive (20%) combined. The remainder of daily transit users accessing the Trunkline would be rail transfers (14%).

These preliminary results suggest that in Cobb County more than 7 thousand parking spaces would be required along the Trunkline stations. The final study forecasts will focus on verifying the overall drive access demand to stations along the Trunkline by share of long-term parking and drop-off users.

**Table 5-12  
Station Access Mode and Parking Demand**

	Daily Boardings	Access Mode/Transfer			
		walk	bus	drive	rail
Chastain Road/I-575		26%	13%	35%	26%
	3,897	995	515	1,376	1,012
Town Center Mall		44%	16%	0%	40%
	2,092	922	324	-	846
Bells Ferry Road/I-75		61%	19%	20%	0%
	1,528	929	295	304	-
Canton Road		38%	53%	9%	0%
	3,089	1,176	1,636	277	-
North Marietta Prky/Loop 120		91%	0%	9%	0%
	1,212	1,101	-	111	-
Roswell Rd./Rte 120		28%	64%	8%	0%
	4,102	1,157	2,631	314	-
S. Marietta Prky/Loop 120		68%	0%	32%	0%
	3,239	2,217	-	1,022	-
Delk Rd./South Cobb Pkwy.		52%	3%	45%	0%
	2,653	1,375	83	1,195	-
Herodian Way*		9%	23%	68%	0%
	3,507	314	817	2,376	-
Windy Hill Road		94%	6%	0%	0%
	2,261	2,134	127	-	-
Cumberland Mall/Galleria		53%	38%	8%	0%
	4,509	2,402	1,729	378	-
Cumberland Blvd./Cobb Parkway		29%	0%	0%	71%
	4,550	1,326	-	-	3,224
Atlanta Road		0%	0%	100%	0%
	920	-	-	920	-
Moore's Mill Road		53%	37%	9%	0%
	3,398	1,802	1,274	322	-
Howell Mill Road		84%	2%	14%	0%
	3,421	2,873	79	469	-
Atlantic Steel		88%	0%	12%	0%
	2,147	1,882	-	265	-
Atlanta Arts Center		9%	75%	0%	17%
	20,152	1,771	15,034	-	3,347
<b>Total</b>	<b>66,677</b>	<b>24,378</b>	<b>24,543</b>	<b>9,327</b>	<b>8,428</b>
	100%	37%	37%	14%	13%
<b>Cobb County Subtotal</b>	<b>36,639</b>	<b>16,049</b>	<b>8,157</b>	<b>7,352</b>	<b>5,082</b>
	100%	44%	22%	20%	14%

### 5.2.3 Rail to Rail Transit Transfers

As previously discussed, the 2025 patronage forecasts show a high degree of transfer activity systemwide across the study alternatives. The analysis of transit transfers can be a complex issue at the system level of analysis. Rather than try to evaluate the appropriateness of the forecast transfer rates across the entire transit system, the study takes a more detailed look at specific transfer stations within Cobb County.

Table 5-13 shows the number of rail-to-rail transfers at the four Trunkline transfer stations whereby transfers are possible to/from the Town Center and Cumberland Circulators. These results show the number and percentage of total boardings at each of these stations that would be rail-to-rail transfers.

As expected, the number and percentage of rail-to-rail transfers is greater the further south along the corridor. This is because of three reasons:

- A greater number of transit boardings in the Town Center Area are drive access transit trips
- Limited assumptions regarding the Town Center Circulator
- More dense employment around the Cumberland Circulator encourages more transit-linked trips and transfers to/from the Trunkline

**Table 5-13**  
**Build Alternative, Rail-to-Rail Transfers, Year 2025**

Trunkline Transfer Stations	Year 2025, Daily Boardings	%, Number of Rail to Rail Transfers to/from Circulators
Chastain Road/I-575		26%
	3,897	1,012
Town Center Mall		40%
	2,092	846
Terrill Mill Road		69%
	3,507	2,434
Cumberland Blvd./Cobb Parkway		71%
	4,550	3,224

### 5.2.4 Select Link Analysis, Trunkline Rail Segments

A transit “select link analysis” is an important transportation planning analysis to determine the origin and destination of transit ridership forecast at different locations along the proposed transit networks. Summaries are provided for each of the 22 Planning Districts illustrated in Figure 5-1.

Table 5-14 provides a summary of the select link analysis prepared for the study. Three segments were identified along the Trunkline system for this analysis.

**Table 5-14  
Select Link Analysis Transit Patronage, Year 2025 – Build Alternative**

Select Link Locations and Direction	District % Share of Trip Origins at Select Link
<b>Select Link 1 (north segment)</b> Transit Patronage Traveling Southbound, departing Town Center Station toward Bells Ferry Station	Ackworth – 4% Kennesaw – 9% Town Center – 21% East Cobb – 24% Cherokee County – 42%
<b>Select Link 2 (middle segment)</b> Transit Patronage Traveling Southbound, departing Delk Road Station toward Herodian Way Station	Ackworth – 3% Kennesaw – 5% Town Center – 12% East Cobb – 14% West Cobb – 8% Cherokee County – 10% Marietta – 47% Other – 3%
<b>Select Link 3 (south segment)</b> Transit Patronage Traveling southbound, Departing Atlantic Steel Station toward Arts Center Station	Ackworth – 1% Kennesaw – 2% Town Center – 4% East Cobb – 7% West Cobb – 4% Cherokee County – 4% Marietta – 17% Cumberland – 20% Smyrna – 8% South Cobb – 3% Fulton County – 28%

The transit select link analysis reveal the Trunkline system would at different points serve a different share of the travel market in the corridor. It is important to understand from the earlier summaries of transit patronage forecast for the Trunkline, that ridership generally increases along the system from north to south, or in order from Select Link 1 to 3.

The select link analysis results indicate the following:

- At Select Link 1, the north segment south of the Town Center Station, a significant share of total transit riders would begin their trip in Cherokee County (42%).

Significant patronage would be generated by East Cobb (24%) and the Town Center (21%). Ackworth (4%) and Kennesaw (9%) would also contribute transit patronage in this part of the system.

- At Select Link 2, the middle segment south of Delk Road Station, nearly half the transit riders would begin their trip in Marietta (47%). As a percent of total transit patronage at this point, the share of trips from Cherokee County (10%), East Cobb (14%), and Town Center (12%) would continue to be significant.
- At Select Link 3, the south segment between the Atlantic Steel and Arts Center Station, this location would show the greatest mixture of trip origins, represented at this the peak load point along the entire Trunkline system. The Cumberland (20%) and Marietta (17%) districts would generate the highest share of Cobb County patrons at this location. Significant ridership would also have origins in Smyrna (8%) and East Cobb (7%). Fulton County (28%) would also generate a significant share of patronage at this location, resulting from the four stations assumed between Cobb County and the terminal Arts Center station.

In summary, the results of the select link analysis positively reveal that the Trunkline rail system would serve many travel markets within the corridor. Of the total daily patronage, about 72 percent at the peak load point would have trip origins in Cobb County. This is an indication that the Trunkline would predominantly serve Cobb County residents and workers.

### **5.3 SYSTEMWIDE AND CORRIDOR ROADWAY FORECASTS**

The transportation demand forecasts include summaries of highway traffic volumes for all roadways and systems within the Atlanta region. These comparative forecasts for the highway systems indicate benefits the transit system improvements would have on regional vehicular traffic demand. The results provided in this section include vehicle-miles-traveled (VMT) and cut-line volume summaries.

#### **5.3.1 Regional Vehicle Travel Summary – Vehicle Miles of Travel (VMT)**

Table 5-15 is a summary of the forecast year 2025 daily VMT across all Atlanta Region roadways, summarized by functional roadway classification. Table 5-16 is a summary of the net increment of additional VMT over the Build Alternatives, for the TSM and No Build Alternatives.

The results show that the Build Alternative would reduce regional daily VMT as compared to the TSM and No Build Alternatives. On a regional scale the overall reduction is about .2% compared to the TSM Alternative and about .3% as compared to the No Build Alternative. The percentage change is small is because the total regional VMT forecasts at these systemwide summaries are large numbers. It is important to note that the only difference across the alternatives are transit system assumptions in Cobb County.

**Table 5-15  
Forecast Daily Vehicle Miles Traveled, Year 2025**

	Build Alternative	TSM Alternative	No Build Alternative
Freeway	60,731,310	60,818,510	60,849,460
Expressway	594,227	589,254	592,262
HOV	1,399,558	1,423,249	1,427,531
Freeway Ramps	3,284,272	3,291,922	3,301,620
Principal Arterial	15,105,510	15,147,920	15,151,910
Major Arterial	16,784,830	16,801,190	16,860,130
Minor Arterial	20,436,390	20,484,240	20,505,450
One-Way Roadways	176,325	177,097	177,749
Principal Collectors	16,997,510	17,037,710	17,027,460
Major Collectors	563,659	568,831	574,742
Minor Collectors	410,370	415,239	419,033
Local	16,239,860	16,260,250	16,270,270
TOTAL	152,723,821	153,015,412	153,157,617

**Table 5-16  
Net Daily VMT Increase Over Build Alternative, Year 2025**

	TSM Alternative	No Build Alternative
Freeway	87,200	118,150
Expressway	(4,973)	(1,965)
HOV	23,691	27,973
Freeway Ramps	7,650	17,348
Principal Arterial	42,410	46,400
Major Arterial	16,360	75,300
Minor Arterial	47,850	69,060
One-Way Roadways	772	1,424
Principal Collectors	40,200	29,950
Major Collectors	5,172	11,083
Minor Collectors	4,869	8,663
Local (Centroids)	20,390	30,410
TOTAL	291,591	433,796

### 5.3.2 Cut-Line Traffic Volumes

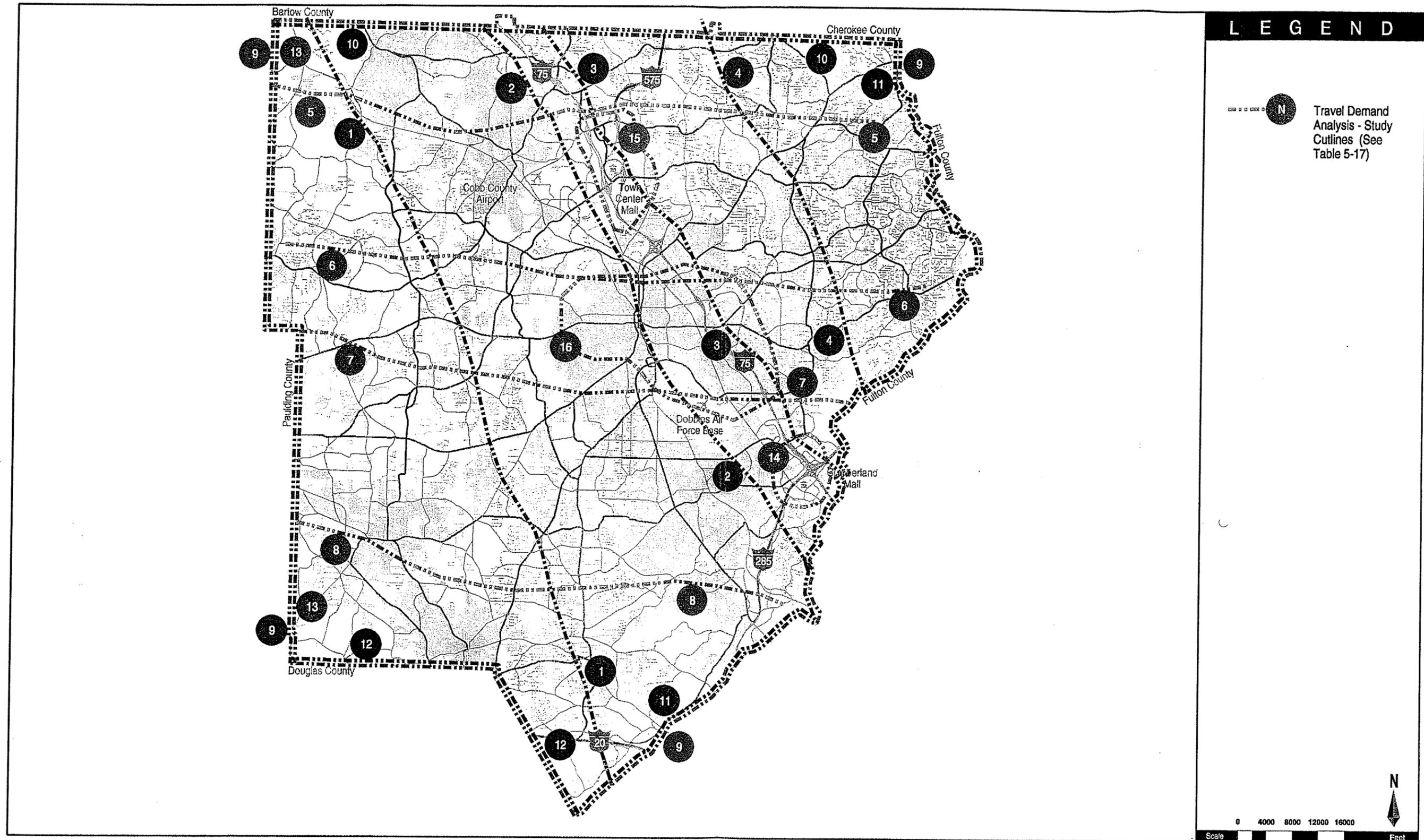
A “Cut-line Analysis” was prepared to take a more focused look in Cobb County at the forecast change in traffic volumes across the study alternatives. Table 5-17 is a summary of the cut-line analysis showing summaries of traffic volume crossing all roadways intersecting different locations within the county for the Build Alternative, and the “net change” or additional traffic volume under the TSM and No Build Alternatives. Figure 5-3 is a map showing the cut-line locations.

These cut-line summaries indicate that the Build Alternative would reduce vehicular traffic volumes in many areas of the county, as compared to the TSM and No Build Alternatives. The reduction in vehicles on the roadway system would show positive benefits to air quality in Cobb County.

**Table 5-17**  
**Cut-Line Analysis Daily Traffic Forecasts, Year 2025**

Map Reference	Cut-line Description	Build Alternative	TSM Alternative	No Build Alternative
		Total	Net Change*	Net Change*
<b>All east-west roadways</b>				
1	West Cobb	763,389	1,379	4,954
2	West of I-75	775,563	10,989	11,576
3	East of I-75	867,520	8,449	11,166
4	East Cobb	229,695	1,954	3,665
<b>All north-south roadways</b>				
5	North of Town Center	334,893	3,072	3,033
6	North of North Loop	535,218	5,671	7,804
7	South of Delk Road	662,665	9,162	6,280
8	South Cobb	514,141	(20)	1,872
10	Bartow-Cherokee County	346,406	1,096	3,991
<b>All crossing roadways</b>				
9	Cobb County Cordon	2,370,401	7,785	20,230
11	Fulton County Line	1,480,766	5,496	12,809
12	Douglas County Line	384,506	493	2,305
13	Paulding County Line	158,723	700	1,125
14	Cumberland Cordon	1,402,964	15,058	16,954
15	Town Center Cordon	693,106	6,452	5,508
16	Marietta Cordon	1,135,760	13,050	13,388

\*Net Change includes the increment over the Build Alternative



**FIGURE 5-3 TRANSPORTATION ANALYSIS CUTLINE LOCATIONS**

*Cobb County Transit Implementation Study*

#### 5.4 COMPARATIVE FORECAST RESULTS FROM ARC MODEL, YEAR 2025

The RTP adopted by ARC in March 2000 provides patronage forecasts for the Trunkline and Cumberland Circulator. The Town Center Circulator was not included in the RTP analysis.

The assumptions made for the RTP forecasts are generally the same in terms of the corridors to be served by fixed guideway systems. Some differences in service assumptions and stations, contribute to a differences in transit patronage forecasts for year 2025, as compared to the forecasts presented in this study.

Table 5-18 is a summary of the Trunkline and Cumberland Circulator daily patronage forecasts for the RTP and this study.

This comparison shows the study daily patronage forecasts are about 16,700 (23%) higher for the Trunkline and 1,200 (6%) higher for the Cumberland Circulator. The difference in the Cumberland Circulator is considered insignificant. For the Trunkline system, this study considers more stations and other differences in the details of the transit systems assumed.

While generally the comparative forecasts show similar patterns in terms of patronage demand, the study forecasts are considered a step refinement of the ARC forecasts, using a more detailed version of the regional model and different assumptions.

**Table 5-18**  
**Daily Patronage Forecasts, Year 2025**

System Element	ARC – RTP 2025 <sup>1</sup>	CCTIS – 2025
Trunkline FGT	52,000	67,600
Cumberland Circulator	19,000	20,200
Total	71,000	87,800

<sup>1</sup> Atlanta Regional Commission, Final Draft RTP, March 2000, page 6-22, Table 6.5-5

**Section 6**  
**Transportation Impact Analysis**

This section presents a preliminary summary of the benefits and impacts resulting from the Build Alternative. Transportation benefits include improved transit mobility, transit service coverage, travel time savings, transit accessibility to low income households, and the opportunity to coordinate land use and development plans through the stimulus of the transit system. Transportation impacts may include alignment and station area dislocation, and station area traffic.

A thorough documentation of the benefits and impacts of the proposed Cobb County transit systems will be provided in the formal Alternatives Analysis study to follow. The discussions below introduce the key issues to be elaborated upon during the alternatives analysis.

## **6.1 MOBILITY IMPROVEMENTS**

Transit service coverage, travel time savings and transit accessibility to low- and moderate-income households are key mobility improvements that would result from implementation of the proposed transit systems under the Build Alternative for Cobb County.

### **6.1.1 Transit Service Coverage**

As documented in Section 5, the Build Alternative would expand transit service coverage throughout the county and provide accessibility to high frequency service in the I-75 North corridor serving the Town Center Area and Cumberland CIDs.

The forecasts show that under the Build Alternative approximately 45 percent of the population and about 62 percent of the employment would be within a walk accessibility to transit service. Under the TSM Alternative, with the same countywide bus transit service, about 41 percent of the population and about 52 percent of the employment would be within a walk accessibility to transit service.

Clearly the Build Alternative would expand the availability of transit service to the largest share of the population and employment in Cobb County. The expansion of transit service coverage would directly benefit the County in meeting transportation demand in a manner directly consistent with the RTP and the air quality conformity program.

### **6.1.2 Travel Time Savings**

The Build Alternative would show a significant benefit in transit travel time between key travel origin and destination zones within the county and region. To evaluate the project's benefits in transit travel time savings, the Build Alternative is compared against the TSM and No Build Alternatives.

Table 6-1 shows a summary of transit travel times between key locations within Cobb County and Atlanta. The transportation model forecasts both walk and drive access to transit, and travel time results are shown for both types of transit trips.

The results indicate that the Build Alternative would provide a competitive transit travel time to the automobile in serving travel in the I-75 corridor linking the Town Center and Cumberland CIDs, and points south in Mid-Town and Central Atlanta. Furthermore, the Build Alternative would provide significantly improved transit travel times as compared against the TSM and No Build Alternatives.

For example, the average walk access transit trip in year 2025, from the Town Center Mall to the Atlanta Arts Center station is forecast to take about 39 minutes under the Build Alternative, about 74 minutes under the TSM Alternative, and about 101 minutes under the No Build Alternative.

These initial travel time savings results indicate the direct benefit in the I-75 North Corridor that would result from the Trunkline rail system. Travel times within the county between the Town Center CID and the Cumberland CID, between each of these centers and midtown Atlanta would be significantly improved, and a travel time benefit that would attract a significant transit ridership. The Trunkline rail service would maintain these travel times since the system would be completely grade-separated.

Transit travel times between these important locations would be impaired under the TSM and No Build Alternatives, since buses would travel on the roadway system under highly congested conditions.

### **6.1.3 Low-Income Households Served**

All three study alternatives would provide an expanded transit service, with improved access to transit for low- to moderate-income households. Table 6-2 is a summary showing that the Build Alternative would provide service within a walk access to transit for about 49 percent of the low to moderate-income households in Cobb County in year 2025. Both the TSM and No Build Alternatives would expand significantly upon existing transit service coverage, providing service within a walk access to transit for about 36 percent of low- to moderate-income households.

Given that low- to moderate-income households are distributed throughout the county in 2025, based on the definition used in the model, the Build Alternative would clearly provide a benefit for these households providing access to jobs and activities throughout the county and region. The FTA criteria for project justification will place importance on documentation of these results.

**Table 6-1  
Transit Travel Time Comparison – Study Alternatives**

Selected Door-to-Door Interchanges (Origin to Destination)	Transit Travel Times					
	Build		TSM		No Build	
	Walk Access	Drive Access	Walk Access	Drive a Access	Walk Access	Drive Access
Town Center to Cumberland	24.1	24.9	75.7	57.0	73.2	64.4
Town Center to Central Marietta	28.6	16.5	41.2	16.5	38.3	16.5
Town Center to Atlanta Arts Center	38.6	39.4	74.7	65.1	101.3	85.6
Town Center To Atlanta CBD	45.2	46.0	80.0	70.4	96.7	79.0
Cumberland to Town Center	24.1	23.9	75.7	52.6	80.2	79.0
Cumberland to Central Marietta	28.7	17.4	46.5	18.8	46.9	18.8
Cumberland to Atlanta Arts Center	24.2	27.3	54.9	46.3	33.5	41.1
Cumberland to Atlanta CBD	30.8	33.9	58.2	49.6	30.9	36.5
Central Marietta to Town Center	28.6	12.9	41.2	13.7	38.3	30.0
Central Marietta to Cumberland	28.7	18.3	46.5	18.8	46.9	18.8
Central Marietta to Atlanta Arts Center	43.2	32.8	87.9	69.7	75.0	51.9
Central Marietta to Atlanta CBD	49.8	39.4	91.2	73.0	70.4	47.3

**Table 6-2  
Comparative Study Alternatives  
Low Income Households Served, Year 2025**

	Build Alternative	TSM Alternative	No Build Alternative
Low-Moderate Income Households Walk Accessible to Transit – Cobb County	75,716	53,191	54,687
Low-Moderate Income Households* in Cobb County	153,747	153,747	153,747
Total Cobb County Households	296,924	296,924	296,924
% Low-Moderate Income Households which are Walk Accessible to Transit in Cobb County	49%	35%	36%

\* Low-Moderate Incomes households defined by income quartile distribution Includes Income Groups 1 and 2.

## 6.2 TRANSIT SUPPORTIVE EXISTING LAND USE AND FUTURE PATTERNS

The existing CCT local and express bus services is oriented to link transfer points in the City of Marietta, the Town Center Area and the Cumberland Area, and places outside the county in the City of Atlanta. The county transfer stations allow passengers to transfer to connecting bus lines oriented to providing service to major employment and activity centers. The CCT bus service is therefore a service plan to meet the major travel demands of the existing land use.

An important and significant benefit of the proposed Cobb County Transit System is the opportunity to integrate planning for the fixed-guideway projects with new development plans.

Already, physical planning for the fixed guideway alignment and stations is being established in close coordination with land use plans and project development within each of the Community Improvement Districts.

### 6.2.1 Land Use Plan Documentation

A comprehensive database has been established for the study, to enumerate the existing and planned land use and new development potential within the Town Center Area and Cumberland CIDs. The database is direct input to the final transit patronage forecasts and for identifying the best locations for stations along the fixed-guideway systems. Figures 2-2 and 2-3, previously provided in Section 2, illustrate the inventory of existing land use in each CID resulting from the development of the database.

Over the past six months, the study team has been actively working with county planners and developers in the study area to identify planned *new* land use, based on project plans. The study team has meet with many developers active in the CIDs and is working to identify the benefits of integrating the fixed guideway transit systems into their specific plans. In general, the development community is welcoming the development of the transit system and indicated a strong willingness to modify plans toward these objectives.

This integration of land use and transit system development is a primary categorical benefit of the proposed projects. A clear documentation of direct results will be important to project justification during the formal alternatives analysis to follow.

### 6.2.2 Qualitative Land Use Assessment

The study team is preparing a qualitative land use assessment following guidelines provided by the FTA. The assessment will document the results of cooperation with the development community in modifying land use plans to achieve integration with the transit systems planned for the two CIDs. These tasks are underway and will be reported in the final study report.

### **6.3 FTA SECTION 5309 NEW STARTS EVALUATION MEASURE TEMPLATES**

Appendix B provides a complete listing of the many evaluation templates to be prepared for the FTA application for federal funding for transit fixed-guideway projects. These evaluation templates will be completed as part of the final study report, to the extent data generated in this study fits the requirements. The formal Alternatives Analysis will focus on a complete documentation of these evaluation templates.

### **6.4 TRANSPORTATION IMPACTS OF THE PROPOSED PROJECTS**

A thorough documentation of the likely transportation impacts of the transit fixed guideway systems, is another requirement met during the formal Alternatives Analysis and Draft Environmental Impact Statement stages of project development. A brief discussion concerning some of the potential transportation impacts of the proposed project is provide in the following sections.

#### **6.4.1 Station Access Traffic**

The travel demand forecasts show that stations along the Trunkline rail system would generate significant drive access park-and-ride demand. In most cases, station access traffic would comprise traffic already traveling along the arterial roadways and freeways, rather than new traffic demand. Site specific traffic impacts would occur at the access and egress to the stations. Mitigation measures to handle the traffic demand at stations may include new traffic signals, access roadways, and other roadway improvements. These improvements would be approved by the local Public Works agencies and would be considered as part of the project cost.

#### **6.4.2 Park-and-Ride Facilities**

At each Trunkline rail station, secure and adequate park-and-ride facilities should be developed that allow for efficient parking, drop-off and pick-up zones, and bus transfer facilities. These park-and-ride facilities must be developed so as to minimize impacts on adjacent land use. In general, the development of these park-and-ride facilities are considered an impact of the proposed transit system, and require adequate mitigation measures so as to minimize visual, noise, traffic and other associated impacts. These mitigation measures would be considered part of the project cost.

#### **6.4.3 Traffic Signal Systems**

The change in traffic demand patterns around the Trunkline Rail stations may require modifications to the areas traffic signal coordination. Often updates to signal hardware and computer software is required to serve the change in traffic patterns and to provide good access to stations.

The trend in traffic signal systems is develop area-wide computerized traffic management plans that seek to optimize traffic flow throughout the roadway systems. These systems would ideally be re-oriented to provide efficient access and egress to the rail stations so as to minimize travel times and encourage the use of the rail service.

#### **6.4.4 Roadway Modifications**

The alignment of the Trunkline rail system may require modifications to roadways and site access driveways. Any changes that would be required to these roadways or driveways, would be part of the project mitigation that would be negotiated amongst property owners, city public works officials, and the implementation agency.

Changes to circulation patterns resulting from modifications in roadways would seek to improved traffic flow in each area. Traffic signal system modification would be integrated into these improvements on an area-wide basis.