



Greater Dalton Metropolitan Planning Organization

Multimodal Transit Feasibility Study Part II

Draft Report



In Association with
Parsons Brinckerhoff and
Connetics Transportation Group

June 2012

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Draft Report

Prepared by:

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In Association with:

**Parsons Brinckerhoff and
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SECTION 1 INTRODUCTION

The purpose of this study is to conduct an analysis for assessing the feasibility of implementing a fixed-route transit option in the Greater Dalton Area. This report documents the transit analyses and findings of the Multi-modal Transit Feasibility, Part II.

The document is organized as follows:

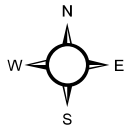
- Section 1 presents a description of the project study area and project background.
- Section 2 describes the review of previous reports and the transit needs assessment including current and future demographics and land use.
- Section 3 summarizes the public engagement activities from Part I of the study and the stakeholder interview process that was conducted in Part II.
- Section 4 describes the development and analysis of the proposed transit service alternatives in the study area.
- Section 5 recommends the study's preferred transit service alternative for future study.
- Section 6 identified potential funding sources.
- Section 7 presents the next steps to move towards public transit service implementation.

1.1 DESCRIPTION OF PROJECT STUDY AREA

Whitfield County is located in northwest Georgia, 25 miles south of Chattanooga, Tennessee and 90 miles north of Atlanta, Georgia. There are four municipalities in Whitfield County which include: Cohutta; Tunnel Hill; Varnell; and, Dalton, the county seat which is also known as the "*Carpet Capital of the World*." Whitfield County is divided into two districts on the Ridge and Valley Province of the Appalachian Highlands: the Armuchee Ridge District in the west, and the Great Valley District in the east. The Conasauga River is the boundary of the County on the east. Important hydrological resources in addition to the Conasauga River include three water supply watersheds, wetlands, and groundwater recharge areas. Steep slopes of 15-25% on elevations ranging from 800 to 1,800 feet above sea level are common and constitute a major scenic resource but create a constraint on transportation. The Dalton-Whitfield County area includes approximately 295 square miles. **Figure 1-1** illustrates Whitfield County.

The focus of the Greater Dalton Metropolitan Planning Organization (GDMPO) study is to explore transit opportunities in key urban transportation corridors to address current and anticipated population and employment growth. The study limits for the transit feasibility study include the City of Dalton urbanized area. **Figure 1-2** illustrates the transit project study area.

GDMPO Transit Study Whitfield County, GA



TENNESSEE

CATOOSA COUNTY

WALKER COUNTY

MURRAY COUNTY

GORDON COUNTY

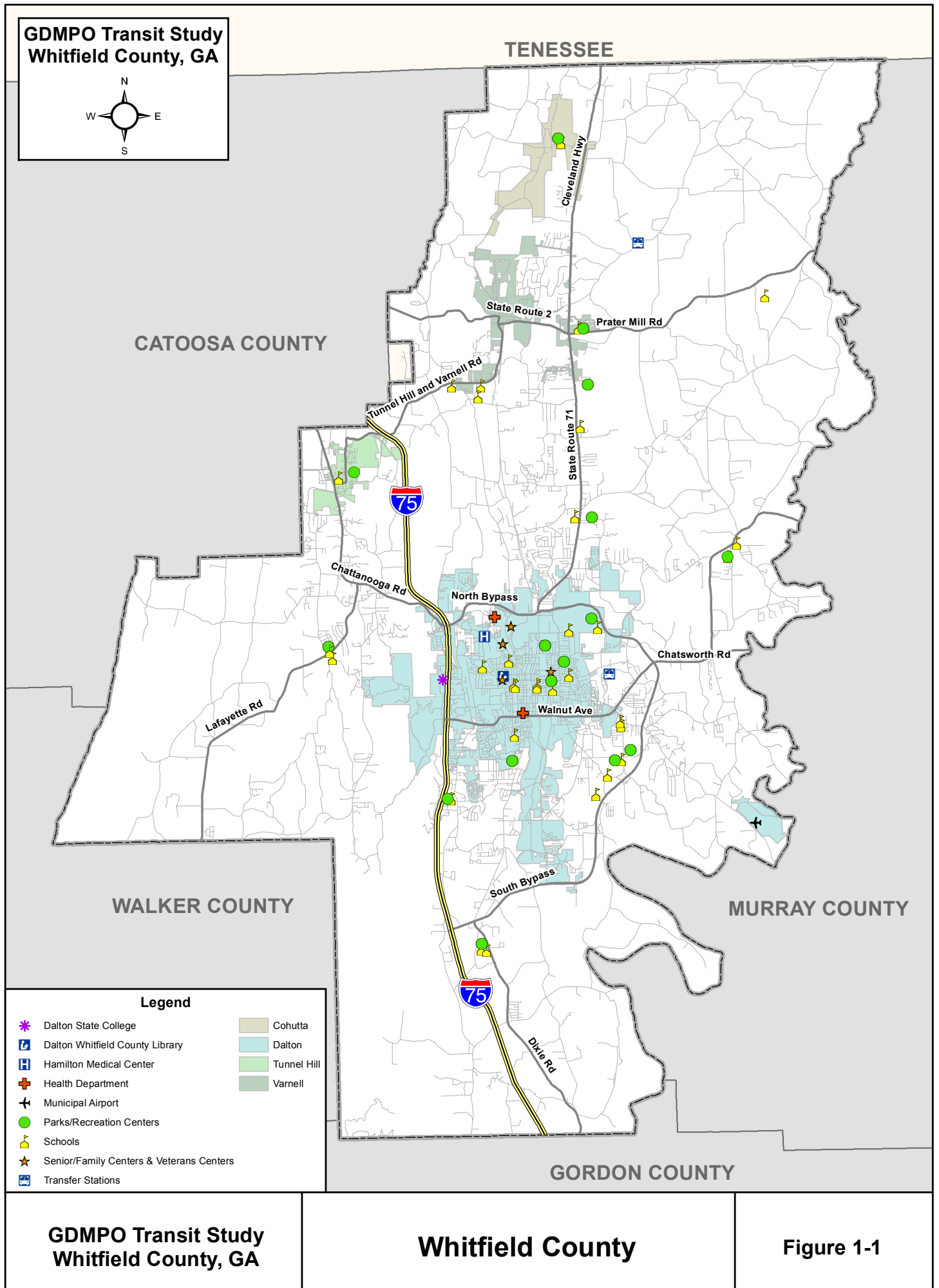
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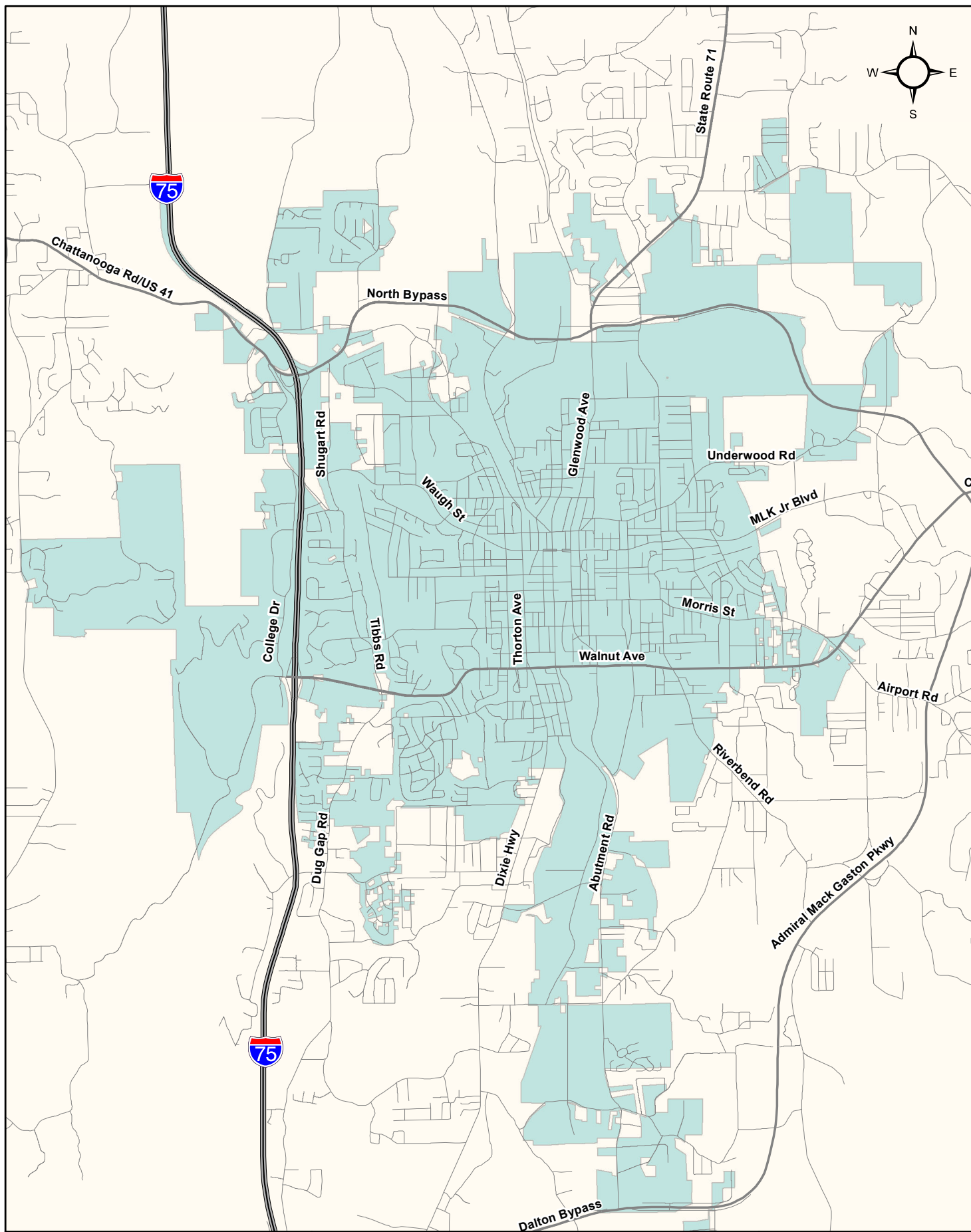
- | | | | |
|--|--|--|-------------|
| | Dalton State College | | Cohutta |
| | Dalton Whitfield County Library | | Dalton |
| | Hamilton Medical Center | | Tunnel Hill |
| | Health Department | | Varnell |
| | Municipal Airport | | |
| | Parks/Recreation Centers | | |
| | Schools | | |
| | Senior/Family Centers & Veterans Centers | | |
| | Transfer Stations | | |

GDMPO Transit Study
Whitfield County, GA

Whitfield County

Figure 1-1





1.2 PURPOSE OF THIS STUDY AND REPORT

Multimodal transportation options for the Dalton-Whitfield County area have been studied over the last several years. As part of this study, the GDMPO is continuing the evaluation of transportation alternatives in the study area's key transportation corridors. The past studies had identified initial multimodal corridors recommendations. These studies include: *The City of Dalton Multimodal Transportation Study (2003)*, the *North Georgia Regional Development Center Transportation Needs Study (2006)*, the *Northwest Georgia Regional Commission Transit Study (2010)*, and Part I of this current Multimodal Transit Feasibility Study.

Part I of this multimodal transit feasibility study primarily focused on the public engagement planning process for the development of transit alternatives. This phase of the transit feasibility study (Part II) is another step toward addressing and implementing the transportation needs expressed by the citizens of Whitfield County.

The 2006 Transit Study outlined some distinct transit needs for the Greater Dalton urbanized area, and the 2010 NWGRC - Street Smarts Study looked into transit needs to get commuters to and from points along the I-75 corridor as efficiently as possible. The GDMPO needs to determine, based on the results of the above two studies and future population and employment projections, the specific transit needs for the Dalton-Whitfield County study area, which will help to improve public transportation for the traditionally underserved populations of Whitfield County and all of the communities within its boundaries.

The major objective of this multimodal transit feasibility study (Part II) is to identify a significant transportation alternative and funding opportunities that meet the needs of the study area, and which is worthy of being carried forward for further planning efforts including future implementation. Part II of this study includes:

- The Review the previous reports and data, in an effort to utilize to the greatest extent possible, the information for this study;
- Conduct stakeholder interviews to solicit input transportation issues and needs;
- Formulation and evaluation of transit service alternatives;
- Identification and recommendation of a preferred transit service alternative to carry forward for more detailed evaluation in the next study phase; and
- Identification of potential funding sources for evaluation in the next study phase.

This report documents the tasks of Part II of this transit feasibility study, as well as identifies the next steps.

SECTION 2 TRANSIT NEEDS ASSESSMENT

This section provides a brief description of the review of the previous studies related to multimodal transportation alternatives in the study area and the transit needs assessment. The needs assessment is based on the information provided from the previous studies and analysis of the existing and future characteristics for population, employment, land use, and stakeholder interview summaries from Part I and II of this study.

2.1 REVIEW OF PREVIOUS REPORTS

A review of the previous reports and studies pertaining to the Dalton-Whitfield County study area was conducted to obtain transit needs information and information related to proposed transit service alternative formulation.

All relevant reports and data from past efforts and from Part I of the Study were reviewed. This review helped to better define the transportation problems affecting the study area, to identify local issues and concerns related to transportation, and to identify/collect previous data to be utilized in the feasibility analysis.

The information assembled and evaluated included the following:

- The Public Engagement Report of Part I of the Study (data and outreach documentation), September 2011
- Transit Development and Coordination Plan – Northwest Georgia Regional Commission (NWGRC), June 2010
- Public Transportation Needs Study, January 2006
- GDMPO 2035 Long Range Transportation Plan, June 2010
- Population, employment, and land use data (current and future) provided by GDMPO and Georgia Department of Transportation (GDOT)
- Existing Public Transportation Operations (Whitfield County Transit Service); described in Section 4

The **Public Engagement Report (September 2011)** is briefly summarized in Section 3 of this report. Information regarding preferred multimodal transportation improvements and desired areas to connect (destinations and corridors) were reviewed and considered in the transit service alternative development process.

The **Transit Development and Coordination Plan (June 2010)** provided an evaluation of the vision of public transportation for the counties of Whitfield, Catoosa, Gordon, and Bartow. It looked at public transportation from a regional perspective to recommend inter-county and inter-agency cooperation and coordination as a means to provide improved transportation service between and within the four county study area. The plan developed coordinated strategies for the region to

consider, as well as an implementation plan for the recommended actions and strategies. Regarding Whitfield County, the plan explored expanding the existing Whitfield County Transit Service. It stated that additional funding for more general public transit trips would be a candidate for new service. It reported that local transit service in Dalton and surrounding area could be feasible, based on the 2006 Public Transportation Needs Study.

The **2006 Public Transportation Needs Study** investigated the feasibility of a fixed-route transit service. Five service options were developed as part of this study. Options 1 and 2 were designed as demand-response options to serve all of Whitfield County (expanding upon the existing Whitfield County Transit Service). Options 3, 4, and 5 were designed to offer various types of services to serve the urbanized area of Dalton, which included a range of possible service levels and their associated costs. The report recommended Option 5, which included fixed route service in the City of Dalton with complimentary ADA paratransit service. This option included six proposed fixed routes which would operate 12 hours a day, Monday through Friday. It included the removal of the current demand responsive service provided by Whitfield County Transit Service (formerly contracted to a private agency). The plan also outlined four Management Options: Option A: Local Government Owned and Operated. Option B: Contract Service. Option C: Local Government Owned/Operations Contracted Out. Option D: Multi-Agency Operating Agreement. Due to the costs involved, neither the City of Dalton nor Whitfield County have been able to follow the recommendations for a fixed route system.

The **GDMPO 2035 Long Range Transportation Plan (June 2010)**, was review regarding existing and future socio-economic data, land use, and transportation needs as they relate to the study area.

2.2 DEMOGRAPHIC CHARACTERISTICS

Demographic data for the study area was obtained from GDMPO, the GDMPO 2035 Long Range Transportation Plan (LRTP), and from the Georgia Department of Transportation (GDOT) Travel Demand Model for the Traffic Analysis Zones (TAZ) included in the Dalton and Whitfield County coverage area. Data was obtained from both the model base year (2006) and horizon year (2035) for population and employment.

The existing and future demographic characteristics for population and employment were analyzed to provide a review and validation of the previous reports identified transit needs in the study area. Existing and future conditions in the study area were mapped from Geographic Information System (GIS) data from the sources identified above.

2.2.1 Population

The population of Whitfield County in 2000 was 83,535 and the City of Dalton had a population of 27,912. The 2000 Census reports a 15.3% increase over the decade in Whitfield County compared to 26.4% for Georgia and 13.1% for the nation. Whitfield County and, more specifically the City of Dalton, have a large Hispanic or Latino population. According to the 2000 Census, there were 18,419

Hispanic or Latinos living in Whitfield County, which represent 22.1 percent of the county's total population. As reported by the 2000 Census, the Hispanic/Latino population in the City of Dalton was 11,219 or 40 percent of the total population of 27,912. Following the 2000 US Census, the City of Dalton crossed the metropolitan statistical area threshold and became an urbanized area. The Dalton urbanized area population was recorded at 57,666 people in 2000. The Dalton urbanized area encompasses the City of Dalton as well as all cities and unincorporated areas outside the Dalton City Limits.

Whitfield County 2006 and 2035 population density by TAZ are illustrated in **Figures 2-1 and 2-2**, respectively. Whitfield County's population from 1980 to 2000, with estimates for future population from the GDOT TAZ data, is presented in **Table 2-1**.

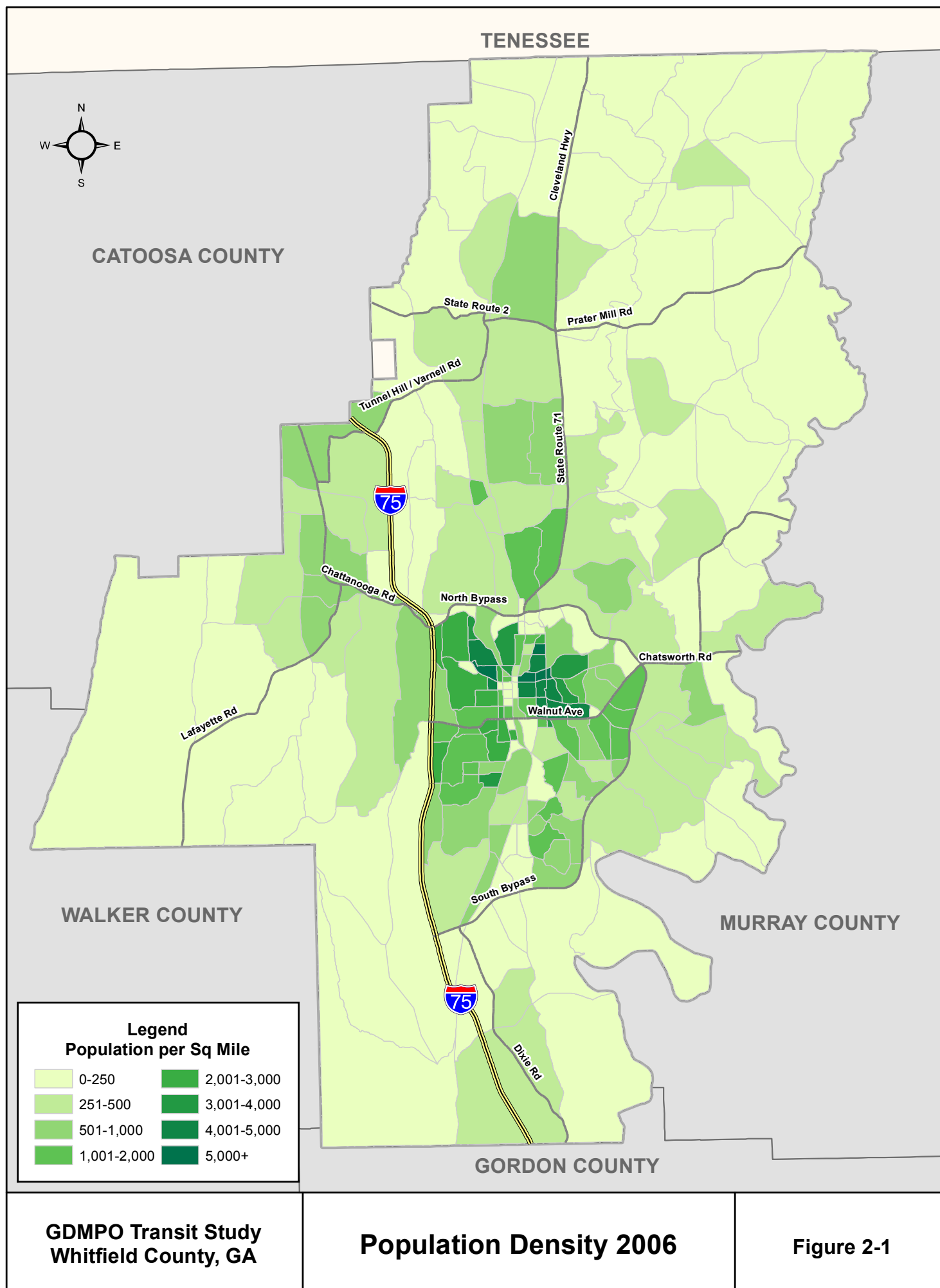
**Table 2-1 Whitfield County Population 1980-2000
(with 2006* and 2035* Population Estimates)**

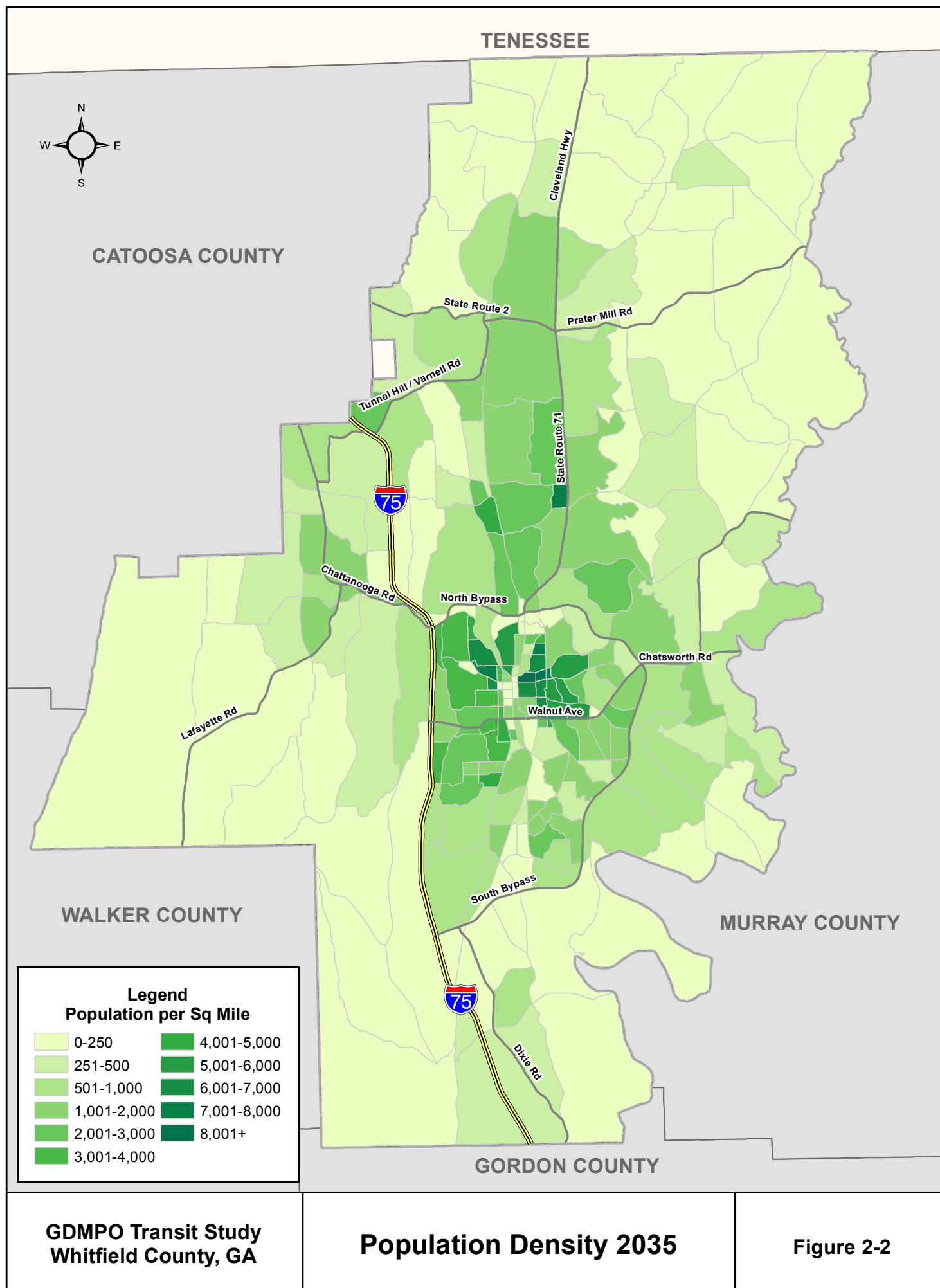
Year	Population	Percent Change
1980	65,775	Base
1990	72,462	10.2%
2000	83,525	15.3%
2006*	91,331*	9.34%*
2035*	162,282*	77.68%*

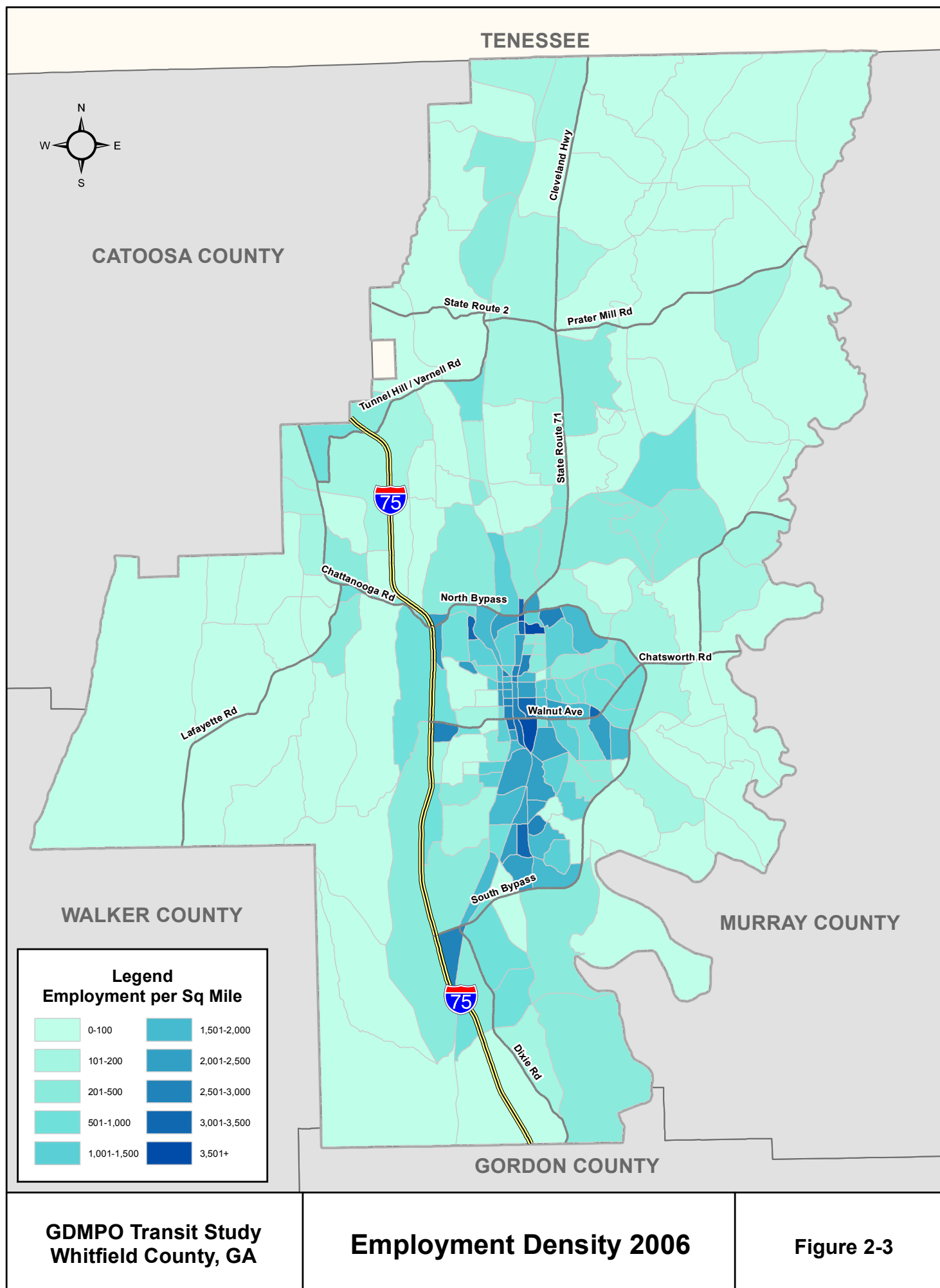
Source: GDMPO 2035 Long Range Transportation Plan / GDOT Travel Model

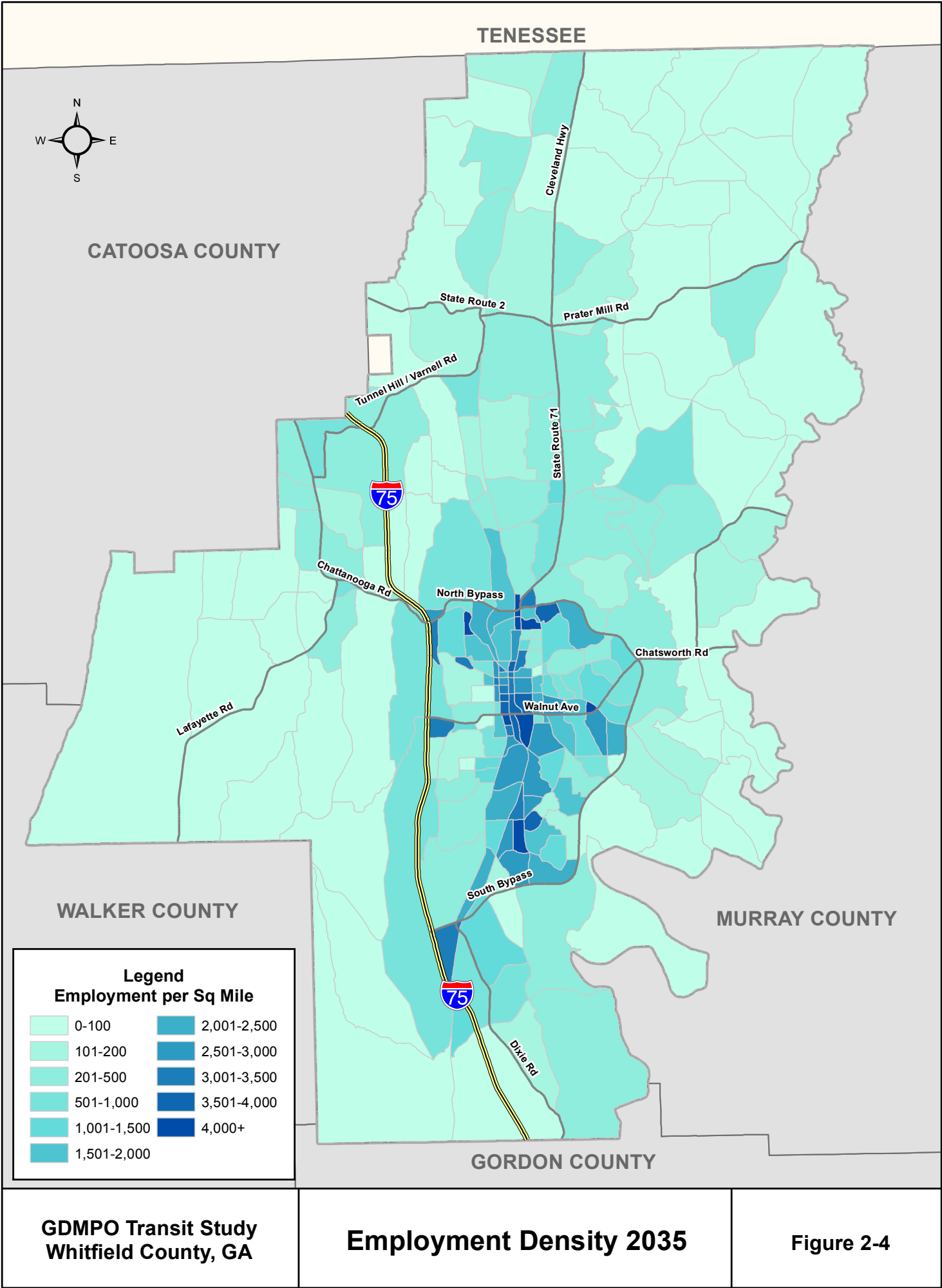
2.2.2 Employment

As stated in the GDMPO 2035 LRTP, 2000 employment in Whitfield County was 60,279 with 51 percent in manufacturing. 2006 employment in Whitfield County was 68,600, with approximately 49 percent in manufacturing. As a worldwide production and distribution leader in the carpet/flooring industry, Whitfield County is a leading economic force in North Georgia and a significant contributor to the state's overall economy. Over 46% of the estimated total number of people working in carpet/flooring manufacturing in the State of Georgia in 2006 worked in Whitfield County. (*Source: U.S. Department of Labor-Bureau of Labor Statistics.*) According to the GDOT Travel Model data, the projected 2035 employment in Whitfield County is 87,932, an increase of 28% from 2006. Whitfield County 2006 and 2035 employment density distribution by TAZ are illustrated in **Figures 2-3 and 2-4**, respectively.









2.3 LAND USE CHARACTERISTICS

Existing land use within the study area was determined utilizing information from the GDMPO staff and the 2035 LRTP. As documented in the 2035 LRPT, commercial, industrial, and manufacturing uses are located primarily within Dalton and Tunnel Hill. Commercial land use is located primarily along the corridors of SR 71/Cleveland Highway, SR 52 near I-75, SR 52/Chatsworth Highway, and I-75/SR 3 Connector. The majority of land use is agriculture, with pockets of single family residential scattered throughout the county. The City of Dalton is the primary urban center for Whitfield County that provides employment, retailing, and service opportunities to populations in adjoining counties. As documented in the LRTP, commercial land uses occupy about 9.6% of the city's land area with the majority of this activity located in the Central Business District, along Walnut, Thornton and Glenwood Avenues, Morris Street and the bypass around the city. Industrial land uses occupy about 15% of the land area located on a north/south axis through the center of the city, with the majority being located at the south end. Dalton contains the majority of all multi-family housing located in the county, which is widely scattered throughout the city. Existing land use and zoning for the City of Dalton is provided in **Figure 2-5**.

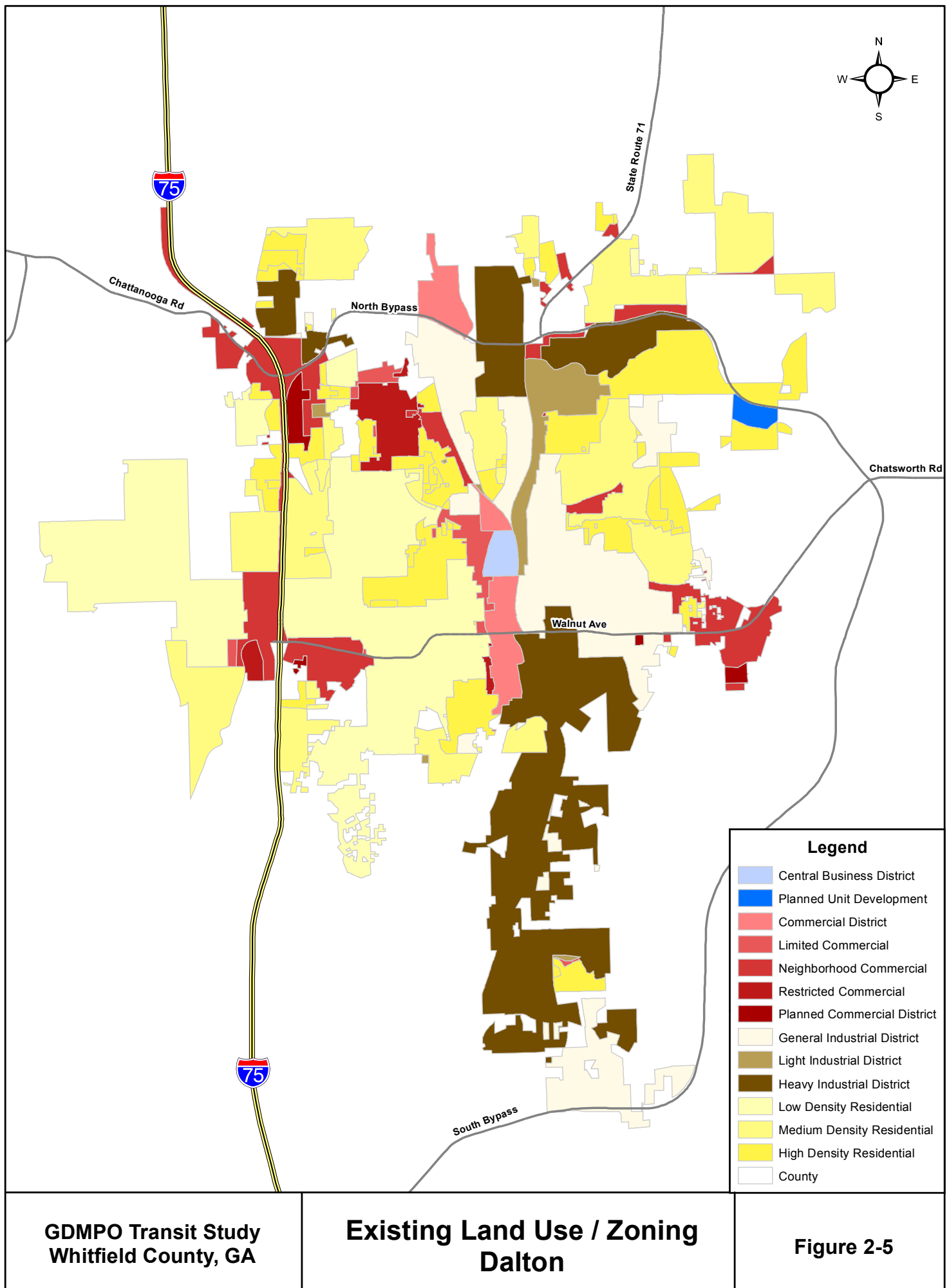
Future land use and development information was provided by the GDMPO. The Future Land Use /Development Maps the City of Dalton and for Whitfield County, are presented in **Figures 2-6 and 2-7**, respectively. These maps show a large industrial use south of the City of Dalton, commercial use along the major urban area corridors, and residential uses spread throughout the study area.

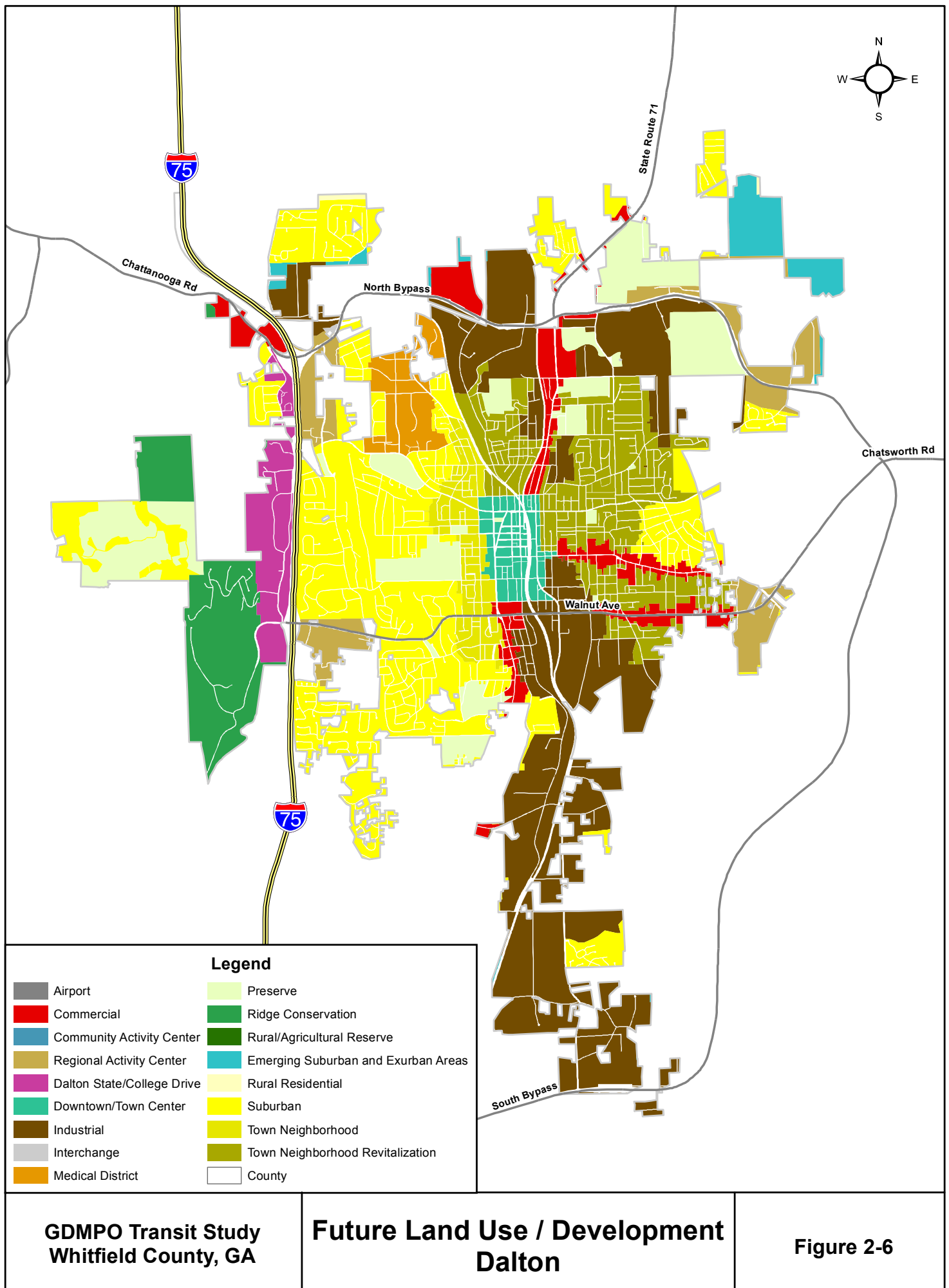
2.4 MAJOR STUDY AREA DESTINATIONS

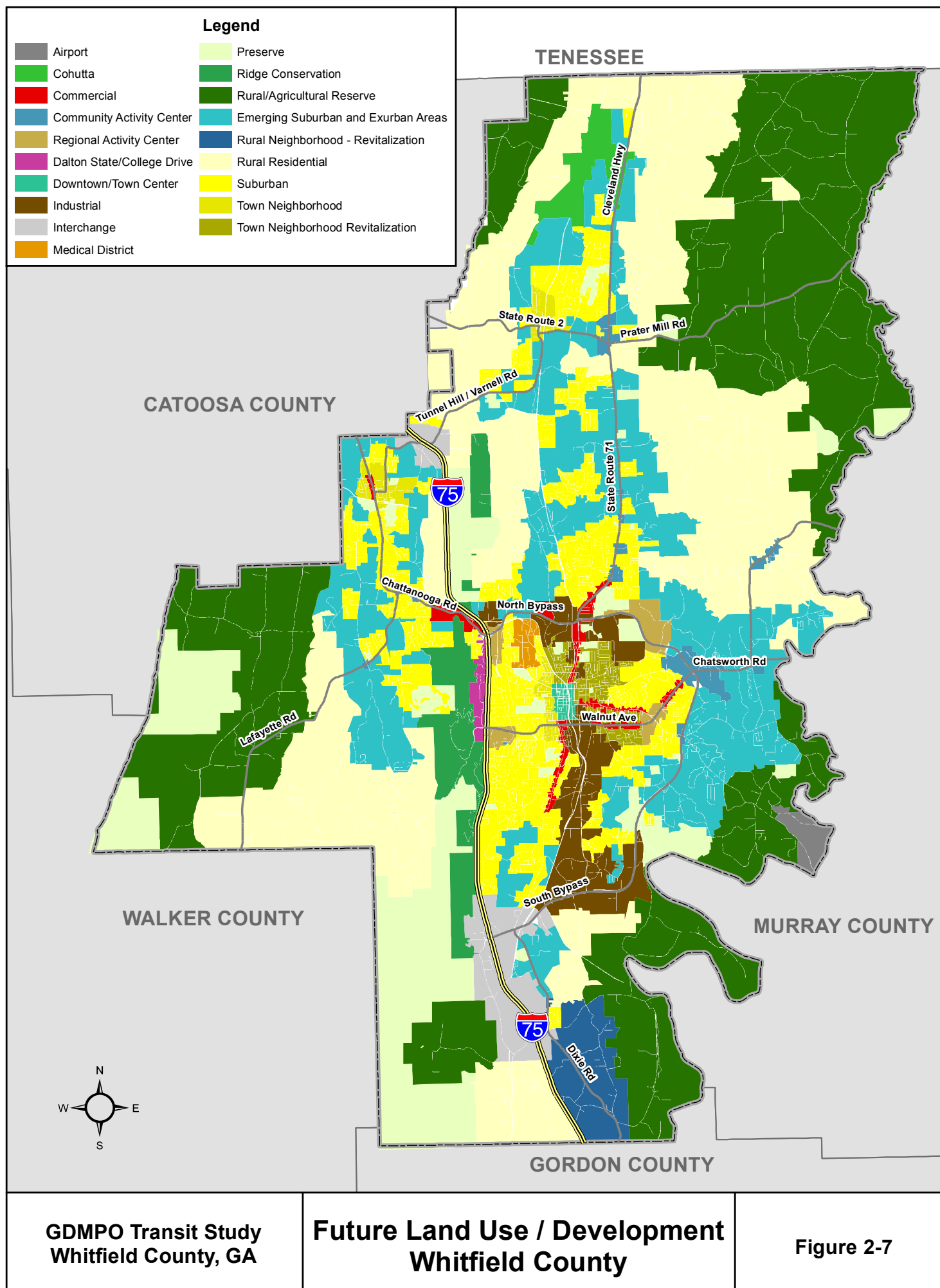
Primary consideration in transit service alternative development is the identification of major trip destinations within the study area. Major destinations typically include major employment locations, medical facilities, commercial/shopping areas, and schools, among others. The Public Engagement Report produced during Part I of this study conducted a "Major Destinations / Activity Center Exercise". The process involved participants placing dots on maps next to the five major destinations and activity centers that were viewed as most important to be serviced by public transit in the City of Dalton. The results of this exercise were used in the developed of proposed transit service alternatives in Section 4. Some of the destinations and corridors included:

Destinations

- City of Dalton (CBD)
- Dalton State College
- Hamilton Medical Center
- Dalton Public Schools
- Whitfield County Health Department
- Housing (100+ units)
- Walnut Crossing / Walnut Square Shopping Centers







Corridors

- Walnut Avenue
- Hamilton Street
- Cleveland Hwy / Glenwood Ave / Abutment
- Shugart Road
- Murray Street
- Morris Street
- Market Street
- Cleveland Hwy
- US 41 / S Dixie Hwy

In addition to the Public Engagement responses, the location of major employers and community/public service facilities also were identified, and are summarized below.

2.4.1 Major Employment Locations

Major employers that included manufacturers and service providers in Whitfield County with 200 or more employees at a single location were identified. The employer information was provided by NWGRC. **Table 2-2 and 2-3** presents the major manufacturing and service employers and their location in Whitfield County. **Figure 2-8** shows the location of the major employers.

2.4.2 Community and Public Facilities Locations

Community and public facilities include public schools, colleges and universities; medical centers, hospitals, and clinics; libraries and other government buildings; parks/recreation centers, among others. **Figure 2-9** shows the location of the community and public facilities in the study area.

Table 2-2 Whitfield County Manufacturing Employers

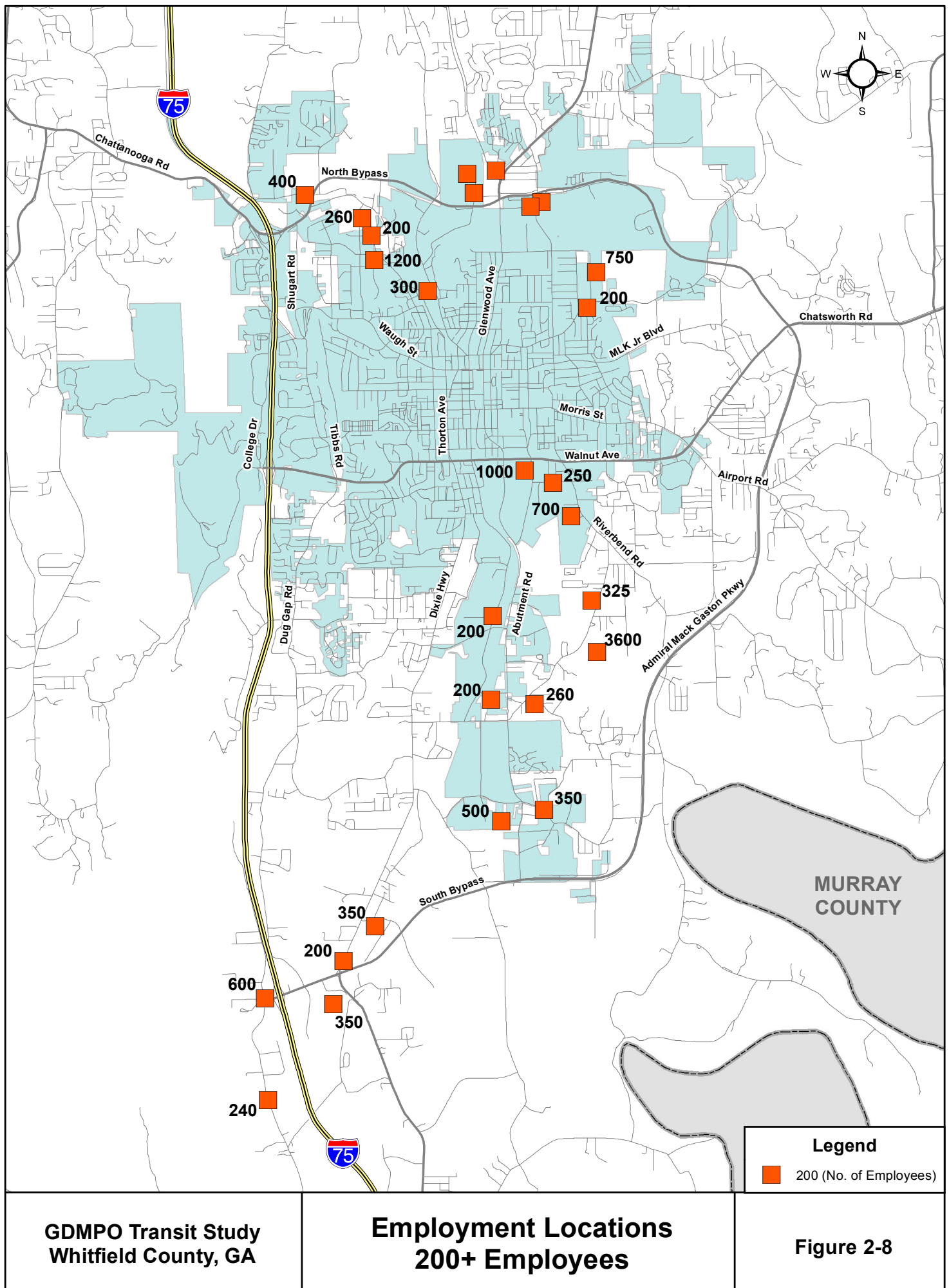
Company Name	Also Called	Address	City	Zip	Approx. No. of Employees
Aladdin Manufacturing Corporation		207 Phelps Road	Dalton	30721-4942	350
Aladdin Mills Inc.	Townhouse Mills	2001 Antioch Rd	Dalton	30721-4622	3600
Beaulieu Group LLC (PA)		1502 Coronet Dr	Dalton	30720-2664	200
Beaulieu Group LLC	American Polycraft	710 Cavendar Rd SE	Dalton	30721-5096	260
Beaulieu Group LLC		1501 Coronet Drive	Dalton	30720-2664	610
Chem-Tech Finishers Inc		1904 Hamilton St	Dalton	30720-5345	200
Columbia Recycling Corp		1001 Chattanooga Ave	Dalton	30720-8371	300
Garland Sales Inc (PA)		1800 Antioch Rd	Dalton	30721-4617	325
Indian Summer Carpet Mills Inc.		601 Callahan Rd SE	Dalton	30721-5004	350
J & J Industries Inc		818 J and J Drive	Dalton	30721-3647	750
Madison Industries, Inc		1318 Underwood St	Dalton	30721-3701	200
Marketing Alliance Group Inc		2830 N Dug Gap Road SW	Dalton	30720-4946	600
Mohawk Industries Inc		104 East McFarland Rd	Dalton	30721-4818	200
Shaw Industries Group Inc		1100 Riverbend Rd	Dalton	30721-4703	700
Shaw Industries Inc (DH)		616 E Walnut Ave	Dalton	30721-4409	1000
Shiroki North America Inc		1300 Veterans Dr	Dalton	30721-8692	400
Tandus Flooring Inc (HQ)		311 Smith Industrial Blvd	Dalton	30721-8661	257
Textile Rubber and Chemical Co (PA)		1300 Tiarco Dr SW	Dalton	30721-1907	350
TI Acquisition LLC	Templeton Carpet Mills	1104 Willowdale Rd NW	Dalton	30720-6970	400

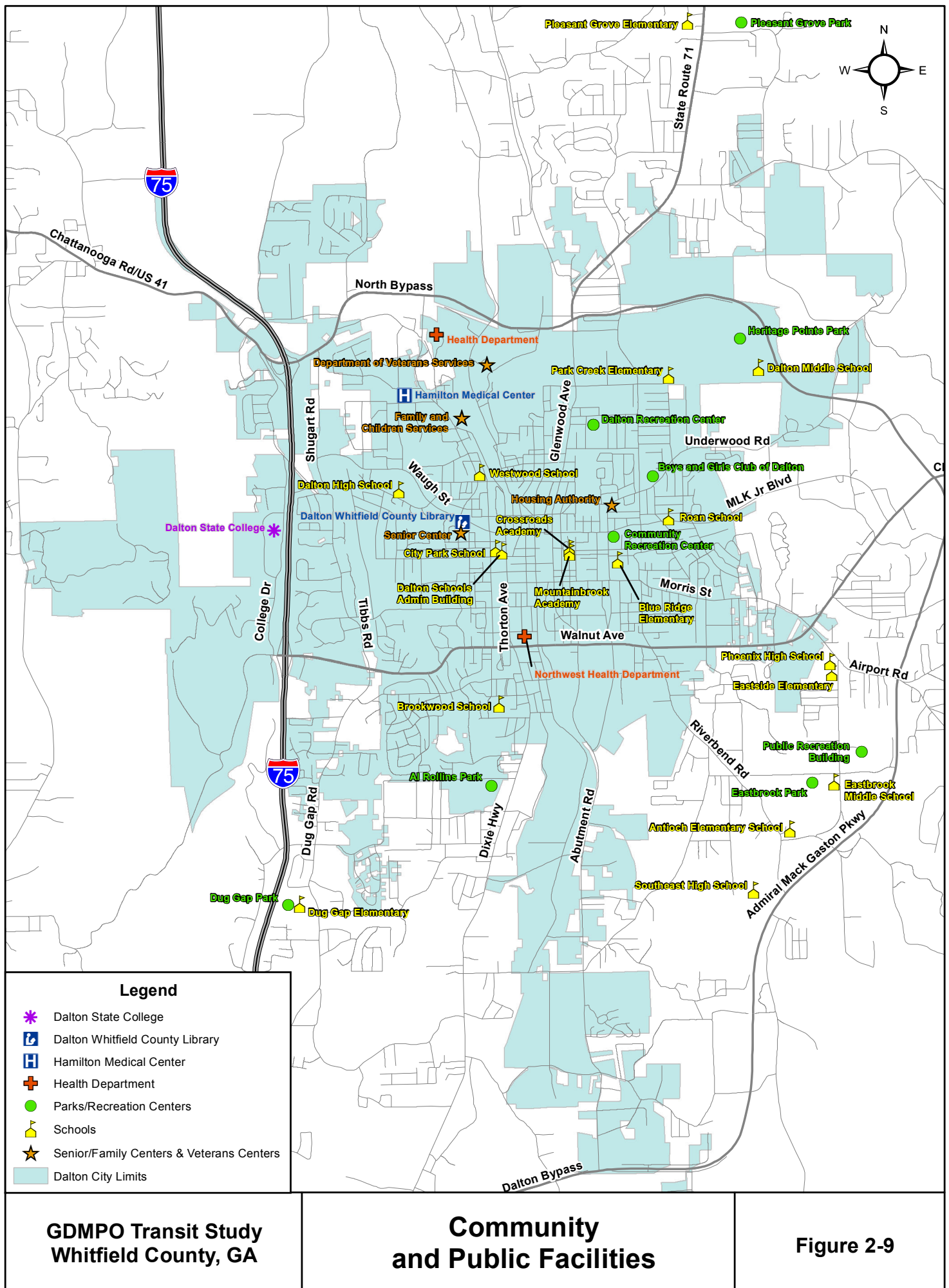
Data from the 2012 Official Georgia Manufacturers Directory, Harris Info Source, a Division of Dun and Bradstreet, published in cooperation with the Georgia Department of Economic Development

Table 2-3 Whitfield County Services Employers

Company Name	Also Called	Address	City	Zip	Approx. No. of Employees
Beaulieu Group, LLC		950 Riverbend Drive	Dalton	30721-4422	250
Cherokee Extrusion Investors		2313 Dalton Industrial Ct	Dalton	30721-1911	500
County of Whitfield	Correctional Center	805 Professional Blvd	Dalton	30720-2536	200
Ethica Health and Retirement	Integra Rehabilitation	1600 Broadrick Dr	Dalton	30720-3012	260
Hamilton Health Care System		1200 Memorial Dr	Dalton	30720-2529	1200
Shaw Industries Group Inc		3435 Lower Dug Gap Road	Dalton	30722	240
Shaw Industries Group Inc	Nurses Station Clinic	1529 Waring Rd NW	Dalton	30721-8320	500
Textile Rubber and Chemical Co (PA)		1300 Tiarco Dr SW	Dalton	30721-1907	350
TI Acquisition LLC	Templeton Carpet Mills	1104 Willowdale Rd NW	Dalton	30720-6970	400
United Parcel Service, Inc	UPS	3560 S Dixie Rd	Dalton	30720-7606	200

Data from the 2012 Official Georgia Services Directory, Harris Info Source, a Division of Dun and Bradstreet, published in cooperation with the Georgia Department of Economic Development





SECTION 3 PUBLIC AND STAKEHOLDER OUTREACH

The public and stakeholder outreach effort included the review of the public and stakeholder engagement information previously conducted during Part I of this study, and also included the conduct of additional stakeholder meetings to identify transit needs in the study area. This section summarizes the public and stakeholder outreach process for the study.

3.1 PUBLIC ENGAGEMENT – PART I

Part I of this transit feasibility study included many public engagement techniques and the development of a Public Engagement Report. The information gathered from this process was utilized in the formulation of proposed transit service alternatives presented in Section 4 of this report. The process and summary of the Public Engagement Report (Part I) are described below.

3.1.1 Public Engagement Planning Process

Using the insights revealed in the 2006 Transit Feasibility Study, 2035 Long Range Transportation Plan (LRTP), and other studies undertaken by GDMPO and its planning partners within the Dalton-Whitfield County region over the last several years, GDMPO has developed a public engagement and community stakeholder involvement program that reaches out to every community within the study area. From the very beginning, the public, local government officials, planning and transportation agencies were invited to participate in the process.

This process will be used to develop transit options that support the social infrastructure of the local communities including shopping, medical centers, schools, and government destinations. The approach for public engagement is proactive and invites the opinions of all stakeholders. It is through consistent outreach that the study process will stimulate public involvement and interaction.

3.1.2 Report Summary

The Public Engagement Report provides a summary of the public and media notification process, public and stakeholder involvement strategies, and feedback received from the following major public and stakeholder involvement events during the first phase of the transit study, “Existing Conditions / Visioning,”

- Joint Committee #1 held July 14, 2011;
- Day for Dalton held August 17, 2011; and
- Community Forum #1 held August 18, 2011.

3.1.3 Public, Stakeholder, Media Notification

Notifications to the general public of opportunities to provide comments and insights about the GDMPO Transit Study took place since the early stages of the study and continued with a number of awareness activities including the project web site, transit opinion survey and community forum. The public,

stakeholder, and media notification strategies described in the report were implemented to raise awareness and provide adequate opportunities for stakeholders and citizens to learn more about the GDMPO Transit Study.

3.1.4 Public and Stakeholder Engagement

This section of the report described the types of meetings and activities that were conducted during the initial stage of the GDMPO Transit Study to assess the existing transportation conditions and determine transit needs and expectations of the general public and key stakeholders.

3.1.5 Summary of Responses

This section of the report provided a summary of the responses to the interactive exercises and comments generated during the first phase of public engagement that provided insight into the existing transit needs and expectations of the general public and key stakeholders.

3.2 STAKEHOLDER INTERVIEWS AND MEETINGS – PART II

The current phase of this transit feasibility study (Part II) included the conduct of additional stakeholder (major employers and Dalton State College) meetings to identify transit needs in the study area. Meeting questionnaires were designed and a series of work sessions were held with stakeholders to help define the most reasonable conceptual level preliminary transit alternatives to be examined during the screening of alternatives, and to assess the willingness of the stakeholders to participate (financially or otherwise) in order to offer improved transportation options for their employees. The work accomplished under this task included the following:

- Reviewed all stakeholder interview data from interviews conducted under Part I of the Study
- Prepare materials for working meetings with stakeholders
 - Developed GIS base maps and identified key transportation facilities, public facilities, and developments/activity centers
 - Developed stakeholder interview questionnaires
- Held meetings and/or received information with the following stakeholders to identify transit needs:
 - Dalton State College
 - Beaulieu of America
 - Tandus Flooring
 - NWGRC (Manufacturers and Services Employer information)
 - Several requests for additional meetings and information were made to major employers in the study area with no response.

The Stakeholder Meeting's Questionnaires are provided in **Appendix A**.

SECTION 4 ANALYSIS OF TRANSIT SERVICE ALTERNATIVES

The section documents the development and analysis of the initial transit service alternatives which were designed to meet the transportation needs and support the public and stakeholder engagement input in the study area. This section also describes transit service types that were considered for the alternatives; the current public transit service operations in Whitfield County; the proposed transit service alternatives routes, operating characteristics and statistics and conceptual costs estimates.

4.1 TRANSIT SERVICE TYPES CONSIDERED

There are several types of possible transit service options that vary in terms of level of service, routing, and scheduling. Level of service is related to how frequent the service is provided and the span of service provided throughout the day. Routing is the path or alignment the vehicles travel to provide access to the system for riders and to serve destinations. Scheduling defines when vehicles are available to riders for service at predetermined times between locations. Routing and scheduling can be fixed or flexible. Both fixed and flexible services were considered for the study area, as they are well suited for smaller urbanized and/or rural areas. A brief summary of the service types considered for this study, as generally defined by the National Transit Database (NTD), are described below.

4.1.1 Local Bus Service

Local bus service is typically a community-based transit bus service provided for residents of a specific localized area. Local bus service is primarily fixed route where service is provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand-response and taxicab services. Local fixed-route service will vary by type of vehicle and size, frequency of service, and span of service (hours and days of week). Local bus service also can be provided as flexible route (or deviation) service.

4.1.2 Deviation Bus Service

Deviation service operates along a fixed alignment or path at generally fixed times, but may deviate from the route alignment to collect or drop off passengers who have requested the deviation. There are two basic types of deviation service, point and route. Point deviation service is a method of providing transit service to all origins and destinations within a corridor, defined by a prescribed distance from a street (e.g., $\frac{1}{4}$ mile), making scheduled stops at mandatory time points along the corridor on a predetermined schedule. This type of service does not follow a fixed route because the path is determined based on the origins and destinations of the passengers. Passengers can use the service in three ways: 1) traveling between mandatory time points on the schedule, 2) advising the bus operator if they want to be taken to a destination that is not a scheduled time point when boarding, or 3) if they want to be picked up at a location that is not a scheduled time point, by calling the transit system and requesting a pickup. Route deviation is a type of transit service that

operates as conventional fixed route bus service along a fixed alignment or path with scheduled time points at each terminal point and key intermediate locations. Route deviation service is different than conventional fixed route bus service in that the bus may deviate from the route alignment to serve destinations within a prescribed distance (e.g., ¾ mile) of the route. Following an off-route deviation, the bus must return to the point on the route it left. Passengers may use the service in two ways: 1) if they want to be taken off route as part of a service deviation, they must tell the bus operator when boarding, or 2) if they want to be picked up at an off route location, they must call the transit system and request a pickup, and the dispatcher notifies the bus operator.

4.1.3 Express Bus Service

Express bus service is service type where a bus operates on a route or a portion of a route without stops or with a limited number of stops. Express bus service may operate directly between an origin, such as a park-and-ride lot, and a destination with few or no stops along the route. Express service is usually provided only during the morning and afternoon peak service times.

4.1.4 Demand Response Service

Non-fixed-route service utilizing vans or buses with passengers boarding and alighting at pre-arranged times at any location within the system's service area. Demand response service is the most flexible type of transit service and is also called Dial-a-Ride. The transit vehicle operates in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations. A demand-response operation is characterized by the following: firstly, the vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a temporary basis to satisfy a specific need; and secondly, the vehicle typically may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers.

The following types of operations fall under the above definitions provided they are not on a scheduled fixed-route basis:

- Many origins - many destinations
- Many origins - one destination
- One origin - many destinations
- One origin - one destination

4.1.5 Paratransit Service

The Americans with Disabilities Act (ADA) requires that transit agencies shall provide complementary paratransit service to origins and destinations within corridors with a width of three-fourths of a mile on each side of each fixed route. The corridor shall include an area with three-fourths of a mile radius at the ends of each fixed route. Paratransit is a type of demand response transit service comprised of vans, small buses and other vehicles operating as a ride-

sharing arrangement operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations. The vehicles do not operate over a fixed route or on a fixed schedule. The vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers. Paratransit includes demand response transportation services, shared-ride taxis, carpooling and vanpooling, and jitney services. It most often refers to wheelchair-accessible, demand-response (DR) service.

4.1.6 Circulator Service

Buses serving an area confined to a specific locale, such as a downtown area, activity center/shopping center, or suburban neighborhood, with connections to major traffic corridors.

4.1.7 Vanpools

A transit service comprised of vans, small buses and other vehicles operating as a ride sharing arrangement, providing transportation to a group of individuals traveling directly between their homes and a regular destination within the same geographical area. The vehicles usually have a minimum seating capacity of seven persons, including the driver. For inclusion in the NTD, it is considered mass transit service if it meets the requirements for public mass transportation and is publicly sponsored.

4.2 CURRENT SERVICE IN WHITFIELD COUNTY

Whitfield County Transit Service (WCTS) provides demand-responsive public transit within Whitfield County. In addition, they provide service by contract agreement through the Georgia Department of Human Resources (DHR) with Lookout Mountain Community Services Board, which acts as main contractor for DHR.

Funding for WCTS is provided through Federal Transportation Administration (FTA) grant program (Section 5311). Formal Grants for Other than Urbanized Areas is a rural program that is formula based. Recipients may use the funding for capital, operating, and administrative expenses for public transportation projects that meet the rural community needs. The Federal share of eligible capital and administrative expenses may not exceed 80 percent of the net project cost. Operating expense may not exceed 50 percent of the net project operating cost. Up to 90 percent of Federal match may be funded from projects that meet the requirements of American with Disabilities Act, the Clean Air Act, or bicycle access projects.

WCTS operates curb-to-curb, demand-responsive public transit service Monday through Friday from 6:30 am to 6:00 pm, with the last call back pick up at 4:30 pm. Service is available to all County residents for various trip purposes, including medical, nutrition, shopping, education, recreation, personal errands, and other purposes. Other services include purchase of service agreements. Roughly 60 percent of services are provided for trips within Dalton; however, services are available countywide. Primary beneficiaries of the transit program are

disadvantaged populations such as elderly, handicapped, and/or populations of low-income status individuals. Reservations for service should be made 48 hours in advance. Public transit service is provided to medical appointments, shopping centers,

WCTS currently operates a total of 11 vehicles, which includes two Georgia Department of Transportation (GDOT) leased vehicles. Nine buses operate during the peak periods. All the vehicles are 16-passenger gas-powered vans with wheelchair lifts, with the exception of one 20-passenger van without wheelchair lift. The service areas for all vehicles include all of Whitfield County. There are no specific zones for individual buses, as they are dispatched to meet daily need. WCTS serves approximately 180 trips per day. The fare for the general public is \$4.00 per one-way trip; \$3.00 if using a 10-count pre-purchased ticket book.

Greyhound provides intercity/interstate bus services to and from Whitfield County. In addition to the public transit service, 11 private taxi companies, several of which are Hispanic owned and operated, operate in Dalton and Whitfield County. Typical rates are a \$1.80 - \$2.00 pull-up fee and \$2.00 per each additional mile.

4.3 CANDIDATE LOCAL ROUTES

Local fixed-routes and flexible routes were considered for the Dalton study area. The balance of the Whitfield County service area does not have the densities and other transit needs to support the implementation of fixed-route service, and is better served by the current demand-response service type.

Eleven candidate local routes were developed based on the transit needs assessment, field review of the study area, and public engagement process. The most basic approach to providing transit service coverage in areas previously un-served by transit, such as Dalton, is by means of new local radial bus routes oriented toward downtown. The fixed routes described below and in the transit service alternatives are configured in a radial system that utilizes the proposed Cuyler Street Multi-Modal Transit Center (MMTC) as its hub. The MMTC is located at the historic Norfolk Southern (NS) Railway Depot (Dalton Depot) in downtown Dalton. The site is located west of the NS railroad tracks, east of Hamilton Street, north of West Morris Street, and south of Cuyler Street.

Varying combinations of the candidate routes, as well as demand response service, was used to formulate the initial transit service alternatives described later in this section. Below are summaries and maps (**Figures 4-1 thru 4-11**) of the candidate local routes. A system map of all the candidate routes is presented in **Figure 4-12**.

Route 1: Dalton State College / W. Walnut Ave (see Figure 4-1)

- Routing: MMTC to W. Cuyler St to S. Thornton Ave to W. Walnut Ave to College Dr to George Rice Dr
- Distance: 4.5 miles (one-way route length)

Route 2: Medical Center/Shugart Rd/Dalton State College (see Figure 4-2)

- Routing: MMTC to W. Cuyler St to S. Thornton Ave to W. Walnut Ave to College Dr to N. Tibbs Road to Shugart Rd to Chattanooga Rd to Hospital Conn to Broadrick Dr to Memorial
- Distance: 7.5 miles (one-way route length)

Route 3: Trade and Convention Center / W. Walnut Ave (see Figure 4-3)

- NOTE: Could be served by Route 1 and/or Route 2
- Routing: MMTC to W. Cuyler St to S. Thornton Ave to W. Walnut Ave to Dug Gap Battle Road
- Distance: 3.6 miles

Route 4: Medical Center/N. Thornton Ave (see Figure 4-4)

- Routing: MMTC to W. Cuyler St to north on Thornton Ave to Memorial; loops back via Memorial to Broadrick Dr to Professional to south on Thornton
- Distance: 2.8 miles (one-way route length)

Route 5: Bi-Lo/Glenwood Ave (see Figure 4-5)

- Routing: MMTC to N. Hamilton to W. Waugh St to N. Glenwood Ave to US 41/N. Dalton Bypass
- Distance: 2.3 miles (one-way route length)

Route 6: Cleveland Hwy (SR 71)/Bi-Lo/Glenwood Ave (see Figure 4-6)

- Routing: MMTC to N. Hamilton to W. Waugh St to N. Glenwood Ave to SR 71 to Beaverdale Rd NE
- Distance: 4.9 miles (one-way route length)

Route 7: Underwood St (see Figure 4-7)

- Routing: MMTC to W. Morris to N. Glenwood Ave to east on Underwood Street to North Bypass
- Distance: 3.3 miles (one-way route length)

Route 8: Wal-Mart/Walnut Square Mall/E. Walnut Ave (see Figure 4-8)

- Routing: MMTC to W. Morris to south on Glenwood to east on E. Walnut Ave to Wal-Mart Super Center
- Distance: 2.7 miles (one-way route length)

Route 9: Industrial Center Loop (Abutment/Antioch/Riverbend) (see Figure 4-9)

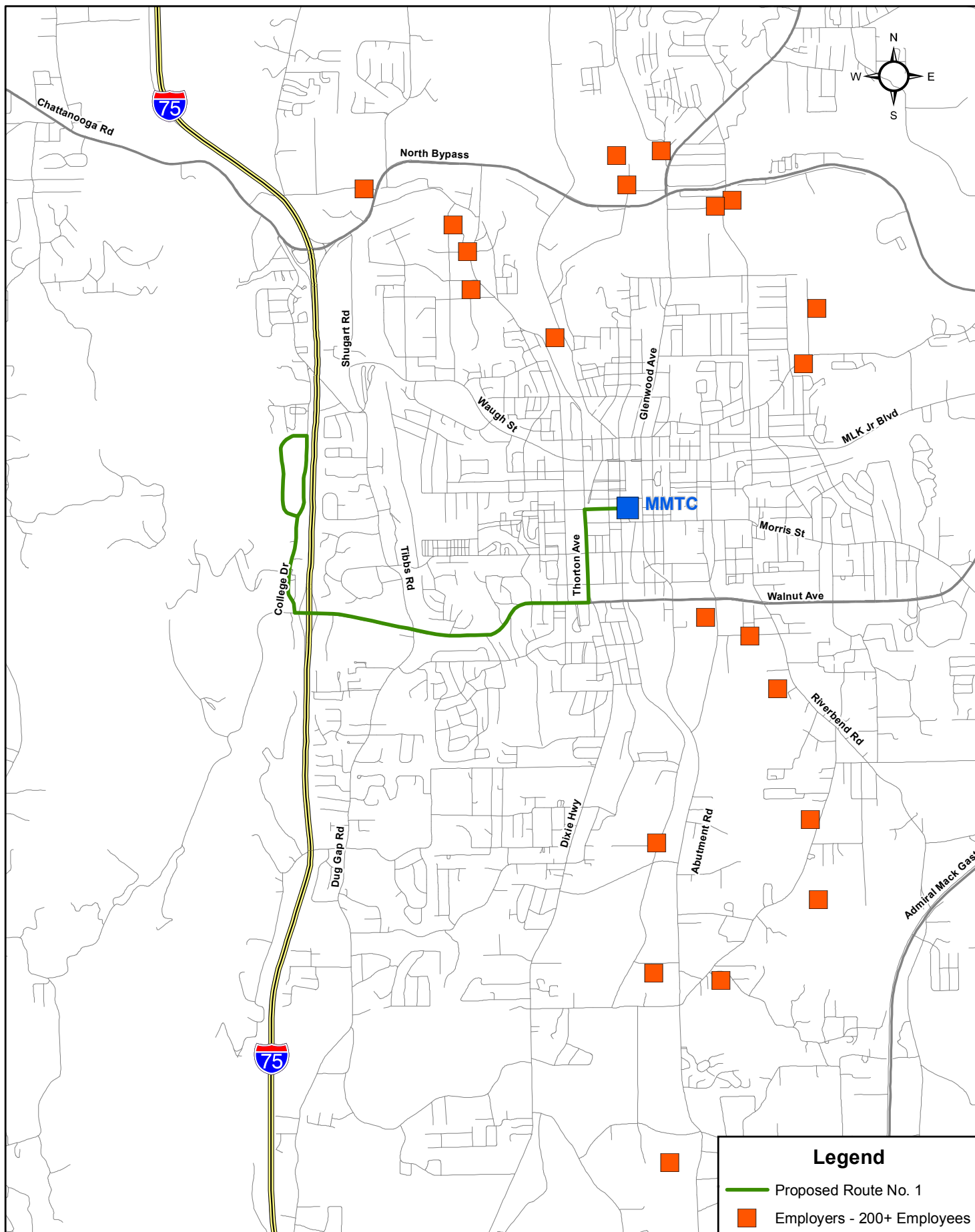
- Routing: MMTC to W. Morris to south on Glenwood Ave (south of Walnut it becomes Abutment) to Abutment Rd to Antioch Rd to north on Riverbend Rd to west on East Walnut to north on Glenwood to Morris and back to MMTC
- Distance: 6.9 miles (one-way route length)

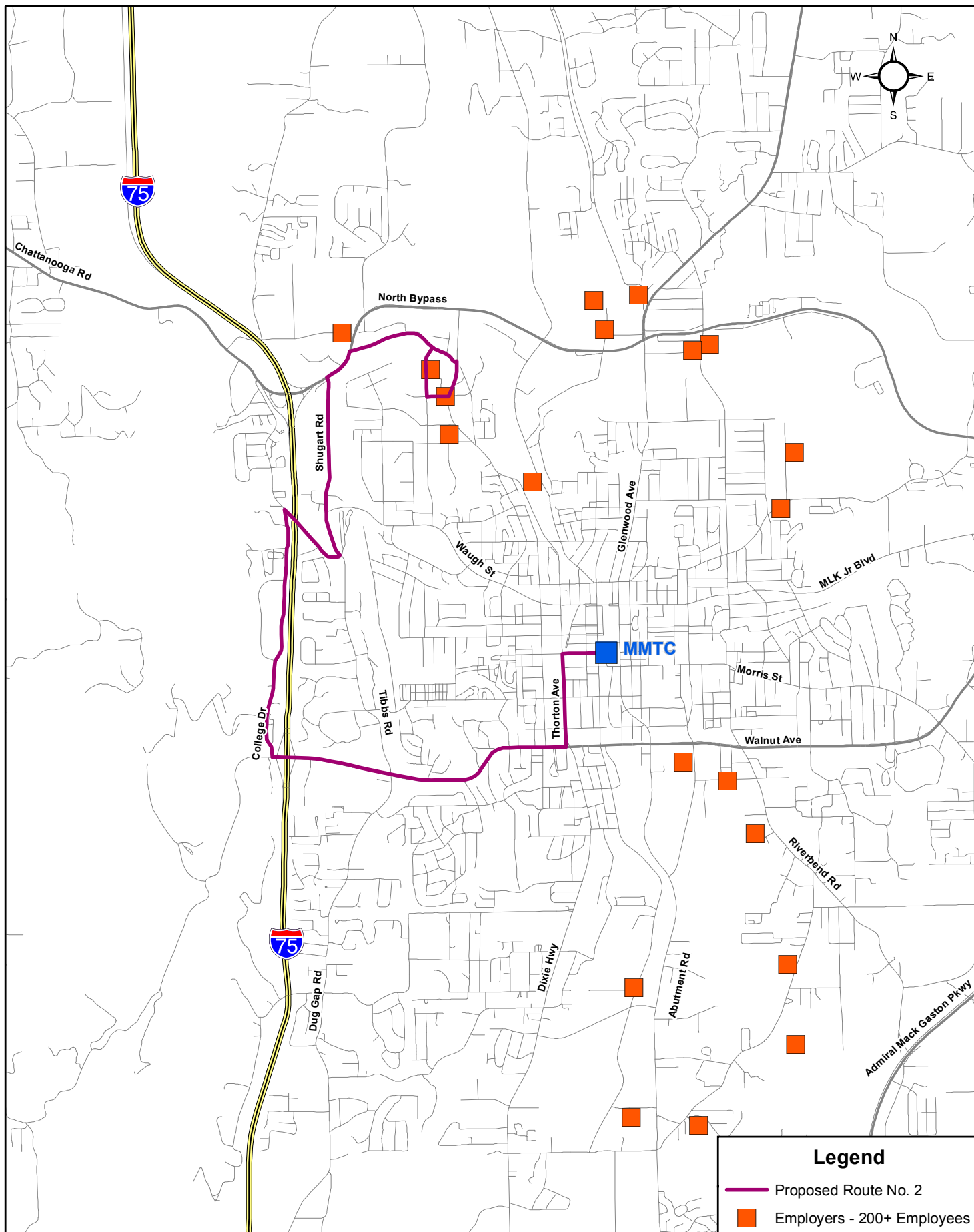
Route 10: South Bypass/South Dixie Hwy (see Figure 4-10)

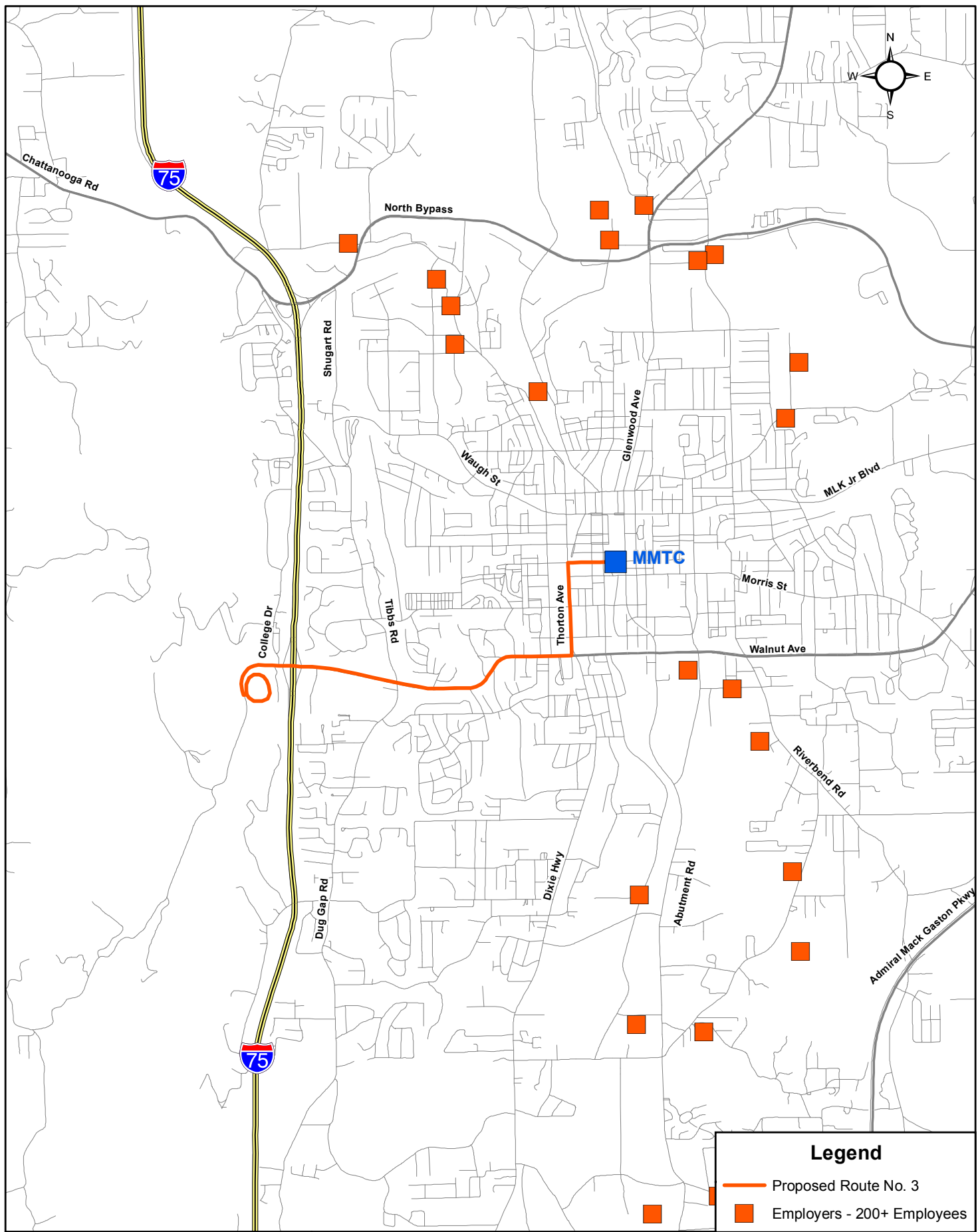
- Routing: MMTC to W. Cuyler to S. Thornton Ave (turns into S. Dixie Hwy) to South Bypass Industrial area
- Distance: 6.0 miles (one-way route length)

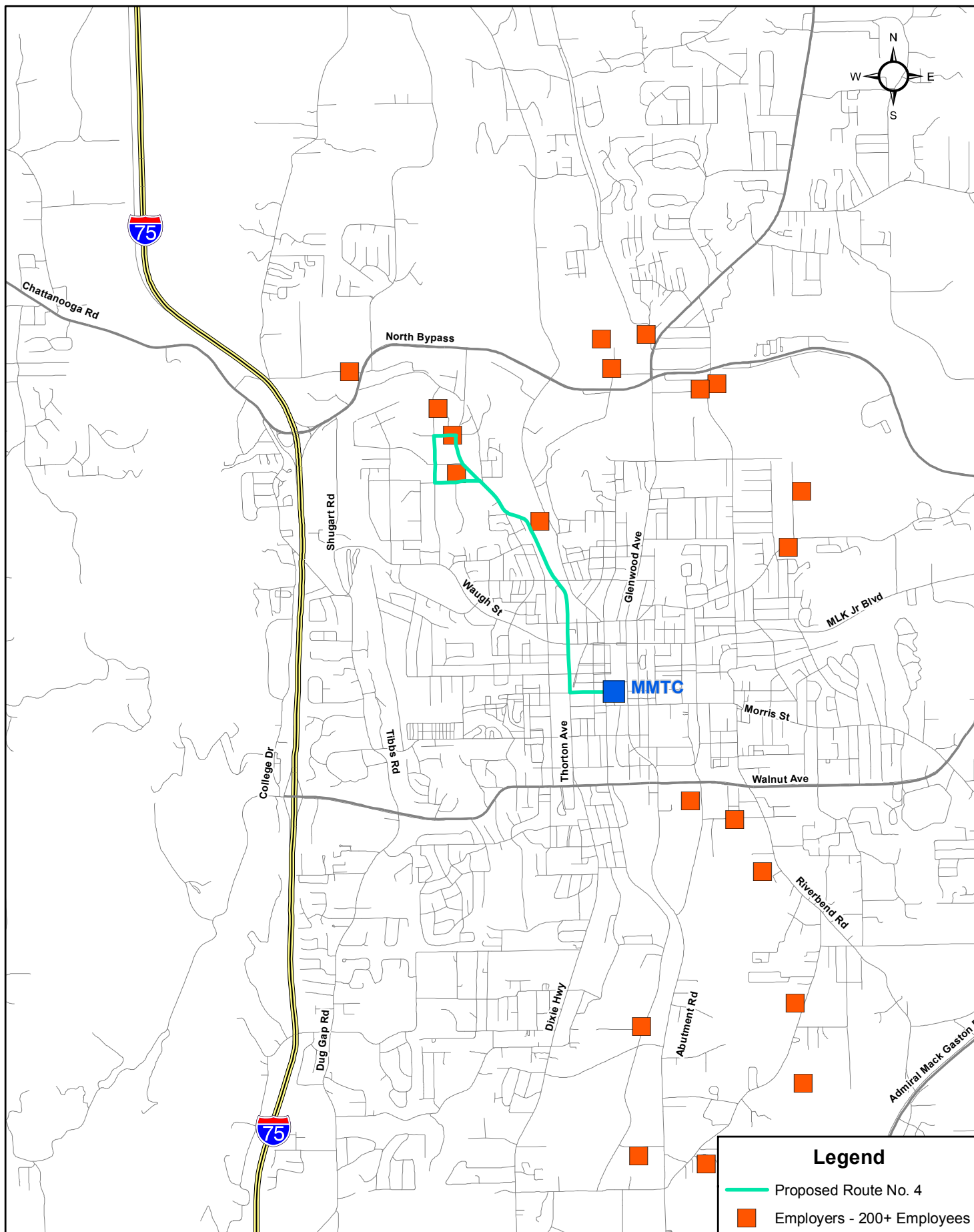
Route 11: Greyhound Intercity Station/South Dixie Hwy (see Figure 4-11)

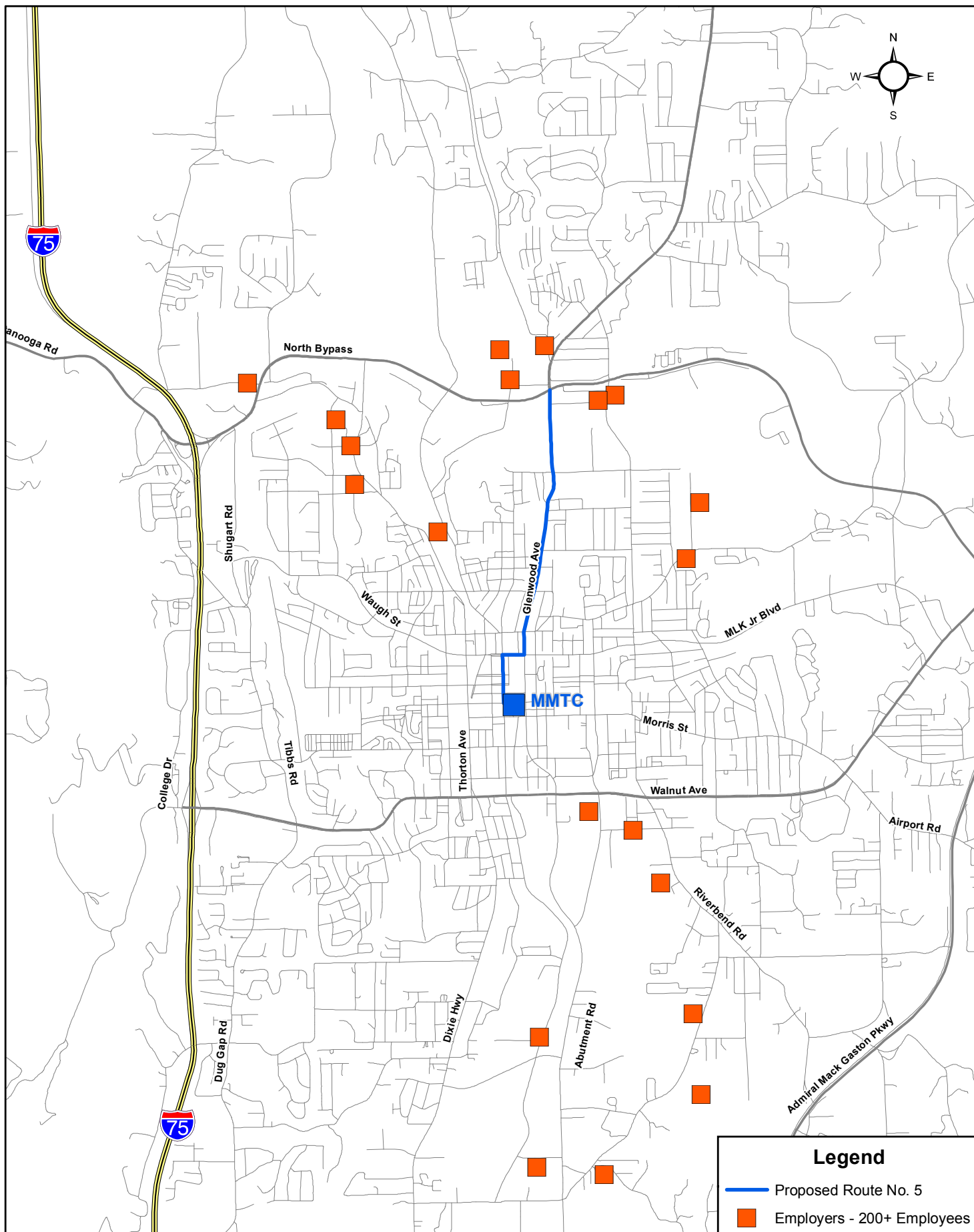
- Routing: MMTC to W. Cuyler to S. Thornton Ave/S. Dixie Hwy to Carbondale Rd SW (Greyhound Bus Station)
- Distance: 8.9 miles (one-way route length)

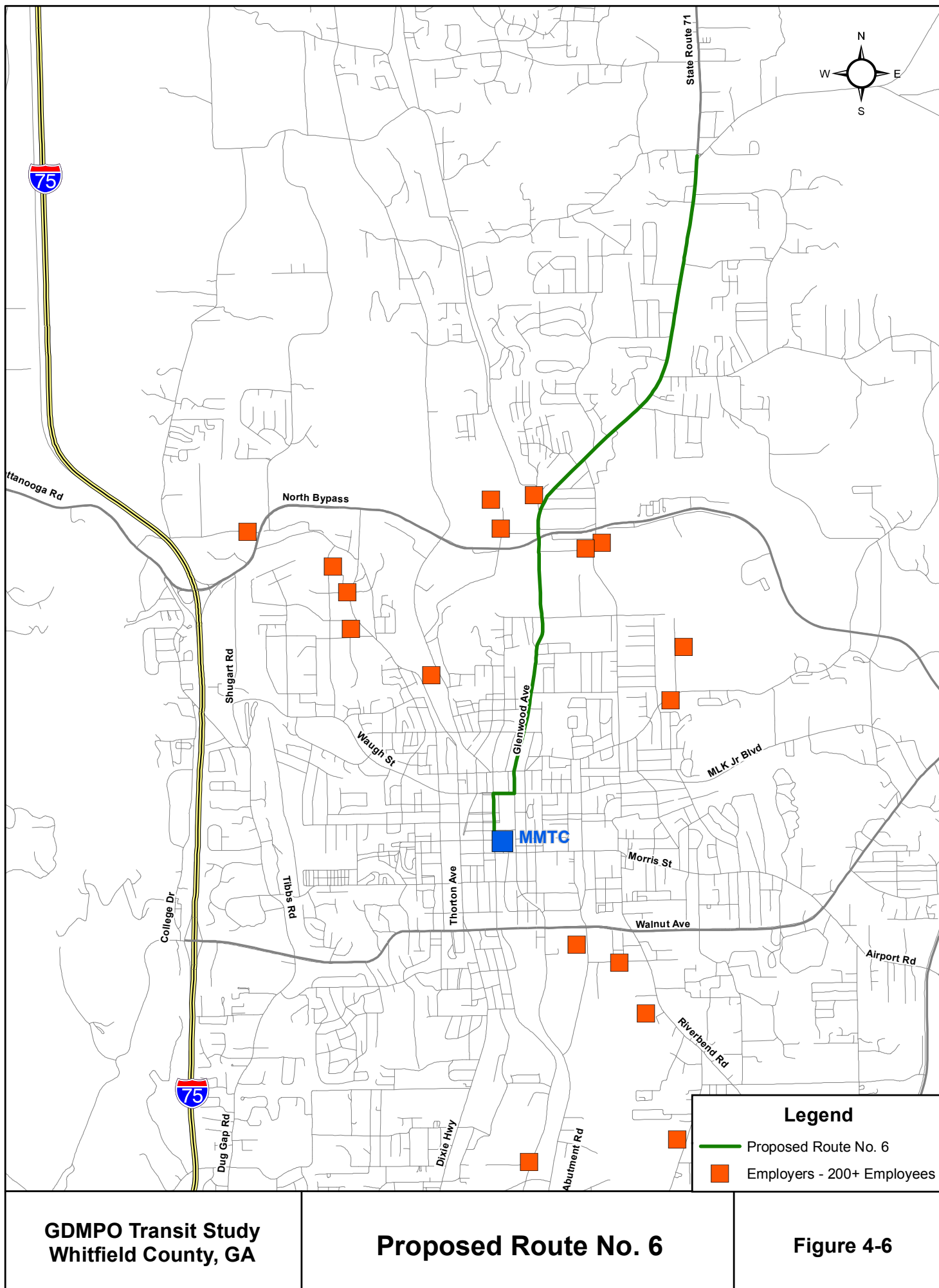


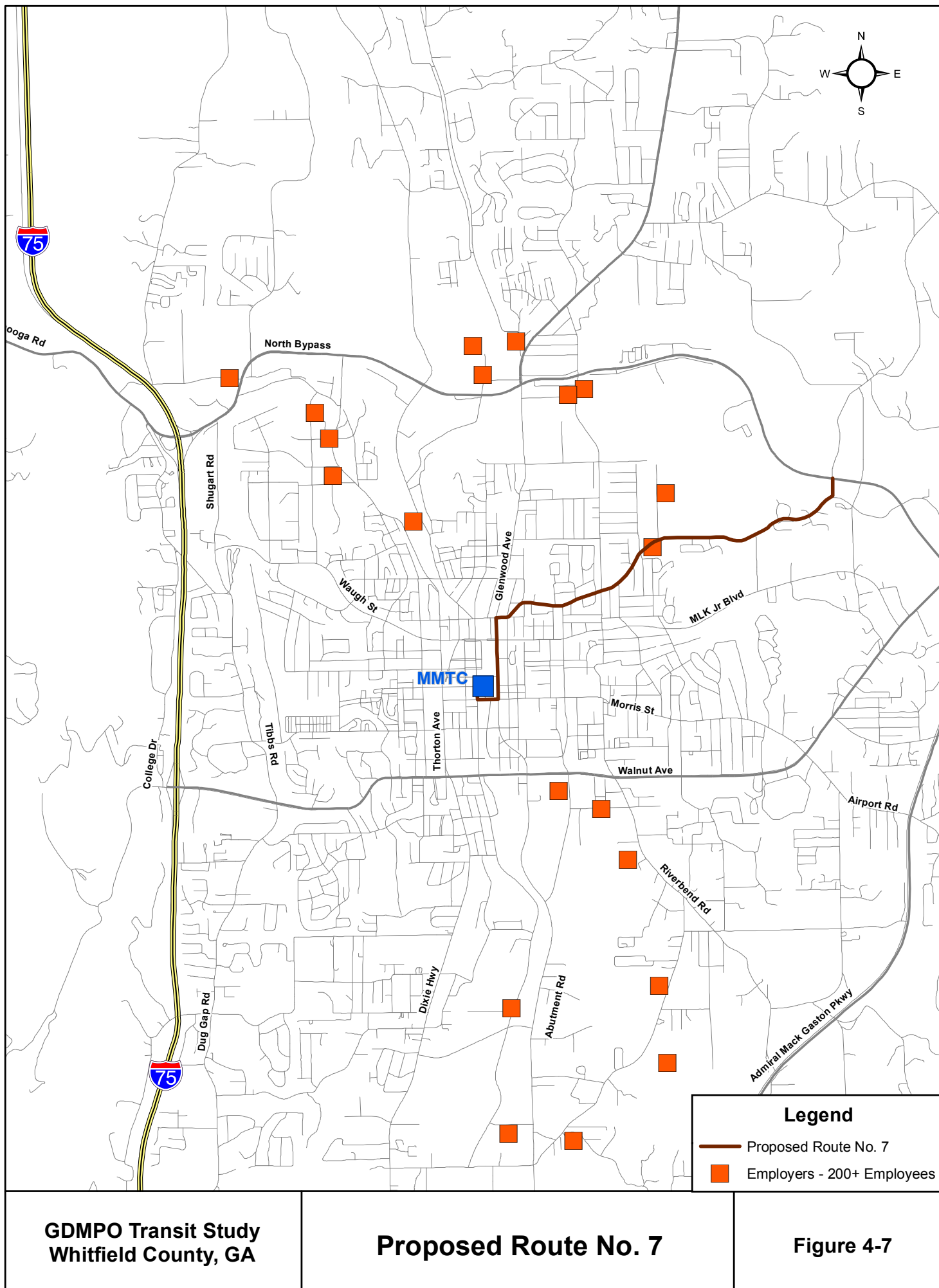


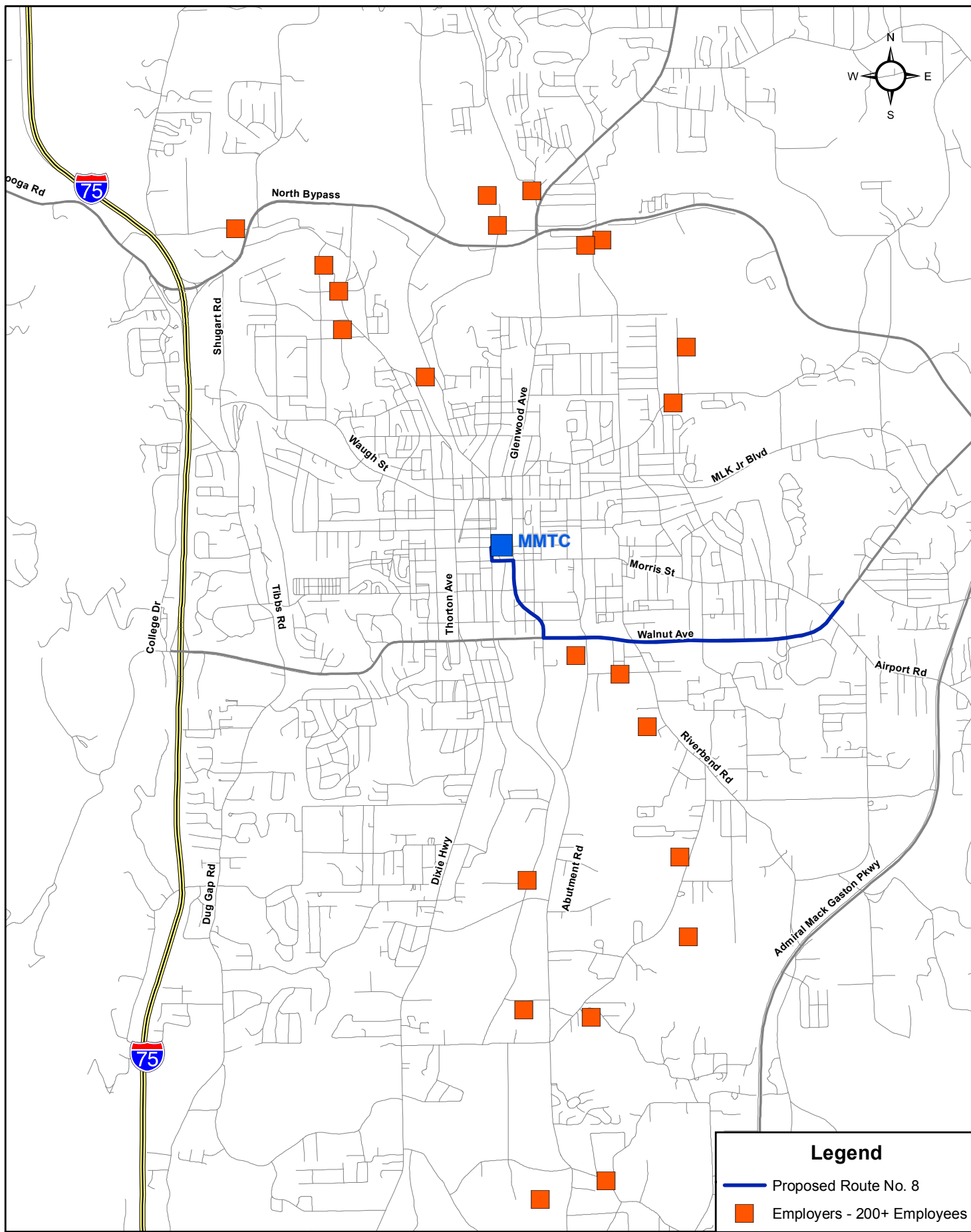


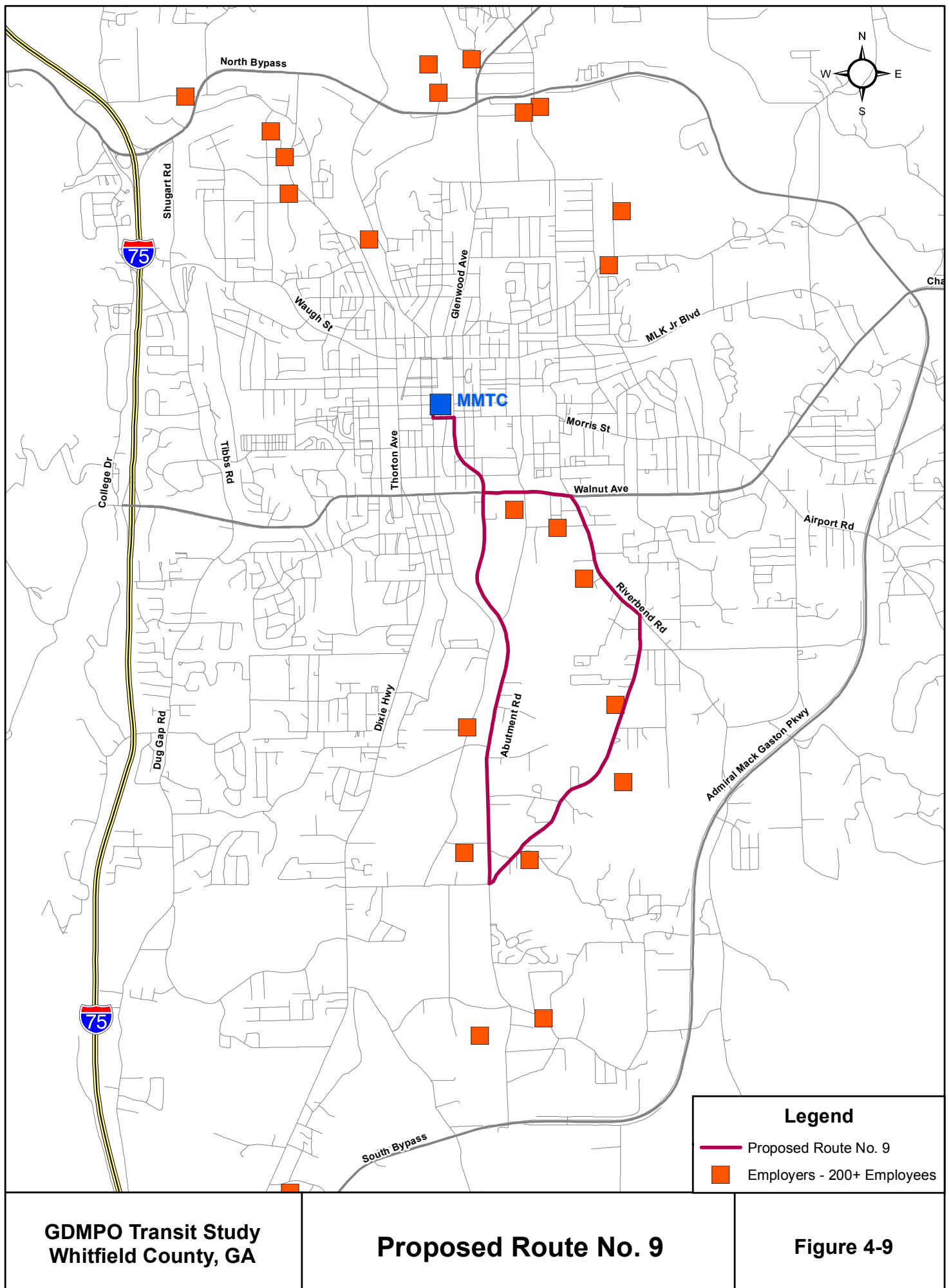


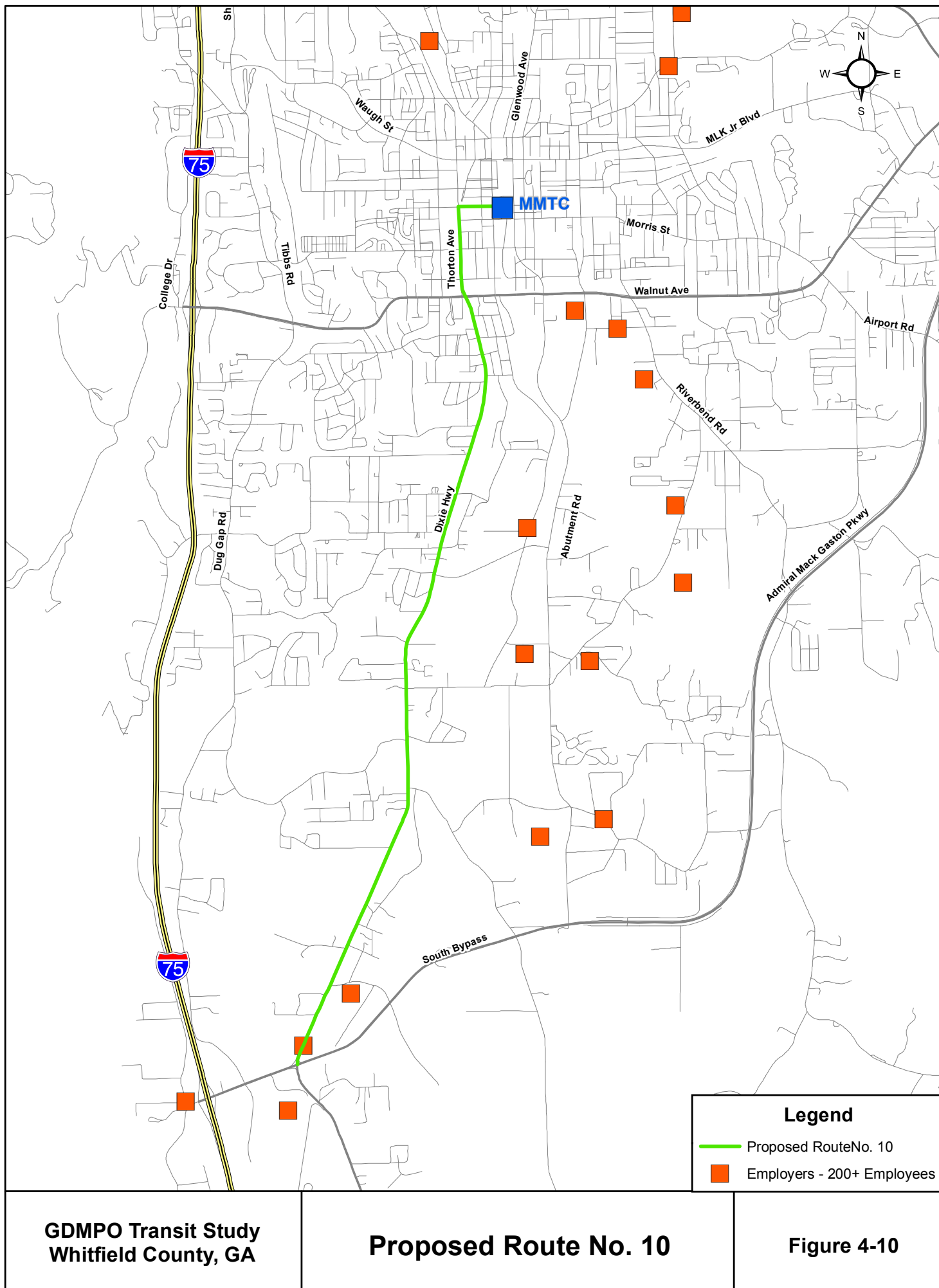


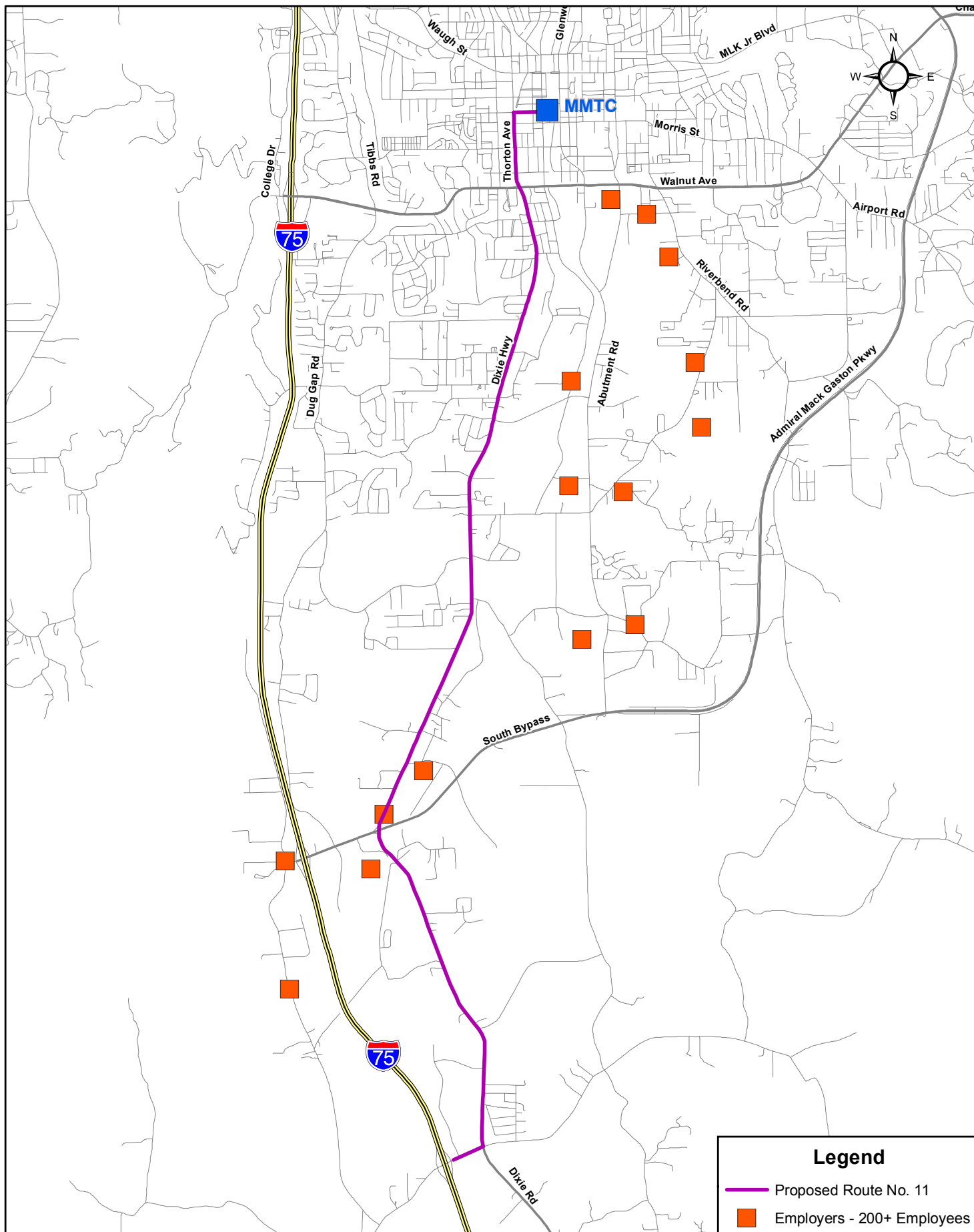




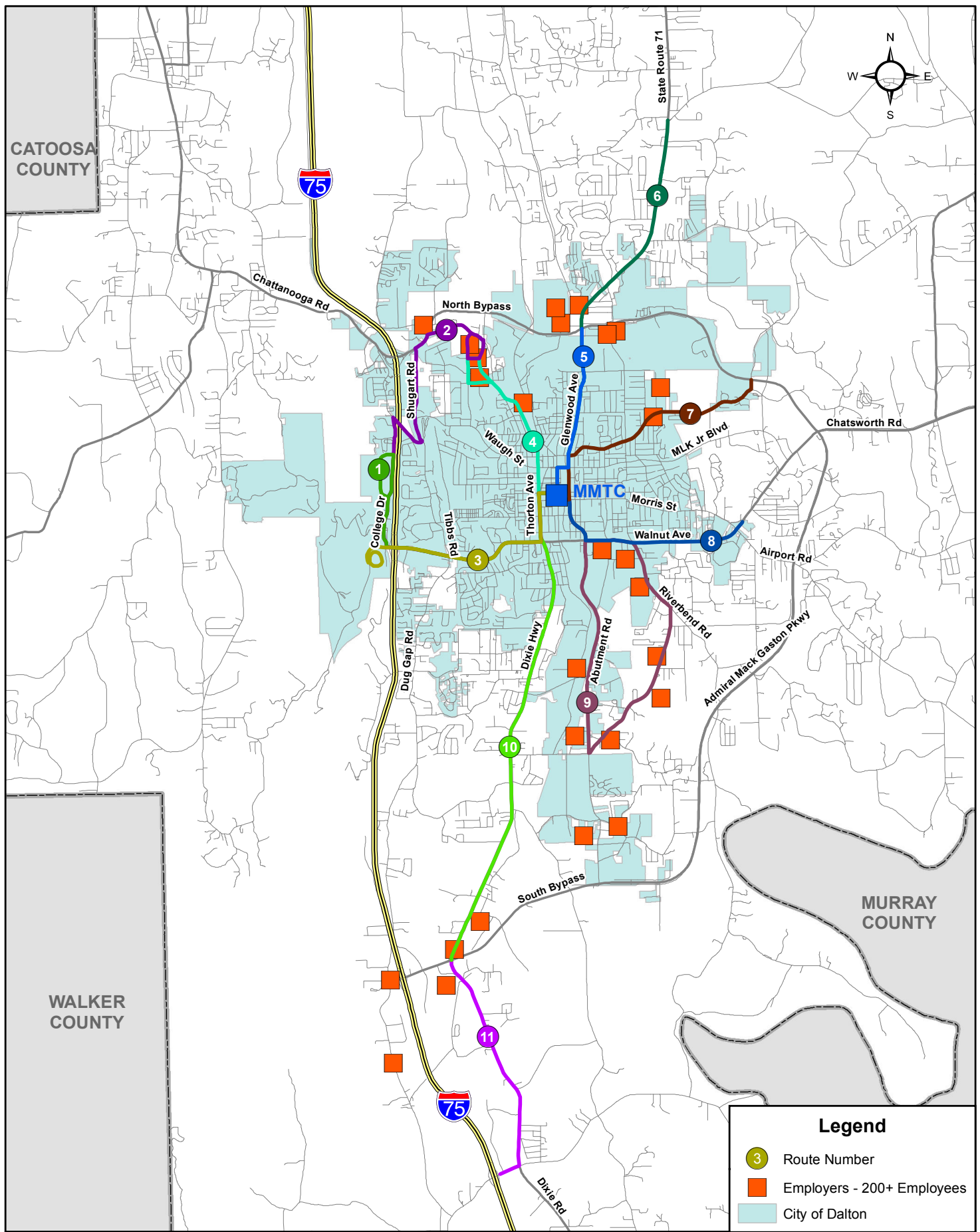








Legend	
—	Proposed Route No. 11
■	Employers - 200+ Employees



4.4 TRANSIT SERVICE ALTERNATIVE DEFINITIONS

This section defines the transit service alternatives that have been developed to meet the transit needs of the study area. Combinations of the candidate local routes described in the previous section have been used with varying level of service in formulating the service alternatives.

The initial set of transit service alternatives are summarized below. In addition to the existing demand response service provided by WCTS, three additional alternatives, which include a combination of demand-responsive and local flexible-route bus service, have been developed. The flexible routes described under the Alternatives are configured in a radial system that utilizes the proposed Cuyler Street Multi-Modal Transit Center (MMTC) as its hub.

4.4.1 Alternative 1 (Do Nothing / Maintain Existing System)

Alternative 1 is the existing WCTS as described previously in Section 4.2, with no enhancements or expansion to what currently is provided. This alternative includes 11 vehicles, nine operating at the peak level of service. Service is provided Monday through Friday from 6:30 am to 6:30 pm. No service is provided on weekends or county holidays.

4.4.2 Alternative 2

Alternative 2 includes the demand responsive service operated by WCTS as described in Alternative 1, in addition to local flexible route service within the City of Dalton. This option also includes the required complementary paratransit service for eligible persons within $\frac{3}{4}$ mile of each route during the same operating hours as the fixed-route service. Most of the routes would operate Monday through Saturday from 6 am to 7 pm. Frequency of service would range from 30 minutes in the peak periods (6 am to 9 am; 4 pm to 7 pm) to 60 minutes in the midday/off-peak periods (9 am to 4 pm). The system map for Alternative 2 is illustrated in **Figure 4-13**. The seven local routes in this alternative are described below:

Route 2: Medical Center/Shugart Rd/Dalton State College

- Routing: MMTC to W. Cuyler St to S. Thornton Ave to W. Walnut Ave to College Dr to N. Tibbs Road to Shugart Rd to Chattanooga Rd to Hospital Conn to Broadrick Dr to Memorial
- Distance: 7.5 miles (one-way route length)
- Service Frequency: 30 minutes weekdays; 60 minutes Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday
- *Note - Route could include future deviation service to the Trade & Convention Center where satellite parking was previously provided for Dalton State College.*

Route 4: Medical Center/N. Thornton Ave

- Routing: MMTC to W. Cuyler St to north on Thornton Ave to Memorial; loops back via Memorial to Broadrick Dr to Professional to south on Thornton
- Distance: 2.8 miles (one-way route length)
- Service Frequency: 30 minutes
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 5: Bi-Lo/Glenwood Ave

- Routing: MMTC to N. Hamilton to W. Waugh St to N. Glenwood Ave to US 41/N. Dalton Bypass
- Distance: 2.3 miles (one-way route length)
- Service Frequency: 30 minutes weekdays peak; 60 minutes off-peak and Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday

Route 7: Underwood St

- Routing: MMTC to W. Morris to N. Glenwood Ave to east on Underwood Street to North Bypass
- Distance: 3.3 miles (one-way route length)
- Service Frequency: 30 minutes weekday peak; 60 minutes off-peak and Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday

Route 8: Wal-Mart/Walnut Square Mall/E. Walnut Ave

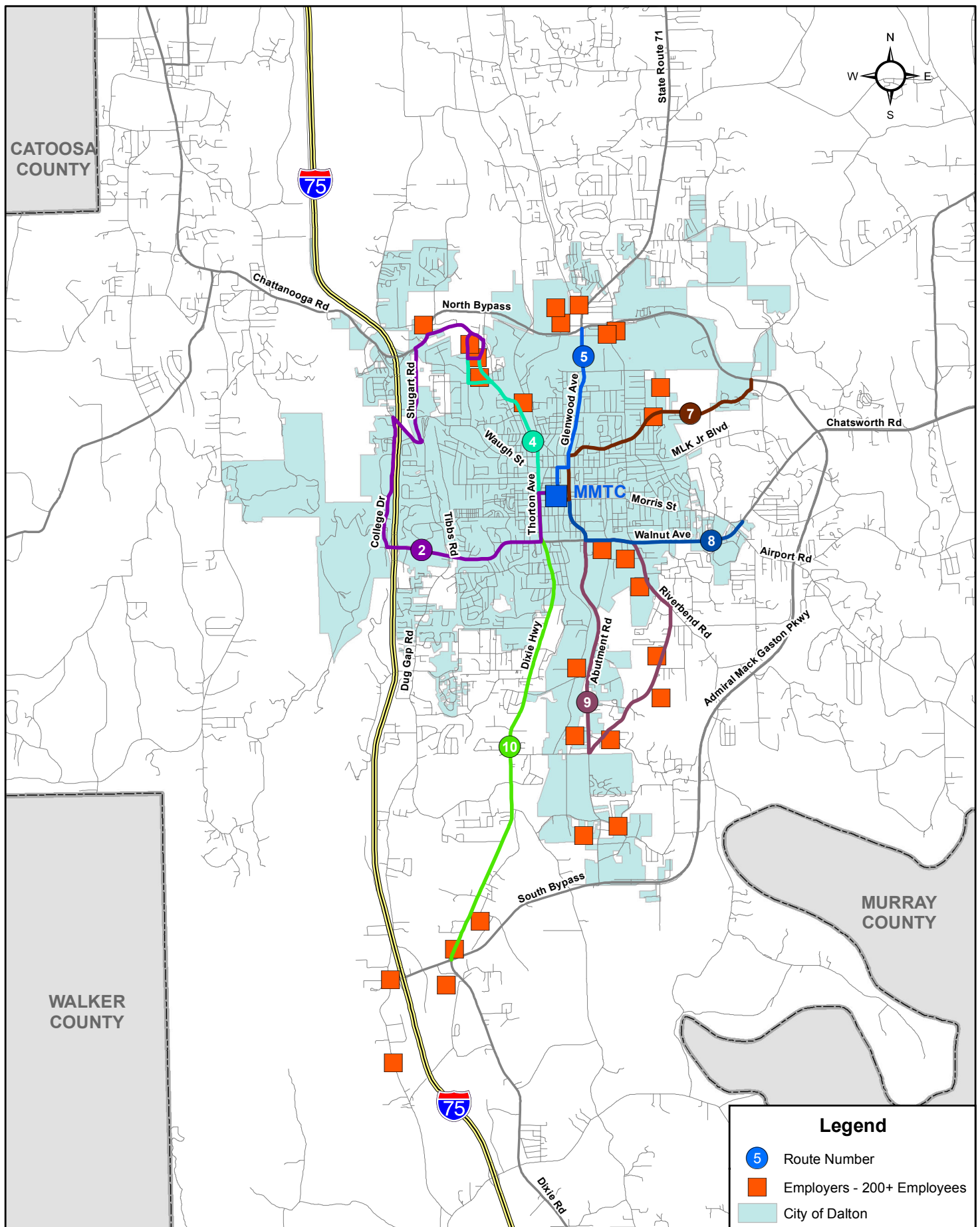
- Routing: MMTC to W. Morris to south on Glenwood to east on E. Walnut Ave to Wal-Mart Super Center
- Distance: 2.7 miles (one-way route length)
- Service Frequency: 30 minutes weekday peak; 60 minutes off-peak and Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday

Route 9: Industrial Center Loop (Abutment/Antioch/Riverbend)

- Routing: MMTC to W. Morris to south on Glenwood Ave (south of Walnut it becomes Abutment) to Abutment Rd to Antioch Rd to north on Riverbend Rd to west on East Walnut to north on Glenwood to Morris and back to MMTC
- Distance: 6.9 miles (one-way route length)
- Service Frequency: 30 minutes weekday peak; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 10: South Bypass/South Dixie Hwy

- Routing: MMTC to W. Cuyler to S. Thornton Ave (turns into S. Dixie Hwy) to South Bypass Industrial area
- Distance: 6.0 miles (one-way route length)
- Service Frequency: 30 minutes weekday peak; 60 minutes off-peak and Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday
- *Note – This route could operate as an Express route with two trips in the weekday am-peak and two trips in the pm-peak periods and no Saturday service*



4.4.3 Alternative 3

Alternative 3 includes the demand responsive service operated by WCTS as described in Alternative 1, in addition to local flexible-route service within the Dalton urbanized area. This option also includes the required complementary paratransit service for eligible persons within ¼ mile of each route during the same operating hours as the fixed-route service. Most of the routes would operate Monday through Saturday from 6 am to 7 pm. Frequency of service would range from 30 minutes in the peak periods (6 am to 9 am; 4 pm to 7 pm) to 60 minutes in the midday/off-peak periods (9 am to 4 pm). The system map for Alternative 3 is illustrated in **Figure 4-14**. The seven local routes in this alternative are described below:

Route 1: Dalton State College / W. Walnut Ave

- Routing: MMTC to W. Cuyler St to S. Thornton Ave to W. Walnut Ave to College Dr to George Rice Dr
- Distance: 4.5 miles (one-way route length)
- Service Frequency: 30 minutes weekdays; 60 minutes Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday
- *Note - Route could include future deviation service to the Trade & Convention Center where satellite parking was previously provided for Dalton State College.*

Route 4: Medical Center/N. Thornton Ave

- Routing: MMTC to W. Cuyler St to north on Thornton Ave to Memorial; loops back via Memorial to Broadrick Dr to Professional to south on Thornton
- Distance: 2.8 miles (one-way route length)
- Service Frequency: 30 minutes
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 6: Cleveland Hwy (SR 71)/Bi-Lo/Glenwood Ave

- Routing: MMTC to N. Hamilton to W. Waugh St to N. Glenwood Ave to SR 71 to Beaverdale Rd NE
- Distance: 4.9 miles (one-way route length)
- Service Frequency: 30 minutes weekdays peak; 60 minutes off-peak and Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday

Route 7: Underwood St

- Routing: MMTC to W. Morris to N. Glenwood Ave to east on Underwood St to North Bypass
- Distance: 3.3 miles (one-way route length)
- Service Frequency: 30 minutes weekday peak; 60 minutes off-peak and Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday

Route 8: Wal-Mart/Walnut Square Mall/E. Walnut Ave

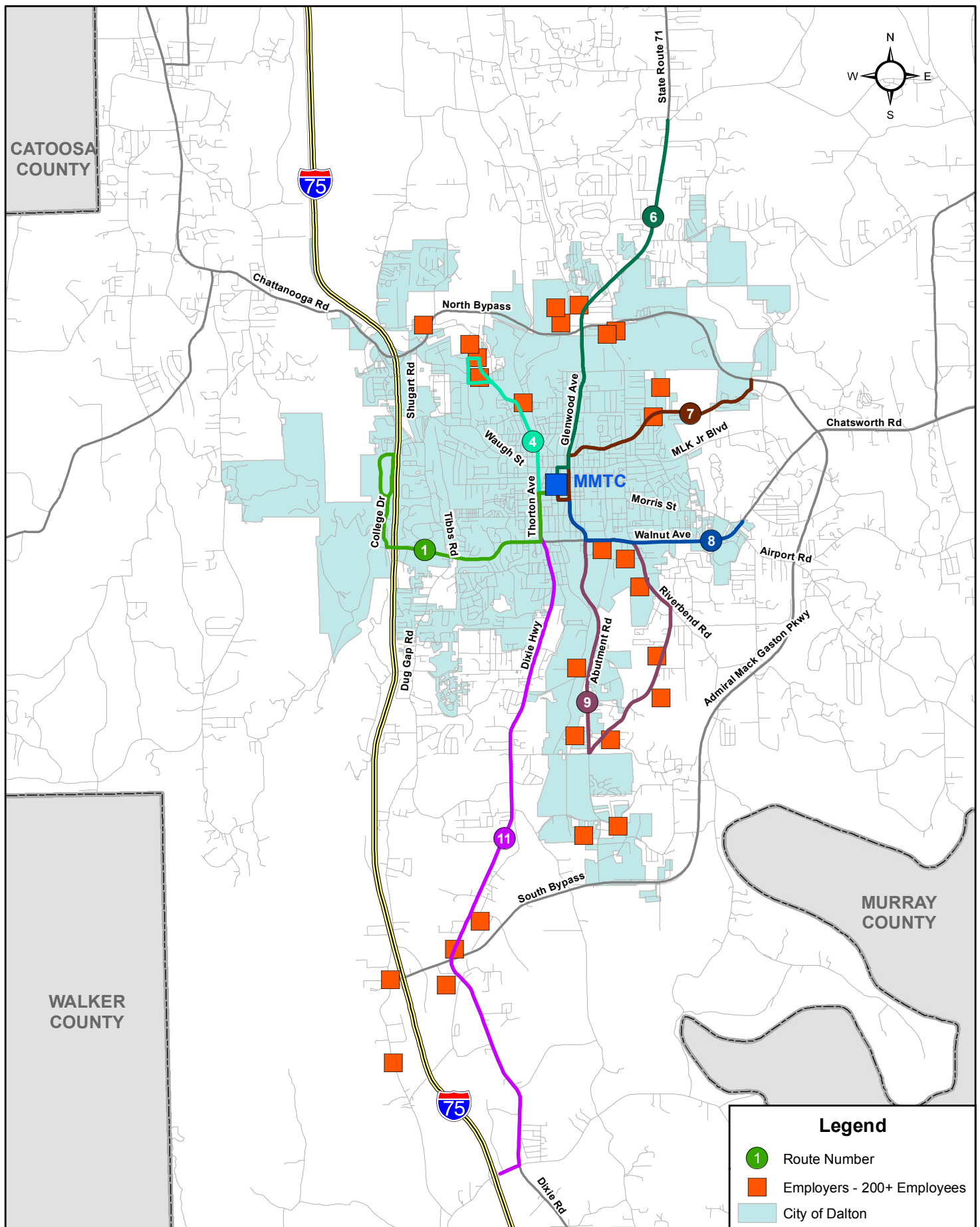
- Routing: MMTC to W. Morris to south on Glenwood to east on E. Walnut Ave to Wal-Mart Super Center
- Distance: 2.7 miles (one-way route length)
- Service Frequency: 30 minutes weekday peak; 60 minutes off-peak and Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday

Route 9: Industrial Center Loop (Abutment/Antioch/Riverbend)

- Routing: MMTC to W. Morris to south on Glenwood Ave (south of Walnut it becomes Abutment) to Abutment Rd to Antioch Rd to north on Riverbend Rd to west on East Walnut to north on Glenwood to Morris and back to MMTC
- Distance: 6.9 miles (one-way route length)
- Service Frequency: 30 minutes weekday peak; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 11: Greyhound Intercity Station/South Dixie Hwy

- Routing: MMTC to W. Cuyler to S. Thornton Ave/S. Dixie Hwy to Carbondale Rd SW (Greyhound Bus Station)
- Distance: 8.9 miles (one-way route length)
- Service Frequency: 30 minutes weekday peak; 60 minutes off-peak and Saturday
- Span of Service: 6 am – 7 pm, Monday – Saturday
- *Note – This route could operate as an Express route with two trips in the weekday am-peak and two trips in the pm-peak periods and no Saturday service.*



4.4.4 Alternative 4

Alternative 4 would include the demand-response service operated by WCTS as described in Alternative 1 (at a reduced level within the City of Dalton) in addition to flexible route service within the Dalton urbanized area. This option also includes the required complementary paratransit service for eligible persons with $\frac{1}{4}$ mile of each route during the same operating hours as the flex route service. The routes would operate Monday through Friday from 6 am to 7 pm. Frequency of service would range from 30 minutes in the peak periods (6 am to 9 am; 4 pm to 7 pm) to 60 minutes in the midday/off-peak periods (9 am to 4 pm). The system map for Alternative 4 is illustrated in **Figure 4-15**. The five flex routes in this alternative are described below:

Route 1: Dalton State College / W. Walnut Ave

- Routing: MMTC to W. Cuyler St to S. Thornton Ave to W. Walnut Ave to College Dr. to George Rice Drive
- Distance: 4.5 miles (one-way route length)
- Service Frequency: 30 minutes weekdays; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 4: Medical Center/N. Thornton Ave

- Routing: MMTC to W. Cuyler St to north on Thornton Ave to Memorial; loops back via Memorial to Broadrick Dr. to Professional to south on Thornton
- Distance: 2.8 miles (one-way route length)
- Service Frequency: 30 minutes; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 5: Bi-Lo/Glenwood Avenue

- Routing: MMTC to N. Hamilton to W. Waugh St to N. Glenwood Ave to US 41/N. Dalton Bypass
- Distance: 2.3 miles (one-way route length)
- Service Frequency: 30 minutes peak; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 7: Underwood Street

- Routing: MMTC to W. Morris to N. Glenwood Ave to east on Underwood Street to North Bypass
- Distance: 3.3 miles (one-way route length)
- Service Frequency: 30 minutes peak; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 8: Wal-Mart/Walnut Square Mall/E. Walnut Ave

- Routing: MMTC to W. Morris to south on Glenwood to east on E. Walnut Ave to Wal-Mart Super Center
- Distance: 2.7 miles (one-way route length)
- Service Frequency: 30 minutes peak; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

4.5 ANALYSIS OF TRANSIT SERVICE ALTERNATIVES

The transit service alternatives have been analyzed and evaluated based on conceptual estimates of operating and maintenance cost, capital cost, and operating requirements and characteristics. No estimates of ridership or revenue were developed or used in the analysis for this study. However, preliminary ridership developed in the 2006 Study was examined as they related to the candidate routes.

4.5.1 Estimated Operating Requirements for Transit Service Alternatives

Operating requirements were estimated for each transit service alternative, including annual revenue-hours, annual revenue-miles, and peak buses. These characteristics were estimated for the proposed flexible fixed route and demand response service separately.

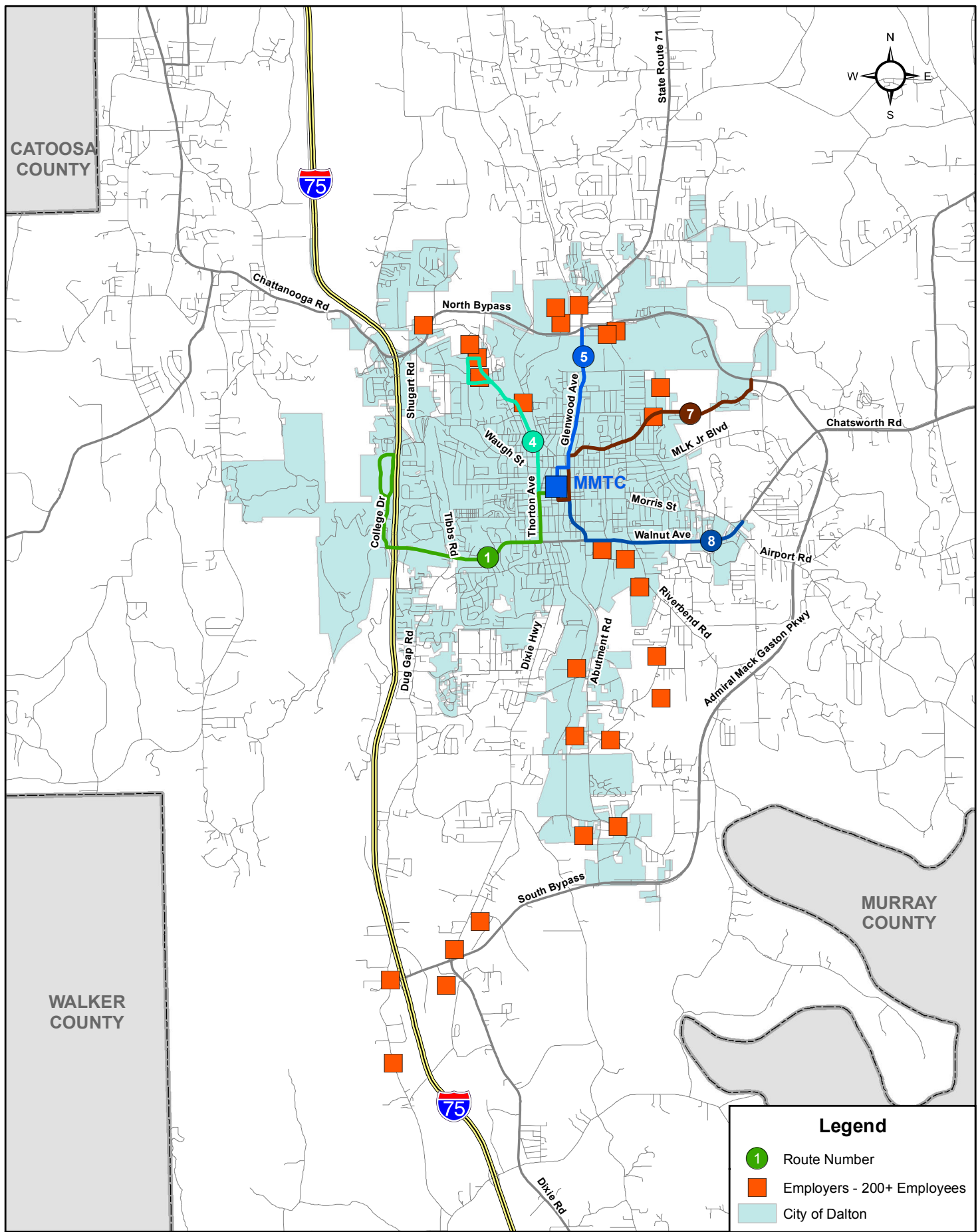
Flexible Route Service

Alternatives 2 through 4 propose the introduction of flexible route service in the Dalton area. Both Alternatives 2 and 3 propose seven new routes primarily serving the City of Dalton, with some routes extending into Whitfield County, with service on weekday and Saturdays. Alternative 4 proposes five new routes focused on key corridors in the City, operating only on weekdays. Proposed service hours are from 6:00 am to 7:00 pm.

Local bus service can be provided as either fixed-route or flexible-route (or deviation) service. Flexible-route service is becoming more common among transit providers in rural and small urban areas. It offers both a means of complying with the ADA and providing more personalized services to passengers.

With the potential for curb-to-curb service for any rider, flexible-route service is more convenient for passengers than fixed-route services. While the additional convenience of flexible-route service may help attract choice riders, it clearly offers better service opportunities for individuals needing special service who might otherwise require a demand response alternative (such as the disabled and elderly).

It also has the added benefit of spreading the limited resources of the system to more areas of the community. Flexible-route service in Dalton would allow the transit system to penetrate into areas of the community that do not have good walk access to collector or arterial roadways and thus bring the service closer to residents.



For these reasons, flexible-route bus service was assumed for all potential routes in Alternatives 2 through 4. Buses would be able to deviate within a specified service area along each route. For the purposes of this study, a deviation service area within $\frac{3}{4}$ mile on each side of the routes or portions of routes was assumed. Buses would have a limited amount of time available within each trip when, provided time is available, the bus can be rerouted to pick up and drop off passengers at locations that are not on the route. To allow for potential deviations, overall cycle times for each route are increased by approximately 10%, in addition to a standard layover time of at least 15% of the total run time.

Additionally, some routes are assumed to be interlined in Alternatives 2 through 4 to provide for operational efficiencies. This technique matches routes with excess layover time with routes with insufficient layover time, thus reducing revenue bus-hours and bus-miles. It also allows for a reduction in the number of peak buses required, which would be particularly important in the midday and on Saturdays when service frequencies are reduced from 30 minutes to 60 minutes.

Table 4-1 summarizes the route-level operating requirements for the flexible-route bus service in Alternatives 2 through 4. Detailed operating statistics for the flexible routes in Alternatives 2, 3, and 4 are presented in Appendices B, C and D, respectively.

Table 4-1 Estimated Operating Requirements for Proposed Flexible Routes

Route	Alternative 2			Alternative 3			Alternative 4		
	Annual Revenue Bus-Hours	Annual Revenue Bus-Miles	Peak Vehicles Required	Annual Revenue Bus-Hours	Annual Revenue Bus-Miles	Peak Vehicles Required	Annual Revenue Bus-Hours	Annual Revenue Bus-Miles	Peak Vehicles Required
1	n/a	n/a	n/a	7,200	65,200	2	4,800	43,200	2
2	11,200	108,400	3	n/a	n/a	n/a	n/a	n/a	n/a
4	3,300	36,500	1	3,300	36,500	1	2,400	26,700	1
5	2,700	23,100	1	n/a	n/a	n/a	2,400	20,200	1
6	n/a	n/a	n/a	5,500	53,300	2	n/a	n/a	n/a
7	3,100	35,800	1	3,100	35,800	1	2,400	31,400	1
8	2,700	29,500	1	2,700	29,500	1	2,400	25,800	1
9	2,400	36,400	1	2,400	36,400	1	n/a	n/a	n/a
10	5,500	65,300	2	n/a	n/a	n/a	n/a	n/a	n/a
11	n/a	n/a	n/a	8,200	96,700	3	n/a	n/a	n/a
Total	30,800	334,900	10	32,300	353,500	11	14,300	147,300	6

Note: Slight inconsistencies in total revenue bus-hours and bus-miles compared to the sum of the routes due to rounding.

Demand-Response Service

All four proposed alternatives include some level of demand response service. Alternative 1 is defined as the existing Whitfield County Transit Service, which currently operates on weekdays only from 6:30 am to 6:00 pm. The service covers all of Whitfield County. However, as the needs are greatest within the City of Dalton, approximately 60% of the service is provided for trips within the City of Dalton. The system currently operates nine vehicles in the peak periods. Two additional

vehicles are available as spares, for a total fleet of 11 buses. For FY 2012, Whitfield County estimates 22,000 revenue bus-hours and 224,000 revenue bus-miles.

With the introduction of flexible-route bus service in Alternatives 2 through 4, much of the City of Dalton would have route coverage, particularly since the routes would be able to deviate up to $\frac{3}{4}$ mile on either side of the routes. Because flexible-route service has been assumed, there would be no additional cost to Whitfield County for providing demand-response during extended hours when new bus service would be operated.

It is expected, however, that many existing demand response clients will be able to use the flexible bus service in Alternatives 2 through 4, instead of demand response. To estimate the amount of this reduction, the operating plan assumes five buses (approximately 60%) are used in the City of Dalton and the remaining four buses are used outside the City. It then assumes that with the flexible-route service, demand in the City would be reduced by 60%, resulting in the need for only two buses operating in demand-response mode within the City and four operating outside the City (or a total of six buses). It is assumed that the three buses no longer needed for demand response service within the City could be placed into service on the proposed flexible routes, thereby reducing the number of new vehicles required.

The operating plan then uses ratios of peak buses to revenue bus-hours and bus-miles to allocate the existing service statistics between the City of Dalton and the remainder of Whitfield County. The result is an estimated reduction in demand-response service to 14,700 revenue bus-hours and 149,300 revenue-bus-miles for Alternatives 2 through 4.

Summary of Estimated Operating Requirements for the Alternatives

Table 4-2 summarizes the estimated operating requirements for each of the four alternatives. **Table 4-3** summarizes the incremental change compared to the existing system (Alternative 1), including spare vehicles.

Table 4-2 Summary of Operating Requirements for the Service Alternatives

Alternative	Flexible Route Bus Service			Demand Response Service			Total		
	Annual Revenue Bus-Hours	Annual Revenue Bus-Miles	Peak Vehicles	Annual Revenue Bus-Hours	Annual Revenue Bus-Miles	Peak Vehicles	Annual Revenue Bus-Hours	Annual Revenue Bus-Miles	Peak Vehicles
1	None	None	None	22,000	224,000	9	22,000	224,000	9
2	30,800	334,900	10	14,700	149,300	6	45,500	484,200	16
3	32,300	353,500	11	14,700	149,300	6	47,000	502,800	17
4	14,300	147,300	6	14,700	149,300	6	29,000	296,600	12

Table 4-3 Incremental Change in Operating Requirements

Alternative	Incremental Change from Existing Service			
	Annual Revenue Bus-Hours	Annual Revenue Bus-Miles	Total Peak Vehicles	Spare Vehicles
2	23,500	260,200	7	2
3	25,000	278,800	8	2
4	7,000	72,600	3	1

4.5.2 Estimated Operating & Maintenance Costs

The estimated annual cost to operate, maintain and administer a transit system is an important consideration in a transit feasibility study. Operating and maintenance (O&M costs) are expressed as the annual total of employee earnings and fringe benefits, contract services, materials and supplies, utilities, and other day-to-day expenses incurred. In general, steps of the O&M cost estimating process are:

- Develop appropriate cost model(s) to evaluate alternatives;
- Calibrate the model(s) for current year operations;
- Generate operating plans and statistics for each study alternative; and
- Estimate annual transit operating and maintenance costs for each study alternative.

Flexible Route Bus Service O&M Cost Model and Results

Peer System Selection

Since flexible route bus transit service is not currently operated in the greater Dalton area, O&M cost estimates for the feasibility study are based on operating characteristics and costs from the National Transit Database (NTD) for a group of existing systems designated as Dalton's transit peers. Peer averaging is a way of using data from systems that have some features in common with the Dalton urbanized area, while minimizing the effects of any one system's unusually high or low costs, consumption or productivity. The peer analysis begins with the identification of 7 to 10 peers from the "universe" of bus systems included in the NTD for the 2010 Report Year, which is the most current, readily-available information.

Selection criteria were established to narrow down potential bus systems to those with urbanized area populations, square miles and population densities similar to Dalton's (based on the 2000 Census, as 2010 Census information has not yet been included in the NTD), and also number of directly-operated peak buses. As such, peer selection focused on urbanized area populations less than 100,000 (an exception made for one bus system that was included in the 2006 study), land areas of less than 100 square miles, population densities less than 1,500 people per square mile, and fewer than 30 buses directly operated (i.e., not operated by a contractor) during peak periods of service. Bus systems that are in the northern and west coast states are also avoided as experience has demonstrated those geographic locations tend to be dissimilar operating environments to southern bus systems from a cost perspective.

Table 4-4 shows the 10 bus systems selected as peers for the Dalton urbanized area along with their relevant Census, bus service and cost characteristics. The peers ranged as follows on the selection criteria:

- Population: 53,714 (Jefferson City, MO) to 102,456 (Johnson City, TN)
- Square Miles: 38 (Jefferson City, MO) to 91 (Johnson City, TN)
- Population Density: 981 (Gainesville, GA) to 1,486 (Fredericksburg, VA)
- Peak Buses: 5 (Cleveland, TN) to 26 (Rome, GA)

Table 4-4 Fixed Route Bus System Peers

Urbanized Area	2000 Census			2010 National Transit Database			
	Population	Square Miles	Population Density	Pk Bus	Annual Rev Bus-Hr	Annual Rev Bus-Mi	Annual O&M Cost
Jefferson City, MO	53,714	38.0	1,408	13	17,781	305,979	\$1,517,954
Cleveland, TN	58,192	48.0	1,206	5	15,008	151,647	\$506,960
Rome, GA	58,287	41.0	1,427	26	27,830	461,504	\$2,135,010
Alexandria, LA	78,504	58.0	1,346	8	33,489	533,257	\$2,325,217
Gainesville, GA	88,680	90.0	981	6	10,063	189,060	\$633,534
Albany, GA	95,450	66.0	1,449	7	31,612	529,949	\$1,906,741
Johnson City, TN	102,456	91.0	1,127	12	29,349	414,422	\$1,460,505
Victoria, TX	61,529	51.0	1,206	7	31,425	447,491	\$1,067,432
Sumter, SC	64,320	45.0	1,439	19	24,052	483,387	\$1,620,604
Fredericksburg, VA	97,102	65.0	1,486	22	59,969	932,002	\$3,271,017
Peer Average	75,823	59.3	1,308	13	28,058	444,870	\$1,644,497
Dalton, GA	57,666	54.0	1,068				

Service statistics data (annual revenue bus-hours and bus-miles) and annual operating expenses for each peer system as reported to the NTD are also shown in Table 4-4.

Peer O&M Costs by Function

To calibrate the cost model, the methodology broke out the peer systems' total annual operating cost by NTD functional categories called Vehicle Operations, Vehicle Maintenance, Non-Vehicle (e.g., facilities and equipment) Maintenance, and General Administration. **Table 4-5** lists these calibration costs. The peer systems' total annual O&M calibrated costs for 2010 ranged between \$428,436 (Cleveland, TN) and \$2.4 million (Fredericksburg, VA).

Table 4-5 Peer O&M Costs by Functional Area

Urbanized Area	2010 National Transit Database Expenses (\$2010)				
	Vehicle Operations	Vehicle Maintenance	Non-Vehicle Maintenance	Non-Vehicle Maintenance	Total Annual O&M Cost
Jefferson City, MO	\$880,191	\$254,946	\$36,044	\$36,044	\$1,207,225
Cleveland, TN	\$328,576	\$93,334	\$3,263	\$3,263	\$428,436
Rome, GA	\$1,161,031	\$466,581	\$49,487	\$49,487	\$1,726,586
Alexandria, LA	\$1,324,351	\$451,704	\$15,020	\$15,020	\$1,806,095
Gainesville, GA	\$472,024	\$65,863	\$9,817	\$9,817	\$557,521
Albany, GA	\$1,081,141	\$438,676	\$22,229	\$22,229	\$1,564,275
Johnson City, TN	\$986,693	\$195,729	\$28,919	\$28,919	\$1,240,260
Victoria, TX	\$815,220	\$170,641	\$3,709	\$3,709	\$993,279
Sumter, SC	\$1,046,143	\$275,579	\$23,711	\$23,711	\$1,369,144
Fredericksburg, VA	\$2,062,020	\$286,342	\$47,063	\$47,063	\$2,442,488

Peer Unit Costs

The last step in developing the cost model was to calculate meaningful unit costs to be applied to the Dalton Transit Feasibility Study alternatives. A key supply variable was assigned to each of the O&M functional areas:

- Vehicle Operations: annual revenue bus-hours
- Vehicle Maintenance: annual revenue bus-miles
- Non-Vehicle Maintenance: number of maintenance/storage facilities (the model assumes one facility for each peer)
- General Administration: number of peak buses (used as proxy for overall system size)

For each peer, the functional area cost (from Table 4-5) was divided by the value of the designated key supply variable (peak vehicles, hours or miles from Table 4-4). The resulting unit cost calculations are shown in **Table 4-6**.

Table 4-6 Peer Unit Costs by Functional Area

Urbanized Area	2010 Unit Costs (\$2010)			
	Vehicle Operations (cost/bus-hr)	Vehicle Maintenance (cost/bus-mi)	Non-Vehicle Maintenance (cost/garage)	Non-Vehicle Maintenance (cost/garage)
Jefferson City, MO	\$49.50	\$0.83	\$36,044	\$36,044
Cleveland, TN	\$21.89	\$0.62	\$3,263	\$3,263
Rome, GA	\$41.72	\$1.01	\$49,487	\$49,487
Alexandria, LA	\$39.55	\$0.85	\$15,020	\$15,020
Gainesville, GA	\$46.91	\$0.35	\$9,817	\$9,817
Albany, GA	\$34.20	\$0.83	\$22,229	\$22,229
Johnson City, TN	\$33.62	\$0.47	\$28,919	\$28,919
Victoria, TX	\$25.94	\$0.38	\$3,709	\$3,709
Sumter, SC	\$43.50	\$0.57	\$23,711	\$23,711
Fredericksburg, VA	\$34.38	\$0.31	\$47,063	\$47,063
Peer Average (\$2010)	\$37.12	\$0.62	\$23,926	\$23,926
Peer Average (\$2012)	\$38.83	\$0.65	\$25,028	\$25,028

The averaged peer unit costs were inflated to represent 2012 dollars and are used as follows to estimate the annual bus operating and maintenance costs of each study alternative, using statistics for each alternative from the operating requirements presented in the prior section.

$(\$38.83 \times \text{alternative's annual revenue bus-hours}) + (\$0.65 \times \text{alternative's annual revenue bus-miles}) + (\$25,028 \text{ for facilities maintenance}) + (\$30,573 \times \text{number of peak buses}).$

Flexible-Route Bus O&M Cost Estimates

The results of applying peer bus system unit costs to the Dalton Transit Feasibility Study alternatives are shown in **Table 4-7**. They range from approximately \$826,000 for Alternative 4 to nearly \$1.7 million and \$1.8 million for Alternatives 2 and 3, respectively.

Table 4-7 Flexible Route Bus O&M Cost Estimates (\$2012)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
<i>Bus Statistics</i>				
Annual Rev Bus-Hr	0	30,800	32,300	14,300
Annual Rev Bus-Mi	0	334,900	353,500	147,300
Peak Buses	0	10	11	6
<i>Estimated Annual Bus O&M Cost</i>				
Vehicle Operations	\$0	\$1,195,968	\$1,254,213	\$555,271
Vehicle Maint.	\$0	\$217,684	\$229,774	\$95,745
Non-Vehicle Maint.	\$0	\$25,028	\$25,028	\$25,028
General Admin.	\$0	\$250,280	\$275,307	\$150,168
Total	\$0	\$1,688,960	\$1,784,323	\$826,211

Demand-Response Service O&M Cost Model and Results

In a similar fashion as the flexible route bus O&M cost modeling, a cost model for the existing Whitfield County Transit demand response service was developed. This model uses State Fiscal Year (SFY) 2011 actual data provided by the County, inflated to SFY 2012 costs.

Demand-Response Service Statistics

State Fiscal Year 2011 service statistics data (annual revenue bus-hours and bus-miles and peak vehicles) for Whitfield County Transit is shown in **Table 4-8**.

Table 4-8 Demand Response Service Statistics

	Whitfield County Transit Service Statistics		
	Peak Buses	Annual Revenue Bus-Hours	Annual Revenue Bus-Miles
SFY 2011 Actual	9	26,344	232,377

Demand-Response O&M Costs by Function

To calibrate the cost model, Whitfield County Transit's actual SFY 2011 administration and operations costs were broken out by NTD functional categories. Similar to the peer systems, it was assumed that 80% of total maintenance costs are for vehicle maintenance, with the remaining 20% for non-vehicle maintenance. **Table 4-9** lists these calibration costs.

Table 4-9 Demand Response O&M Costs by Functional Area

	Whitfield County Transit Expenses				
	Administration	Vehicle Maintenance	Non-Vehicle Maintenance	General Administration	Total Annual O&M Cost
SFY 2011 Actual Expenses (\$2011)	\$369,052	\$30,548	\$7,637	\$165,901	\$573,138

Demand-Response Unit Costs

For Whitfield County Transit, the functional area cost (from Table 4-9) was divided by the value of the designated key supply variable (from Table 4-8). The resulting unit cost calculations are shown in **Table 4-10** in 2011 dollars and as inflated to 2012 dollars.

Table 4-10 Demand Response Unit Costs by Functional Area

	Whitfield County Transit Unit Costs			
	Vehicle Operations (cost/bus-hr)	Vehicle Maintenance (cost/bus-mi)	Non-Vehicle Maintenance (cost/garage)	General Administration (cost/pk bus)
SFY 2011 Actual Unit Costs (\$2011)	\$16.78	\$0.14	\$7,637	\$18,433
SFY 2012 Inflated Unit Costs (\$2012)	\$17.32	\$0.14	\$7,884	\$19,030

2012 Inflation factor derived from the U.S. Department of Labor, Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers (CPI-U), South Urban
1.032

The unit costs are used as follows to estimate the annual demand response operating and maintenance costs of each study alternative, using statistics for each alternative from the operating requirements presented in the prior section.

$(\$17.32 \times \text{alternative's annual revenue bus-hours}) + (\$0.14 \times \text{alternative's annual revenue bus-miles}) + (\$7,884 \text{ for facilities maintenance}) + (\$19,030 \times \text{number of peak buses}).$

Demand-Response O&M Cost Estimates

The results of applying unit costs to the alternatives are shown in **Table 4-11**. The costs would decrease from nearly \$592,000 for Alternative 1 to approximately \$398,000 in the three alternatives with flexible bus service.

Table 4-11 Demand Response O&M Cost Estimates (\$2012)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
<i>Demand Response Statistics</i>				
Annual Rev Bus-Hr	22000	14,700	14,700	14,700
Annual Rev Bus-Mi	224000	149,300	149,300	149,300
Peak Buses	9	6	6	6
<i>Estimated Annual Demand Response O&M Cost</i>				
Vehicle Operations	\$380,988	\$254,569	\$254,569	\$254,569
Vehicle Maintenance	\$31,536	\$21,019	\$21,019	\$21,019
Non-Vehicle Maintenance	\$7,884	\$7,884	\$7,884	\$7,884
General Admin.	\$171,267	\$114,178	\$114,178	\$114,178
Total	\$591,675	\$397,650	\$397,650	\$397,650

Summary of O&M Cost Results

Tables 4-12 and 4-13 summarize the costs of the proposed flexible-route and demand-response services. As shown, total costs are estimated to increase from approximately \$560,000 to more than \$2 million in Alternatives 2 and 3, but by only about \$1.2 million for Alternative 4. The incremental cost of Alternatives 2 and 3 are in the \$1.5 to \$1.6 million range, while for Alternative 4, the incremental cost is only about \$632,000.

Table 4-12 Summary of System Cost Estimates (\$2012)

Estimated Annual Total O&M Costs	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Vehicle Operations	\$380,988	\$1,450,537	\$1,508,782	\$809,840
Vehicle Maint.	\$31,536	\$238,704	\$250,794	\$116,764
Non-Vehicle Maint.	\$7,884	\$32,912	\$32,912	\$32,912
General Admin.	\$171,267	\$364,457	\$389,485	\$264,345
Total	\$591,675	\$2,086,610	\$2,181,973	\$1,223,861

Table 4-13 Incremental Change in System Costs (\$2012)

Estimated Annual Total O&M Costs	Alternative 2 Incremental Cost	Alternative 3 Incremental Cost	Alternative 4 Incremental Cost
Vehicle Operations	\$1,069,549	\$1,127,794	\$428,852
Vehicle Maint.	\$207,168	\$219,258	\$85,228
Non-Vehicle Maint.	\$25,028	\$25,028	\$25,028
General Admin.	\$193,191	\$218,219	\$93,079

4.5.3 Estimated Capital Cost and Requirements for Transit Service Alternatives

This section describes the preliminary capital cost of the transit service alternatives. The start-up of the new local bus service would require the purchase of capital facilities and equipment. In addition to the on-going O&M costs, the capital investment requirements include new buses; cost associated

with the modifications of an existing facility for bus maintenance and/or the planning, design, and construction of a new maintenance facility; and cost related to specific planning, design, and construction/renovations of the multimodal transit center (MMTC).

Vehicle Costs

The American Public Transportation Association (APTA) reports annually on average vehicle costs for a variety of transit vehicles through its Public Transportation Vehicle Database. This information is based on data gathered from approximately 265 North American transit agencies. **Table 4-14** summarizes vehicle costs relevant to this study.

Table 4-14 Select U.S. Average New Vehicle Costs (2010/2011 Dollars)

Vehicle	Length	Characteristics	Approximate Average Cost
Bus			
Transit	≥ 27.5'	Two doors	\$480,000
Small vehicle	< 27.5'	Minibus, van, car, or SUV	\$91,000
Demand Response			
Transit	≥ 27.5'	Two doors	\$274,000
Small vehicle	< 27.5'	Minibus, van, car, or SUV	\$66,000

Source: APTA

Exact vehicle specifications and costs vary considerably. Therefore, the average vehicle costs in Table 4-14 should be considered a range of what Whitfield County would likely pay for bus and demand-response vehicles. Based on the service alternatives discussed in this report, total vehicle fleet capital costs are summarized in **Table 4-15**. Note that demand-response vehicles are not listed in Table 4-15. Additional demand-response vehicles are not needed under any service alternative.

Table 4-15 Order-of-Magnitude Vehicle Capital Cost

Service Alternative	Proposed Number of Vehicles	Cost Range	Cost per Bus	Total Cost
1	0	High	\$480,000	\$0
		Low	\$91,000	\$0
2	9	High	\$480,000	\$4,320,000
		Low	\$91,000	\$819,000
3	10	High	\$480,000	\$4,800,000
		Low	\$91,000	\$910,000
4	4	High	\$480,000	\$1,920,000
		Low	\$91,000	\$364,000

Multi-Modal Transit Center Costs

A Multimodal Transit Center (MMTC) is proposed to serve fixed-routes transit services presented in this report. Ideally, the MMTC would be located at the site of the Cuyler Street train depot. This single-story depot's footprint is approximately 6,600 square feet (170' by 40'), enough space to accommodate a variety of uses ranging including restrooms, a customer service area, a supervisor office, and customer seating. However, Whitfield County may decide to raze this structure and construct a new depot on the same site. This study also proposes at least four bus bays along Cuyler Street, though more may be needed depending on which alternative is selected and to what extent it is implemented.

Exact specifications of the proposed MMTC have not been designed. Many different factors (e.g. construction methods, materials selection, operational characteristics of finalized services, renovation of the existing depot or construction of a new building, etc.) will affect the overall scope of the MMTC's design. However, this study does provide order-of-magnitude capital cost estimates, as shown in **Table 4-16**, for reference. These rule-of-thumb costs per square foot are based on years of project experience designing and estimating costs for transit centers throughout the country. As such, they are not intended to represent or should be interpreted as detailed cost estimates.

Assuming the costs per square foot highlighted in **Table 4-16**, renovating the approximately 6,600 square-foot Cuyler Street train depot is estimated to cost between \$1.65 and \$2.97 million. New construction may somewhat lower the cost of a similarly sized transit center to approximately \$1.32 to \$2.97 million, though the complexity of renovating the existing structure is unknown and, thus, new construction may not represent any cost savings when planned and designed in greater detail.

Table 4-16 Order-of-Magnitude Transit Center Cost

Construction Type	Cost Range	Cost per Square Foot
Transit Center Renovation	High	\$450
	Low	\$250
Transit Center New Construction	High	\$450
	Low	\$200
Construction Type	Cost Range	Cost per Bus Bay
Bus Bay New Construction	High	\$30,000
	Low	\$20,000

Order-of-magnitude bus bay costs are also provided in Table 4-16. As with transit center costs, bus bay costs may be lower or higher depending upon final design. Order-of-magnitude bus bay costs are also based on years of project experience designing and estimating costs for similar facilities. The cost per bay assumes that the bay would be constructed on an existing paved facility that would involve some level of demolition and also assumes a standard 8 to 10" concrete pad on a compacted aggregate base (as opposed to asphalt) with some curbing. Assuming a minimum of four

bays for the proposed MMTC, these facilities will add approximately \$80,000 to \$120,000 to overall MMTC capital costs. Additional bays, if desired, will increase this cost further.

Maintenance Facility Costs

As discussed in the 2006 *North Georgia Regional Development Center Transportation Needs Study*, vehicle maintenance may be accommodated an existing county-owned facility. If a new facility is required, its size, scope, and cost would depend upon how many vehicles it would serve. **Table 4-17** provides a range of order-of-magnitude capital costs for maintenance facilities, based on previous experience planning facilities of similar purpose.

Table 4-17 Order-of-Magnitude Maintenance Facility Cost

Construction Type	Cost Range	Cost per Vehicle
New Maintenance Facility	High	\$500,000
	Low	\$200,000

Applying the number of total proposed vehicles—buses and demand response vehicles combined—for each service alternative, an order-of-magnitude cost estimate for a new maintenance can be calculated. This estimate is shown in **Table 4-18**. Note that, as with a transit center, many different design factors will influence the final capital costs of a maintenance facility. To some extent, total maintenance facility costs will be less expensive on a per vehicle basis for a facility that serves a comparatively higher number of vehicles. This occurs because there are a certain components of a maintenance facility that are shared among all vehicles regardless of how many the maintenance facility serves—for example, a fueling station.

Table 4-18 Order-of-Magnitude New Maintenance Facility Cost

Service Alternative	Proposed Number of Total Vehicles	Cost Range	Cost per Vehicle	Total Cost of New Maintenance Facility
1	9	High	\$500,000	\$4,500,000
		Low	\$200,000	\$1,800,000
2	16	High	\$500,000	\$8,000,000
		Low	\$200,000	\$3,200,000
3	17	High	\$500,000	\$8,500,000
		Low	\$200,000	\$3,400,000
4	12	High	\$500,000	\$6,000,000
		Low	\$200,000	\$2,400,000

SECTION 5 PREFERRED TRANSIT SERVICE ALTERNATIVE

This section recommends the preferred transit service alternative to be carried forward for more detailed analysis in the next phase of the study. The existing WCTS defined as Alternative 1 was used as the baseline alternative for the evaluation. The recommendation of the preferred transit service alternative is based on the operating requirements and level-of-service; O&M cost estimates, and order-of-magnitude capital cost estimates documented for Alternatives 2, 3, and 4 in Section 4 of this report.

5.1 SUMMARY OF O&M COST RESULTS

The O&M cost results and analysis documented in Section 4.5.2 provides a comparison of the cost associated with each transit service alternative (See Tables 4-12 and 4-13). These tables summarize the costs of the proposed flexible route and demand response services. As shown, total costs are estimated to increase from approximately \$560,000 to more than \$2 million in Alternatives 2 and 3, but by only about \$1.2 million for Alternative 4. The incremental cost of Alternatives 2 and 3 are in the \$1.5 to \$1.6 million range, while for Alternative 4, the incremental cost is only about \$632,000.

Based on the O&M cost requirements, in comparison to the level-of-service provided for each alternative, Alternative 4 seems to be the most cost-effective.

5.2 SUMMARY OF CAPITAL COST RESULTS

The capital cost results and analysis documented in Section 4.5.3 provides a comparison of the order-of-magnitude capital cost associated with each transit service alternative. The required new vehicle acquisitions cost (See Tables 4-15), depending on vehicle type, for Alternative 2 ranged from \$0.82 to \$4.3 million, for Alternative 3 ranged from \$0.91 to \$4.8 million, while for Alternative 4, the cost range is only \$0.36 to \$1.9 million. Capital cost associated with the Multi-Modal Transit Center and the requirements for a maintenance facility would not vary significantly among the alternatives.

Based on the preliminary capital cost requirements in comparison to the level-of-service provided for each alternative, Alternative 4 seems to be the most cost-effective.

5.3 PREFERRED ALTERNATIVE

Based on the cost-benefit tradeoffs of the transit service alternatives, Alternative 4 is the recommended alternative to advance to more detailed analyses. Alternative 4 has lower O&M cost and capital cost requirements, while still providing adequate geographic coverage and level-of-service for the Dalton area.

In comparison to the 2006 *North Georgia Regional Development Center Transportation Needs Study's* recommended option (Option 5), Alternative 4 is keeping the demand-response service in the County that is now in place, whereas the 2006 Study recommendation removed the existing demand-response service and replaced it with six fixed route plus paratransit service. Alternative 4 is estimated to have a total of 29,000 revenue-hours of service (up from 26,000 revenue-hours for

the 2006 Study recommended option). Alternative 4 would use 12 peak vehicles (up from 10), at an O&M cost of approximately \$1.2 million in 2012 dollars. The 2006 recommended option O&M cost was also \$1.2 million, but that was in 2005 dollars. When you inflate the 2005 dollars to 2012 dollars, the cost would be approximately \$1.4 million.

The recommended preferred alternative would include the demand-response service operated by WCTS as described in Alternative 1 (at a reduced level with in the City of Dalton) in addition to flexible-route service with in the Dalton urbanized area. This option also includes the required complementary paratransit service for eligible persons with $\frac{3}{4}$ -mile of each route during the same operating hours as the flexible-route service. The routes would operate Monday through Friday from 6 am to 7 pm. Frequency of service would range from 30 minutes in the peak periods (6 am to 9 am; 4 pm to 7 pm) to 60 minutes in the midday/off-peak periods (9 am to 4 pm). The system map for Preferred Alternative (Alternative 4) is illustrated in **Figure 5-1**. The level-of-service and operating characteristics of the five flexible routes in this alternative are described below:

Route 1: Dalton State College / W. Walnut Ave

- Routing: MMTC to W. Cuyler St to S. Thornton Ave to W. Walnut Ave to College Dr. to George Rice Drive
- Distance: 4.5 miles (one-way route length)
- Service Frequency: 30 minutes weekdays; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 4: Medical Center/N. Thornton Ave

- Routing: MMTC to W. Cuyler St to north on Thornton Ave to Memorial; loops back via Memorial to Broadrick Dr. to Professional to south on Thornton
- Distance: 2.8 miles (one-way route length)
- Service Frequency: 30 minutes; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 5: Bi-Lo/Glenwood Avenue

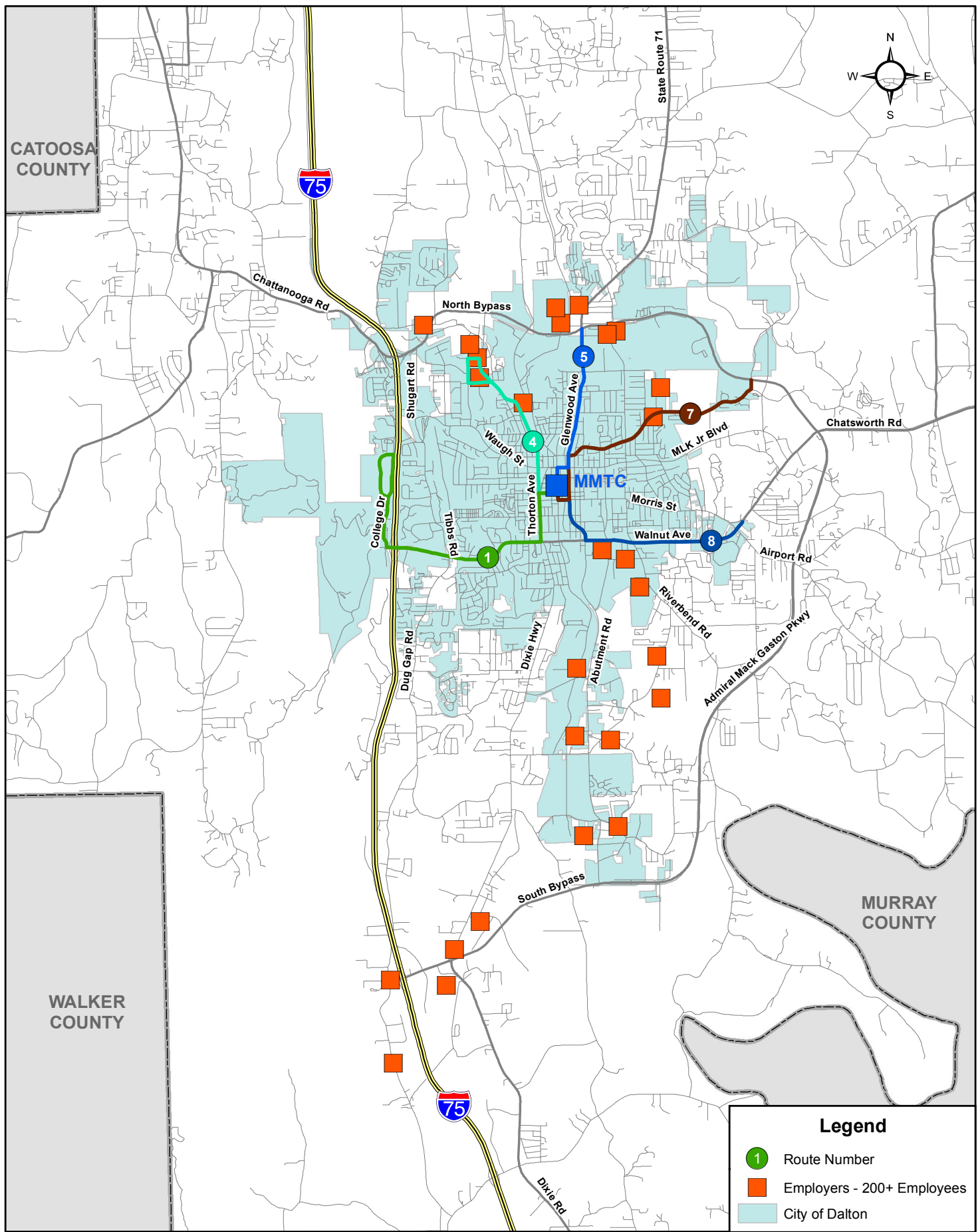
- Routing: MMTC to N. Hamilton to W. Waugh St to N. Glenwood Ave to US 41/N. Dalton Bypass
- Distance: 2.3 miles (one-way route length)
- Service Frequency: 30 minutes peak; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 7: Underwood Street

- Routing: MMTC to W. Morris to N. Glenwood Ave to east on Underwood Street to North Bypass
- Distance: 3.3 miles (one-way route length)
- Service Frequency: 30 minutes peak; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday

Route 8: Wal-Mart/Walnut Square Mall/E. Walnut Ave

- Routing: MMTC to W. Morris to south on Glenwood to east on E. Walnut Ave to Wal-Mart Super Center
- Distance: 2.7 miles (one-way route length)
- Service Frequency: 30 minutes peak; 60 minutes off-peak
- Span of Service: 6 am – 7 pm, Monday – Friday



SECTION 6 POTENTIAL FUNDING SOURCES

This section describes the potential funding sources and options at the federal, state, and local level.

6.1 FEDERAL FUNDING OPTIONS

The Greater Dalton Metropolitan Planning Organization (GDMPO) is eligible to receive both formula and discretionary (competitive) grants from the Federal Transit Authority (FTA). These grants are funded by the most recent transportation authorization, the Safe Accountable Flexible Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU), which Congress passed in 2005 and extended multiple times since the original bill's expiration. The original bill provided \$286.4 billion in transportation funding over a five-year period, with \$52.6 billion of this dedicated to transit.

Because greater Dalton has between 50,000 and 200,000 persons, many of these formula grants are first apportioned among states by the FTA and then distributed among small transit providers by the state. As Dalton does not currently have fixed-route transit service, it is not yet eligible for some of the FTA's formula grant programs, and would need to work with the Georgia Department of Transportation (GDOT) to meet its requirements for agencies receiving FTA formula funds as one of GDOT's grant sub-recipients. There are, however, other federal grant programs administered by the FTA for which Dalton could apply in order to receive discretionary grants to acquire buses or invest in bus facilities. The formula and discretionary grants for which the Dalton area is eligible are discussed below. In addition, a summary of recent FTA grant apportionments and allocations is provided at the end of this section.

Another federal funding consideration is that most federal grants require local matching funds. The non-federal matching funding requirements vary by program, but most programs require a minimum of 20 percent non-federal funds, and many discretionary grant programs require higher proposed non-federal shares (e.g., 50 percent) in order to be competitive against applications submitted by other applicants. These non-federal funds can be state or local, and vary by grant. More detailed information about Georgia's state and local transit funding is presented in later sections.

6.1.1 FTA Bus and Bus Facilities: U.S.C. Section 5309 (Discretionary)

FTA's Section 5309 Bus and Bus Facilities program provides discretionary grants, which are allocated on a competitive basis. This grant provides capital assistance for new and replacement buses, related equipment, and facilities. The funding from this grant is not eligible to be used to cover any operating expenses.

In recent years, the FTA has effectively divided this program into two separate programs: a Bus and Bus Facilities State of Good Repair program, and a Bus Livability program. While the State of Good Repair program is not applicable in this case because it is focused on replacing aging buses or bus facilities, the Bus and Bus Facilities Livability program is focused on providing grants to proposed fixed-route bus projects that would integrate transit into communities. In FY11, FTA provided

approximately \$150M available for grants in the Bus Livability program, although this grant program is very competitive. This program might help Dalton fund the cost of purchasing new buses and/or a bus maintenance facility; however, it would need to work closely with GDOT because GDOT would need to submit an application on its behalf. Additional information on the Section 5309 Bus program can be found here: http://www.fta.dot.gov/grants/13094_3557.html.

6.1.2 USDOT TIGER (Discretionary)

Since 2009, the U.S. Department of Transportation (USDOT) has had four rounds of grants from this program, known as TIGER (Transportation Investment Generating Economic Recovery) grants. These grants are discretionary, i.e., awarded on a competitive basis, for major capital investments. Any surface transportation project is eligible and any public agency (including MPOs) is eligible to apply directly to USDOT. The evaluation criteria focus on economic benefits, sustainability, livability, safety, state of good repair, partnership (including local financial commitment), and innovation. \$1.5 billion was available in the first round, \$600 million was available in the second round, and approximately \$500 million per year was available in both the third and fourth rounds. These grants are extremely competitive and, demand typically exceeds the amount of funding by 20-to-1 or 40-to-1. In many cases, successful applicants seek less than half of the project funding from USDOT and use state and local funding sources for the remainder of project costs. It is unknown whether there will be a fifth round of funding available, but this program offers potential for relatively large capital grants. Most grants awarded to projects in urban areas are in the \$10 million to \$20 million range. Additional information on this program can be found here: <http://www.dot.gov/tiger/>

6.1.3 FTA Formula Metropolitan Planning Assistance (49 U.S.C. Section 5303)

The Metropolitan Planning Assistance grant is designed to provide planning and technical studies dollars to urban and non-urban areas. These planning and technical activities include studies related to management, operations, and the economic feasibility of public transportation projects. The potential activities also include usability and community-friendly transit facility enhancements, system analyses, and short and long range transportation evaluations. While this grant does not provide any capital construction dollars, it could provide additional funds for the initial system analysis or aid in funding future studies. This grant does require a 10 percent state and 10 percent local match, of which the local funds cannot be federal funds.

Each state is apportioned funds using a ratio that compares each state's urbanized population against the nation's urbanized population. Using this formula, Georgia received \$1.02 million from FTA grant 5303 in FY 2011. Additional information for the grant program can be found here: http://www.dot.state.ga.us/localgovernment/intermodalprograms/transit/Documents/2005_5303_Admin_Guide.pdf

6.1.4 FTA Urbanized Area Formula (49 U.S.C. Section 5307)

The FTA's Section 5307 Urbanized Area Formula program is one of the most applicable to the GDMPO's considerations and provides formula funding on an annual basis through SAFETEA-LU. Its purpose is to "provide grants to Urbanized Areas for public transportation capital investments, and

operating expenses in areas under 200,000 in population.” Unlike most FTA grants, the GDMPO is eligible to use Section 5307 formula funds for both capital expenses and up to 50 percent of a Dalton area transit provider’s operating expenses because the region has fewer than 200,000 persons.

Although the initial source of this funding is the FTA, dollars from the 5307 grant would be funneled to the Dalton area through GDOT because the region’s population is less than 200,000. GDOT is the direct recipient of these funds and receives funding based on a formula that incorporates both population and population density. During the last three years, the Dalton area received just over \$600,000 per year from this grant, while Georgia received around \$10 million annually.

In order to receive these funds to support the capital and operating costs of fixed-route service, Dalton would need to submit a feasibility study of the proposed service and a financial plan to GDOT, the primary recipient, that demonstrates the capability to provide a local match to federal funds. Additional information can be found at the links below:

(State):

http://www.dot.state.ga.us/localgovernment/intermodalprograms/transit/Documents/Funding_Administered_by_GDOT_5307.pdf

(Federal):

http://fta.dot.gov/grants/13093_3561.html

6.1.5 FTA Formula Transportation for Elderly Persons & Persons with Disabilities (U.S.C. 49 Section 5310)

This grant is designed to fund capital expenses that support the special needs of older adults and persons with disabilities. Funding for this federal formula grant program is obligated based on the annual program of projects included in each statewide 5310 grant application submittal and is distributed using a formula that includes the number of elderly persons in each state. The state ensures that the local applicants and project activities are eligible and compliant with the Federal requirements. However, the GDMPO would still need to show that a significant number of elderly or disabled individuals in the Dalton area would significantly benefit from additional transit service.

Once the FTA approves a state’s program, the funds are obligated and then available for allocation to individual sub-recipients throughout the state. In FY 2011, Georgia metro areas received nearly \$3.4 million from the 5310 grant program for distribution among sub-recipients. Additional information regarding the Section 5310 grant program can be found at the following link: http://www.fta.dot.gov/grants/13093_3556.html

6.1.6 FTA Formula Other than Urbanized Area Program (Section 5311)

This program is designed to provide capital and operating assistance for rural and small urban public transportation systems. This program’s funds are apportioned to states using a formula that is based 80 percent on a state’s non-urbanized population and 20 percent on land area. During the

last three years, Georgia received approximately \$17 million annually from the FTA using this formula. Of this, the Dalton area received approximately \$190,000 in operating funds and approximately \$40,000 in capital funding with an additional \$5,000 in state match funds in FY 2011. Additional information can be found here:

(State):

http://www.dot.state.ga.us/localgovernment/intermodalprograms/transit/Documents/Funding_Administered_by_GDOT_5311.pdf

(Federal):

http://fta.dot.gov/grants/13093_3555.html

6.1.7 FTA Formula Job Access & Reverse Commute Program (Section 5316)

This federal formula grant program provides funding to address the challenge that low-income persons often face in reaching their employment destinations. Many of these destinations are in suburban areas that are difficult to access from both urban and rural areas. The GDMPO region's high number of employment positions in the flooring industry may help it to qualify to receive funding for this grant, as many of these positions may qualify as low paying jobs. States and public bodies are eligible recipients, while public agencies, including transit operators, are eligible sub-recipients. Twenty percent of the funds go to states for areas under 200,000 persons with each state's share determined by its percentage of eligible low-income individuals. Despite this allocation, projects within each state must be selected on a competitive basis and must be included in a locally developed human service coordinated transportation plan. Georgia was apportioned approximately \$1.1 million for urban areas between 50,000 and 200,000 in population in FY 2011 as part of FTA's 5316 grant program. Additional information for the program can be found by using the following links:

(State):

http://www.dot.state.ga.us/localgovernment/intermodalprograms/transit/Documents/Funding_Administered_by_GDOT_5316.pdf

(Federal):

http://www.fta.dot.gov/grants/13093_3550.html

6.1.8 FTA Formula New Freedom Program (Section 5317)

This formula grant program is designed to promote service and facility improvements that address the needs of persons with disabilities that go beyond those required by the Americans with Disabilities Act (ADA). This grant program provides both capital and operating funds based on a formula that incorporates the number of persons with disabilities within each state. Twenty percent of the total program funds are allocated to areas that have between 50,000 and 200,000 people, but are first apportioned to each state for distribution. States must then competitively select grantees for final allocation to urban areas of this size. Georgia's small urbanized areas were apportioned

\$553,000 in FY 2011 to fund those areas between 50,000 and 200,000 persons. Additional information can be found at the link below:

(State):

http://www.dot.state.ga.us/localgovernment/intermodalprograms/transit/Documents/Funding_Administered_by_GDOT_5317.pdf

(Federal):

http://fta.dot.gov/grants/13093_3549.html

6.1.9 FHWA Flex Funds

The start-up bus system might also be eligible to use federal highway funding. Much of the federal highway funding can be “flexed” to transit if the state department of transportation chooses to do so. These funds can be flexed from the Federal highway Administration (FHWA) to the FTA and vice versa, but can only be used for purposes eligible under the initial program from which the funds were transferred; however, once they are transferred to FTA, they are administered as such and take on all of the requirements of the FTA. Once the funds are transferred from the FHWA to the FTA, they are transferred to any one of the FTA’s 5307, 5311, or 5310 programs, which are all described in the previous paragraphs. The funds can then be used for a multitude of purposes, including bus purchases and bus facilities, car and vanpool projects, transit parking facilities, and bicycle and pedestrian facilities. The GDMPO may initiate talks with GDOT to discuss whether some of the state’s FHWA formula funding might be flexed to help fund the start-up costs of fixed-route bus service in the Dalton area. Additional information can be found at the following link: <http://www.fta.dot.gov/grants/12867.html>

Table 6-1 below provides a summary of the recent grant funding apportionments and allocations to Dalton, Georgia, and small Urbanized Areas (UAs) in Georgia for each of the applicable grants discussed in this section.

Table 6-1 Georgia and Dalton Historical Grant Funding

Grant Apportionments and Allocations for Georgia, Dalton, and Small Urbanized Areas in Georgia, FY 2009 - FY 2011				
Grant	Recipient	2011	2010	2009
5307	Georgia	10,424,504	9,393,664	9,555,500
	Dalton	617,377	616,293	618,547
5310	Georgia	3,398,505	3,413,890	3,465,642
5311	Georgia	17,151,140	17,120,109	17,158,958
5316	Georgia	5,045,047	5,052,648	5,284,546
	Small UA's	1,116,492	1,118,174	1,169,495
5317	Georgia	2,871,862	2,857,107	2,911,135
	Small UA's	553,202	550,360	560,767

FTA, Federal Registry: http://www.fta.dot.gov/grants/12853_88.html

6.2 STATE FUNDING OPTIONS

The state of Georgia does not provide any transit funding that is not funneled through federal sources or used as a match for federal funds. The 5307 and 5310 grant programs mentioned in the *Federal Funding* section are examples of grants that use federal dollars but are funneled through state organizations. Georgia contributed \$52 million in matching transit funds in FY 2011. In the required State Transportation Improvement Program (STIP), GDOT is also required to list its projected future FTA grant program receipts by program. **Table 6-2** shows the projected funds per grant program and highlights the aforementioned grant programs that apply to the Dalton area.

Table 6-2 Projected FTA Grant Funding FY 2012-2015

Category	FY 2012	FY 2013	FY 2014	FY 2015	Total FY 2012- 2015
Urbanized Area Formula Program (5307) - Capital	\$89,800	\$89,537	\$87,031	\$83,263	\$349,631
Urbanized Area Formula Program (5307) - Operating	\$17,802	\$13,937	\$6,289	\$6,289	\$44,317
Clean fuels Program (5308) - MARTA	\$5,563	\$5,875	\$1,250	\$1,250	\$13,938
Capital Investment Program (5309)	\$102,531	\$101,983	\$102,252	\$102,752	\$409,518
Elderly & Persons with Disabilities Program (5310)	\$6,388	\$4,521	\$4,236	\$3,961	\$19,106
Non-urbanized Area Formula Program (5311) - Capital	\$5,170	\$7,141	\$6,433	\$8,709	\$27,453
Non-urbanized Area Formula Program (5311) - Operating	\$25,530	\$26,151	\$26,607	\$26,285	\$104,573
Intercity Bus Program (5311f)	\$2,574	\$2,574	\$2,574	\$2,574	\$10,296
Job Access & Reverse Commute Program (5316) - Urban	\$1,163	\$1,187	\$1,210	\$1,210	\$4,770
Job Access & Reverse Commute Program (5316) - Rural	\$1,444	\$1,473	\$1,502	\$1,502	\$5,921
New Freedom Program (5317) - Urban	\$573	\$584	\$596	\$596	\$2,349
New Freedom Program (5317) - Rural	\$795	\$811	\$828	\$828	\$3,262
Other Transit Projects	\$154	\$0	\$294	\$294	\$742
Total Apportionment	\$259,487	\$255,774	\$241,102	\$239,513	\$995,876

Source: 2012 Georgia State Transportation Improvement Plan

6.3 LOCAL FUNDING OPTIONS

The GDMPO and City of Dalton can choose from a number of different mechanisms to raise local funding for transit service. These mechanisms include a wide range of different taxes and fees that could be established either independently or in conjunction. While property tax, sales tax, and

general fund appropriations are the most common sources to fund transit systems, the possibilities are virtually endless. Below is a summary of some of the more common local transit funding sources:

6.3.1 Farebox Revenues

Some farebox revenue will be generated by the proposed service if a fare is charged; however, even the nation's highest ridership transit systems have operating subsidies of well over 50%. Farebox revenues will cover some operating costs, but other mechanisms will need to be enacted in concordance with it to fund the operating costs of the system and assist in matching federal funds.

6.3.2 Vehicle Taxes

The region could choose to place a dedicated tax or fee on the sale or registration of vehicles. This tax could be a flat fee, or a percentage-based tax on the vehicle's total value. The additional revenue generated might be collected and dedicated to the fixed-route service. Other vehicle components such as batteries or tires could also be taxed in this manner.

6.3.3 Fuel Taxes

The region could choose to place an additional per-gallon excise tax (above and beyond the current federal, state, and local taxes) on motor fuels purchased in the GDMPO jurisdiction. These taxes could also be applied to diesel and compressed natural gas (CNG) fuels to raise additional funds from freight vehicles.

Fuel taxes could also be levied in the form of a sales tax. With this tax, transit funding would be accrued on a per dollar basis rather than on a per gallon basis. Because the funding is linked to fuel prices, transit revenues would fluctuate with fuel prices.

Another fuel-tax option would be to index the fuel tax to inflation to generate additional revenue. Over time, inflation weakens fuel excise taxes. However, linking the tax to inflation helps to maintain a more constant level of real revenue and also minimizes the political action needed to gain approval for multiple increases.

6.3.4 Local Sales Taxes

Another option that the GDMPO and other local jurisdictions could employ is a dedicated local option sales tax. This sales tax would be in addition to other previously established sales taxes and could be dedicated solely to fund the fixed-route transit service under consideration.

6.3.5 Property Taxes

The region could elect to increase property taxes and dedicate the additional revenue to the proposed fixed-route service. Property tax revenues are one of the most common sources for funding transit operations and capital investments.

6.3.6 Occupational Taxes

Another transportation funding option for the Dalton area is an occupational tax. For example, the Louisville, Kentucky, region utilizes this tax to generate revenue for its regional transportation system. Occupational taxes already exist in other Georgia jurisdictions that generate funds for a variety of purposes.

6.3.7 Selective Taxes

These taxes are applied to specific items such as tobacco, alcohol, and tourism related activities such as hotels or rental cars. These taxes can also be extended to other items such as insurance and utilities under the discretion of the county or enforcing jurisdiction. Again, the additional revenue generated in this manner could be directed to the proposed fixed-route service.

6.3.8 Parking Fees

The GDMPO could evaluate increasing local parking rates and parking fines as a component of raising the revenue for transit service. Due to the relatively small population in the region, this revenue mechanism would likely need to be coupled with others in order to raise significant revenue.

6.3.9 Safety & Violation Fees

These fees would be applied on top of any existing safety or traffic citation fines that currently exist, with the additional revenue dedicated to the proposed fixed-route transit service. The range of violations for which this fee would be applied would be determined by the GDMPO and the local jurisdictions within the region.

6.3.10 General Appropriations

The additional costs of the fixed-route service could be covered by reallocating funds within local general funds. Historically, the use of the general fund for transit service reduces the long-term reliability of transit funding, especially when down economies result in fewer available funds.

6.3.11 Advertising Revenue

While usually a very small component of operating costs (no more than one to two percent for large transit networks), most transit agencies do gain some revenue from advertising. The sides of buses, bus stops, and other facilities are used as advertising media to generate revenue for the transit service operations. As with farebox revenue, advertising revenue would need to be combined with other revenue strategies.

6.3.12 Public Private Partnerships

Public private partnerships (P3s) are contractual agreements between private entities and public agencies that utilize collaboration to allow for greater private involvement in the financing of public projects. Many different types of P3s exist, and the structure and division of financial risk of each varies by application and the stakeholders involved. A potential use of public private partnerships in

the greater Dalton area would be for flooring manufacturers to provide financial assistance to a consolidated public transit service that ensures their employees have access to the manufacturing centers.

6.3.13 Value Capture Mechanisms

Value capture mechanisms use the expected future value created by projects as capital to fund the projects. In the case of Dalton, the additional value might be created by the proposed fixed-route transit service and the enhanced mobility options it would provide.

One of the most common value capture mechanisms is Tax Increment Financing (TIF). It uses the expected increase in revenue from increased property value to pay for current improvements to generate the value increase. Typically, only the increment or added value can be used to pay for these improvements. Other forms of value capture are special assessment districts, which levy an additional increment on property taxes for properties located near the transit service, or development impact fees, which charge fees to new residential or commercial development and use the revenues to help fund transportation operations or expenses.

A key limitation of value capture is that, in theory, the argument for its application is that property values will increase as the result of a transportation investment. Accordingly, stakeholders might want to expect an increase in property values as a result of the transit service in order to pursue this mechanism.

6.3.14 Other Considerations

The aforementioned revenue mechanisms do not discuss the administrative and political challenges one can face in attempting to raise the funds necessary to implement fixed-route transit service. It is recommended that any implementation concerns specific to the Dalton area be evaluated in a following study.

6.4 COMMON FUNDING PROGRAMS NOT APPLICABLE TO GREATER DALTON

6.4.1 Congestion Air Quality and Mitigation (CMAQ)

These funds are designed to provide assistance to air quality non-attainment regions as part of the National Ambient Air Quality Standards (NAAQS). The funds from this program can be used to support a variety of projects that reduce emissions such as vanpool, express bus, traffic flow improvements, bicycle and pedestrian infrastructure, and vehicle inspection and maintenance. However, because Whitfield County and the GDMPO are currently in attainment of the NAAQS, they are not eligible for these funds.

6.4.2 Very Small Starts Program

FTA's "Very Small Starts" is a subset of its larger New Starts program that provides discretionary dollars for major transit projects. The Very Small Starts program was designed to provide funding to smaller, lower risk projects with a more streamlined FTA evaluation and rating process. Dalton is

not eligible for these funding dollars because the program requires several metrics which Dalton has not yet attained. These include an existing corridor ridership of 3,000+ per day, proposed service of 10 minute headways, distinctive transit stations, and signal priority and pre-emption.

6.5 FUNDING FEASIBILITY

The previous sections illustrate that there are numerous FTA funding programs for which Dalton is eligible to apply to support fixed route service and many local funding options that the Dalton area could choose to implement to generate local match and operating funds.

When evaluating the various FTA grants, Dalton area leaders should note the difference between the discretionary and formula programs. The discretionary Bus and Bus Facilities (5309) and TIGER programs, while very competitive, have the potential for a higher magnitude of funding, while the formula programs have a greater potential to provide sustained funding, albeit typically in smaller dollar amounts. The amount generated by the various formula programs also depends on the demographic makeup of the Dalton area and the state, as many of the formulas used to apportion and allocate grant dollars use Census data. This is especially true for the more specialized formula grants such as the 5310 and 5317 grant programs which focus on providing transit service to the elderly and disabled with special needs. Also, the Dalton area's population requires that many of its eligible FTA grant funds are first apportioned at the state level to GDOT and then further allocated to the GDMPO or a local transit provider. Because of this, the GDMPO and Dalton area leaders should ensure they fully comprehend the GDOT grant submittal process for each of the grants so that their applications are compliant.

At the local level, Dalton area leaders and decision makers may choose whichever funding method best aligns with the communities makeup and needs; however, general apportionments, sales taxes, and occupation taxes are some of the most commonly used mechanisms used to generate local transportation funding on top of farebox revenue. Many of the other methods such as parking fees and advertising generate lower magnitudes of revenue and may need to be used in conjunction with other mechanisms to generate adequate funding.

SECTION 7 NEXT STEPS

The next steps for advancing the proposed transit service alternative towards implementation are summarized below.

7.1 *SELECT SERVICE ALTERNATIVES FOR REVIEW BY STAKEHOLDERS AND RECOMMEND MOST FEASIBLE ALTERNATIVE*

The GDMPO will need to refine and detail the preferred transit service alternative, develop a detailed operating plan, project ridership and other benefits, estimate detailed capital and operating costs, establish a financial plan that identifies potential funding sources, established a fare policy and structure, and describe institutional factors related to the implementation and provision of transit services in the City of Dalton and Whitfield County. Some of the required tasks include:

- Provide short/long range monetary and social costs and benefits for alternatives.
- Recommend the most feasible alternative for consideration and approval.
- Include an examination of relevant legal, regulatory and institutional factors.
- Meetings with GDMPO staff, committees and the TAC as necessary.

7.2 *DEVELOPMENT OF DETAILED IMPLEMENTATION PLAN*

The GDMPO will need to prepare an implementation plan for the recommended service alternative that answers several key questions related to management/administrative structure, institutional considerations, fare policy, start-up capital and annual operating costs, local funding needs, and personnel requirements. The Implementation Plan will also need to identify a detailed schedule that identifies key milestones for implementation. Some of the required tasks include:

- Provide short/long-range elements for selected services.
- Include a description of service options, operational characteristics, administrative structure, capital and operating costs, personnel needs, expected ridership and revenues and strategy/schedule for implementation.
- Meetings with GDMPO staff, committees and the TAC as necessary.
- Preparation of a report that documents:
 - Recommendation of the most feasible alternative with estimated costs and benefits and needed legal, regulatory, and institutional steps to take in implementing the recommended public transportation service
 - An outline for short/long-range elements for implementation of the selected service with a description of the operations, administrative structure, capital and operating costs, personnel needs, expected ridership, and expected revenues
 - A strategic schedule of events towards full implementation of the recommended service

APPENDIX A

Stakeholder Meetings / Interviews

Major Employers

Dalton State College

GDMPO Multimodal Transit Feasibility Study: Part II

Stakeholder Meeting Questionnaire for Major Employers

1. How many facilities does your company operate in the Dalton area?

2. How many employees work at each facility?
 - a. Full Time?

 - b. Part Time?

3. What are the current operating hours of facilities, including shift times and number of employees per shift?
 - a. Do the employees have set hours or do they come in at various times?

4. From where do employees generally commute? (What section of Dalton, Whitfield County or what other area?) If anonymous zip code data is available, this would help us better understand commuting patterns.

5. How do the majority of employees travel to work?

6. How much parking is available at your facilities?

7. Where do most of the employees park?
8. Is existing parking at capacity?
9. Do parking conditions create problems for your employees?
10. Does your company plan to build additional parking in the future at existing facilities?
11. Do your employees come and go frequently as part of their regular work day activities?
12. Do your employees leave the worksite during midday for lunch, breaks, or other purposes?
13. Does your company receive visitors to your facilities? If so, generally, how many visitors and how frequently?
14. Does your company have any expansion plans at current location or at other sites in the future?

15. Are you expecting to hire new employees in the future?
16. Are you planning any additional shifts or changes to existing shifts in the future?
17. What type of vanpool/carpool, shuttle, or other commuter programs, benefits, or subsidies are provided to employees?
- a. If none, has your company ever offered any of these to your employees?
 - b. Is your company willing to or planning on offering these programs in the future?
Why or why not?
18. On a scale of 1 to 5, where 1 is not important and 5 is very important, how important is it to the operations of your businesses to help your employees find ways to make their trip to and from work easier?
19. How willing is your company to contribute financially in order to offer improved transportation options for your employees?
20. Please provide any additional details which may be helpful to this study.

GDMPO Multimodal Transit Feasibility Study: Part II

Stakeholder Meeting Questionnaire for Dalton State College

1. How many students are currently enrolled?

2. How many students live on campus?

3. What are popular destinations in the area for students (e.g. nightlife or shopping)?

4. How many students live off campus and commute?

5. How many employees work at Dalton State College?

6. From where do students and employees generally commute? If anonymous zip code data is available, this would help us better understand commuting patterns.

7. How much parking is available on campus? Is there any off-campus parking nearby?

8. Is existing parking at capacity?
9. What type of vanpool/carpool, shuttle, or other commuter programs, benefits, or subsidies are provided to students and employees?
10. What are the busiest times of day on campus? Please describe the operating hours of the school, including general schedule for classes.
11. Does Dalton State College have any expansion plans?
12. How many enrolled students are expected in the future under these expansion plans?
13. Are you expecting to hire new employees in the future?
14. Are you planning to modify class schedules and hours of operation in the future?

15. Are you planning to construct additional parking in the future?
16. Please list or describe problem roadways or intersections that impede mobility on or off-campus.
17. Is transportation mobility and choice a strategy for Dalton State College to retain and attract students and faculty in the future?
18. Where do you feel the provision of public transportation would provide the greatest benefits to Dalton State College?
19. Please provide any additional details which may be helpful to this study.

APPENDIX B

Flexible Route Detailed Operating Statistics

Alternative 2

**GDMPO TRANSIT FEASIBILITY STUDY
ALTERNATIVE 2 FLEXIBLE ROUTE BUS SERVICE**

AVERAGE WEEKDAY SERVICE

Rte. #	Route Name	Service Frequency		Calculated Trips			Peak Period		1-Way Distance (Miles)	Avg. Weekday		Buses Required	
		Peak Period	Midday Period	Peak Trips	Midday Trips	Total Daily Trips	Time (Min.)	Cycle Time		Rev. Hrs.	Rev. Miles	Peak Period	Midday Period
2	Medical Ctr/Shugart Rd/Dalton State	30	30	24	28	52	30.0	90.0	7.5	39.0	391.0	3.0	3.0
4	Medical Ctr/N Thornton Ave	30	30	24	28	52	11.2	30.0	2.8	13.0	145.6	1.0	1.0
5	Bi-Lo/Glenwood Ave	30	60	24	14	38	8.5	30.0	2.1	9.5	80.6	1.0	0.5
7	Underwood St	30	60	24	14	38	13.2	30.0	3.3	9.5	125.0	1.0	0.5
8	Wal-Mart/Walnut Sq Mall/E Walnut	30	60	24	14	38	10.8	30.0	2.7	9.5	102.6	1.0	0.5
9	Industrial Ctr Loop	30	60	24	14	38	12.7	30.0	3.8	9.5	145.0	1.0	0.5
10	S Bypass/S Dixie Dr	30	60	24	14	38	20.0	60.0	6.0	19.0	228.0	2.0	1.0
Total Weekday Daily Statistics						294				109.0	1,217.8	10.0	7.0
Total Weekday Annual Statistics						73,800				27,400	305,700		

Notes: Routes 5 and 7 would be interlined
Routes 8 and 9 would be interlined

AVERAGE SATURDAY SERVICE

Rte. #	Route Name	Service Frequency	Calculated Trips	Time (Min.)	Cycle Time	One-Way Distance (Miles)	Avg. Saturday		Buses Required
							Rev. Hrs.	Rev. Miles	
2	Medical Ctr/Shugart Rd/Dalton St	60	26	30.0	120.0	7.5	26.0	195.5	2.0
4	Medical Ctr/N Thornton Ave	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5	Bi-Lo/Glenwood Ave	60	26	8.5	30.0	2.1	6.5	55.1	0.5
7	Underwood St	60	26	13.2	60.0	3.3	13.0	85.5	1.0
8	Wal-Mart/Walnut Sq Mall/E Walnut	60	26	10.8	30.0	2.7	6.5	70.2	0.5
9	Industrial Ctr Loop	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10	S Bypass/S Dixie Dr	60	26	20.0	60.0	6.0	13.0	156.0	1.0
Total Saturday Daily Statistics			130				65.0	562.4	5.0
Total Saturday Annual Statistics			6,900				3,400	29,200	

Notes: Routes 5 and 8 would be interlined

APPENDIX C

Flexible Route Detailed Operating Statistics

Alternative 3

**GDMPO TRANSIT FEASIBILITY STUDY
ALTERNATIVE 3 FLEXIBLE ROUTE BUS SERVICE**

AVERAGE WEEKDAY SERVICE

Rte. #	Route Name	Service Frequency		Calculated Trips			Peak Period		One-Way Distance (Miles)	Avg. Weekday		Buses Required	
		Peak Period	Midday Period	Peak Trips	Midday Trips	Total Daily Trips	Time (Min.)	Cycle Time		Rev. Hrs.	Rev. Miles	Peak Period	Midday Period
1	Dalton State/W Walnut Ave	30	30	24	28	52	18.1	60.0	4.5	26.0	235.6	2.0	2.0
4	Medical Ctr/N Thornton Ave	30	30	24	28	52	11.2	30.0	2.8	13.0	145.6	1.0	1.0
6	Cleveland Hwy/Bi-Lo/Glenwood	30	60	24	14	38	19.6	60.0	4.9	19.0	186.2	2.0	1.0
7	Underwood St	30	60	24	14	38	13.2	30.0	3.3	9.5	125.0	1.0	0.5
8	Wal-Mart/Walnut Sq Mall/E Walnut	30	60	24	14	38	10.8	30.0	2.7	9.5	102.6	1.0	0.5
9	Industrial Ctr Loop	30	60	24	14	38	12.7	30.0	3.8	9.5	145.0	1.0	0.5
11	Greyhound Station/S Dixie Hwy	30	60	24	14	38	29.6	90.0	8.9	28.5	337.4	3.0	1.5
Total Weekday Daily Statistics						294				115.0	1,277.4	11.0	7.0
Total Weekday Annual Statistics						73,800				28,900	320,600		

Notes: Routes 7, 8, 9, and 11 would be interlined

AVERAGE SATURDAY SERVICE

Rte. #	Route Name	Service Frequency	Calculated Trips	Time (Min.)	Cycle Time	One-Way Distance (Miles)	Avg. Saturday		Buses Required
							Rev. Hrs.	Rev. Miles	
1	Dalton State/W Walnut Ave	60	26	18.1	60.0	4.5	13.0	117.8	1.0
4	Medical Ctr/N Thornton Ave	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6	Cleveland Hwy/Bi-Lo/Glenwood	60	26	19.6	60.0	4.9	13.0	127.4	1.0
7	Underwood St	60	26	13.2	60.0	3.3	13.0	85.5	1.0
8	Wal-Mart/Walnut Sq Mall/E Walnut	60	26	10.8	30.0	2.7	6.5	70.2	0.5
9	Industrial Ctr Loop	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
11	Greyhound Station/S Dixie Hwy	60	26	29.6	90.0	8.9	19.5	230.9	1.5
Total Saturday Daily Statistics			130				65.0	631.8	5.0
Total Saturday Annual Statistics			6,900				3,400	32,900	

Notes: Routes 6, 8, and 11 would be interlined

APPENDIX D

Flexible Route Detailed Operating Statistics

Alternative 4

**GDMPO TRANSIT FEASIBILITY STUDY
ALTERNATIVE 4 FLEXIBLE ROUTE BUS SERVICE**

AVERAGE WEEKDAY SERVICE

Rte. #	Route Name	Service Frequency		Calculated Trips			Peak Period		One-Way Distance (Miles)	Avg. Weekday		Buses Required	
		Peak Period	Midday Period	Peak Trips	Midday Trips	Total Daily Trips	Time (Min.)	Cycle Time		Rev. Hrs.	Rev. Miles	Peak Period	Midday Period
1	Dalton State/W Walnut Ave	30	60	24	14	38	18.1	60.0	4.5	19.0	172.1	2.0	1.0
4	Medical Ctr/N Thornton Ave	30	60	24	14	38	11.2	30.0	2.8	9.5	106.4	1.0	0.5
5	Bi-Lo/Glenwood Ave	30	60	24	14	38	8.5	30.0	2.1	9.5	80.6	1.0	0.5
7	Underwood St	30	60	24	14	38	13.2	30.0	3.3	9.5	125.0	1.0	0.5
8	Wal-Mart/Walnut Sq Mall/E Walnut	30	60	24	14	38	10.8	30.0	2.7	9.5	102.6	1.0	0.5
Total Weekday Daily Statistics						190				57.0	586.7	6.0	3.0
Total Weekday Annual Statistics						47,700				14,300	147,300		

Notes: Routes 4 and 8 would be interlined