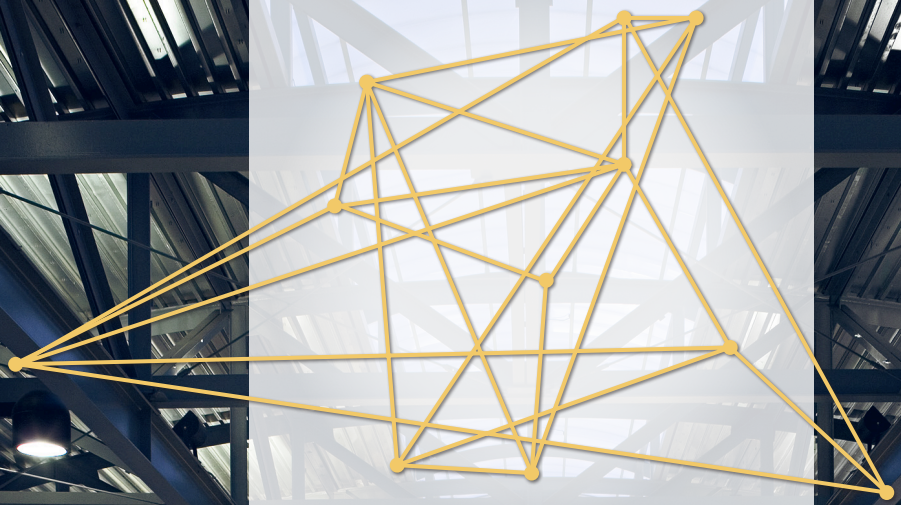
2016

# ATHENS TRANSIT



# FEASIBILITY STUDY

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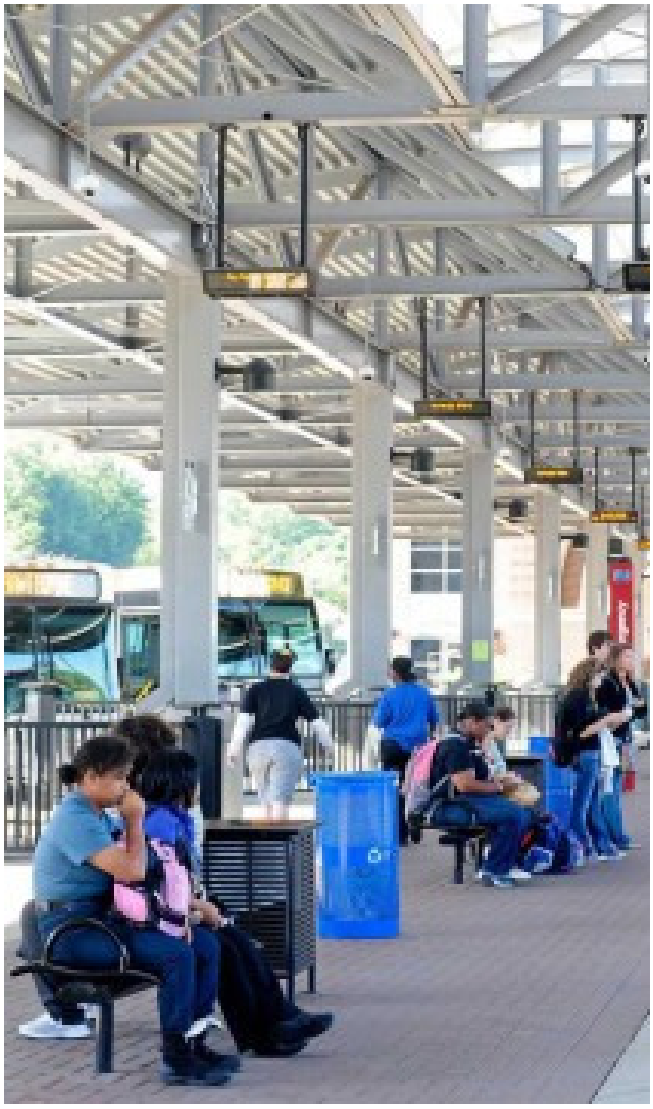
# Existing Conditions Assessment

*The Athens Transit Feasibility Study* explores the feasibility and efficiencies of unified future service in Athens-Clarke County and the University of Georgia (UGA). The purpose of this initial study is to complete an assessment of existing conditions and operations, complete a needs assessment for service expansion and identify the feasibility, opportunities, and service options for a consolidation of services.



Short and long term goals of the study include:

- Short Term
  - Assessment and recommendations to improve multimodal programs and local efficiencies
  - Identification of efficiencies that can be accelerated utilizing SPLOST funding for capital expenditures/improvements
  - Identification of projects for transit accessibility, including bicycle and pedestrian projects and traffic calming
- Long Term
  - Improve overall efficiencies through the elimination of redundant infrastructure and services
  - Identify opportunities and feasibility of service consolidation
  - Identify long term funding options

Establishing the foundation for the Transit Feasibility Study, the Existing Conditions Assessment provides an overview of the study area and its transit services. The overview includes the identification of significant attractions and generators, land use, socioeconomic conditions, the transportation system, and financial information. The assessments of the existing conditions of the fixed-route and demand-response transit systems involve reviewing service characteristics and evaluating performance relative to peer areas based on the National Transit Database (NTD). Finally, a review of previous plans synthesizes previous assessments of conditions and recommendations for consideration in the early stages of this Transit Feasibility Study.

## *Overview*

The study of the interactions of and coordination between Athens Transit and UGA Transit starts with an overview of the context within which the two systems operate.

## *Study Area*

Athens-Clarke County is located in northeast Georgia between I-85 and I-20 approximately 70 miles west of Atlanta (see Figure 1). Landmarks include Athens-Ben Epps Airport and two hospitals – Athens Regional Health System Medical Center and St. Mary's Health Care System. Athens-Clarke County (population of almost 120,000) is dominated by the University of Georgia (UGA), with more than 35,000 students. Athens is also home to Athens Technical College. Other significant activity locations include downtown and Georgia Square Mall. The Athens Transit Multi-Modal Transit Center is located near downtown, and Greyhound has a bus stop near Georgia Square Mall.

Another important aspect of the study area are K-12 schools which are major employment and activity centers with implications for Athens Transit route and schedule coordination. Fourteen elementary schools, four middle schools, and three high schools also enroll a total of 12,000 students (See Figure 2 and Table 1).

**FIGURE 1:** STUDY AREA

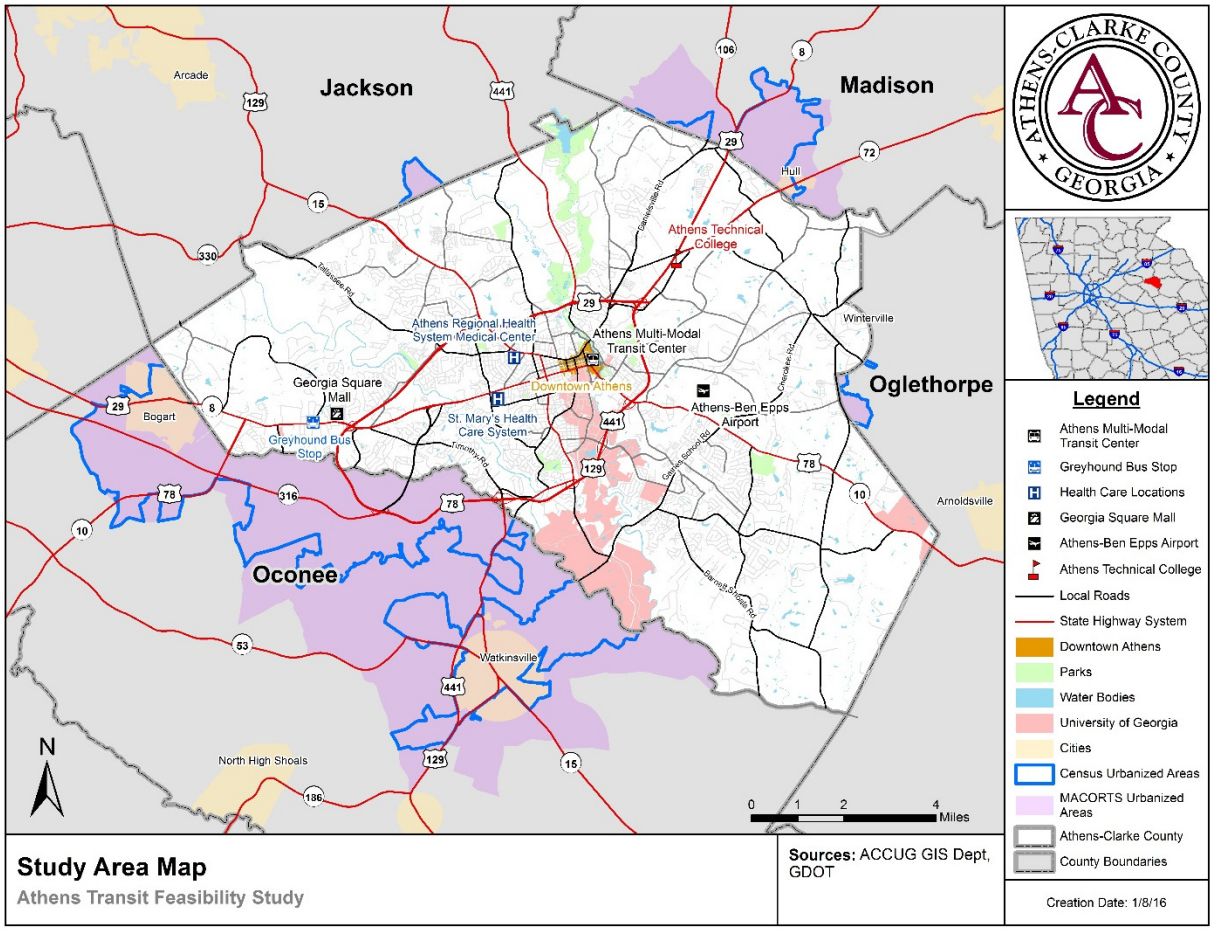


**FIGURE 2:** SCHOOL LOCATIONS

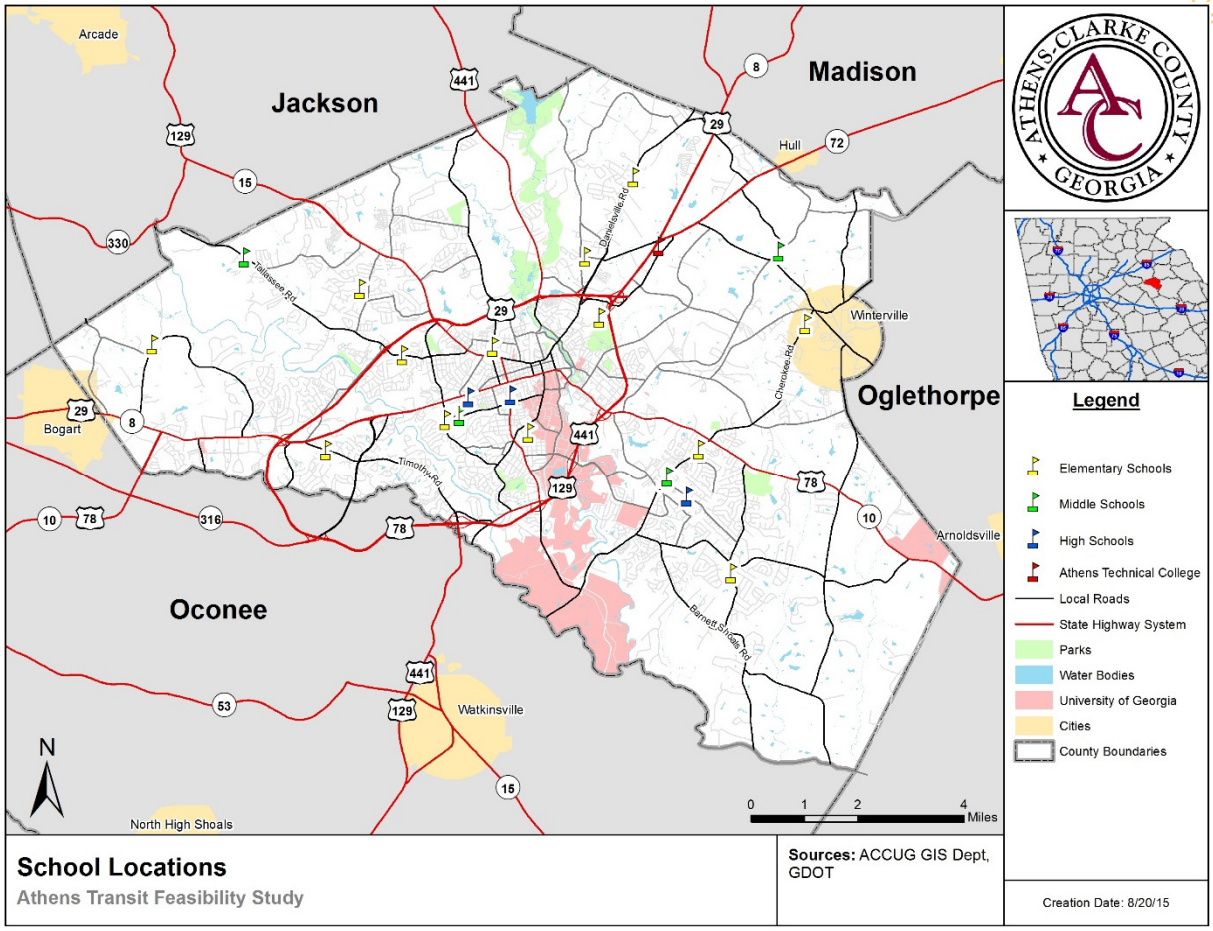


**TABLE 1:** 2013-2014 ENROLLMENT IN ATHENS-CLARKE COUNTY SCHOOLS

| School | Address | City | Zip | Enrollment |
|---|---|---|---|---|
| Alps Road Elementary School | 205 Alps Road | Athens | 30606 | 257 |
| Barnett Shoals Elementary School | 280 Gaines School Road | Athens | 30605 | 453 |
| Barrow Elementary School | 100 Pinecrest Drive | Athens | 30605 | 489 |
| Chase Street Elementary School | 757 North Chase Street | Athens | 30601 | 453 |
| Cleveland Road Elementary School | 1700 Cleveland Road | Bogart | 30622 | 348 |
| Fowler Drive Elementary School | 400 Fowler Drive | Athens | 30601 | 411 |
| Gaines Elementary School | 900 Gaines School Road | Athens | 30605 | 530 |
| Howard B. Stroud Elementary School | 715 Forth Street | Athens | 30601 | 346 |
| Judia Jackson Harris Elementary | 2300 Danielsville Road | Athens | 30601 | 495 |
| Oglethorpe Avenue Elementary School | 1150 Oglethorpe Avenue | Athens | 30606 | 553 |
| Timothy Elementary School | 1900 Timothy Road | Athens | 30606 | 538 |
| Whit Davis Road Elementary School | 1450 Whit Davis Road | Athens | 30605 | 528 |
| Whitehead Road Elementary School | 555 Quailwood Drive | Athens | 30606 | 628 |
| Winterville Elementary School | 305 Cherokee Road | Winterville | 30683 | 368 |
| Burney-Harris-Lyons Middle School | 1600 Tallassee Road | Athens | 30606 | 642 |
| Clarke Middle School | 1235 Baxter Street | Athens | 30606 | 611 |
| Coile Middle School | 110 Old Elberton Road | Athens | 30601 | 642 |
| Hilsman Middle School | 870 Gaines School Road | Athens | 30605 | 674 |
| Cedar Shoals High School | 1300 Cedar Shoals Drive | Athens | 30605 | 1,428 |
| Clarke Central High School | 350 South Milledge Avenue | Athens | 30605 | 1,439 |
| Classic City High School | 440-3 Dearing Extension | Athens | 30606 | 128 |

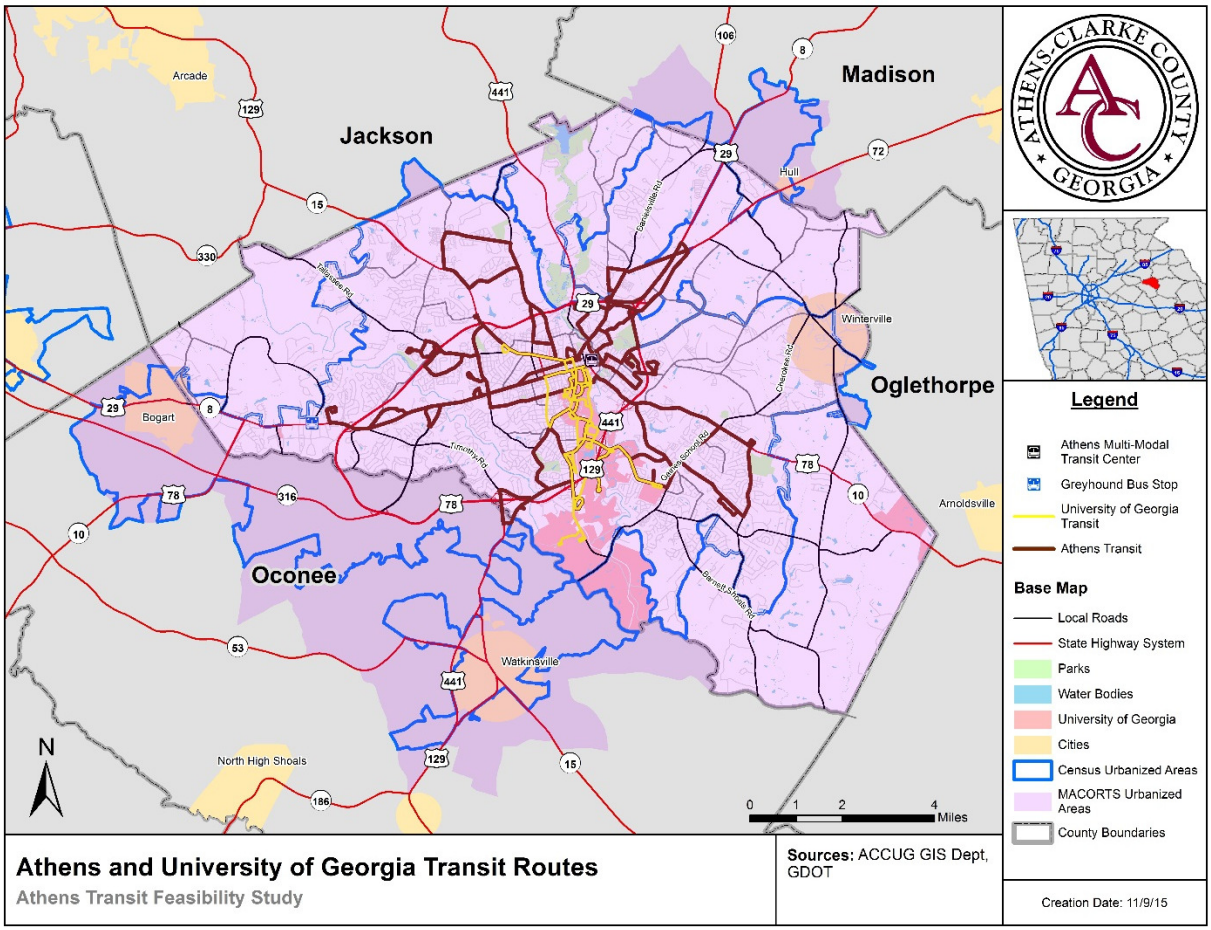
**Source: Governor's Office of Student Achievement. http://gosa.georgia.gov/2013-14-downloadable-data-files*

## *Identification of Service Providers*

Multiple entities provide public transportation services within Athens-Clarke County. The two major fixed-route transit service providers are Athens Transit and UGA Transit. Athens Transit also operates a demand-response transit service. Other service providers include human services transportation services, taxis, schools, and intercity bus.

Figure 3 provides an overview of the extents of the Athens Transit and University of Georgia Transit routes within the study area. UGA Transit mainly serves campus, with a few spurs to nearby locations. Athens Transit routes serve central Clarke County, including routes with segments running through the UGA campus.

**FIGURE 3:** TRANSIT OVERVIEW




## Athens Transit

The Athens Transit bus system is owned and operated by the Athens Clarke County Unified Government and operates 19 routes throughout County. Many routes circulate through residential areas to primarily provide service to downtown and to the UGA campus. Other routes serve different commercial hubs and activity centers throughout the service area.  Appendix A maps the individual routes.

## UGA

The University of Georgia campus transit system provides transportation services to the University community through a variety of fixed-route, paratransit and custom services. UGA provides transit service in a more concentrated service area on the central campus and to campus facilities located neighboring areas. UGA's eleven (11) routes shuttle students, faculty and staff to and from various parts of campus. All fixed routes are fare-free and open to anyone including students, faculty, staff, and visitors. The service is funded primarily by a transportation fee paid by students each semester.

In addition to fixed-route transit service and driving personal automobiles, transportation in Athens-Clarke County can be accomplished by the following described below.

## Apartment Shuttles

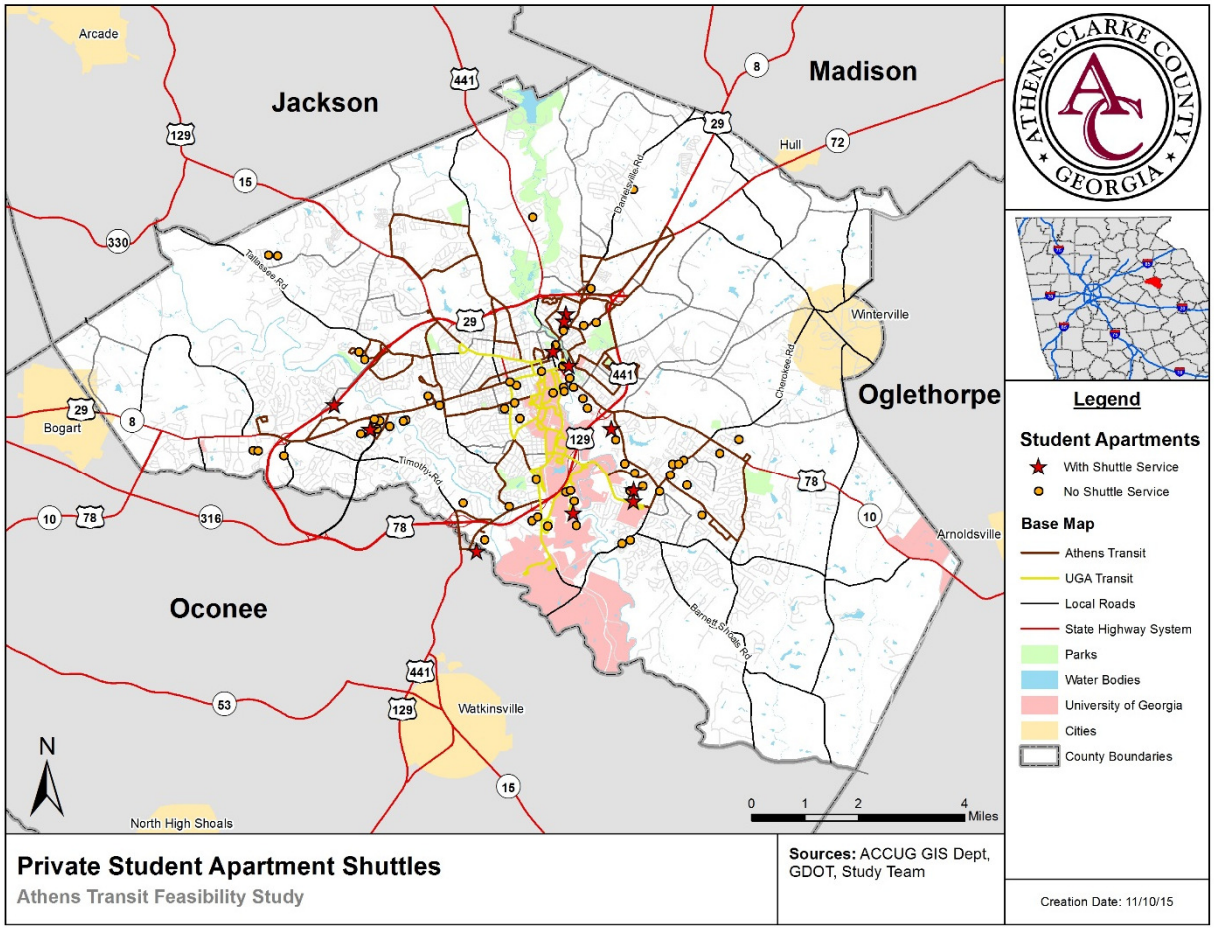
UGA student travel comprises a large component of the daily travel occurring within Athens-Clarke County. UGA requires their freshmen, approximately 5,300, to live on campus. With a total of 7,600 on-campus residence hall beds and 580 family and graduate housing apartments, about 75% of UGA's 35,000 enrolled students live off campus. These off-campus students, who commute to campus, total about 20% of the Athens-Clarke County's population and student-oriented apartments serve an important role as generators of travel.

Several student apartment communities provide complimentary shuttle service to residents (see Table 2 and Figure 4). Providing the convenience of flexible schedules and drop-off and pickup locations, these shuttles add additional vehicles to Athens-Clarke County's roadways, can complicate boarding and alighting operations of Athens Transit, and negatively impact demand for existing Athens Transit service. Residents of the apartment complexes with shuttles face the apparent sunk costs of transportation mode choice through vehicle ownership (driving), rent (apartment shuttle), and student fees (Athens Transit pass).

**TABLE 2:** STUDENT APARTMENTS PROVIDING SHUTTLE SERVICE

| | Complex | Address |
|---|---|---|
| 1 | The Connection at Athens | 255 The Preserve Dr |
| 2 | Abbey West | 250 Epps Bridge Pkwy |
| 3 | 909 Broad | 909 W Broad St |
| 4 | The Standard | 170 College Avenue |
| 5 | The Lodge | 211 North Ave |
| 6 | Ikon at Athens | 314 Barnett Shoals Rd |
| 7 | Athens Ridge | 1000 Redwood Ln |
| 8 | The Reserve at Athens | 175 International Drive |
| 9 | Polo Club Athens | 110 International Drive |
| 10 | Archer on North | 210 Spring Court |
| 11 | The Redland | 505 Riverbend Parkway |

**FIGURE 4:** STUDENT APARTMENT LOCATIONS




## Intercity Transit

As a gateway to and from Athens Clarke-County, intercity transit terminals impact travel primarily as transfer points for transit dependent or transit choice intercity riders. Three providers of intercity transit are Greyhound, Megabus, and Groome Transportation.

Greyhound, operated by Southeastern Stages, utilizes a partner stop at 4020 Athens Highway. This location outside the Athens Perimeter near the Georgia Square Mall requires riders to transfer to Route 20 Georgia Square Mall to access downtown, UGA, and the rest of the service area via transfer at the Multi-Modal Transfer Center. Greyhound provides two runs to Atlanta and two runs from Atlanta per day seven days a week serving Athens.

Megabus operates two routes that serve Athens on the way from Atlanta to and from Charlotte, North Carolina. Megabus utilizes the Multi-Modal Transit Center, facilitating transfer to Athens Transit and UGA routes. With the recent initiation of Sunday Athens Transit service, an on-campus stop formerly utilized by Megabus is no longer in use.

Groome Transportation provides hourly shuttle service to Hartsfield Jackson Atlanta International Airport from the UGA Georgia Center and Athens West Shopping Center. The on-campus UGA Georgia Center is served by Athens Transit Routes 9, 12, 14, 25, and 26 and UGA Transit routes East-West, Family Housing,

Health Sciences Connector, Milledge Avenue, North-South, and Riverbend South Milledge. Athens Transit Route 20 Georgia Square Mall serves the Athens West Shopping Center (Ingles).

### Taxis and Ride Share Network Services

Taxis provide another means of transportation for Athens Clarke County residents and visitors. Though often more expensive than transit, taxis represent potential competition for passengers. Taxis can also provide a last-mile extension of transit trips by enabling riders to get to or from transit. However, in a community the geographic size of Athens-Clarke County, such a compound mode choice is unlikely.

Three taxi companies operate in Athens-Clarke County (see Table 3). The largest is United Taxi Cab, which operates 61 vehicles. Golden Taxi and 5 Star Taxi each operate about a third as many vehicles as United. The average vehicle model year of taxis is 1997-1999.

**TABLE 3:** TAXI COMPANIES IN ATHENS-CLARKE COUNTY

| Company | Number of Vehicles | Average Vintage |
|---|---|---|
| United Taxi Cab | 61 | 1999 |
| Golden Taxi | 17 | 1997 |
| 5 Star Taxi | 20 | 1999 |

In recent years, ride share network services, such as Uber and Lyft, have gained popularity in many cities across the country. Ride share network services are defined "as any person or entity that uses a digital network or Internet network to connect passengers to ride share drivers for the purpose of prearranged transportation for hire or for donation." 1 These services are often seen as personalized, flexible, responsive, and economical alternatives to alternative modes of transportation. Uber began service in Athens in August 2014.[2] In an external scan of the operating environment for Athens Transit, it is important to recognize the presence and potential draw of ride share network services.

### Human Services

Human services transportation is defined as "mobility services provided for the benefit of transportation disadvantaged populations, including persons with disabilities, older adults, and persons with lower incomes."[3] Two types of human services transportation trips and funding sources are Georgia Department of Human Services (DHS) and Medicaid/Georgia Department of Community Health (DCH). According to the 2012 *Northeast Georgia Rural and Human Services Transportation Plan*, in Athens-Clarke County DHS trips are provided by T&T Transportation and DCH trips provided by Velstar Medical Transportation. Human services transportation demands in the study area are primarily met through these DHS and DCH providers.

[1] http://www.gamccd.net/Documents/DPS_HB225_FAQ.pdf, *accessed November 2015*

[2] http://flagpole.com/news/in-the-loop/uber-is-here, *accessed November 2015*

[3] *Atlanta Regional Commission 2013 Coordinated HST Plan Limited Update*

## Land Use and Zoning

Beyond the transportation service providers available, another important component of the existing conditions is current land use and zoning. The land use and zoning in Athens-Clarke County define the geographic distribution of activity locations relative to the transit service area. Existing land use is shown in Figure 5, and Figure 6 shows existing zoning.

Much of the county's area is residential use. Commercial and service uses cluster along West Broad St / Atlanta Highway and other radial routes. Educational uses are concentrated on the UGA and Athens Technical College campuses, but are also distributed across many isolated parts of the county. Arts, entertainment, and recreational uses center along a north-south band across the center of the county.

Most of the higher trip intensity land uses and zones are within the service area of fixed route transit. Two areas in need of additional analysis for consideration of possible service expansion that are not currently served are Atlanta Highway west of Georgia Square Mall and industrial areas in the east, particularly along Olympic Drive.

**FIGURE 5:** CURRENT LAND USE

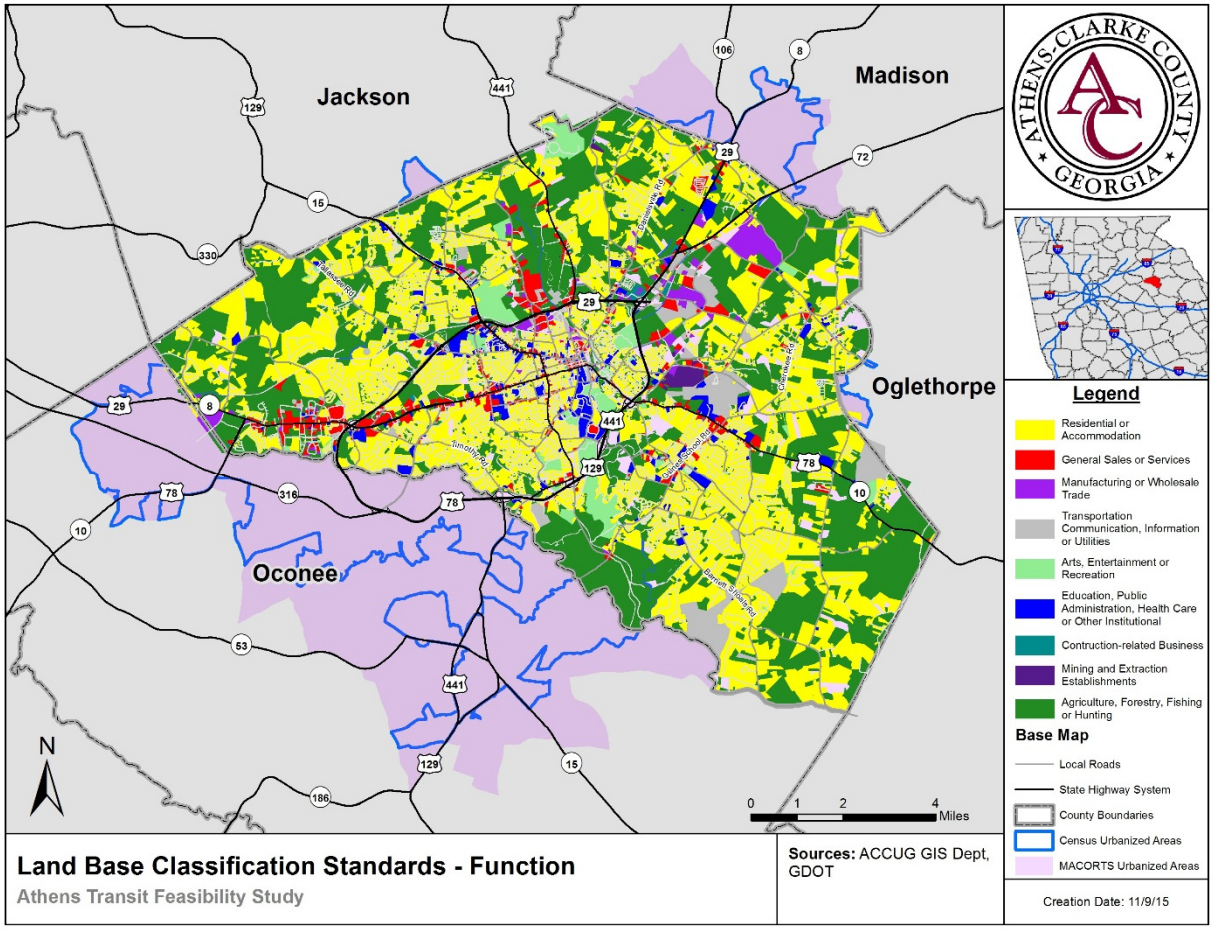
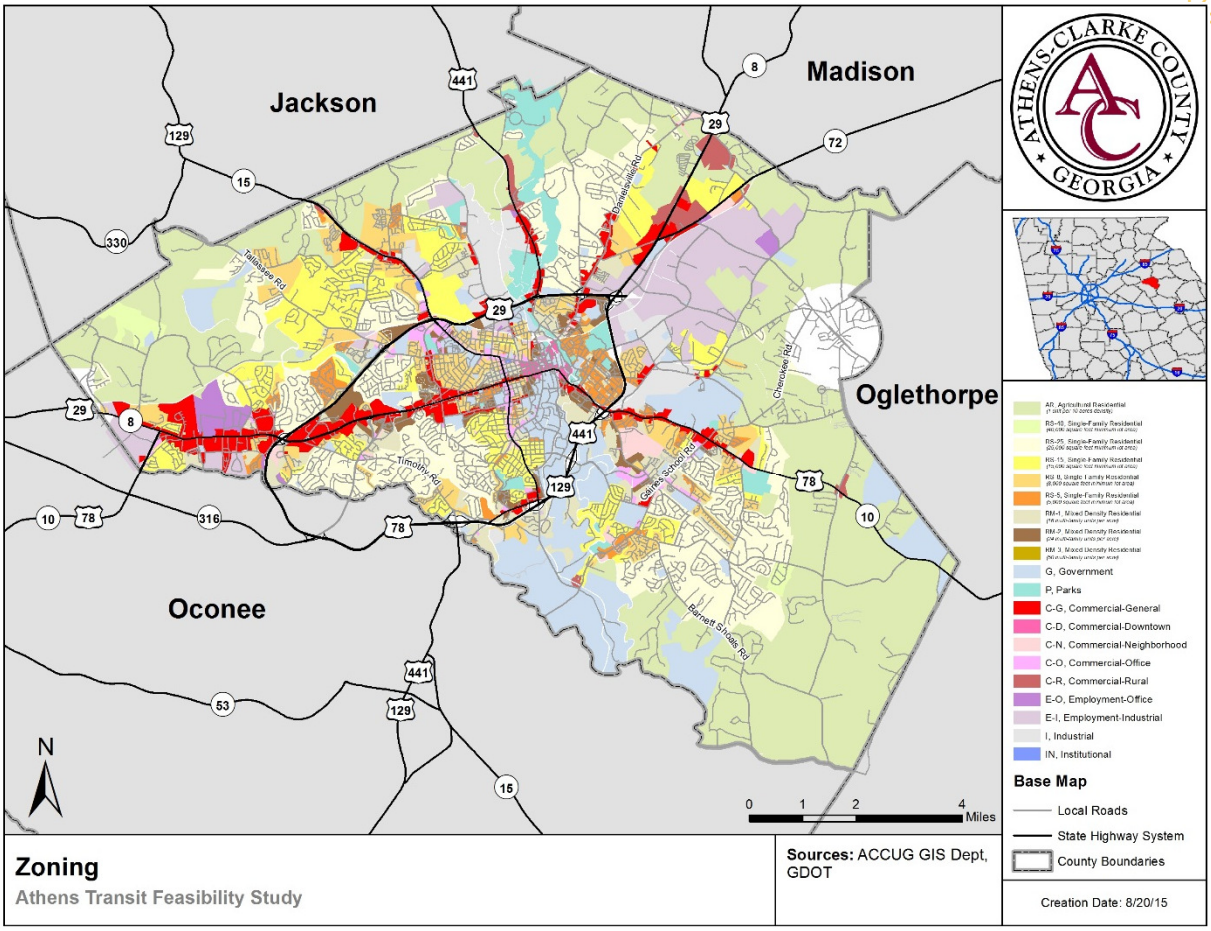


**FIGURE 6:** CURRENT ZONING



## Socioeconomic Conditions

In addition to the geographic distribution and allocation of land among various uses, the context for the operation of transit in Athens-Clarke County is shaped by socioeconomic factors. Two transit-related lenses through which to view socioeconomics are transit supportive density and transit propensity.

### Transit Supportive Density

One important aspect of transit demand is evaluating where population and employment densities are sufficient to support transit service. Population and employment are essential building blocks that drive the need for public transportation. *The Transit Capacity and Quality of Service Manual* states, "The more people and the more jobs that are within easy access distance of transit service, the more potential customers there are to support high-quality service."

The *Manual* cites studies identifying transit-supportive population density thresholds as three units per gross acre for hourly bus service, about 4.67 units per gross acre to support buses every 30 minutes, and 10 units per gross acre to support buses every 10 minutes. Alternatively, four jobs per gross acre would support hourly bus service. Operating transit service balances tradeoffs between the provision and utilization of service, which depend in large part on density. The cited thresholds assumes the average transit subsidy in the U.S., 27% fare box recovery ratio of bus operating costs.

Initially, transportation analysis zones (TAZ) for Athens-Clarke County containing the Madison Athens-Clarke Oconee Regional Transportation Study (MACORTS) socioeconomic data were utilized to identify current transit supportive areas. Utilizing Census data, Madison and Oconee Counties were also screened for population densities that would be sufficient to support fixed route transit. Figure 7 demonstrates that areas with density sufficient to support hourly bus service in 2010 were all served by the current bus system.

Future transit supportive densities were also analyzed using population and employment projections developed by the MACORTS MPO for the 2040 Metropolitan Transportation Plan's travel demand model. Figure 8 shows that future densities sufficient for hourly bus service are served by the current bus system.

**FIGURE 7:** EXISTING TRANSIT SUPPORTIVE DENSITY

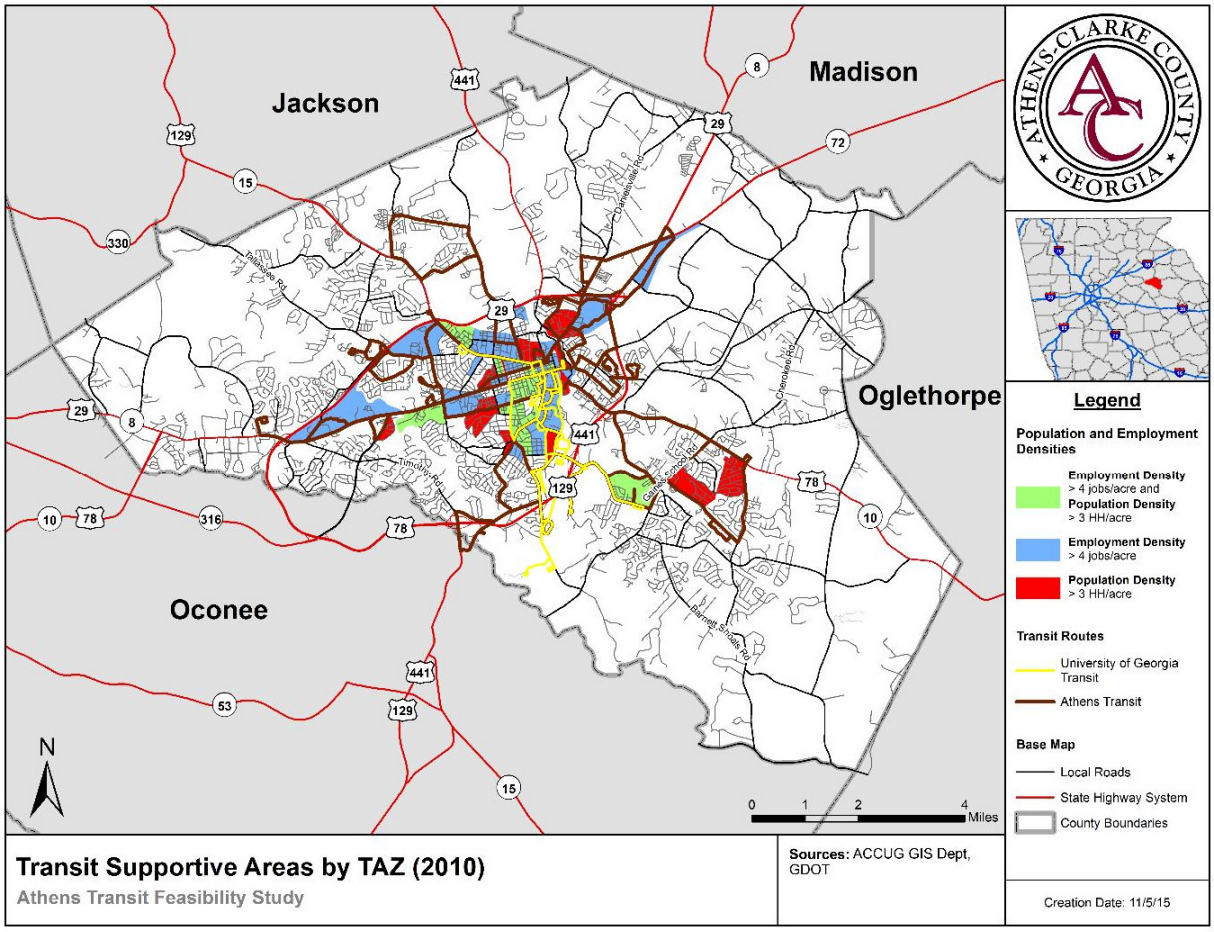
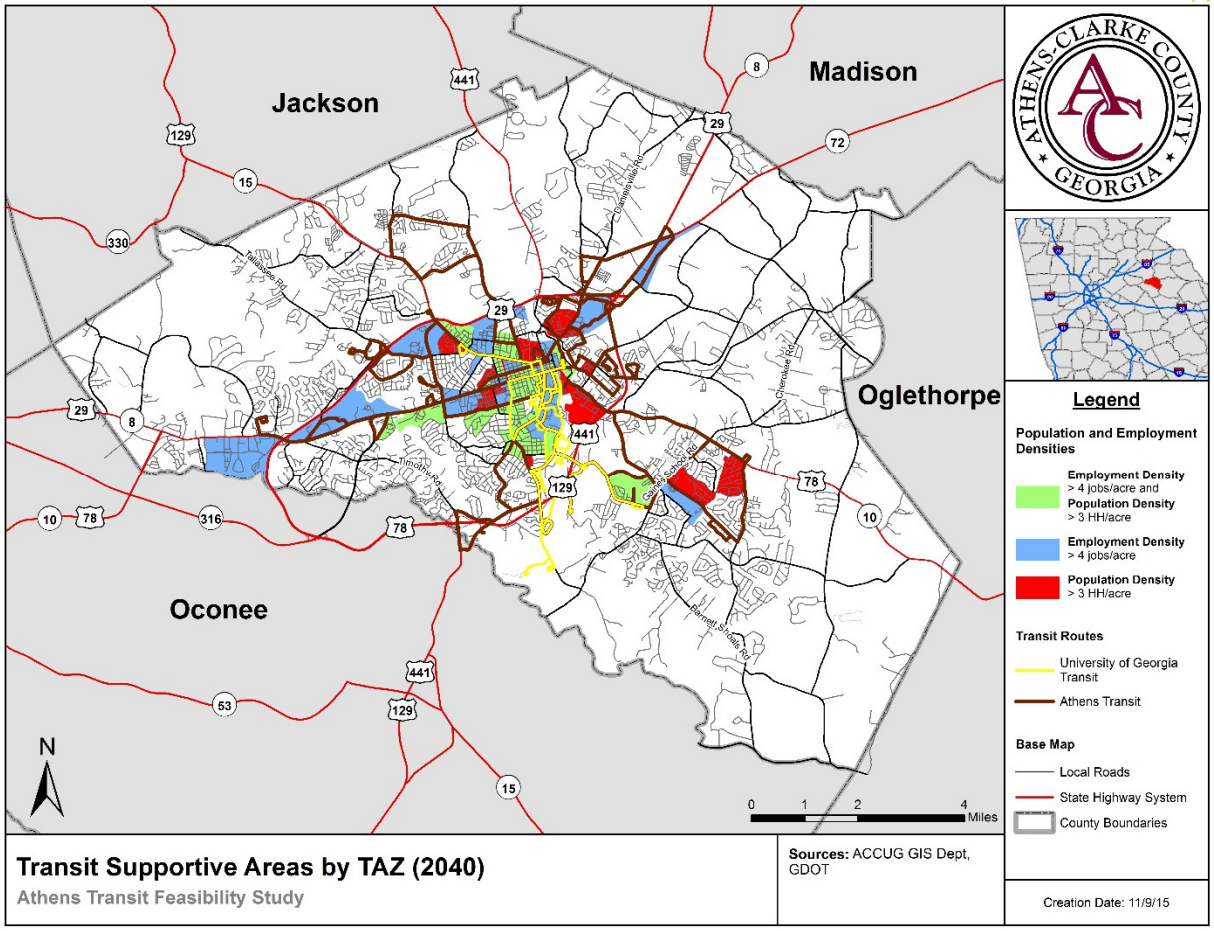


**FIGURE 8:** FUTURE TRANSIT SUPPORTIVE DENSITY



## Demographic Factors and Propensity to Use Transit

Not only does high population density drive transit usage, but research suggests concentrations of certain subsets of the population tend to be associated with higher transit usage.[4, 5, 6] These factors are households without cars, poverty, minority, female, disability, mobility limitations, and workers 65 and older. Areas with relatively high concentrations of these populations exhibit a high propensity for transit usage.


### Composite Propensity

Combining all of these factors together, Figure 9 presents the composite transit propensity. Several locations of very high transit propensity are highlighted, all of which are served by existing transit routes. The largest concentration of very high transit propensity is spans W. Broad Street from Chase Street to the Middle Oconee River. On the eastern portion of this stretch, several Housing Authority communities (see Figure 10) include Broadacres Homes, Hancock Apartments, and Rocksprings Homes. One location of high propensity is near Nellie B Ave spanning the Athens Perimeter on the east and includes the Nellie B Community of the Athens Housing Authority. While areas in Jackson, Madison, Oconee and Oglethorpe Counties display factors of transit propensity, or likelihood for transit usage, the densities were found to be insufficient to support hourly bus service.

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[4] *Rosenbloom, S, and G. J. Fielding. TCRP Report 28: Transit Markets of the Future: The Challenge of Change. Transportation Research Board of the National Academies, Washington, D.C., 1998.*

[5] *Charles River Associates. TCRP Report 27: Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It. Transportation Research Board of the National Academies, Washington, D.C., 1997.*

[6] *Bush, Robert. A Proposed Methodology for Conducting Propensity Analyses Identifying Areas of Transit Need, Robert E. Bush, 2011 TRB Using Census Data for Transportation conference.*

**FIGURE 9:** COMPOSITE TRANSIT PROPENSITY

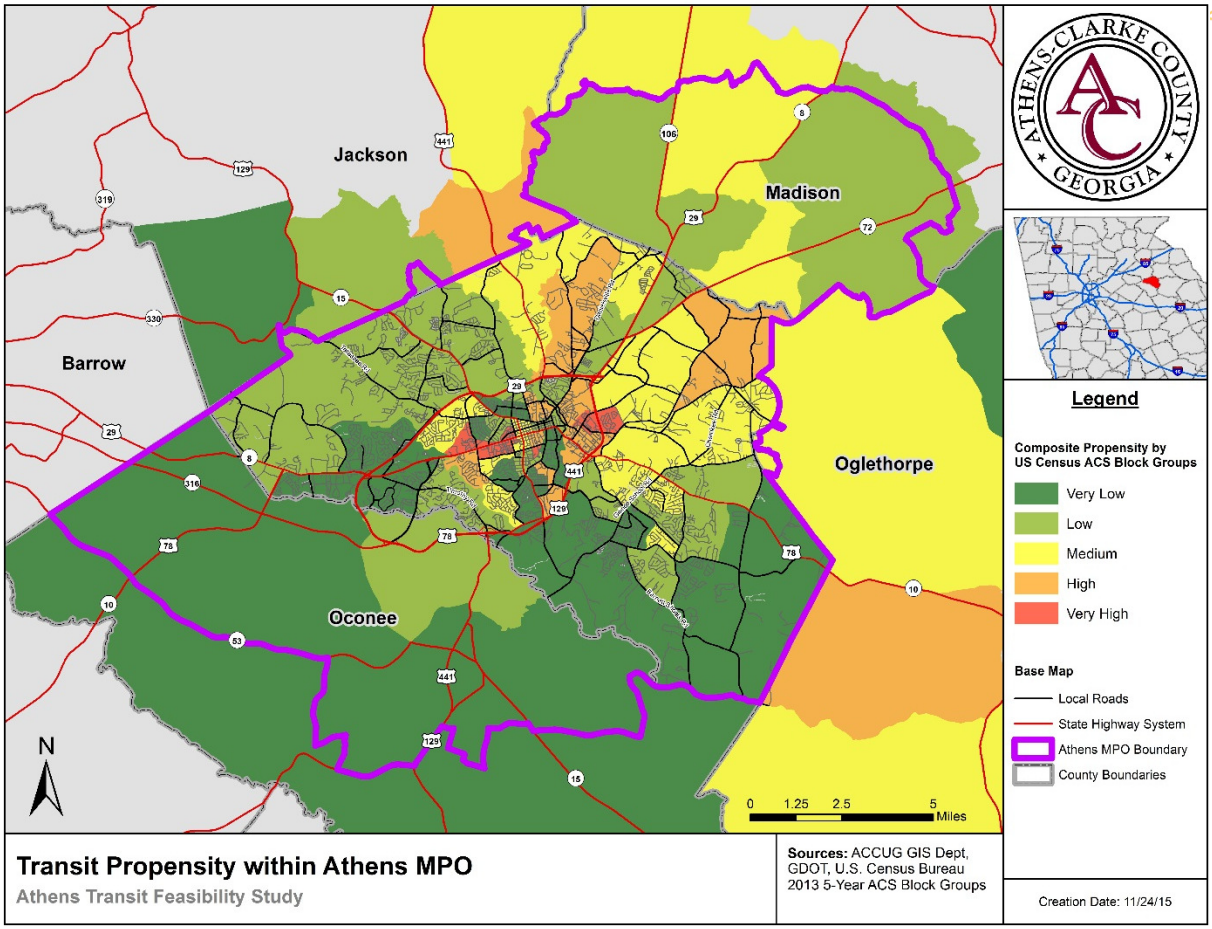
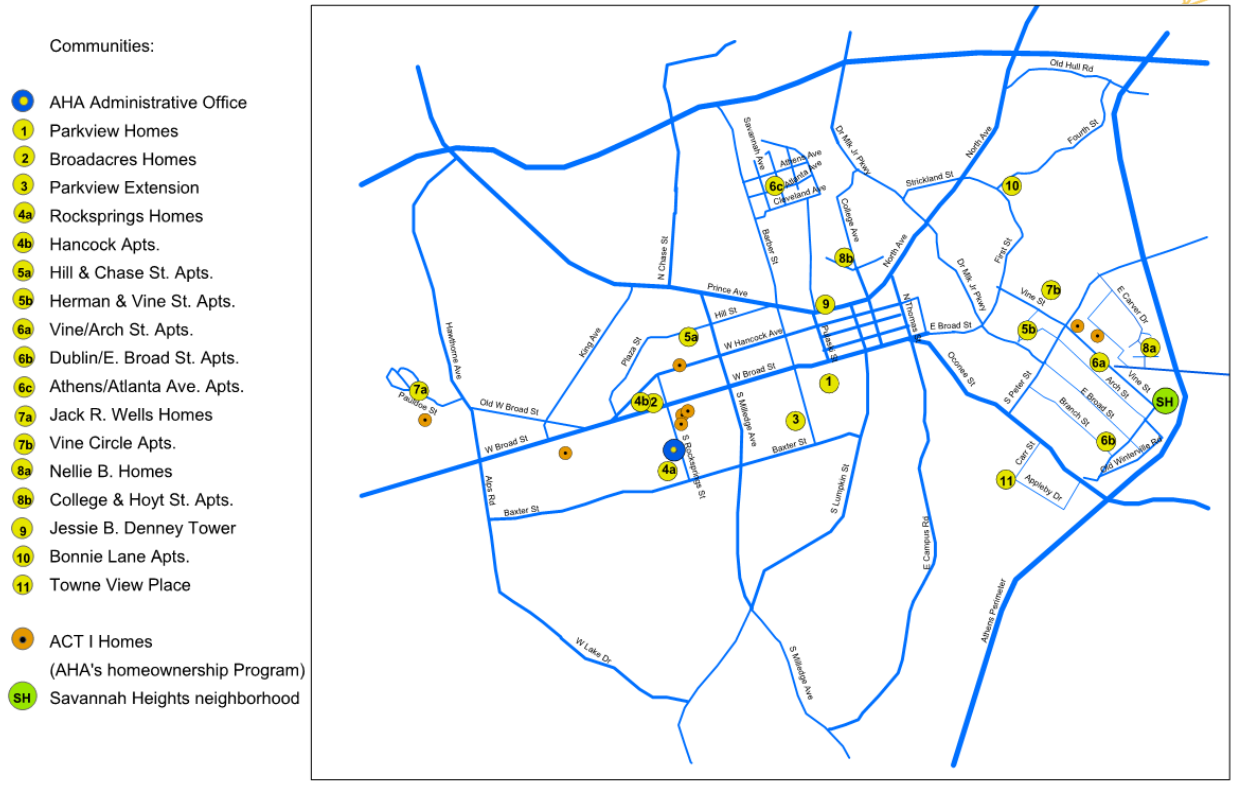


**FIGURE 10:** ATHENS HOUSING AUTHORITY COMMUNITIES (2011)




*Source: Athens Housing Authority*

## *Travel Patterns*

Athens-Clarke County is a self-contained community, with 80% of Athens-Clarke County residents working within Athens-Clarke County. About six percent of Athens-Clarke County residents work in Oconee County. No other county hosts employment for more than 2% of Athens-Clarke County residents.

Athens-Clarke County does draw workers from adjacent counties. For example, about 9% of Athens-Clarke County workers reside in Oconee County, 7% in Gwinnett County, and 5% in Jackson County. Nevertheless, almost 60% of Athens-Clarke County works reside within the county.

This residential and employment pattern implies that much travel demand resides within and could be served by a relatively compact system. With the relatively small land area of Athens-Clarke County, this internal concentration of employment, coupled with the large population of resident students has led to Athens Transit and UGA Transit's strong ridership performance.

**TABLE 4:** WHERE ATHENS-CLARKE COUNTY RESIDENTS WORK

| | County of Work | Number of Clarke County Residents | % |
|---|---|---|---|
| 1 | Clarke | 41,619 | 80.3% |
| 2 | Oconee | 2,909 | 5.6% |
| 3 | Gwinnett | 976 | 1.9% |
| 4 | Jackson | 886 | 1.7% |
| 5 | Barrow | 880 | 1.7% |
| 6 | Madison | 720 | 1.4% |
| 7 | Fulton | 702 | 1.4% |
| 8 | Hall | 407 | 0.8% |
| 9 | Walton | 316 | 0.6% |
| 10 | DeKalb | 313 | 0.6% |
| | Other | 2,077 | 4.0% |
| | Total | 51,805 | 100.0% |

*Source: U.S. Census Bureau, 2006-2010 American Community Survey*

*Table 1. Residence County to Workplace County Flows for the United States and Puerto Rico Sorted by Residence Geography: 2006-2010*

**TABLE 5:** WHERE ATHENS-CLARKE COUNTY WORKERS LIVE

| | County of Residence | Number of Clarke County Workers | % |
|---|---|---|---|
| 1 | Clarke | 41,619 | 58.8% |
| 2 | Oconee | 6,675 | 9.4% |
| 3 | Gwinnett | 5,237 | 7.4% |
| 4 | Jackson | 3,527 | 5.0% |
| 5 | Barrow | 3,286 | 4.6% |
| 6 | Madison | 2,291 | 3.2% |
| 7 | Fulton | 1,329 | 1.9% |
| 8 | Hall | 1,116 | 1.6% |
| 9 | Walton | 682 | 1.0% |
| 10 | DeKalb | 648 | 0.9% |
| | Other | 4,341 | 6.1% |
| | Total | 70,751 | 100.0% |

*Source: U.S. Census Bureau, 2006-2010 American Community Survey*

*Table 2. Residence County to Workplace County Flows for the United States and Puerto Rico Sorted by Workplace Geography: 2006-2010*

## Transportation

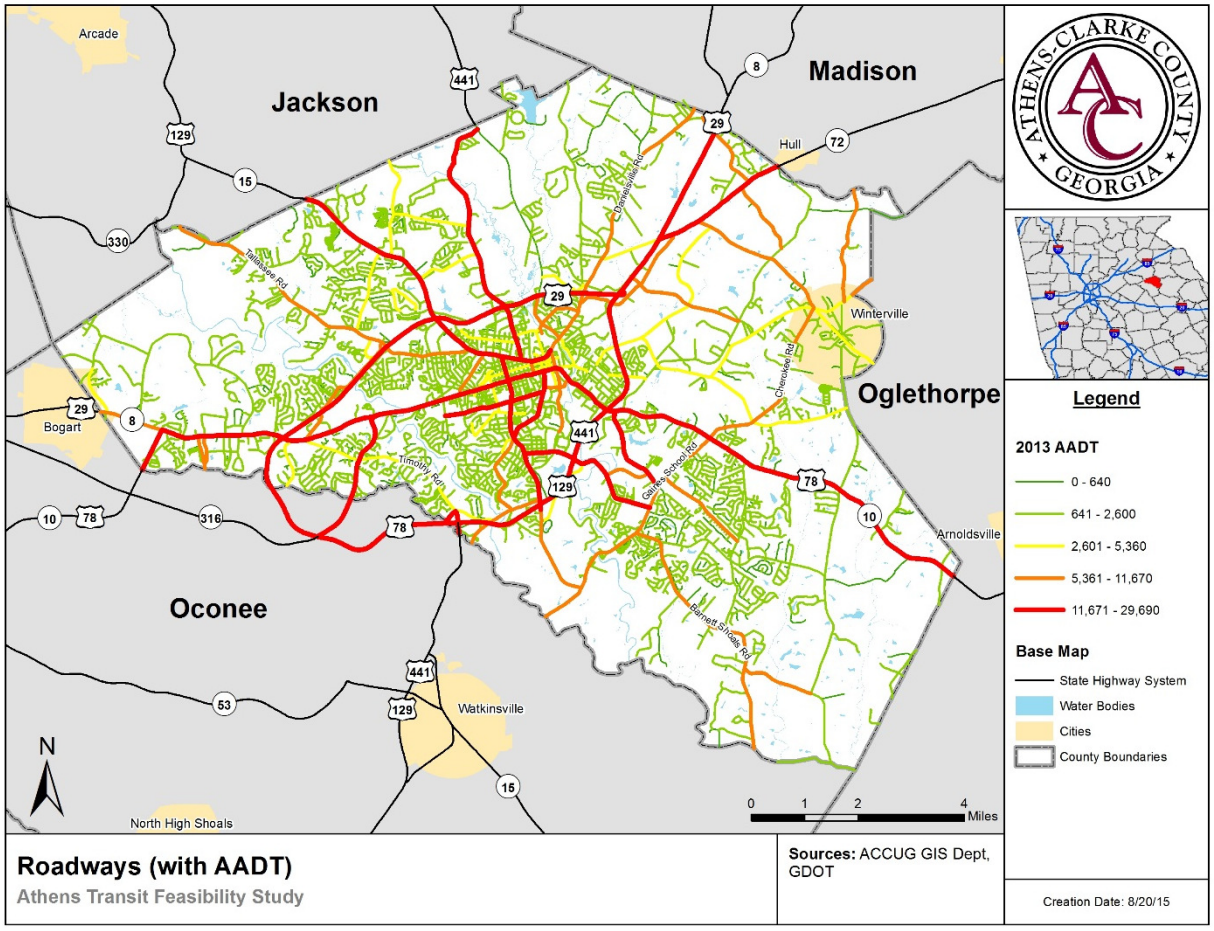
### Roadways

The network of roadways serving Athens-Clarke County (see Figure 11) is important in that it provides routing options for transit vehicles, serves as the conduits for the movement of people and goods, and shapes land use.

As a significant center of the Northeast Georgia region, several state and US routes radiate out of Athens. US 29 and US 78 connect Athens to Atlanta to the west. On the east side, US 29 continues to the northeast toward Danielsville, and US 78 extends to the southeast toward Crawford. US 441 traverses Clarke County from Commerce to the north and extends to the south toward Watkinsville. US 129 provides access to Gainesville to the northwest. These routes converge on the Athens perimeter.

Within the perimeter, US 78 / Atlanta Highway / Broad Street / Lexington Road provides the primary east-west route. SR 15 continues from US 129 / Jefferson Road at the north perimeter as Prince Avenue and continues to the south through Athens as Milledge Avenue. Other heavily traveled roads providing key connections within the perimeter include Lumpkin Street, Baxter Street, North Avenue, Hawthorne Avenue / Alps Road, Epps Bridge Parkway, and Timothy Road.

**FIGURE 11:** ROADWAYS (WITH AVERAGE ANNUAL DAILY TRAFFIC)



## Non-Motorized Facilities

As part of the suite of alternative travel modes, transit's connection with bicycle and pedestrian facilities is a key consideration in the evaluation of the transit system. Inventorying the non-motorized facilities brings into focus possible opportunities for transit route coordination.

The non-motorized facility inventory provided by the Athens-Clarke County Unified Government GIS Department includes current sidewalks and bike paths (see Figure 12). Downtown Athens and the UGA Campus have extensive sidewalk networks. Several other outlying corridors include sidewalks that provide key links include portions of Lexington Road, Timothy Road, SR 15, Whit Davis Road, Old Lexington Road, Whitehead Road, and Danielsville Road.


The existing bicycle facilities including a combination of bicycle lanes, sharrows, greenways, and other off-road facilities. Bicycle lanes are currently provided on some major corridors such as Lumpkin Street, Hawthorne Avenue, Baxter Street, East Campus Road, Oglethorpe Avenue, Barnett Shoals Road, and Cedar Shoals Drive. Other current bicycle facilities include simple "share the road" signage and sharrows, indicating where in the shared lanes bicycles are intended to be.

GDOT has identified 14 State Bicycle Routes comprising almost 4,000 miles to serve long distance travel between population and activity centers. The routes provide a framework for future improvements and do not necessarily reflect specific bicycle facilities.

State Bicycle Route 60 Athens Link runs from Gwinnett County across northeast Georgia through Clarke County and to Elbert County. From Watkinsville and Oconee County, Route 60 takes Simonton Bridge Road / Whitehall Road over the Middle Oconee River into Clarke County and through UGA campus. After a left on Milledge Avenue, Route 60 turns right onto Lumpkin Street, right onto Broad Street, Left onto Peter Street, which turns into Olympic Drive. The route turns right onto Voyles Road / Moores Grove Road to Winterville, where it turns left onto Athens Road / Smithonia Road before departing Clarke County into Oglethorpe County. Bicycle facilities along State Bicycle Route 60 are limited to bicycle lanes on Lumpkin Street and sharrows on Olympic Drive.

Several operational considerations are associated with buses sharing the road with bicycles. Bicycle lanes have the advantage of providing dedicated roadway space to bicyclists. However, conflicts occur between bicyclist and vehicles at driveways. Specific to transit, bus stops located on roads with bicycle lanes are problematic in that they cause buses to encroach on and block the bicycle lane (for example, Baxter Street). Another challenge to safety and comfort of the bicyclists is bicycles and buses operating in close proximity in adjacent lanes. These challenges are amplified when the bicycle facility is a sharrow, requiring bicycles to share the lane with buses and other vehicles.

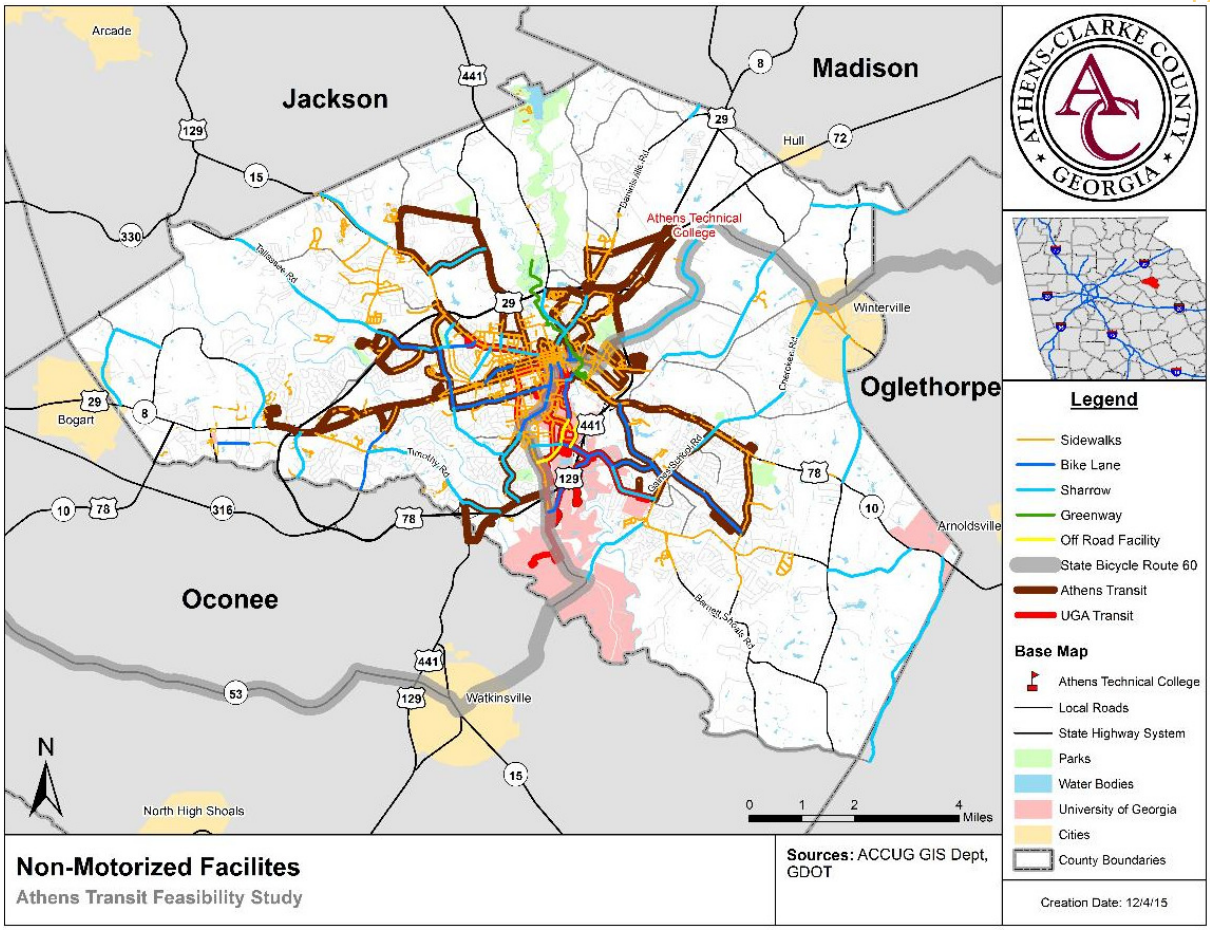
The North Oconee River Greenway provides a dedicated bicycle and pedestrian facility from the Sand Creek Nature Center near US 441 / Commerce Road and the Athens Perimeter, along the North Oconee River to Oconee Street. Future plans call for extending the greenway. Other off-road facilities located on

UGA campus, including a trail along East Campus Road between S. Milledge Avenue to Carlton Street and along River Road.

Combined bicycle-transit mode trips are opportunities provided by the existing non-motorized facilities and transit system. The boarding and alighting count confirmed usage of bus bike racks. Several bicycle facilities potentially extend the catchment area of the current transit system. Bicycle lanes on Epps Bridge Parkway allow trips to or from Athens Transit Routes running along Atlanta Highway, including Route 20 Georgia Square Mall and Route 6 West Broad / Atlanta Highway. The other examples of bicycle facilities potentially extending the reach of the transit system involve sharrows. An example is Tallassee Road from Route 5 Beechwood/Baxter and Route 7 Prince Avenue, which depart Tallassee Road at Westchester Drive.

Some bicycle facilities on transit routes have potential impacts on transit usage. For example, the bicycle lanes on Barnett Shoals Road and Cedar Shoals Drive provide an alternative to the use of Route 27. Another potential negative impact of the existing non-motorized facilities is the lack of safe and connected pedestrian access to transit. Several substantial sidewalk gaps exist along Atlanta Highway, which is served by Route 20 Georgia Square Mall and Route 6 West Broad / Atlanta Highway.

**FIGURE 12:** EXISTING NON-MOTORIZED FACILITIES




## Parking

Parking is another important dimension of Athens-Clarke County's transportation system. Figure 13 shows the locations of park and ride lots and downtown parking decks provided by Athens-Clarke County, as well as UGA campus parking.

The primary park and ride lot is located on Oconee Street at the Athens perimeter, to the east of downtown. The lot can be accessed by automobile directly from the southbound off ramp, indicating a prevalence of trips from US 19 from the north. Route 23 Oconee Street Park and Ride Lot provides dedicated express service from the park and ride lot to campus during morning and afternoon peak periods. With transit stops located on both sides of Oconee Street, this lot also provides an option for commuters to take transit into downtown or other locations served by routes 25 Lexington Road / Gaines School, 26 College Station/Barnett Shoals, or 27 Barnett Shoals/Cedar Shoals. Utilization of this lot is extensive. Congestion is also quite acute in the vicinity during peak periods.

Another park and ride lot is located at the Lexington Road Walmart. Routes 25 and 27 serve the Walmart park and ride lot. Bus stops are located both at the store entrance and at the park and ride lot, which is on the periphery of the parking lot. Given its location, this lot could serve origins from the east along US 78.

A park and ride lot is listed at the Georgia Square Mall. Route 20 Georgia Square Mall has a stop located in the parking lot near the periphery of the mall ring road near the stop at the entrance to the mall. If utilized, the stop would provide an option for travelers from US 29 or US 78 from the west. Another park and ride lot is located at North Avenue / Old Hull Road / Athens Plaza and is served by Route 1 North Avenue.

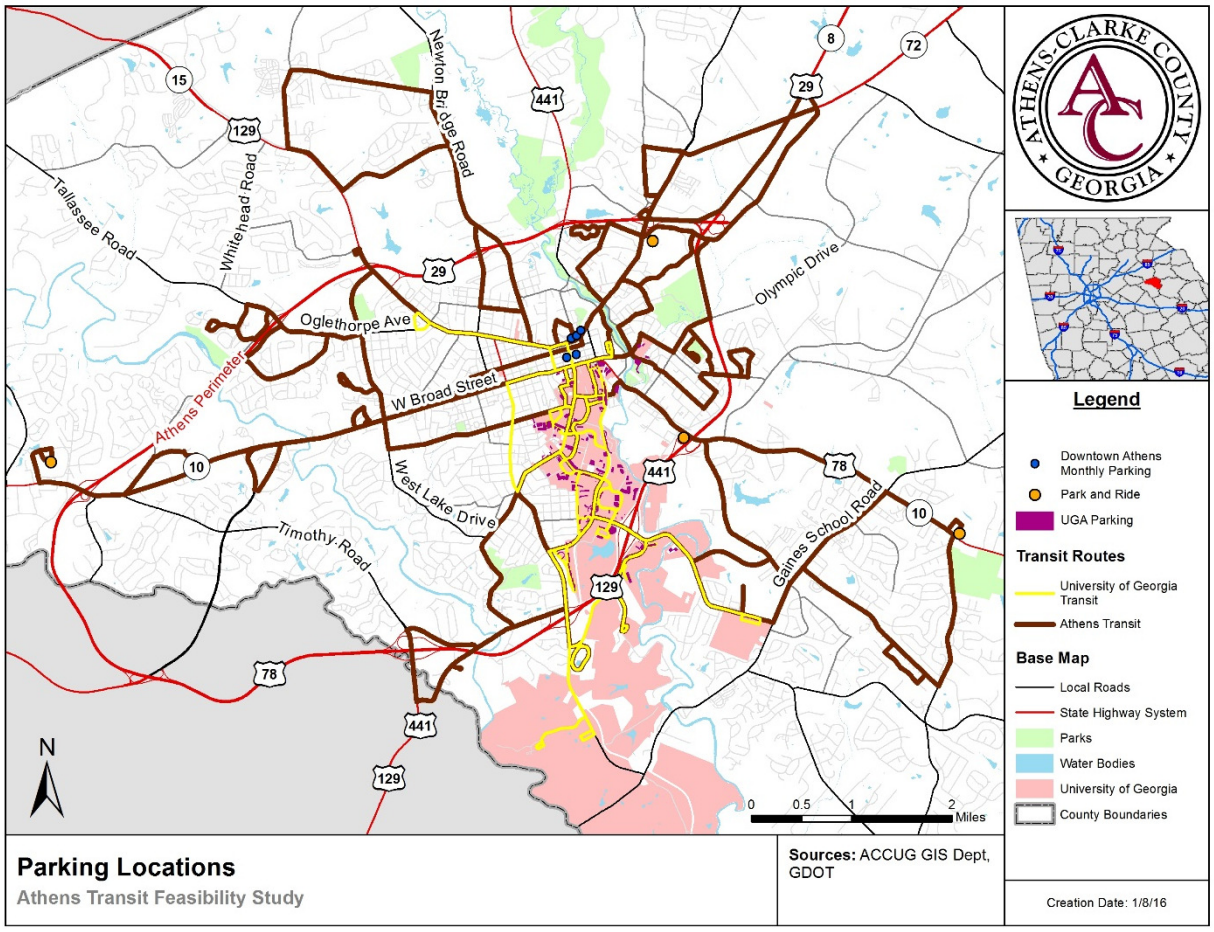
The park and ride lot locations provide adequate coverage for access to Athens from a variety of directions. Although utilization is typically low, the lots provide opportunity for carpools to form, some possibly heading outbound (to the Atlanta region, for example). Taken together, these lots function as a combination of peripheral and urban fringe facilities.[7] These are defined as:

- Peripheral facilities: "serve activity centers having limited parking and/or auto access, such as auto-free zones and colleges. They are usually located at the outer edge of activity centers. As a result, distances to the lot from residential areas are typically longer than other Park-and-Ride facilities, while distances from the lot to the activity center are usually shorter."
- Urban fringe lots: "located at the outer edge of urban development. Trips tend to originate outside or on the fringe of the urban area, while destinations may be concentrated or dispersed within the urban area."

Parking supply in the core, both in downtown parking decks and on campus, factor into the demand for the park and ride lots. At least five major downtown parking decks provide monthly parking. Though UGA has numerous parking areas, according to UGA officials, the on campus parking is approaching capacity. Constrained supply and/or increased pricing of parking in the core could increase utilization of the park and ride lots.

[7] *See State Park-and-Ride Guide, Florida Department of Transportation, Revised June 1, 2012.*

**FIGURE 13:** PARKING LOCATIONS



## Safety

Safety is an important consideration in the functioning of the transportation system. Data related to safety include the occurrence of crashes, injuries, and fatalities. Vehicular crashes have implications for both rider safety and on-time route performance. Crashes involving bicyclists and pedestrians relate to the safety of transit customers coming to or going from the bus.

The 2010 *Georgia Bicycle and Pedestrian Safety Action Plan* identified several corridors in Athens-Clarke County as having the top five highest number of bicycle crashes in the state from 2004 to 2006. The plan recommended a priority bicycle safety project in Athens on Prince Street, Baxter Street, Broad Street, and Oconee Street including:

- Evaluate the possibility of marking bike lanes or shoulders on Prince, Baxter, Broad, and Oconee Streets.
- Identify and mark alternative routes where necessary
- Use sharrows and signage where roads are too narrow for bike lanes

Figure 14 shows concentrations of vehicular crashes based on crash data from GDOT's Geographic Transportation Reporting Analysis and Query System (GeoTRAQS), and Figure 15 shows the locations of bicycle and pedestrian crashes according to the Georgia Electronic Accident Reporting System (GEARS).

Areas of concentration of vehicular crashes include downtown, near the intersection of West Broad Street and Hawthorne Avenue / Alps Road, and near the interchange of Atlanta Highway with the Athens perimeter. These areas involve some of the highest volume roadways in the county, which increases risk exposure. Nevertheless, routes running through these locations are likely to experience increased risk of delay due to crashes as well as direct involvement in crashes.


*West Broad Street and Hawthorne Avenue/Alps Road (Source: Google Earth)*

Bicycle and pedestrian crashes are clustered toward the downtown, where more walking and biking is likely to occur. Bicycle crashes also occur with some density in residential areas to the southeast within the transit service area. Some crashes involving pedestrians occur in outlying areas. Risk could potentially be reduced if these bicyclists chose to take transit or if transit service were extended to the outlying areas.

**FIGURE 14:** VEHICLE CRASHES

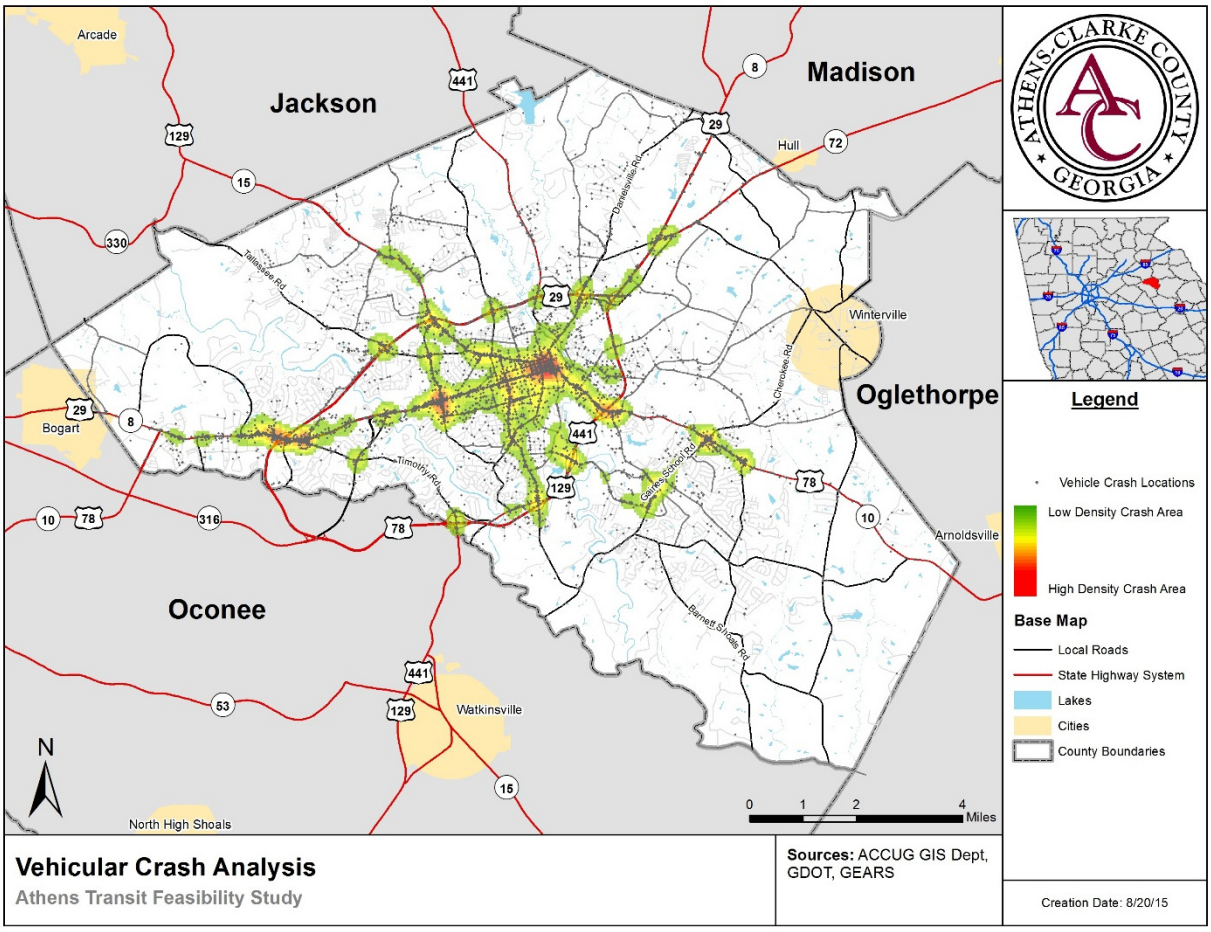


**FIGURE 15:** BICYCLE AND PEDESTRIAN CRASH LOCATIONS

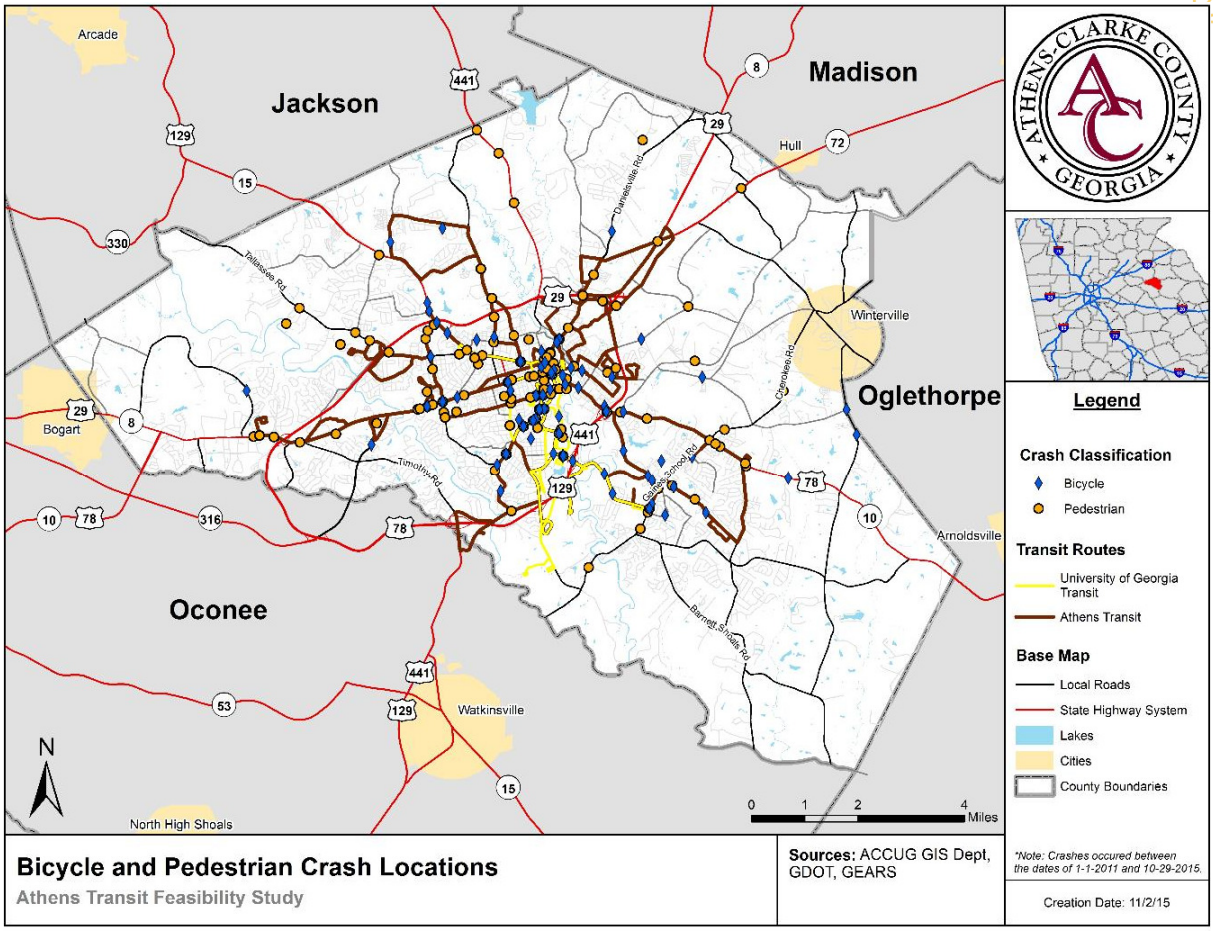



Table 6 shows the total number of bicycle and pedestrian accidents that occurred in Clarke County for years 2011 – 2015. While bicycle fatalities remain at 0% over the 5 year period, pedestrian fatalities have increased by 200% with 3 fatalities reported in 2015. Both bicycle and pedestrian accidents resulting in injury have increased from the lowest level in 2012. Bicycle injury accidents have increased 314%, and pedestrian injury accidents have increased by 81% from years 2012 – 2015. While there is no reliable data to compare the number of pedestrians and bicyclists utilizing facilities to the number of accidents reported, percentage of accidents per population is the national standard for point of comparison benchmarking. Figure 16 shows the population growth trends from 2011 – 2015 increasing at an average of 1% annually, while Table 7 shows the percentage of bicycle and pedestrian accidents per 100,000 population.

**TABLE 6:** BICYCLE AND PEDESTRIAN ACCIDENTS IN CLARKE COUNTY, GA

| | | Total Injuries | | Total Fatalities | |
|---|---|---|---|---|---|
| Year | Population | Bicycle | Pedestrian | Bicycle | Pedestrian |
| 2011 | 118586 | 22 | 41 | 0 | 0 |
| 2012 | 120310 | 7 | 16 | 0 | 1 |
| 2013 | 121265 | 11 | 26 | 0 | 1 |
| 2014 | 120838 | 26 | 27 | 0 | 2 |
| 2015 | * | 29 | 29 | 0 | 3 |

*Sources: GeoTRAQS, GEARS, US Census Bureau*

**TABLE 7:** BICYCLE AND PEDESTRIAN ACCIDENTS/100,000 POPULATION IN CLARKE COUNTY, GA

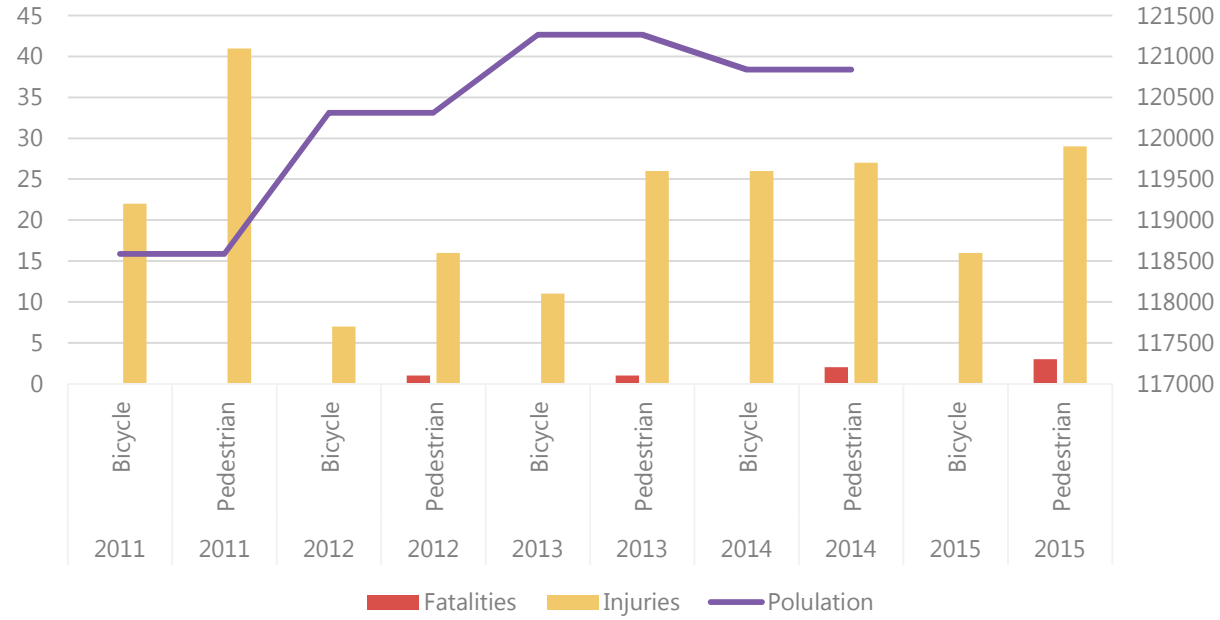
| | | Injuries/100,000 | | Fatalities/100,000 | |
|---|---|---|---|---|---|
| Year | Population | Bicycle | Pedestrian | Bicycle | Pedestrian |
| 2011 | 118586 | 26.09 | 48.62 | 0.00 | 0.00 |
| 2012 | 120310 | 8.42 | 19.25 | 0.00 | 1.20 |
| 2013 | 121265 | 13.34 | 31.53 | 0.00 | 1.21 |
| 2014 | 120838 | 31.42 | 32.63 | 0.00 | 2.42 |
| 2015 | * | 0.00 | 0.00 | 0.00 | 0.00 |

**US Census Bureau 2015 population estimates were not published at the time this report was developed.*

*Sources: GeoTRAQS, GEARS, US Census Bureau*

| Clarke County Pedestrian Accidents | | |
|---|---|---|
| Year | Fatalities | Injuries |
| 2011 | 0 | 41 |
| 2012 | 1 | 16 |
| 2013 | 1 | 26 |
| 2014 | 2 | 27 |
| 2015 | 3 | 29 |

**FIGURE 16:** CLARKE COUNTY BICYCLE AND PEDESTRIAN ACCIDENT TRENDS




## *Fixed Route*

### *Service Characteristics*

In order to better understand the existing fixed route transit services, the current Athens Transit service has been assessed on a route-by-route performance and as a total service. At the route level, each route has been assessed on ridership and revenue efficiency. For the purpose of evaluating the entire service, trend and peer analysis methods have been used.

#### Routes, Schedules, and Fares

Routes

The current transit service covers the Athens-Clarke County community, as well as the University of Georgia (UGA) campus, with 19 daily routes and 6 evening routes. All of the routes operate while the University is in session. However, routes 21, 22, 23 and 28 do not operate during the summer months, which affect the ridership and revenue statistics for May, June, July and August. Since some service is provided on these routes in early May and late August, the statistics are effectively reduced by approximately 25% (3 months) for those 4 routes.

The service includes routes that run anywhere from 30 to 60 minute service. This mix of run times allows Athens Transit to provide regular transfer opportunities at the Multi-Modal Transfer Center (MMTC). There are two sets of route pairs that operate during the daytime. Routes 1 and 3 alternate each half an hour throughout the day, as do routes 2 and 24. In the evening, route 3 is replaced by route 8.

While many of the routes operate out of the MMTC, several of the routes start and end at the UGA Arch in the downtown area. The hub-and-spoke method of operating the majority of the routes allows

passengers to transfer to other routes to complete their trips. However, having a second "hub" in the downtown area is designed to better meet the needs of students in that area. The Arch is also a major interface point with the UGA Transit Service.

**Table 8** below shows the current fixed route structure as well as several of the performance indicators. The data utilized for this table was taken from the last full year of ridership data (FY 2015).

The two highest performing routes for FY 2015 are Routes 12 and 14. Each of these routes start and end at the UGA Arch, in the downtown area, and serve the UGA campus. Due to the higher than average ridership on each of these routes, Route 12 has three buses operating and Route 14 has two. Another high performing route in the Athens system is Route 25. This route also performs part of its service on the UGA campus, but its service area includes a portion of the County to the east of campus. There are several public schools, businesses and apartment complexes along the route which benefit the ridership.

The Athens Transit System does have routes that did not perform well in FY 2015. Route 23 has the lowest overall ridership among the 19 standard routes in the system. This route operates between the downtown area and the park-and-ride lot in the southeastern portion of the city. Due to the limited number of stops, this route does not have many opportunities to add passengers. This route also only operates in the early morning and late afternoon hours, further limiting its usage.


*UGA Arch / Broad Street (Source: Google Earth)*

**TABLE 8:** FIXED ROUTE STATISTICS FY 2015

| Route | Total Ridership | Passengers per Mile | Passengers per Hour | Revenue per Mile | Revenue per Hour |
|---|---|---|---|---|---|
| 1 North Avenue | 43,884 | 2.03 | 22.06 | $2.12 | $22.99 |
| 2 East Athens | 31,684 | 1.64 | 16.15 | $1.75 | $17.21 |
| 3 East Athens / North Side | 29,260 | 1.54 | 17.86 | $2.94 | $34.14 |
| 5 Beechwood/Baxter | 98,652 | 2.18 | 20.16 | $2.16 | $20.01 |
| 6 West Broad/Atlanta Highway | 70,110 | 1.89 | 21.53 | $2.09 | $23.82 |
| 7 Prince Avenue | 60,281 | 1.42 | 19.53 | $1.40 | $19.27 |
| 8 Barber/Chase Garnet Ridge | 68,479 | 0.99 | 16.24 | $1.00 | $16.43 |
| 9 Macon Highway Five Points | 113,057 | 2.85 | 25.24 | $3.91 | $34.64 |
| 12 Riverbend | 287,151 | 4.78 | 44.92 | $6.89 | $64.69 |
| 14 East Campus/South Milledge | 198,472 | 4.05 | 31.52 | $5.81 | $45.25 |
| 20 Georgia Square Mall | 119,336 | 2.06 | 23.27 | $2.22 | $25.12 |
| 21 West Athens/Ultimate Drive | 20,677 | 1.09 | 12.16 | $1.30 | $14.51 |
| 22 East Athens/Highland Park Drive | 44,440 | 2.33 | 24.90 | $3.18 | $33.96 |
| 23 Oconee St Park and Ride | 3,700 | 0.47 | 5.44 | $0.62 | $7.12 |
| 24 Athens Tech | 33,840 | 1.38 | 22.38 | $1.20 | $19.39 |
| 25 Lexington Road/Gaines School | 138,572 | 2.78 | 27.48 | $3.37 | $33.37 |
| 26 College Station Barnett Shoals | 90,242 | 2.30 | 28.09 | $2.95 | $36.09 |
| 27 Barnet Shoals/Cedar Shoals | 87,819 | 1.79 | 28.45 | $2.10 | $33.42 |
| 28 College Station / Campus Express | 15,662 | 1.88 | 44.08 | $2.72 | $63.71 |
| | | | | | |
| 105 North Avenue/Barber Chase | 4,466 | 0.25 | 4.79 | $0.11 | $2.10 |
| 205 East Athens/W. Broad Brooklyn | 3,665 | 0.33 | 4.78 | $0.19 | $2.72 |
| 505 Beechwood/Baxter | 5,857 | 0.46 | 6.41 | $0.30 | $4.18 |
| 905 Macon Highway | 5,542 | 0.62 | 7.23 | $0.07 | $0.76 |
| 2005 GA Square Mall | 11,993 | 0.72 | 12.55 | $0.58 | $10.13 |
| 2505 Lexington Road | 15,490 | 0.99 | 16.60 | $0.50 | $8.41 |

*Source: ATS Stats, FY 2015*

The routes listed at the bottom of the table represent variations of the daily routes that run at night. Each of these routes operates only a few hours each evening, limiting their ability to amass large ridership numbers. However, the effectiveness of Routes 105, 205, 505 and 905 need to be considered in the planning for the future operations plan.

Schedules

While most of the routes in the Athens Transit System operate in and out of the MMTC, the start and end times and locations for each of the routes varies slightly. **Table 9** shows the start and end times, as well as the start and end locations, for each of the fixed routes in the system.

**TABLE 9:** FIXED ROUTE OPERATING SCHEDULES (MONDAY THROUGH FRIDAY)

| Route | Start Time | End Time | Start Location | End Location |
|---|---|---|---|---|
| 1 North Avenue | 0615 | 1840 | MMTC | MMTC |
| 2 East Athens | 0615 | 1842 | MMTC | MMTC |
| 3 East Athens / North Side | 0547 | 1811 | Chicopee | MMTC |
| 5 Beechwood/Baxter | 0615 | 1838 | Westchester Drive | MMTC |
| 6 West Broad/Atlanta Highway | 0612 | 1908 | Broad/Alps | Old Epps Bridge Road |
| 7 Prince Avenue | 0715 | 1840 | MMTC | Westchester Drive |
| 8 Barber/Chase Garnet Ridge | 0610 | 1840 | Kathwood/Newton Bridge | MMTC |
| 9 Macon Highway Five Points | 0700 | 1908 | Five Points | MMTC |
| 12 Riverbend | 0700 | 1857 | University Apartments | UGA Arch |
| 14 East Campus/South Milledge | 0713 | 1837 | College Park/ Lakeside Drive | UGA Arch |
| 20 Georgia Square Mall | 0615 | 1840 | Georgia Square Mall | MMTC |
| 21 West Athens/Ultimate Drive | 0815 | 1812 | MMTC | MMTC |
| 22 East Athens/Highland Park Drive | 0747 | 1808 | Redstone/Boulder Trail | MMTC |
| 23 Oconee St Park and Ride | 0707 | 1731 | Park & Ride Lot | Park & Ride Lot |
| 24 Athens Tech | 0645 | 1810 | MMTC | MMTC |
| 25 Lexington Road/Gaines School | 0615 | 1907 | MMTC | MMTC |
| 26 College Station Barnett Shoals | 0645 | 1840 | MMTC | MMTC |
| 27 Barnet Shoals/Cedar Shoals | 0610 | 1840 | Walmart | MMTC |
| 28 College Station / Campus Express | 0720 | 0953 | International Drive | UGA Arch |
| | | | | |
| 105 North Avenue/Barber Chase | 1845 | 2145 | MMTC | MMTC |
| 205 East Athens/W. Broad Brooklyn | 1845 | 2113 | MMTC | MMTC |
| 505 Beechwood/Baxter | 1845 | 2138 | MMTC | MMTC |
| 905 Macon Highway | 1845 | 2140 | MMTC | MMTC |
| 2005 GA Square Mall | 1845 | 2140 | MMTC | MMTC |
| 2505 Lexington Road | 1845 | 2140 | MMTC | MMTC |

*Source: ATS Stats, FY 2015*

As the table above indicates, the majority of the fixed route transit service operates from 6 a.m. to 6 p.m. Monday through Friday. Routes 12 and 14 operate multiple vehicles throughout the service day with staggered start and end times. The additional vehicles provide needed service throughout the busiest portion of the day.

Variations to the schedule occur on the weekends, summer and holidays. The majority of the ridership occurs during the Monday through Friday schedule.

## Fares

Like most transit systems, the Athens Transit System has a variety of transit fares based on age, disabilities and job status. The following table outlines the fare structure currently used by ATS:

**TABLE 10:** FARE STRUCTURE

| Fare Category | Fare | Limitations/Requirements |
|---|---|---|
| Adult Fare | $1.75 | Age 18-64 |
| Senior Citizen Fare – Peak hours | $1.00 | Age 65+; proper ID required (Medicare card accepted) |
| Disabled Citizen Fare – Peak hours | $1.00 | Persons with disabilities require ATS or other approved ID |
| Senior Citizen Fare – Non-peak hours | $0.85 | Age 65+; proper ID required (Medicare card accepted) |
| Disabled Citizen Fare – Non-peak hours | $0.85 | Persons with disabilities require ATS or other approved ID |
| Youth | $1.50 | Age 6-17 with proof of age |
| Youth | $1.75 | Age 6-17 without proof of age |
| Children | Free | Age 5 and under; limit 2; must ride with fare paying passenger; additional children charged youth fare |
| Transfers | Free | Good for next connecting bus only |
| University of Georgia students, faculty and staff | Free | With valid UGA ID |

*Source: ATS Website*

As a recipient of Section 5307 funding assistance, the Athens Transit Service is required by Federal Transit Administration (FTA) regulations to provide a reduced fare program for elderly and disabled citizens. The regulations require the transit agency to, at a minimum, provide this reduced fare during non-peak hours.

The age determination for children is made by utilizing the height of the child compared to the height of the farebox. If the child is taller than the farebox, they must pay the youth fare.

For frequent passengers, the transit agency also offers a 22-ride pass. The table below shows the varying costs of the pass based on fare category:

**TABLE 11:** MULTI-RIDE PASS PRICE

| Fare Category | Fare |
|---|---|
| Adult Smart Pass (18-64 years old) | $31.00 |
| Senior Citizen Smart Pass (65+ years old) | $18.00 |
| Disabled Freedom Pass | $18.00 |
| Youth Smart Pass (6-17 years old) | $28.00 |

*Source: ATS Website*

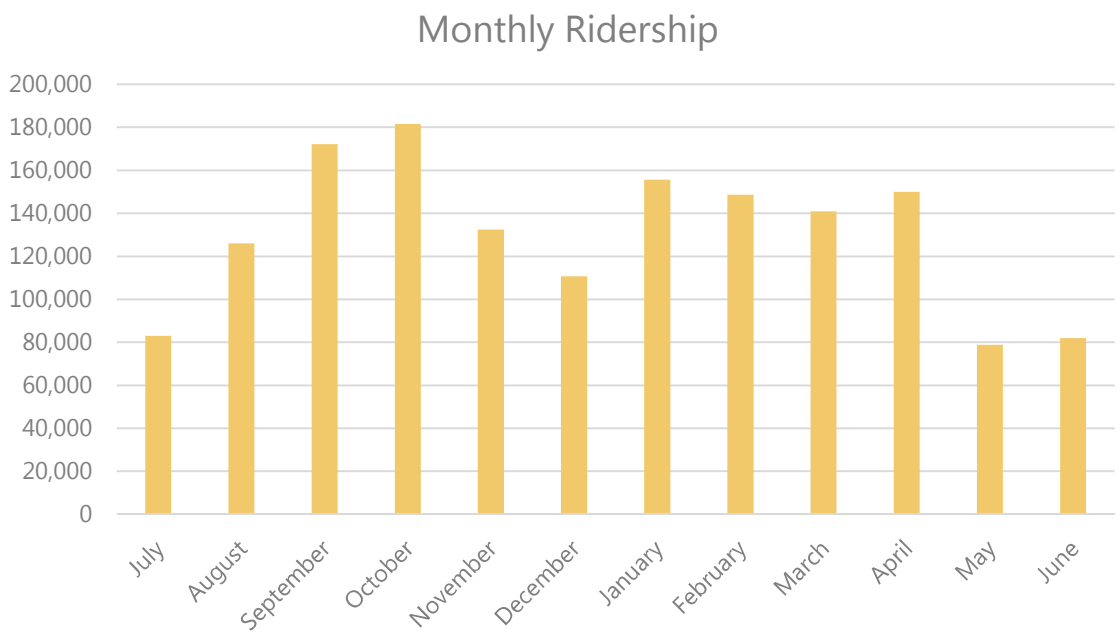
The same limitations/requirements that are used to determine a passenger's eligibility for a single ride ticket are used to purchase a multi-ride pass.

## Historical Ridership

Due to the nature of the Athens Transit System ridership, the month-to-month ridership numbers are affected by the University of Georgia's school calendar. When school is in session, the ridership is buoyed by the routes that directly serve the UGA campus. During the summer and extended breaks, the ridership numbers are reduced considerably.

The figure below shows the variations in ridership on a monthly basis:

**FIGURE 17:** TOTAL MONTHLY RIDERSHIP FY2015




*Source: ATS Monthly Statistics, FY 2015*

The months of May, June and July were the months most affected by the UGA academic calendar. The number of students in the area and on-campus are greatly reduced during the summer months, including early August, and have a direct effect on the system's ridership numbers. Based on the monthly ridership numbers, it appears that students utilize the transit system less in the spring semester, as compared to the

fall semester. One reason for this trend could be an increase in ride-sharing with friends and classmates once a regular schedule is developed. Other fluctuations in the monthly ridership numbers seem to be the result of extended breaks (December holidays and Spring break) in the academic calendar.

The total monthly ridership numbers shown in the figure above include both the fixed route and demand response ridership. While the fixed route ridership totals are greatly affected by the UGA academic calendar, the demand response ridership is steadier on a monthly basis. The table below shows the fixed route and demand response ridership for each month of fiscal year 2015.

**TABLE 12:** TOTAL MONTHLY RIDERSHIP FY 2015

| Month | Fixed Route | Demand Response | Total |
|---|---|---|---|
| July | 82,489 | 510 | 82,999 |
| August | 125,496 | 567 | 126,063 |
| September | 171,567 | 585 | 172,152 |
| October | 180,869 | 650 | 181,519 |
| November | 131,944 | 529 | 132,473 |
| December | 110,193 | 544 | 110,737 |
| January | 155,163 | 527 | 155,690 |
| February | 148,133 | 549 | 148,682 |
| March | 140,291 | 609 | 140,900 |
| April | 149,393 | 621 | 150,014 |
| May | 78,298 | 570 | 78,868 |
| June | 81,482 | 519 | 82,001 |

*Source: ATS Monthly Statistics, FY 2015*

The month-to-month demand response ridership has slight variations. The month with the fewest number of passengers was July, while the 650 rides served in October was the highest total in FY 2015. The variance from the highest to the lowest month was less than 25 percent. The fixed route transit service has a much higher variation in ridership from month-to-month. May 2015 was the lowest month of ridership on the fixed route system. The highest fixed route ridership occurred in October 2014. The October ridership was more than double the May total.

## Operations

### On-Time Performance

Transit customers depend on the system to meet the posted schedule times so that they can arrive at their destination at the designated time without delays. The on-time performance is also important so that riders know when to be at the bus stop. If the bus is early or late, the rider has a chance of completely missing the bus or waiting an inordinately long time at the stop.

The table below shows the on-time performance of the Athens Transit System by trip and at time points throughout the system:

**TABLE 13:** MONTHLY ON-TIME PERFORMANCE 2015

| Month | On-Time Percentage – Trip | On-Time Percentage – Time Point |
|---|---|---|
| July | 85% | 92% |
| August | 81% | 83% |
| September | 77% | 83% |
| October | 82% | 81% |
| November | 81% | 80% |
| December | 83% | 83% |
| January | 84% | 81% |
| February | 84% | 80% |
| March | 75% | 72% |
| April | 86% | 92% |
| May | 82% | 79% |
| June | 83% | 82% |
| **Total for FY** | **82%** | **82%** |

*Source: ATS Monthly Statistics, FY 2015*

There are many factors that can affect the on-time performance of a particular bus or route. Some of the more common factors that impact the on-time performance include:

- Passenger transit experience
- Vehicle load factors
- Bike rack usage
- Frequency of wheel chair passengers
- Weather
- Traffic

While many of these factors are uncontrollable, educating the passengers on the proper and efficient boarding and alighting, including the use of the on-vehicle bike rack, may be a factor that can help to improve the on-time performance of the system.

Incident Trends

For transit systems, incidents affect the performance of the system and customer experiences. If a transit system has a lot of traffic accidents or mechanical breakdowns, the system will not perform on-time and customers may look for alternative means of transportation.

The table below outlines a comparison of accidents and mechanical breakdowns between FY 2014 and FY 2015 for both fixed route and demand response.

**TABLE 14:** MONTHLY ON-TIME PERFORMANCE 2015

| Category | FY 2014 | FY 2015 | Percent Change |
|---|---|---|---|
| Collision Accidents – Fixed Route | 27 | 24 | (11%) |
| Collision Accidents – Demand Response | 2 | 6 | 200% |
| Mechanical Road Calls – Fixed Route | 164 | 206 | 26%` |
| Mechanical Road Calls – Demand Response | 7 | 6 | (14%) |
| Accidents/100,000 Miles – Fixed Route | 3.58 | 3.15 | (12%) |
| Miles/Road Failure – Fixed Route | 4,933 | 3,964 | (20%) |

*Source: ATS Monthly Statistics, FY 2015*

While not all accidents are preventable, an increase in the number of accidents may indicate a need for additional driver training with a particular vehicle type. The number of accidents for the fixed route service slightly declined from FY 2014 to FY 2015. However, the average of 2 accidents per month can have a direct effect on the transit agency's ability to fulfill its scheduled service, depending on the severity of the damage to the revenue vehicles.

Mechanical road calls are caused by the failure of a mechanical element of the revenue vehicle that prevents it from completing a scheduled revenue trip or from starting the next scheduled trip. The failure of a mechanical element may prevent the actual movement of the revenue vehicle or raise a safety concern for the driver and passengers. Mechanical failures that could prevent a revenue vehicle from completing its service may include air equipment, brakes, windshield wipers, steering, etc.

## Equipment and Maintenance

### Fleet

The Athens Transit System utilizes a mix of revenue vehicles that range in length from 30 to 40 feet. The different size vehicles provide the system with the ability to match a vehicle to the expected passenger needs along a particular route and to also meet the environmental conditions. Larger vehicles have a more difficult time navigating narrow roads and turns or in areas of higher traffic, so the use of a smaller vehicle may be more appropriate.

The chart below shows the number of revenue vehicles utilized by the demand response and the fixed route systems.

**TABLE 15:** TRANSIT VEHICLE INVENTORY

| Year of Manufacture | Number of Vehicles | Fixed Route or Demand Response | Vehicle Length (feet) | Seating Capacity | Standing Capacity | Average Lifetime Miles |
|---|---|---|---|---|---|---|
| 2001 | 2 | FR | 35 | 37 | 18 | 329,915 |
| 2004 | 3 | FR | 30 | 30 | 15 | 223,604 |
| 2004 | 6 | FR | 35 | 37 | 15 | 385,787 |
| 2005 | 2 | FR | 40 | 46 | 23 | 248,261 |
| 2006 | 3 | FR | 30 | 30 | 15 | 196,587 |
| 2006 | 2 | FR | 35 | 37 | 18 | 357,531 |
| 2007 | 1 | DR | 30 | 11 | 4 | 126,005 |
| 2008 | 2 | FR | 40 | 46 | 23 | 192,496 |
| 2009 | 2 | FR | 30 | 30 | 15 | 136,617 |
| 2009 | 1 | FR | 40 | 46 | 23 | 142,819 |
| 2010 | 2 | DR | 30 | 11 | 4 | 67,236 |
| 2011 | 1 | DR | 22 | 11 | 4 | 13,243 |
| 2011 | 4 | FR | 40 | 46 | 23 | 93,314 |
| 2013 | 4 | FR | 40 | 46 | 23 | 33,389 |

*Source: ATS NTD Report, RY 2014*

While the pattern for the fixed route vehicles has been to increase the number of 40 foot vehicles, there remains a need for smaller fixed route vehicles in the Athens Transit System. The 40 foot vehicles have a distinct advantage in passenger capacity over the smaller vehicles, which is extremely helpful on the routes that serve the UGA campus.

Facilities

The Athens Transit System has two facilities for the administration, operation and maintenance of the system. The Multi-Modal Transportation Center is located at 775 East Broad Street near downtown Athens and alongside the rail line. This facility is utilized by many of the transit agency's vehicles and is the start and end point for many of the daily service trips. The facility has 17 bus bays that are used throughout the service day by ATS buses. MegaBus utilizes the facility's site for pickup and drop off of passengers. However, the MegaBus does not use the covered bus bay area, picking up passengers behind the facility.

*Source: Athens Clarke County*

The facility also includes the offices for the administration and operation staff members. A small parking lot for short-term parking is available on the site. The facility is connected to a multi-story parking deck for long-term parking.

The maintenance facility is located at 325 Pound Street. The facility is located 3 miles northwest of the MMTC facility. The revenue vehicles for the demand response and fixed route transit service are maintained at the Pound Street facility. The facility also provides parking for the revenue vehicles as well as the vehicle operators. The fixed route revenue vehicles deadhead from the maintenance facility to various points along the transit service to start the daily service.

The Athens Transit System has more than 80 passenger shelters located throughout the service area. Several of the shelters were designed through an artist program and provide a unique experience for transit passengers. The transit agency also has an "adopt-a-stop" program to encourage the public and private businesses to take part in the keep the shelters clean and well maintained.

Fuel Consumption

The majority of the Athens Transit System fleet is powered by diesel fuel. One demand response vehicle is operated with gasoline. The table below illustrates the fuel consumption of the demand response and fixed route transit vehicles.

**TABLE 16:** ANNUAL FUEL CONSUMPTION

| Transit Service | Fuel (gallons) | Total Miles | Miles per Gallon |
|---|---|---|---|
| Fixed Route | 226,127 | 811,060 | 3.59 |
| Demand Response – diesel | 8,034 | 46,100 | 5.74 |
| Demand Response – gasoline | 1,841 | 13,243 | 7.19 |

*Source: ATS NTD Report, RY 2014*

## *Performance Evaluation (NTD)*

The Transit Cooperative Research Program (TCRP) Report 141 – A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry, outlines the process for benchmarking within the transit industry. Benchmarking, according to the report, is the "process of systematically seeking out best practices to emulate." Level 1 benchmarking is the process of evaluating the trends within the agency data. In transit systems, the evaluation of year-to-year ridership is an example of a Level 1 benchmark. Peer comparison is the second level of benchmarking. This activity compares the system's performance against other systems with similar demographic profiles. The National Transit Database (NTD) is a typical source for information to complete this activity.

Once a Level 2 benchmarking activity has been completed, the next step is to make direct contact with a peer agency identified as a model. The purpose of contacting the top performing peer agencies is to get a greater understanding, beyond the NTD data. This type of contact is typically short term and does not occur on a regular basis beyond the first contact. The final level of benchmarking, Level 4, is a formal program between multiple agencies that cultivates a sharing of data and experiences for an extended period.

For the purpose of this report, Level 1 and 2 benchmarking exercises were performed. Although data-driven analysis of the Athens Transit System will not provide all of the information, this analysis will provide an illustration of the system's strengths and weaknesses.

### Level 1 Benchmarking – Trend Analysis

In order to understand the changes in the ATS performance over a period of time, a trend analysis was completed for the ATS fixed route transit service. A trend analysis is helpful in identifying positive and negative performance in operational and financial measures. The data used for this analysis was derived from published NTD reports for years 2009 to 2013. The Report Year 2014 data has not been published by NTD at the time of this report.

**TABLE 17:** ATHENS TRANSIT SYSTEM FIXED ROUTE – GENERAL INDICATORS

| General Indicator | 2009 | 2010 | 2011 | 2012 | 2013 | Percent Change 2009 - 2013 |
|---|---|---|---|---|---|---|
| Service Area Population | 101,000 | 101,000 | 128,754 | 116,714 | 116,714 | 15.6% |
| Service Area Size (sq miles) | 44 | 44 | 44 | 44 | 44 | 0.0% |
| Passenger Trips (000's) | 1,839.0 | 1,779.8 | 1,857.3 | 1,789.7 | 1,725.7 | -6.2% |
| Passenger Miles (000's) | 5,789.9 | 5,385.0 | 5,299.4 | 5,188.4 | 5,403.4 | -6.7% |
| Revenue Miles | 855,766 | 844,669 | 806,754 | 764,370 | 757,503 | -11.5% |
| Revenue Hours | 73,879 | 73,832 | 69,849 | 66,351 | 65,868 | -10.8% |
| Route Miles | 163 | 163 | 163 | 163 | 163 | 0.0% |
| Total Employee FTEs | 62.72 | 62.73 | 61.32 | 61.32 | 65.31 | 4.1% |
| Vehicles Operated in Maximum Service | 22 | 22 | 22 | 22 | 22 | 0.0% |
| Spare Ratio (%) | 27.27 | 40.91 | 40.91 | 40.91 | 40.91 | 50.0% |
| Total Gallons Consumed | 254,238 | 253,130 | 250,681 | 253,223 | 217,803 | -14.3% |

*Source: ATS NTD Report, RY 2009-2013*

Service Area

While the size of the area serviced by the Athens Transit System has not expanded, the population within the service area has grown by nearly 16 percent. The increase in population in the service area can only improve the ridership opportunities for the transit agency in the future.

Service Consumed

The number of passenger trips peaked in 2011 for the system, but has declined by more than six percent over the five year evaluation period. The trend for the last three years has been a steady decline from the peak year. From 2009 to 2013, the length of the average trip has remained constant at just over three miles. During the highest ridership in the five year period, the average trip dipped to 2.85 miles.

Service Provided

The total revenue hours and miles for the Athens Transit System have steadily declined over the last five years. Each of these categories of service provision have decline by more than ten percent during this period. The reduction in the amount of service provided by the transit agency may have an effect on the declining ridership numbers.

Employees

The Athens Transit System staff has increased slightly over the evaluation period. The increases in staff were in the maintenance and administration staffs, while the operations staff experienced a slight decline.

Fleet

The number of vehicles operated in maximum service (VOMS) has remained constant for the last five years. However, the agency has added an additional three revenue vehicles to the fixed route fleet. The increase in the number of revenue fleet vehicles resulted in the spare ratio increase to just over 40 percent. Based on FTA standards, the spare ratio should be as close to or under 20 percent as possible. Smaller transit agencies typically have a spare ratio above the 20 percent threshold to make sure that they have enough revenue vehicles to meet their daily needs.

Energy

With the decrease in revenue miles and hours, the drop in energy use by the revenue vehicles is expected. Another reason for the energy reduction is the use of more efficient vehicles in the revenue fleet.

**TABLE 18:** ATHENS TRANSIT SYSTEM FIXED ROUTE – EFFECTIVENESS MEASURES

| Effectiveness Measure | 2009 | 2010 | 2011 | 2012 | 2013 | Percent Change 2009 - 2013 |
|---|---|---|---|---|---|---|
| SERVICE SUPPLY | | | | | | |
| Vehicle Miles Per Capita | 8.91 | 8.79 | 6.49 | 6.80 | 6.77 | -24.0% |
| SERVICE CONSUMPTION | | | | | | |
| Passenger Trips Per Capita | 18.21 | 17.62 | 14.43 | 15.33 | 14.79 | -18.8% |
| Passenger Trips Per Revenue Mile | 2.15 | 2.11 | 2.30 | 2.34 | 2.28 | 6.0% |
| Passenger Trips Per Revenue Hour | 24.89 | 24.11 | 26.59 | 26.97 | 26.20 | 5.3% |
| QUALITY OF SERVICE | | | | | | |
| Average Speed (RM/RH) | 11.58 | 11.44 | 11.55 | 11.52 | 11.50 | -0.7% |
| Average Age of Fleet (in years) | 5.64 | 6.10 | 7.10 | 6.68 | 6.00 | 6.3% |
| Number of Vehicle System Failures | 183 | 246 | 240 | 238 | 184 | 0.5% |
| Revenue Miles Between Failures | 4,676 | 3,434 | 3,361 | 3,212 | 4,117 | -12.0% |
| AVAILABILITY | | | | | | |
| Weekday Span of Service (in hours) | 17 | 17 | 17 | 16 | 16 | -5.9% |

*Source: ATS NTD Report, RY 2009-2013*

Service Supply

The first effectiveness measure compares the service area population growth and the growth of the transit agency. As an urban area population grows, the level of transit service should grow accordingly to continue to support the local population, job market, and economy. However, the combination of the reduction in annual vehicle miles and an increase in the service area population resulted in the agency's vehicle miles per capita reduction of nearly 25 percent.

Service Consumption

The rate at which the transit service is utilized by the local population illustrates the effectiveness of the overall service. If the service is located in most appropriate area and meets the public's needs, the use of the transit service should increase proportionally with the population. Since the service area population has increased over the last five years, the expectation is that the number of passenger trips will increase. However, for the last three years, the Athens Transit passenger trips have decreased resulting in a nearly 19 percent reduction in the agency's passenger trips per capita. The reduction in revenue miles and hours by approximately 11 percent over the last couple of years combined with a slower reduction in passenger trips resulted in an increase in the agency's passenger trips per revenue hour and revenue mile by 5.3 and 6 percent, respectively.

Quality of Service

In addition to provided transit services in the right place and at the right time, the service needs to be of a quality that induces usage. Factors that are considered for the quality of service include the average speed of the vehicles, the age of the vehicles and the frequency of mechanical breakdowns. Each of these factors play a role in projecting an image of the system. The average speed of the Athens Transit System revenue vehicles is calculated by dividing the number of revenue miles by the number of revenue hours. If the passengers on the vehicle feel rushed or unsafe, they are less likely to continue to use the service. The average speed of the system has been maintained at a healthy speed for this type of system for the last five years. The operations and administrative staff have developed schedules that support this factor.

As with most systems, the average age of the Athens Transit revenue vehicle fleet has grown slightly older over the evaluation period. The introduction of newer vehicles and the retiring of older units will help Athens Transit maintain a good mix of vehicles. The average age typically has an effect on the number of mechanical failures that occur throughout the year. Older vehicles tend to breakdown more often. If the general public regularly sees transit vehicles breaking down, they are not likely to depend on the transit service. Athens Transit has improved on the number of mechanical failures over the last five years, based on the number of miles driven. The number of miles between mechanical failures was higher in 2013 than in the previous three years.


*Athens Transit Bus and Passengers at MMTC - Source: Athens Banner Herald*

**TABLE 19:** ATHENS TRANSIT SYSTEM FIXED ROUTE – EFFICIENCY MEASURES

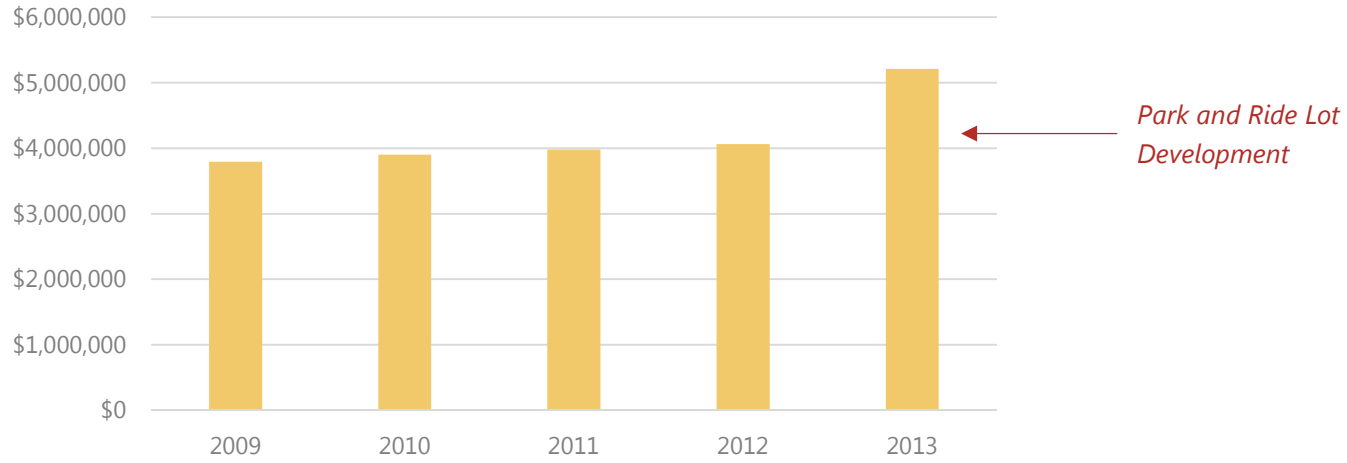
| Efficiency Measure | 2009 | 2010 | 2011 | 2012 | 2013 | Percent Change 2009 - 2013 |
|---|---|---|---|---|---|---|
| COST EFFICIENCY | | | | | | |
| Operating Expense Per Capita | $37.54 | $38.63 | $30.92 | $34.81 | $44.62 | 18.9% |
| Operating Expense Per Peak Vehicle | $172,373 | $177,349 | $180,930 | $184,676 | $236,734 | 37.3% |
| Operating Expense Per Passenger Trip | $2.06 | $2.19 | $2.14 | $2.27 | $3.02 | 46.4% |
| Operating Expense Per Passenger Mile | $0.66 | $0.72 | $0.75 | $0.78 | $0.96 | 47.2% |
| Operating Expense Per Revenue Mile | $4.43 | $4.62 | $4.93 | $5.32 | $6.88 | 55.2% |
| Operating Expense Per Revenue Hour | $51.33 | $52.85 | $56.99 | $61.23 | $79.07 | 54.0% |
| Maintenance Expense Per Revenue Mile | $0.71 | $0.76 | $0.76 | $0.80 | $1.18 | 66.2% |
| Maintenance Expense Per Operating Exp | $15.98 | $16.34 | $15.38 | $15.14 | $17.11 | 7.1% |
| OPERATING RATIO | | | | | | |
| Farebox Recovery (%) | 42.78 | 44.51 | 46.86 | 47.69 | 36.06 | -15.7% |
| VEHICLE UTILIZATION | | | | | | |
| Vehicle Miles Per Peak Vehicle | 40,903 | 40,348 | 38,002 | 36,083 | 35,935 | -12.1% |
| Vehicle Hours Per Peak Vehicle | 3,461 | 3,454 | 3,175 | 3,086 | 3,063 | -11.5% |
| Revenue Miles Per Vehicle Mile | 0.95 | 0.95 | 0.96 | 0.96 | 0.96 | 0.8% |
| Revenue Miles Per Total Vehicles | 30,563 | 27,247 | 26,024 | 24,657 | 24,435 | -20.0% |
| Revenue Hours Per Total Vehicles | 2,639 | 2,382 | 2,253 | 2,140 | 2,125 | -19.5% |
| FARE | | | | | | |
| Average Fare | $0.88 | $0.98 | $1.00 | $1.08 | $1.09 | 23.4% |

*Source: ATS NTD Report, RY 2009-2013*

Cost Efficiency

The cost efficiency measures compare the operating and maintenance costs to various factors to evaluate per unit costs. These measures are greatly affected by the increase or decrease of the overall operating costs for the system. From 2009 to 2013 the total operating expenses for the Athens Transit System increased by 37 percent. The majority of that increase occurred between 2012 and 2013. The figure below shows the increase in operating expense each year of the evaluation period.

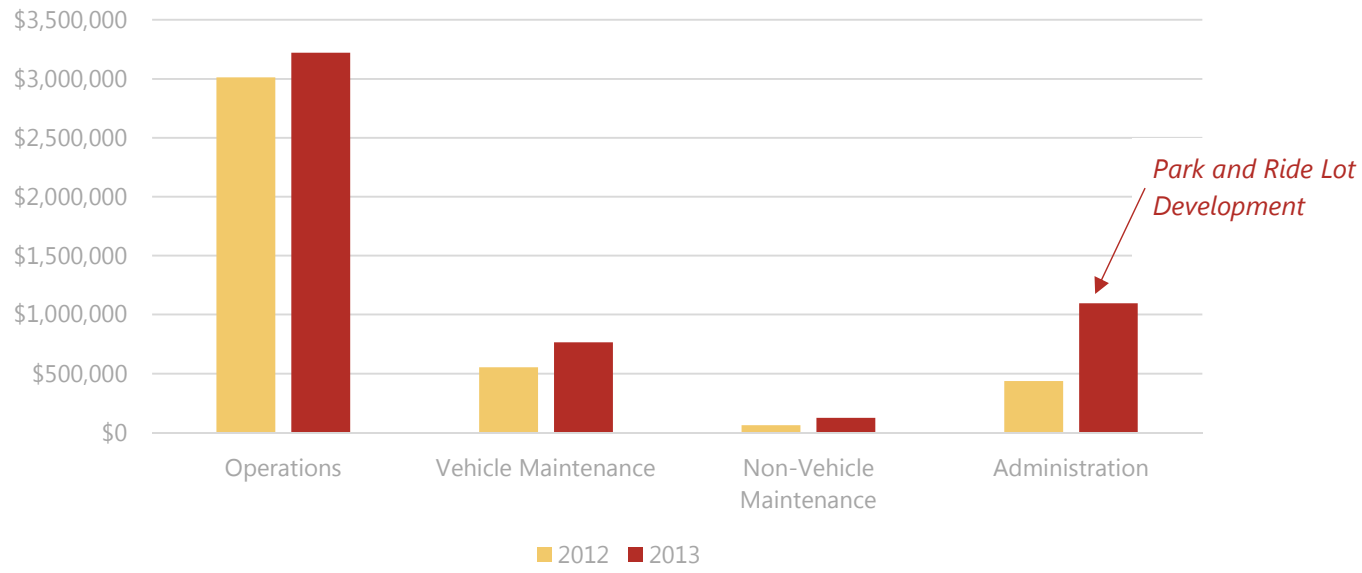
**FIGURE 18:** ATS TOTAL OPERATING EXPENSES




*Source: ATS NTD Report, RY 2009-2013*

From 2009 to 2012, the increase in operating costs were kept very low with only a 2 to 3 percent increase each year. However, in FY 2013, the operating costs increased 28 percent from the previous year. The figure below shows the operating expenses for FY 2012 and FY 2013 by functional classification.

**FIGURE 19:** OPERATING EXPENSES BY FUNCTIONAL CLASSIFICATION




*Source: ATS NTD Report, RY 2012-2013*

While the costs within each of the functional classifications experienced increases between FY 2012 and FY 2013, the administration classification had the highest increase. The administration costs increased by more than $600,000 from year-to-year which accounts for more than 50 percent of the total operating expense increase.

Due to this higher than usual increase in the total operating expenses, each of the cost efficiency measures dealing with the operating costs show drastic increases. The overall maintenance expenses for the transit agency also experienced an increase over the last five years of more than 47 percent. This increase resulted in the measures dealing with per revenue mile and per operating costs to show an increase as well.

### Operating Ratio

This efficiency measure compares the amount of revenue received through the farebox, as well as contracts to provide service to a specific group (i.e., UGA), against the overall operating expenses. Due to the increase in the total operating costs for the Athens Transit System and a relatively flat farebox revenue stream, the transit agency farebox recovery percentage has decreased by nearly 16 percent over the last five years. While the decrease in farebox recovery is not a positive trend, the first four years of the evaluation period actually experienced slight increases in the farebox recovery. The significant increase in total operating expenses from FY 2012 to FY 2013 caused the overall decrease in farebox recovery ratio.

### Vehicle Utilization

The cost efficiency measures dealing with the utilization of the revenue vehicles compares the hours and miles operated against the number of fleet vehicles. The combination of a reduction in revenue hours and miles and an increase in revenue vehicles over the last five years result in an 11 to 20 percent reduction in most of these measures. The one measure that had a slight increase in this category was the revenue mile per vehicle mile. This measure compare the total vehicle miles against the revenue miles. The difference between these mileages is the number of deadhead miles accrued by the Athens Transit revenue vehicles. The Athens Transit System staff has kept deadhead miles to less than 5 percent of the total miles over the last 5 years. Deadhead miles are accumulated during training, maintenance testing, morning rollout and evening return to the maintenance shop.

### Fare

The average fare for the Athens Transit System if affected by the type of tickets sold, fare increases and the negotiated contract with UGA. Over the last five years, the average fare has increased by more than 23 percent. However, the total operating expenses have outpaced the average fare during the same period.

## Financial Indicators

The table below outlines the sources of funds for Athens Transit System over the last five years.

**TABLE 20:** ATHENS TRANSIT SYSTEM FIXED ROUTE – FINANCIAL INDICATORS

| Financial Indicator | 2009 | 2010 | 2011 | 2012 | 2013 | Percent Change 2009 - 2013 |
|---|---|---|---|---|---|---|
| LOCALLY GENERATED FUNDS | | | | | | |
| Fare Revenue (000's) | $1,621.8 | $1,736.5 | $1,865.3 | $1,937.5 | $1,878.2 | 15.8% |
| GOVERNMENT SOURCES OF FUNDS | | | | | | |
| Local (000's)[1] | $1,568.1 | $1,303.8 | $1,290.1 | $1,344.7 | $2,439.6 | 55.6% |
| State (000's) | $78.7 | $197.4 | $29.2 | $106.5 | $252.6 | 221.0% |
| Federal (000's)[2] | $1,589.7 | $2,428.7 | $1,555.9 | $3,654.7 | $5,665.1 | 256.4% |
| USE OF FUNDS | | | | | | |
| Operations (000's) | $4,129.6 | $4,265.8 | $4,359.6 | $4,437.1 | $5,621.6 | 36.1% |
| Capital (000's) | $737.1 | $1,425.5 | $405.1 | $2,635.8 | $4,640.8 | 529.6% |

*Source: ATS NTD Report, RY 2009-2013*

*[1] FY 2009 and FY 2010 figures represent actual local government funds spent.*

*[2] Includes Capital and Urban Area Formula Program funds. The total also does not differentiate between funds spent on fixed route versus demand response.*

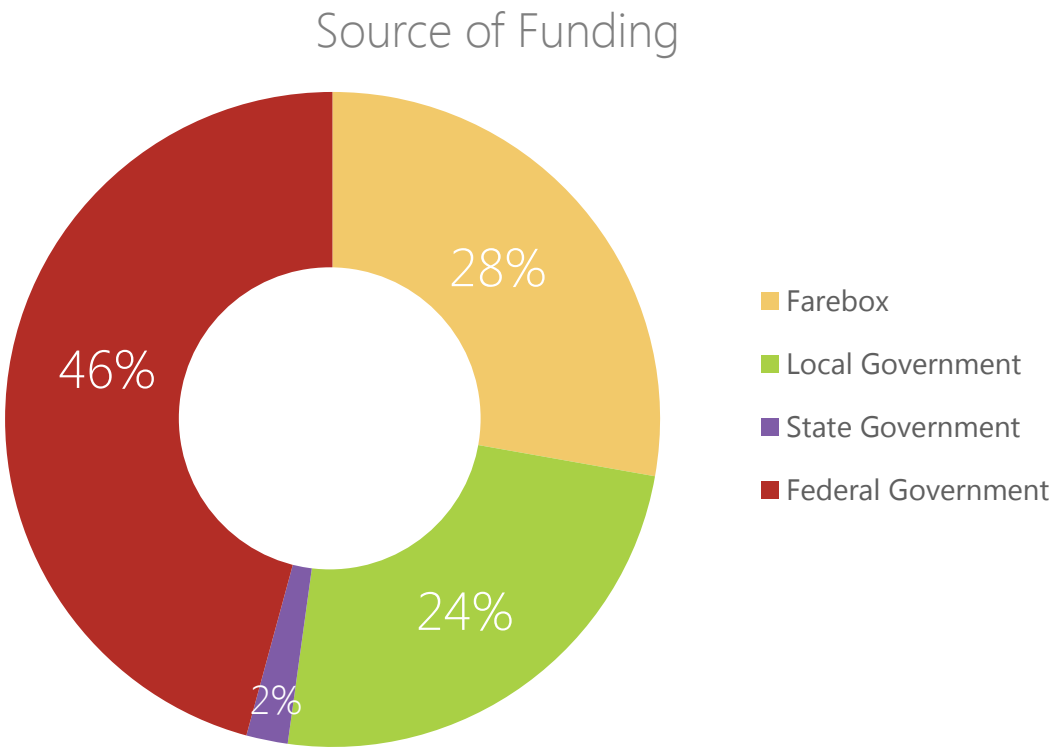
## Locally Generated Funds

As discussed earlier, the fares collected for the service provided by Athens Transit System are the result of ticket sales, fares collected at the farebox and the contract with UGA. Over the last five years, the fare revenues increased steadily from FY 2009 to FY 2012, but the system experienced a slight reduction in fare revenues in FY 2013.

## Government Sources of Funding

As with most transit agencies, the largest source of funding for the Athens Transit System is the federal program. The extremely high growth in the federal funding is due to major capital purchases in the last two years. However, the transit agency has also benefited from sizable increases in both the local and state funding over the last five years. The figure below illustrates the percentage of funding from the various sources for the last five years.

**FIGURE 20:** ATHENS TRANSIT SYSTEM SOURCES OF FUNDING



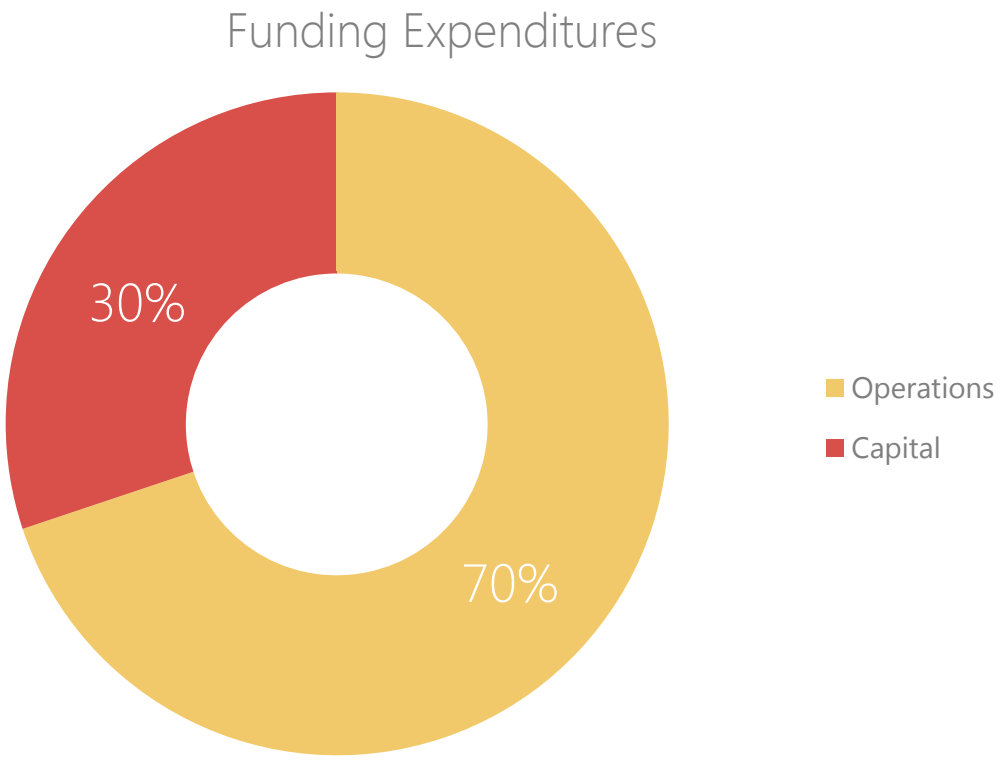

*Source: ATS NTD Report, RY 2009-2013*

As illustrated above, the farebox revenues and local government funding make up approximately half of the funding for Athens Transit System. The federal funding covers most of the rest of the funding for the agency. The state government portion of the funding is the smallest contributor at 2 percent of the total funding for the system.

Use of Funds

Over the last five years, the majority of the funding has been used by Athens Transit System to pay for the operations of the system. Operation expenses include all aspects of running the business including driver wages, fuel, benefits, insurance, maintenance and administration. The capital expenditures for the system include the purchase of equipment, vehicles, bus shelters and other non-consumable items. The figure below shows the comparison of operation and capital funding uses for the last five years.

**FIGURE 21:** ATHENS TRANSIT SYSTEM FUNDING EXPENDITURES




*Source: ATS NTD Report, RY 2009-2013*

## *Trend and Peer Analysis (NTD)*

As mentioned in the previous section, the second level of evaluation for the transit agency is a comparison of its most recent service to a group of peer agencies. The group of peer agencies used in this comparison were selected based on the community size/makeup and our team's knowledge of the agencies' performance. The following table outlines the peer agencies selected for this evaluation.

**TABLE 21:** PEER ANALYSIS GROUP

| Transit Agency | Location | University Served | University Enrollment |
|---|---|---|---|
| Capital Area Transit System | Baton Rouge, LA | Louisiana State University (LSU) | 30,451 |
| Charlottesville Area Transit | Charlottesville, VA | University of Virginia (UVA) | 21,238 |
| Star Metro | Tallahassee, FL | Florida State University (FSU) | 41,773 |
| Town of Chapel Hill Transit | Chapel Hill, NC | University of North Carolina (UNC) | 29,135 |

Each of these transit agencies either directly or through contracting serves a major university in the Southeast. There are similarities between each of these peer agencies and the transit services offered in the Athens community. For the purpose of comparison, the operating statistics for the Athens Transit System and UGA Transit will be shown individually and combined in each of the following comparison tables and figures.

## Service Area

The size, population and density of the service area have a significant effect on a transit agency's ability to effectively and efficiently provide transit service to an area. The table below compares the service area size, population and population density of the five communities in this evaluation. The percent of change for each category from FY 2009 to FY 2013 is shown in parenthesis.

**TABLE 21:** PEER ANALYSIS GROUP

| Transit Agency | Service Area (sq miles) | Service Area Population | Service Area Density (pop/sq mile) |
|---|---|---|---|
| Athens Transit/UGA Transit | 58 (0.0%) | 160,714 (10.8%) | 2,771 (10.8%) |
| Capital Area Transit System | 273 (-7.8%) | 388,542 (-9.7%) | 1,423 (-2.1%) |
| Charlottesville Area Transit | 38 (0.0%) | 85,755 (5.3%) | 2,257 (5.3%) |
| Star Metro | 102 (0.0%) | 162,310 (0.0%) | 1,591 (0.0%) |
| Town of Chapel Hill Transit | 62 (148%) | 80,218 (12.9%) | 1,294 (-54.5%) |

*Source: NTD Reports, RY 2009-2013*

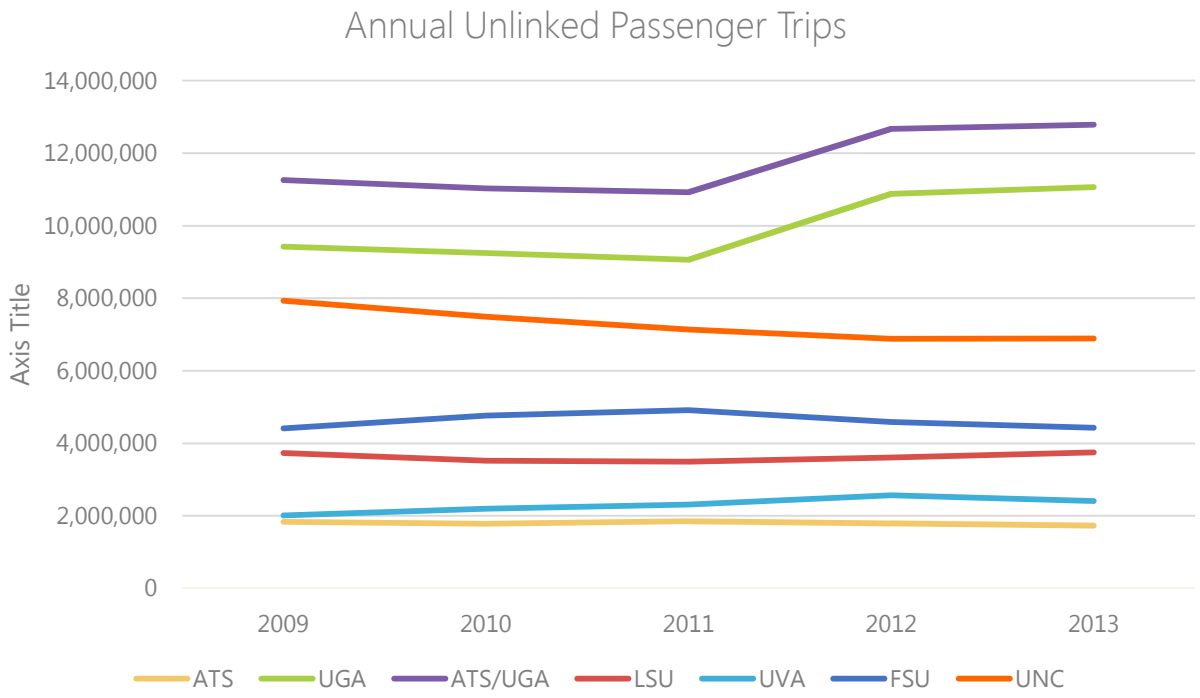
The combined Athens Transit/UGA Transit service area and population fall in the middle of the evaluation group. However, the population density for the Athens area was significantly higher than the peer agencies. The largest service area and population is located in Baton Rouge, LA with the Capital Area Transit System. This agency's service area and population are the only categories to have shrunk over the last five years. The largest growth in area and population occurred in Chapel Hill, NC. Although they more than doubled in area, the slight increase in population caused the service area population density to decrease significantly. The Charlottesville, VA and Tallahassee, FL service areas remained relatively stable over the five years of evaluation.

### Passenger Trips

Since each of the peer analysis systems provide transit service to a major university, there are a number of factors that affect the annual passenger trips, including the academic calendar, enrollment, parking policies, etc. For this report, the annual passenger trips are simply evaluated based on their change from year-to-year, regardless of the local policies that may affect them.

The figure below illustrates the FY 2013 passenger trips by agency for the peer group. The Athens Transit and UGA Transit figures are shown individually and combined for comparison to the other agencies.

**FIGURE 22**: ANNUAL UNLINKED PASSENGER TRIPS




*Source: NTD Reports, RY 2009-2013*

Individually, the Athens Transit System had the lowest annual passenger trips over the five year evaluation period, while the UGA Transit system had the highest number of unlinked passenger trips. Combined, the two systems were more than 50 percent higher than the second system out of Chapel Hill, NC. While the Athens Transit System and Chapel Hill Transit were the only two systems to experience declines in passenger trips over the last five years, Athens Transit has a modest decline of 6 percent while Chapel Hill experienced a decline of more than 13 percent. The UGA Transit system had the highest increase over the last five years; however, some of the increase was the result of improved reporting techniques by the agency.

Revenue Miles and Hours

The amount of service provided by a transit agency has a direct effect on the quality of service as well as the efficiency of the service. If an agency provides too few miles and hours, the needs of passengers may not be met. However, if an agency provides too many miles and hours, the efficiency of the service is negatively affected and may be seen as wasting limited funds. Transit agencies need to establish a proper level of service that meets the community's needs, while maintaining an efficient system. The table below compares the revenue miles and hours for each of the peer agencies to the Athens and UGA systems.

**TABLE 22:** ANNUAL REVENUE MILES AND HOURS

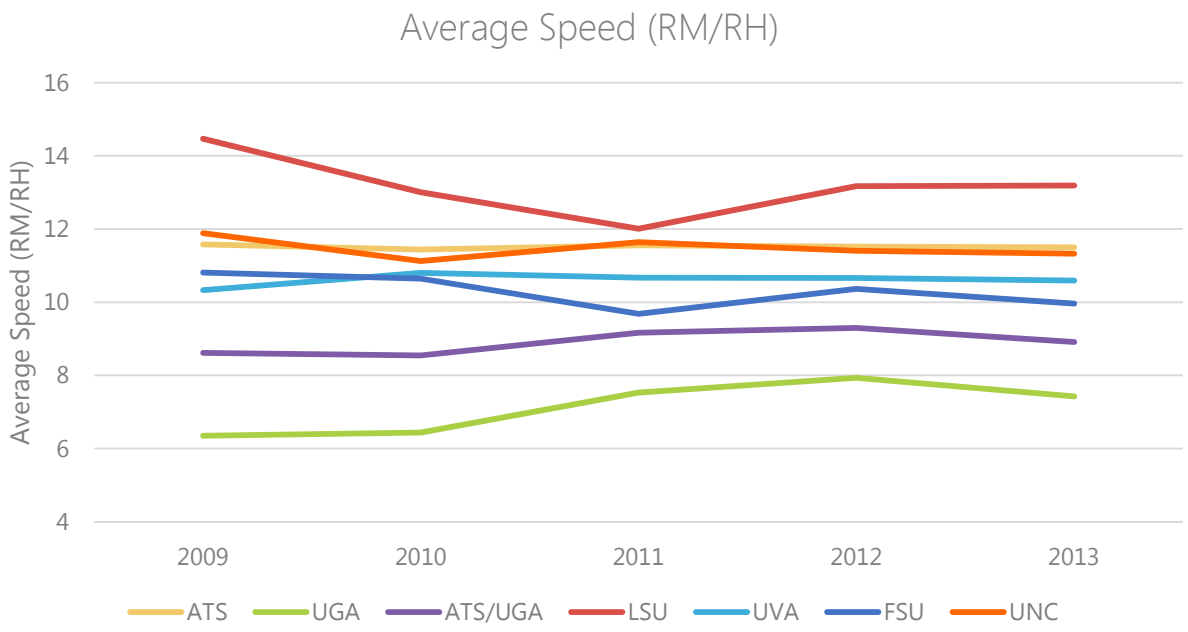
| Transit Agency | 2013 Revenue Miles | Percent Change 2009 – 2013 | 2013 Revenue Hours | Percent Change 2009 – 2013 |
|---|---|---|---|---|
| Athens Transit | 757,503 | -11.5% | 65,868 | -10.8% |
| UGA Transit | 853,644 | 38.6% | 114,959 | 18.5% |
| Athens Transit/UGA Transit | 1,611,147 | 9.5% | 180,827 | 5.8% |
| Capital Area Transit System | 1,872,863 | -16.2% | 142,014 | -8.1% |
| Charlottesville Area Transit | 941,282 | 2.3% | 88,895 | -0.2% |
| Star Metro | 2,190,520 | 11.4% | 219,965 | 20.9% |
| Town of Chapel Hill Transit | 1,759,012 | -9.8% | 155,354 | -5.3% |

*Source: NTD Reports, RY 2009-2013*

Star Metro, the transit agency with the second largest service area and population, provides the most revenue miles and hours amongst the peer agencies. The Athens and UGA transit systems, on an individual basis, provide the least amount of transit service of the group; however, the two systems combined are the median "agency" of the peer group. The Capital Area Transit System's revenue hours and miles retracted, which is consistent with the reduction in service area and population over the five year evaluation period.

As far as the effect on the quality of the service, the figure below illustrates the changes to the average speed of each of the transit agencies over the last five years.

**FIGURE 23:** AVERAGE SPEED




*Source: NTD Reports, RY 2009-2013*

Star Metro and Capital Area Transit both experienced a reduction in the average speed of their system over the last five years. Capital Area Transit had a higher reduction in revenue miles than revenue hours, while Star Metro had a higher increase in revenue hours than miles. Athens Transit and Chapel Hill Transit both saw slight reductions in the overall system speed. However, UGA Transit and Charlottesville Transit both saw increases in their system's speed. At just over 13 miles per hour, Capital Area Transit has the highest speed amongst the peer group, while UGA Transit has the lowest.

Total Operating Expense

The total operating expense for a transit agency includes all of the combined expenses incurred to operate the service. The total operating expenses include the following sub-categories:

- Operations
- Vehicle Maintenance
- Non-Vehicle Maintenance
- Administration

The operations expenses include the salaries and benefits of the vehicle operators, as well as the tires, fuel, insurance, and other elements needed to operate the revenue vehicles. Vehicle maintenance is the actual cost of maintaining the revenue vehicles including the maintenance employees, parts, and other consumable items. Non-vehicle maintenance involves the maintenance of an agency's facilities as well as the maintenance of non-revenue equipment. Administration is the category that covers the salaries of the planning and management staff, marketing, legal costs and any other cost that is not eligible for the other expense categories.

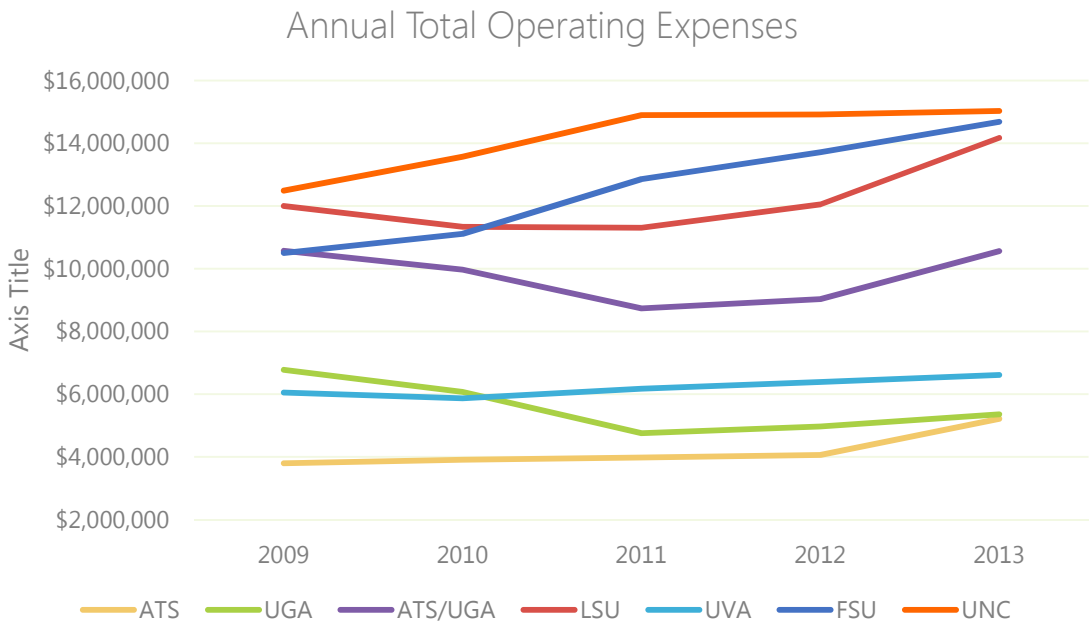
While the operations expenses are typically the largest expense for a transit agency year-to-year, an increase in any of the other sub-categories can cause an unexpected or drastic increase in the total operating costs. The figure below shows the total operating expenses for each of the transit agencies over the last five years.

It is important to note that the National Transit Database (NTD) is the recognized industry source for transit operations data, however there are known inconsistencies and errors in the published data. Despite these errors the NTD is considered the industry standard for transit system performance and peer evaluation metrics, and was therefore used in the Athens Transit Feasibility Study. Specific reporting errors were identified in the Athens Transit 2013 operating expenses, which impacts a number of other performance metrics including, but not limited to:

- Total Operating Expenditures
- Operating Expenditures by Functional Classification
- Total Operating Expenses/Revenue Mile

The Lexington Road Park and Ride Facility began operating in 2013 and a primary factor associated with the perceived operating expense increase.

**FIGURE 24:** TOTAL OPERATING EXPENSES




*Source: NTD Reports, RY 2009-2013*

Each of the transit agencies in the peer analysis group experienced an increase in their total operating costs, with the exception of UGA Transit. Star Metro had the highest percentage increase over the last five years with a nearly 40 percent increase. The UGA Transit system reduced their total operating expenses by over 20 percent during the same period.

While unavoidable at times, controlling spending in all of the expense categories is very important to the success of a transit agency. Systemic maintenance issues or substantial legal action, for example, can cause significant increases in the total operating expenses. These non-operations expenses can force an agency to reduce operations due to a lack of funding. The table below illustrates the effect that the total operating expenses have on per revenue mile and hour of an agency.

**TABLE 23:** TOTAL OPERATING EXPENSES PER REVENUE MILE AND HOUR

| Transit Agency | 2013 Cost per Revenue Mile | Percent Change 2009 – 2013 | 2013 Cost per Revenue Hour | Percent Change 2009 – 2013 |
|---|---|---|---|---|
| Athens Transit | $6.88 | 55.2% | $79.07 | 54.0%* |
| UGA Transit | $6.27 | -43.0% | $46.59 | -33.3% |
| Athens Transit/UGA Transit | $6.56 | -8.7% | $58.42 | -5.6% |
| Capital Area Transit System | $7.57 | 41.1% | $99.83 | 28.6% |
| Charlottesville Area Transit | $7.03 | 6.9% | $74.41 | 9.6% |
| Star Metro | $6.71 | 25.6% | $66.78 | 15.7% |
| Town of Chapel Hill Transit | $8.27 | 29.1% | $93.60 | 23.0% |

*Source: NTD Reports, RY 2009-2013*
**2013 ATS NTD data errors artificially inflate this value*

The UGA Transit system reduced per revenue mile and hour expenses significantly over the last five years. As mentioned earlier, their reporting standards have improved over that period and may have had some effect on the changes. However, the current per revenue mile and hour rates are significantly lower than any other agency in the group. With a spike in the FY 2013 operating expenses, Athens Transit System had the highest percentage increases in both hour and mile categories. As shown in an earlier section, the spike of more than $600,000 in the administration expense category accounts for most of the increase in total operating expenses from FY 2012 to FY 2013. Reductions in the revenue miles for Chapel Hill Transit combined with an increase in total operating expenses resulted in this agency having the highest per revenue mile cost. Similarly, Capital Area Transit has the highest per revenue hour operating expenses due to a cut in hours and increase in overall spending.

Financial Indicators

Fare revenues are affected by ridership, fare changes and contracts that a transit agency may have with the local university or other private or governmental agencies. Local and state governments control the support for transit through budgets and legislation. Depending on the support for transit in a particular area or state, the level of funding may be affected year-to-year or for long periods of time. Due to the existing formula programs, the federal funding for transit agencies has less volatility, but may vary greatly year-to-year depending on the type of expenses incurred by the agency. If an agency needs to replace a facility or revenue vehicles, the level of federal support may skyrocket one year and completely bottom out in the following years. The table below compares the FY 2013 funding levels for each of the peer agencies. The percentage of change from FY 2009 to FY 2013 is shown below each FY 2013 figure.

**TABLE 24:** PEER ANALYSIS – FINANCIAL INDICATORS FY 2013

| Financial Indicator | ATS | UGA | ATS/UGA | LSU | UVA | FSU | UNC |
|---|---|---|---|---|---|---|---|
| LOCALLY GENERATED FUNDS | | | | | | | |
| Fare Revenue (000's) | $1,878.2 (15.8%) | $6,884.1 (-16.7%) | $8,762.3 (-11.3%) | $2,136.3 (-35.6%) | $765.6 (11.5%) | $4,510.7 (17.1%) | $9,314.6 (20.0%) |
| GOVERNMENT SOURCES OF FUNDS | | | | | | | |
| Local (000's) | $2,439.6 (55.6%) | n/a[2] | $2,439.6 (55.6%) | $10,111.1 (85.1%) | $2,828.6 (-10.9%) | $9,603.4 (62.7%) | $2,001.6 (123.1%) |
| State (000's) | $252.6 (221.0%) | n/a[2] | $252.6 (221.0%) | n/a[3] | $1,164.6 (-39.8%) | $1,263.7 (30.3%) | $3,472.5 (4.6%) |
| Federal (000's)[1] | $5,665.1 (256.4%) | n/a[2] | $5,665.1 (256.4%) | $7,410.6 (19.4%) | $2,132.3 (-62.6%) | $7,106.5 (40.4%) | $11,865.7 (68.7%) |
| USE OF FUNDS | | | | | | | |
| Operations (000's) | $5,621.6 | $5,355.5 | $10,977.1 | $14,177.4 | $5,875.5 | $14,688.7 | $15,029.4 |
| Capital (000's) | $4,640.8 | $175.3 | $4816.1 | $690.8 | n/a[4] | $1,121.3 | $7,861.3 |

*Source: NTD Reports, RY 2009-2013*

*[1] Includes Capital and Urban Area Formula Program funds. The total also does not differentiate between funds spent on fixed route versus demand response.*

*[2] UGA Transit did not receive and local, state or federal funding during the last 5 years.*

*[3] Capital Area Transit received $875,729 in state funds in FY 2009, but did not receive any funds in FY 2013. In FY 2012, Capital Area Transit received $562,220 in state funds.*

*[4] Charlottesville Area Transit has not reported any capital expenditures since FY 2010. In FY 2010, Charlottesville Area Transit recorded $12, 096,887 in capital expenditures.*

Locally Generated Funds

Each of the agencies in the peer group collect fares through farebox and/or contracts. The Athens, Charlottesville Area, Star Metro and Chapel Hill transit agencies each experience an increase in their locally generated funds since FY 2009. In spite of reductions in their ridership over the five year period, Athens and Chapel Hill experienced some of the largest increases in this funding. The increase in funding for Athens is more than likely from the fare increase during the period. However, Chapel Hill Transit received a boost from other non-farebox revenues (i.e., advertising, purchased transportation contracts, etc.). Star Metro and Charlottesville Area transit agencies had increases to their locally generated funding based on a combination of increased ridership and other non-farebox revenues.

The University of Georgia and Capital Area transit systems each had a reduction in their locally generated funds from FY 2009 to FY 2013. The UGA system lost revenue even with a ridership increase of more than 17 percent. Meanwhile, Capital Area Transit had less than a 1 percent increase in ridership and lost more than 35 percent of its locally generated funds.

Government Sources of Funds

The University of Georgia Transit system was the only agency in the group to report receiving zero government funds during the 5 year evaluation period. Also, FY 2013 was the only year in which the Capital Area Transit system did not receive any state government funds. The remaining agencies received some funding at each of the 3 levels listed in the table local, state and federal.

Local government funding was up across all agencies with the exception of the Charlottesville Area Transit system. The Chapel Hill Transit System more than doubled their local funding during the five years. State funding increased substantially for Athens Transit and somewhat more modestly for Star Metro and Chapel Hill transit systems. The Capital Area and Charlottesville Area transit systems both experienced significant decreases in state funding, including a 100 percent loss of state funding for Capital Area Transit. As mentioned earlier, the federal funding is more volatile depending on the projects completed by an agency within a given year. Each of the agencies had increases in federal funding except for the Charlottesville Area Transit. Chapel Hill Transit received nearly $12 million in FY 2013.

Use of Funds

In FY 2013, the majority of the funds were spent on operations instead of capital. In total, the six agencies spent over $60 million on operations, while spending just under $15 million on capital, which equates to the group spending just over 80 percent of their funds in FY 2013 on operations. An example of how that fluctuates year-to-year, Charlottesville Area Transit, in FY 2010, spent over $12 million dollars on capital projects in one year. That agency's spending nearly equals the other five agencies spending in FY 2013. However, Charlottesville Area Transit has not spent any capital funds since FY 2010.

## Demand Response

The Americans with Disabilities Act (ADA) paratransit provided by Athens Transit operating within one mile of the fixed route service is called "The Lift." The Lift operates from 6am to 9:45pm on weekdays. A one-way fare is $3.50. The demand response system requires reservations be made at least the day before (by 5pm). Service begins at 7am on weekends. Three of the four available paratransit vehicles are in service at a time. Table 25 summarizes the indicators and performance measures based on recent agency profiles from the National Transit Database (NTD).

**TABLE 25:** DEMAND RESPONSE PERFORMANCE TRENDS

| | | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| General Indicators | Annual Passenger Miles | 47,798 | 51,672 | 53,990 | 52,976 | 42,973 |
| | Annual Vehicle Revenue Miles | 63,312 | 73,513 | 79,919 | 70,684 | 60,914 |
| | Annual Unlinked Trips | 8,485 | 9,419 | 9,478 | 9,234 | 7,848 |
| | Annual Vehicle Revenue Hours | 5,875 | 6,128 | 7,214 | 6,187 | 5,351 |
| Financial Indicators | Operating Expenses | $ 337,388 | $ 364,105 | $ 379,180 | $ 374,187 | $ 413,435 |
| | Fare Revenues | $ 17,792 | $ 24,863 | $ 24,275 | $ 29,519 | $ 26,922 |
| | Uses of Capital Funds | $ 95,256 | $ 42,515 | $ 160,000 | $ 30,287 | $ 32,371 |
| Fleet Data | Vehicles Available for Maximum Service | 4 | 4 | 5 | 5 | 4 |
| | Vehicles Operated in Maximum Service | 3 | 3 | 3 | 3 | 3 |
| | Percent Spares | 33% | 33% | 67% | 67% | 33% |
| Service Efficiency | Operating Expense per Vehicle Revenue Mile | $ 5.33 | $ 4.95 | $ 4.74 | $ 5.29 | $ 6.79 |
| | Operating Expense per Vehicle Revenue Hour | $ 57.43 | $ 59.42 | $ 52.56 | $ 60.48 | $ 77.26 |
| Cost Effectiveness | Operating Expense per Passenger Mile | $ 7.06 | $ 7.05 | $ 7.02 | $ 7.06 | $ 9.62 |
| | Operating Expense per Unlinked Passenger Trip | $ 39.76 | $ 38.66 | $ 40.01 | $ 40.52 | $ 52.68 |
| Service Effectiveness | Unlinked Passenger Trips per Vehicle Revenue Mile | 0.13 | 0.13 | 0.12 | 0.13 | 0.13 |
| | Unlinked Passenger Trips per Vehicle Revenue Hour | 1.44 | 1.54 | 1.31 | 1.49 | 1.47 |

*Source: NTD*

Figures 25 through 29 plot the trends in the data in Table 25. In recent years, the demand response system carried over 8,000 annual unlinked trips and roughly 50,000 annual passenger miles. Reflecting the usage of demand response service, these indicators increased slightly or held steady from 2009 through 2012 but dropped in 2013. According to Figure 25, the demand response service provided peaked in 2011

at around 80,000 annual vehicle revenue miles and 7,000 annual vehicle revenue hours. Figure 26 shows that both fare revenue and operating expenses have generally been increasing.

Service efficiency and cost effectiveness both decreased in 2013, reflecting higher operating expenses relative to service provided or consumed. Figure 27 shows that 2013 exceeded $6 operating expense per vehicle revenue mile and almost reached $80 in operating expenses per vehicle revenue hour. The cost effectiveness in 2013 spiked to around $10 in operating expenses per passenger mile and $50 per unlinked passenger trip. Despite these increases, Figure 29 shows the service effectiveness held constant at 0.13 unlinked passenger trips per vehicle revenue mile and just under 1.5 unlinked passenger trips per vehicle revenue hour.

**FIGURE 25:** DEMAND RESPONSE GENERAL INDICATOR TRENDS

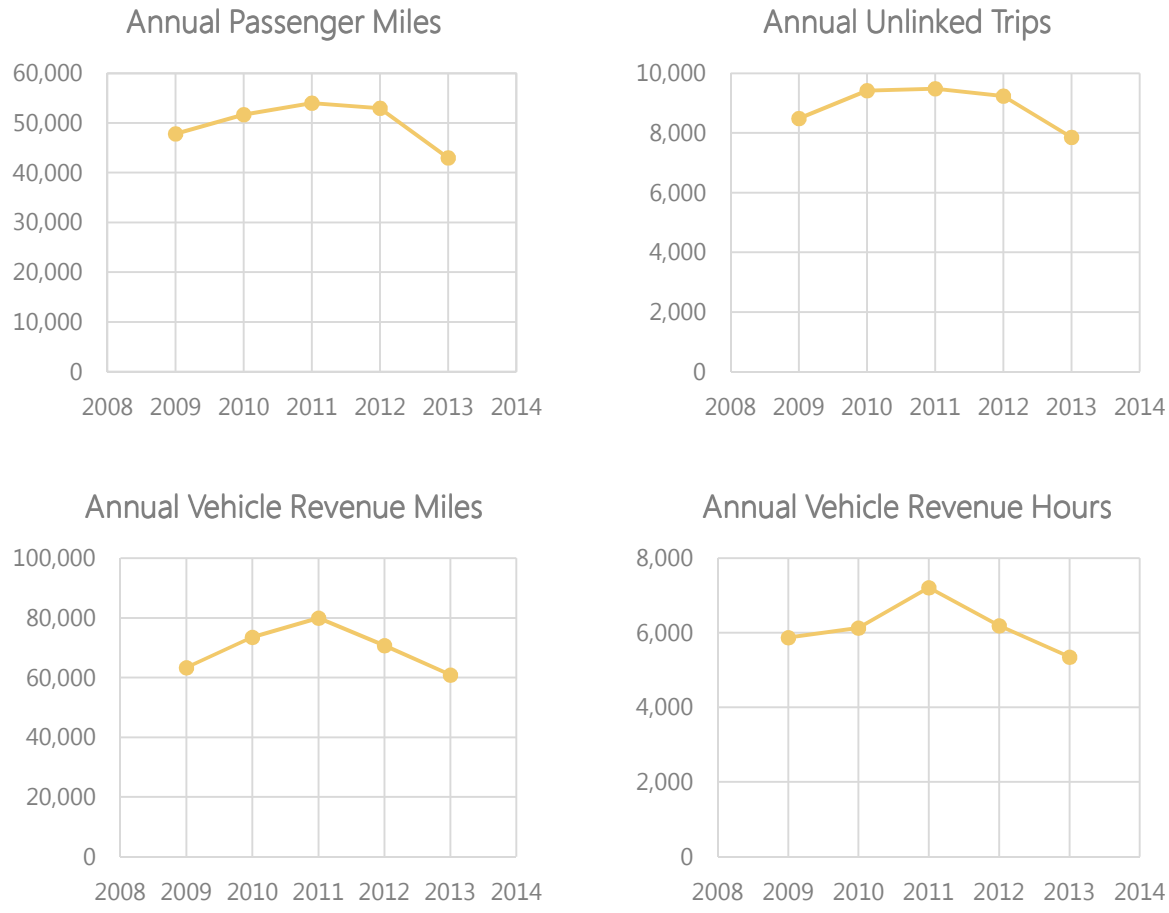


**FIGURE 26:** DEMAND RESPONSE FINANCIAL INDICATOR TRENDS

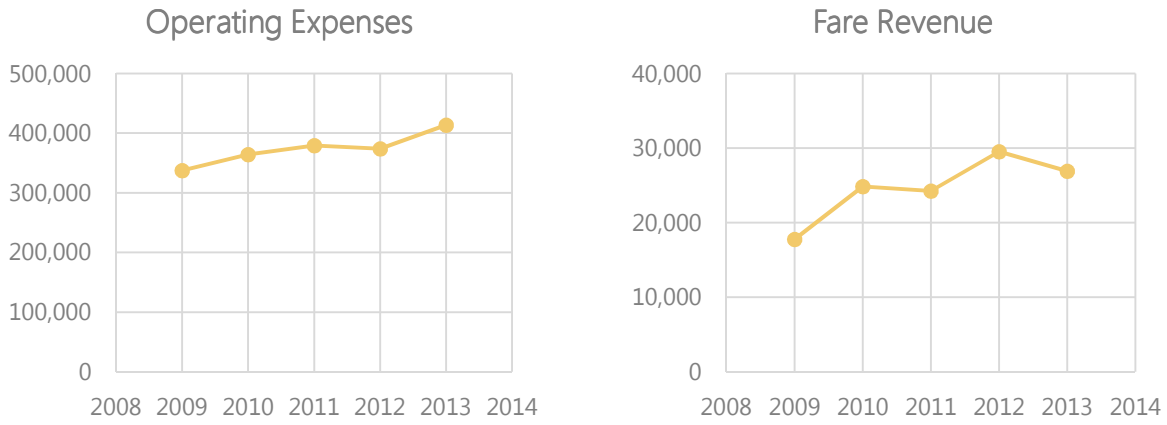



**FIGURE 27:** DEMAND RESPONSE SERVICE EFFICIENCY TRENDS

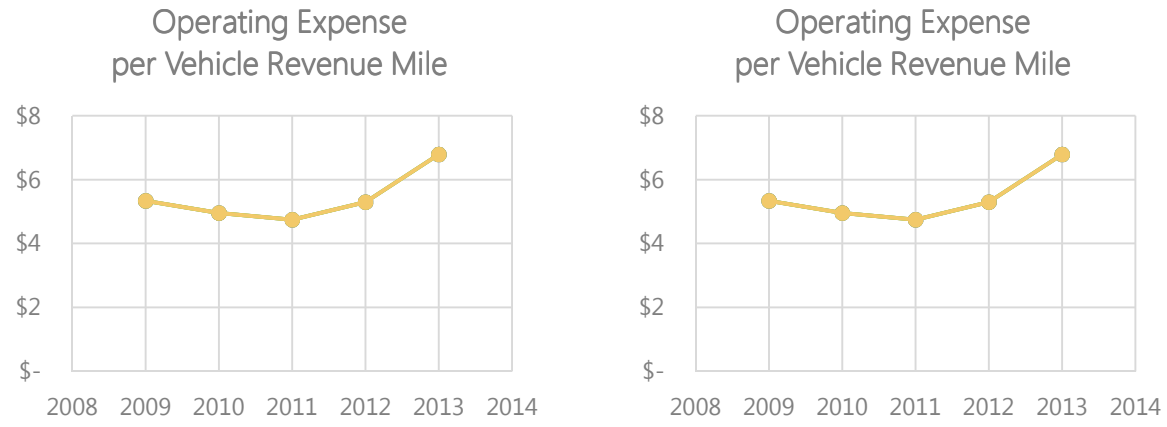



**FIGURE 28:** DEMAND RESPONSE COST EFFECTIVENESS TRENDS

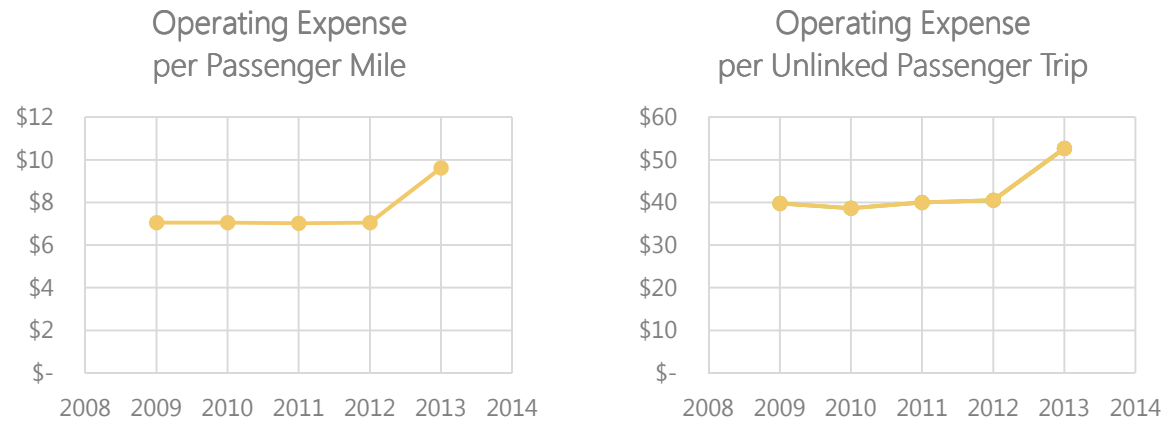
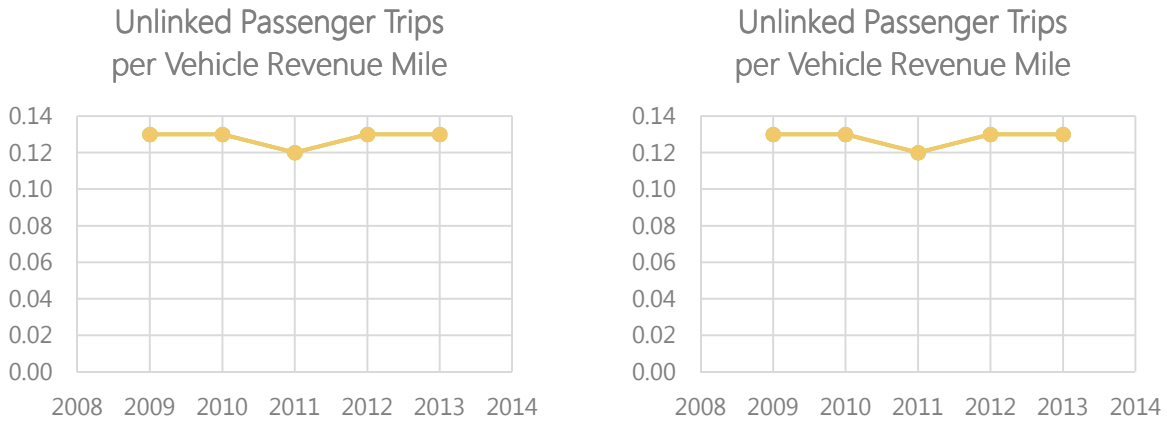


**FIGURE 29:** DEMAND RESPONSE SERVICE EFFECTIVENESS TRENDS




## *Review of Previous Plans*

### *Transit Development Plan Evaluation*

The last Transit Development Plan (TDP) for the Athens Transit System was developed in 2009. This plan had several recommendations that covered several elements of the agency's operations. The following section outlines the recommendations and their current status.

#### Fixed Route Service – "The Bus" – Frequency

In order to improve the operational efficiency and customer satisfaction, the first recommendation was to provide 30-minute headways along seven of the fixed routes. The routes included in this recommendation were:

- Route 5 – Beechwood/Baxter
- Route 6 – West Broad/Atlanta Highway
- Route 7 – Prince Avenue
- Route 9 – Macon Highway/Five Points
- Route 20 – Georgia Square Mall
- Route 25 – Lexington Road/Gaines School
- Route 26 – College Station/Barnett Shoals

At the time of the last TDP, most of these routes had an average passengers per revenue hour that exceeded 20. The only route below that figure was Route 9, which had an average of 18.45. The highest average was for Route 20, 28.05.

In addition to the actual ridership numbers, the report also outlined the number of major activity centers served by these routes, including UGA campus, hospitals, Walmart, malls, library and several apartment complexes utilized by UGA students.

At the time of this report, these routes continue to operate on 60-minute headways. With the reduction of revenue hours over the last 5 years, the cost of implementing better headways may be offset by the need to maintain the current level of transit service throughout the community.

## Fixed Route Service – "The Bus" – Consistency of Service

During the development of the last TDP, there was a finding that revenue vehicles had difficulty staying on-time during their regular service hours. Some of the on-time performance occurred at specific time points, while other issues were identified at key transfer points. The report identified some of the key factors that affected the on-time performance of the revenue vehicles, including:

- Traffic conditions;
- Road construction and maintenance;
- Schedule achievability;
- Evenness of passenger demand;
- Wheelchair lift and ramp usage;
- Bicycle attachment; and
- Route length and number of stops.

ATS Passengers Boarding – Source Athens Transit

To alleviate some of the on-time performance issues and the "bunching" of revenue vehicles at transfer points, the report recommended two strategies that could improve operational efficiency. The first recommendation is to conduct an analysis of all schedules for achievability relative to ridership and potential delay factors. The second recommendation is to evaluate and establish, where practical, bus priority treatments.

While conducting the passenger surveys in the Fall 2015, several of the surveyors noticed that certain routes seemed "rushed" and felt that bus drivers were pushing the revenue vehicles in order to make up time or to stay on time with the posted schedule.

As far as bus priority treatments are concerned, there are no priority treatments within the Athens Transit service area at the time of this report.

## Fixed Route Service – "The Bus" – Days and Hours of Service

In order to provide better access to jobs and services, this recommendation included several changes to the current service plan. While providing more service in the early morning and late evening hours, as well as on the weekend, benefits residents that have flexible or off-peak work hours, the revenue return on these additional services can be difficult for an agency to support.

At the time of the TDP development, Athens Transit provided evening service to eight of its fixed routes and Saturday service to nine of the routes. Currently, Athens Transit provides evening and Saturday service to eight fixed routes. The evening service is provided for the same eight routes as in 2009. The Saturday service was dropped for two routes that no longer run (30 and 31) and was added to Route 9.

The first recommendation under this category included adding Saturday service to Routes 7, 9 and 26. As mentioned above, Saturday service has been added to Route 9 since the last TDP.

The second recommendation was to extend evening service to midnight during the week and 11pm on Saturdays. The last run during the week starts at 9:15pm and ends before 10pm. On Saturday, many of the evening service ends after an 8:45pm run, with a limited number of routes having a 9:15pm run.

The third recommendation was to start Saturday service at 7am. Currently, the eight fixed routes with Saturday service start between 7:45am and 8:45am. Adding the additional time early in the morning on Saturday may enable more workers to utilize the service in the early morning; however, the level of ridership that early on the weekend is likely to be very low.

The final recommendation under this category was to provide 60-minute frequency for late evening and Saturday routes. With the exception of the interlining of Routes 1 and 8 with 30-minute frequency, the remaining routes provide evening and Saturday service with 60-minute headways.

Although not identified as a recommendation in the 2009 TDP, Athens Transit recently implemented Sunday fixed route service on eight routes. The service complements the already existing Saturday service and gives residents more options for completing personal errands or identifying job opportunities.

### Fixed Route Service – "The Bus" – Service Coverage Area

According to the findings of the 2009 TDP, the Athens Transit System adequately covers the low income and no-vehicle households in the Athens-Clarke County community. However, there were several recommendations that aimed to improve the efficiency and cost effectiveness of the system, as well as provide access to jobs and services while creating opportunities for public-private partnerships.

During the evaluation of the transit service area, it was determined that the current system does cover the areas of the community with the highest propensity for transit use. A potential area for future expansion north of the current service area was also identified due to its high propensity for transit use.

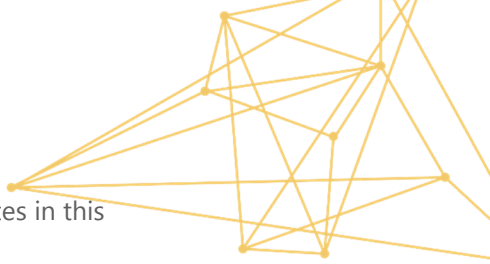
The first recommendation in this category identified Route 6A West Broad/Brooklyn for discontinuation. The route was under-performing and duplicated most of the current Route 6 stops. Since the last TDP, Route 6A has been discontinued and the recommended deviation to add stops at or near the Pauldoe Community Recreation Center and the Athens-Clarke County Health Department were added to Route 6.

The next recommendation involved the restructuring of Route 8. The reasons for the restructure included low performance and inefficiency. Based on the current route map, Route 8 has received some minor modifications, especially the elimination of routing west of Chase Street along Nantahala Avenue and Boulevard Street. With the modifications to this route, the passengers per revenue mile and passengers per revenue hour have increased by 16.5 and 4.7 percent, respectively.

The third recommendation also involved a route modification. In 2009, Route 24 ended at Athens Technical College in the northeast portion of the service area. The TDP recommended extending the route to include several industrial sites. Since the recommendation was made, the route has been extended up to Hull Road. Comparing FY 2015 statistics to the 2009 TDP, Route 24 has improved its passengers per revenue hour slightly and its passengers per revenue mile have remained constant.

The fourth recommendation in this category recommended the elimination of the two circulator routes, 30 and 31. They were a peak hour van service that operated between the Georgia Square Mall and several residential communities. The ridership was very low on both of these routes. The routes were discontinued sometime after the 2009 TDP was published.

The final recommendation for the fixed route service improvements involved reducing the "loops" from several routes and replacing them with more two-way routing. These changes would reduce the travel



times on the routes and make more efficient use of the agency's assets. The routes in this recommendation included:

- Route 5 – Beechwood/Baxter
- Route 7 – Prince Avenue
- Route 8 – Barber/Garnett Ridge
- Route 25 – Lexington Road/Gaines School
- Route 26 – College Station/Barnett Shoals

Routes 5 and 7 have not been changed from the TDP in 2009 to the present route maps. The changes to Route 8, as mentioned earlier, did not have an effect on the "loop" issue identified in this recommendation. Routes 25 and 26 were significantly modified since the TDP report, but the changes did not alleviate the "loops".

### Paratransit Service – "The Lift"

The 2009 TDP reported no recommended changes for the paratransit service. The current service has experienced a steady decline of the last decade and continues to do so. This decline indicates that the fixed route transit service is meeting the needs of the disabled community with its current service.

### Rural Circulator/Demand Response Service – "The Link"

"The Link" provides route deviation service in the rural areas of the community with two accessible vans. There are no recommendations for changes to the current service. Since the development of the last TDP, Athens Transit has discontinued "The Link" service.

## *Other Plan Evaluation*

In addition to the Transit Development Plan, the findings and recommended capital and operational improvements of several other recent plans are reviewed.

### MPO Long Range Transportation Plan

The 2040 MACORTS Long Range Transportation Plan (LRTP) approved in 2014 describes current transit service in Athens-Clarke County, as well as possible future needs.

#### Athens Transit System

The LRTP describes the background and existing services of the Athens Transit System, including the $2.7 million park and ride lot at the interchange of Lexington Road and SR 10 Loop that opened in 2013. Improving headways to five or 10 minutes is stated as a goal of Athens Transit System. The report cites recent requests to expand Athens Transit System to serve nearby counties, which led to the *2009 Public Transportation Study for the MACORTS Region* (see below).

The fixed route ridership decrease in 2011 was partially attributed to the slow economic recovery, to UGA's free bus service to the Prince Avenue Health Sciences Campus corridor, and to increasing numbers of apartment community shuttle services. In addition, the report mentions the move of some medical facilities to adjacent counties outside Athens Transit System's fixed route service area has shifted some trips to Georgia Department of Human Services contractors.

Beyond the Multi-Modal Transportation Center (MMTC), the report indicates that other future remote transfer systems will be needed. The Bus Stop Improvement Program, funded through SPLOST 2005 and SPLOST 2011 greatly improved stops.

The LRTP notes the 37 year old Maintenance and Storage Facility will need to be replaced soon (for $20 million). Fare increases were noted in 2009, 2010, 2012, and 2014.

Athens Transit System used biodiesel from 2006 to 2008. Alternative fuels, such as biodiesel, can promote cleaner air and better environment. Biodiesel can reduce some forms of emissions compared to conventional diesel[8]. In addition, biodiesel can fuel vehicles without introducing new carbon into the atmosphere from fossil fuels by recirculating carbon already in circulation. According to the LRTP, biodiesel became cost-prohibitive in 2008.

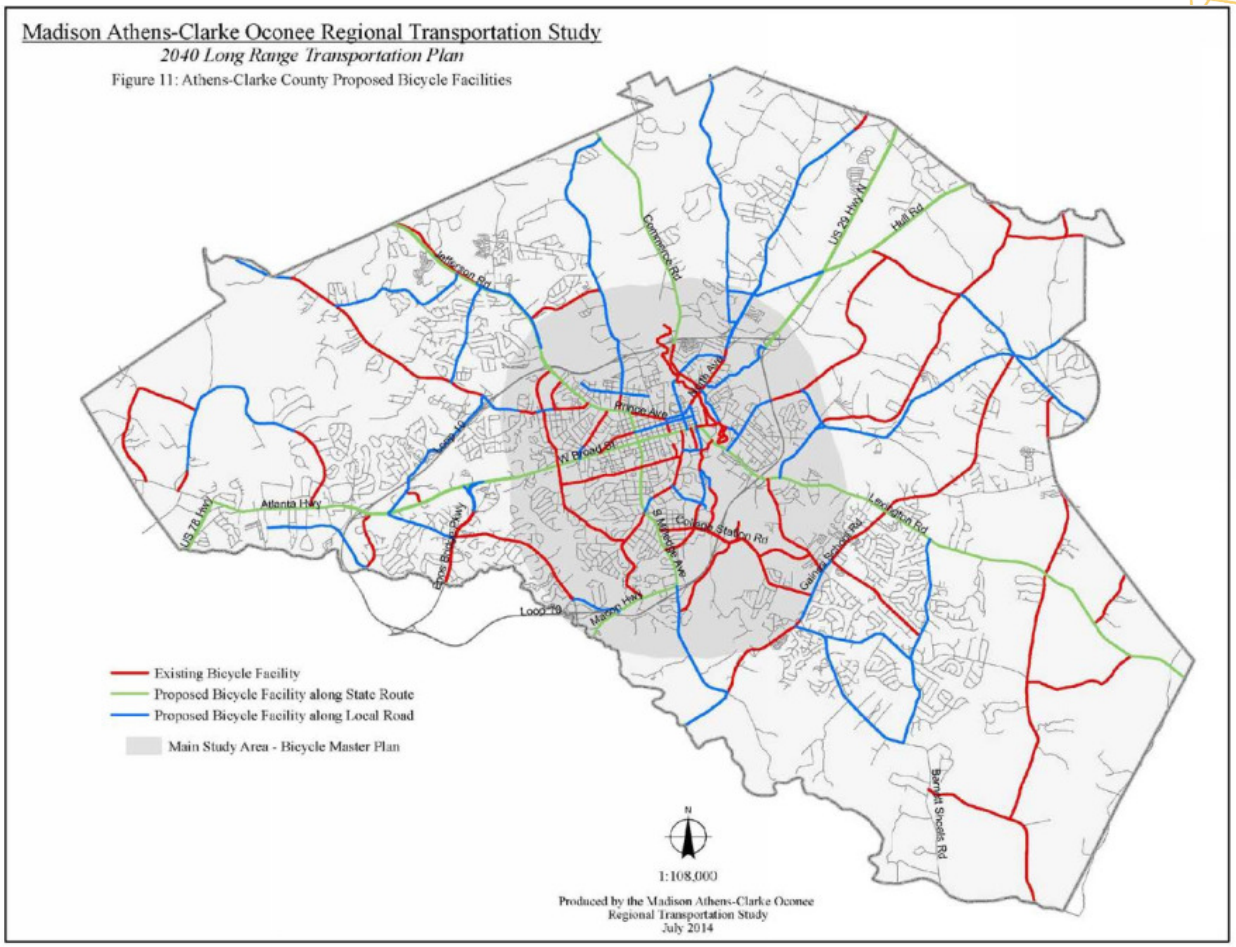
UGA Transit

The LRTP describes UGA's transit system, including its ten daily routes, four night routes, one overnight route, one weekend route, and fleet of buses and minivans. UGA started using biodiesel in 2007 and stopped using it in 2008 due to "operational factors." The study notes the limited parking supply on campus. Despite some usage as a charter service, the study notes "with service requirements growing and the direct expense to students increasing, the UGA Campus Transit System may be in search of other funding sources in the future."

The 2040 Long Range Transportation Plan also includes proposed bicycle facilities along both state routes and local roads (see Figure 30). The proposed facilities would connect the existing bicycle facility segments. The facilities proposed along state routes include the major radial routes through the county. Proposed local bicycle facilities include both enhancements within the core of Athens and other outlying connections.

[8] *A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions, Draft Technical Report, Environmental Protection Agency, October 2002.* http://www3.epa.gov/otaq/models/analysis/biodsl/p02001.pdf

**FIGURE 30:** 2040 LRTP PROPOSED BICYCLE FACILITIES




## Comprehensive Plan

The July 1, 2008 revision to the Community Assessment of the 2006 *Athens-Clarke County and the City of Winterville Comprehensive Plan* contained the following transit-related potential issues and opportunities:

- The Transit System and routes should continue to be evaluated and revised in order to provide the most relevant and efficient service to our community.
    - To meet the continued needs and demands generated by development, it will become necessary for the transit system to expand and modify its existing routes. Continued effective and efficient management of the transit system will ensure that revenues received along with federal and state assistance will allow the transit system to fully utilize its resources. As environmental and road capacity issues become more of a regional issue, transit's role will increase as people become more aware of their role in reducing these regional concerns.

      In late 2005, a Transit Development Plan (TDP) was completed for the Athens Transit System. This Plan evaluated the overall effectiveness and efficiency of the transit system and made recommendations regarding the future operation of the system. Recommendations included route modifications, extended service hours, use of 'superstops', and the possible inclusion of Park and Ride lots.

- Expansion of Transit Services will benefit Athens-Clarke County
    - The Athens Transit System is unable, at this time, to serve all of Athens-Clarke County predominantly due to budget constraints. The TDP addresses expansion of services into more of Athens-Clarke County. As these improvements are made to ATS service, this issue will lessen. The Athens Transit System has been filling some of the gaps in service using the 5311 funding to provide "The Link" service – county wide demand response. As this service is new, the effectiveness of this program is still under consideration.
- Availability to transit, both at the time of construction and accommodations for transit access in the future, should continue to be a factor in new development.
    - Transit is now included in the Plans Review process to ensure that developments integrate transit amenities into their design were feasible. This ensures that present development is transit-friendly if not transit oriented. Recently, the Athens Transit System and MACORTS developed the Transit Development Plan as a foundation for improvement to the Transit System and to encourage looking at transit as part of the 'bigger picture' of development in Athens-Clarke County.

### Human Service Transportation Plan

The Northeast Georgia Regional Commission's 2012 *Northeast Georgia Rural and Human Service Transportation Plan* presented key findings for the Northeast Georgia region outside of Athens.

- Regional key activity centers are poorly served by transit.
- The region's employers, particularly outside of Athens, are poorly served by transit.
- Development is occurring primarily in places that transit does not currently serve.
- Technical and higher education institutions and students need additional transportation options.
- Students and Universities/Colleges outside of Athens have few transportation choices.
- Demographic analysis presents a clear need for additional transit service across all rural ridership groups, including:
    - Seniors - Increase to 18% of region's population by 2035
    - Low-income households – regional average is 18% of population
    - Disabled persons – 18% of the region's population
    - Persons without vehicles – about 7% of the regional population

### Public Transportation Study

The 2009 *Public Transportation Study for the MACORTS Region* evaluated options for extending transit service into Madison and Oconee Counties. Existing services are provided by "Georgia Department of Human Resources" demand response van service and the Oconee County Senior Center, the study notes.

The study noted the demographic makeup of the two counties to be fairly similar, except for the urban-rural population split within each county is dramatically different, with Madison County 96% rural and Oconee 50% rural. Relative concentrations of populations likely to ride transit (elderly, youth, persons below the poverty line, persons with a mobility limitation, and households with no vehicle available) were often found to be outside the portions of the counties within the MPO area. Stakeholder engagement reflected desire for transit service from Madison and Oconee Counties into downtown Athens and between Athens and Atlanta. However, desire to financially support a transit service was not abundantly

apparent. The study notes that Oconee and Madison Counties do not participate in the 5311 program although they are eligible.

After studying peer regions, the study presented three options to capture potential riders: increased vanpool/rideshare coordination, a demand response system, and a fixed route system. A four-vehicle demand response system was estimated to cost $4.4 million to acquire and operate for the first five year period. The fixed route system would be comprised of one route serving Oconee County from downtown Athens and a second route serving Madison County from downtown Athens with a total capital and operating cost of $6 million over the first five year period.

### Athens-Clarke County Bicycle Master Plan

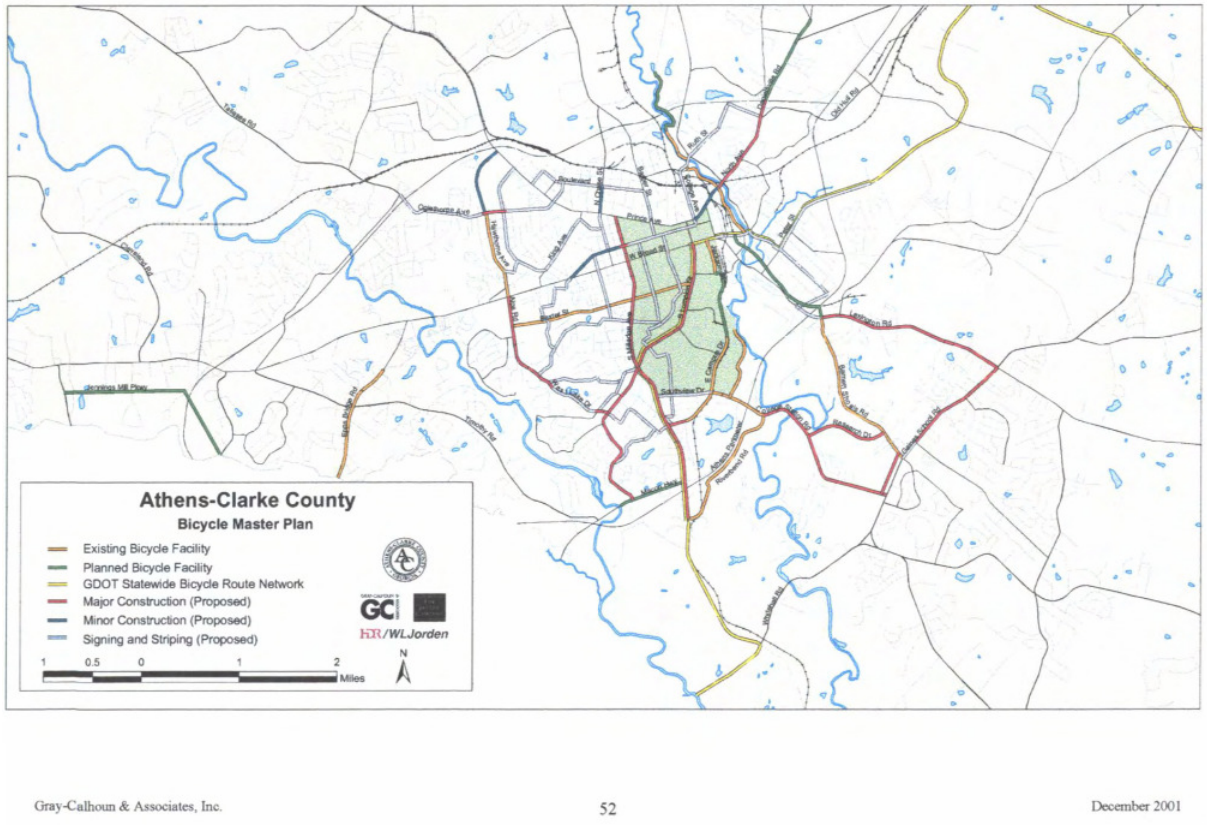
The 2001 *Athens-Clarke County Bicycle Master Plan* assessed the then-existing bicycle and roadway facilities, engaged stakeholders, studied travel patterns, identified corridors, and recommended improvements. The study area was focused within a three-mile radius of the downtown Athens. Improvements were grouped into three tiers reflecting the intensity of improvement needed: major reconstruction, minor construction, or signing and striping improvements. The recommended menu of improvements could then be built as funding allowed. Recommendations were made based on stakeholder engagement and bicycle level of service (BLOS) performance. BLOS took into account number of lanes, traffic, posted speed limit, width of pavement, and pavement condition.

Corridors identified included:

- Barnett Shoals Road / Gaines School Road
- College Station Road Major widening. Bicycle
- Milledge Ave. Major. Minor, Signing
- Southview Drive
- Lumpkin Street
- Alps Road/West Lake Drive
- Oglethorpe Ave
- Prince Ave
- Hancock Ave
- Chase Street
- E. Campus Drive
- Hawthorne Ave
- Lexington Road between Gaines School Road and Barnett Shoals Road
- Research Road
- North Avenue
- Lexington Road between Barnett Shoals Road and E. Broad Street (rails-to-trails corridor)

Figure 31 depicts the composite of existing, planned and recommended routes and improvements; many, but not all, of the recommendations have been implemented.

**FIGURE 31:** COMPOSITE EXISTING, PLANNED AND RECOMMENDED ROUTES/IMPROVEMENTS




*Source: Athens Clarke County Bicycle Master Plan*

## 2011 University of Georgia Bicycle Facility Study

The University of Georgia conducted a Bicycle Facility Study in 2011 as a precursor to a comprehensive campus bicycle masterplan. The study included a series of specific recommendations for bicycle facilities along Stanford Drive, Baldwin Street, Cedar Street, and Carlton Street. Establishing bicycle lanes along these variable-width roads was recommended. To accommodate bicycle lanes within the constrained right-of-way, the study examined conversion of two-way streets to one-way, which would require rerouting UGA Transit. Other transit-related recommendations included reducing conflicts between bicycles and buses by removing bus bays at bus stops and instead replace them with in-street bus zones to discourage overtaking.

# Current Demand and Service Assessment

## *Fixed Route Ridership Survey*

A survey of the entire Athens Transit System was conducted the week of October 26, 2015. The survey was conducted over three days with the assistance of UGA students and consultant staff members. The surveys for each route were broken into manageable blocks of time to meet the student's needs and to emulate the changes to the route schedules that take place in the evenings. The following section summarizes the results of that survey.

### *Ridership by Route*

The survey was conducted Monday, Tuesday and Wednesday of the last week in October. The University of Georgia was in session at the time of the survey. The weather was cool and rainy; however, the total results were in line with the system's daily averages throughout the school year.

The table below summarizes the ridership counts for each of the ATS fixed routes.

**TABLE 26:** SURVEY PASSENGER COUNTS

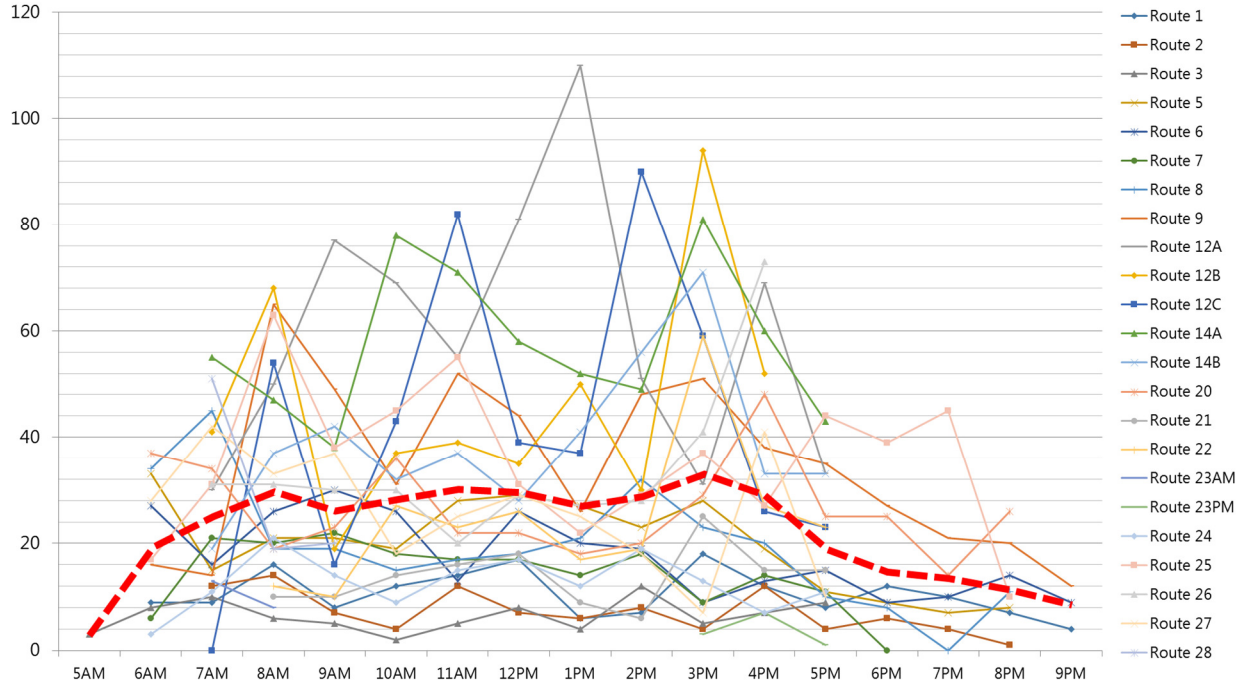
| Route | Total Boardings | Boarding per Hour | Peak Boardings | Peak Run |
|---|---|---|---|---|
| 1 North Avenue | 148 | 22.7 | 18 | 3:15 pm |
| 2 East Athens | 96 | 16.0 | 14 | 8:15 am |
| 3 East Athens / North Side | 84 | 12.9 | 12 | 2:45 pm |
| 5 Beechwood/Baxter | 274 | 21.1 | 29 | 12:45 pm |
| 6 West Broad/Atlanta Highway | 249 | 18.4 | 30 | 9:45 am |
| 7 Prince Avenue | 187 | 15.6 | 22 | 9:15 am |
| 8 Barber/Chase Garnet Ridge | 273 | 21.0 | 45 | 7:45 am |
| 9 Macon Highway Five Points | 496 | 38.2 | 65 | 8:15 am |
| 12 Riverbend | 1,646 | 50.3 | 94 | 3:05 pm |
| 14 East Campus/South Milledge | 1,061 | 48.2 | 78 | 10:25 am |
| 20 Georgia Square Mall | 333 | 25.6 | 48 | 4:45 pm |
| 21 West Athens/Ultimate Drive | 138 | 13.8 | 25 | 3:15 pm |
| 22 East Athens/Highland Park Drive | 243 | 23.1 | 59 | 3:15 pm |
| 23 Oconee St Park and Ride | 32 | 7.5 | 7 | 7:18 am |
| 24 Athens Tech | 152 | 25.3 | 21 | 8:45 am |
| 25 Lexington Road/Gaines School | 457 | 35.2 | 63 | 8:15 am |
| 26 College Station Barnett Shoals | 340 | 28.3 | 73 | 4:45 pm |
| 27 Barnet Shoals/Cedar Shoals | 313 | 24.1 | 42 | 7:45 am |
| 28 College Station / Campus Express | 90 | 36.0 | 37 | 7:40 am |
| | | | | |
| 105 North Avenue/Barber Chase | 40 | 13.3 | 11 | 8:45 pm |
| 205 East Athens/W. Broad Brooklyn | 42 | 14.0 | 14 | 8:15 pm |
| 505 Beechwood/Baxter | 24 | 8 | 9 | 6:45 pm |
| 905 Macon Highway | 53 | 17.7 | 21 | 6:45 pm |
| 2005 GA Square Mall | 65 | 21.7 | 26 | 8:45 pm |
| 2505 Lexington Road | 76 | 25.3 | 45 | 7:45 pm |

*Source: On-board survey, October 2015*

The highest performing routes in terms of total ridership and per revenue hour are Routes 12 and 14, which that serve the UGA campus. While most of the remaining routes are performing well, there are three routes that have less than 15 passengers per revenue hour on average. Routes 3, 21 and 23 have the lowest average passengers per revenue hour for the day time service.

In the evening service, half of the six routes fall below 15 passengers per revenue hour. Routes 105, 205 and 505 fall behind the other evening routes in this average, as well as the total ridership. Figure 32 shows the total ridership by route throughout the day. This graph further demonstrates the routes that are performing well and those that are carrying significantly lower passenger volumes. The red dashed line denotes that the cumulative ridership for the system does not experience traditional peak and off-peak service cycles.

**FIGURE 32:** SURVEY PASSENGER COUNTS: PERFORMANCE BY ROUTE AND TIME




*Source: On-board survey, October 2015*

## *Ridership by Stop*

Another way to assess the results of survey is to examine the most frequently used stops along the routes. This information is valuable in the selection of locations for future bus stop shelters and other amenities. While the Multi-Modal Transfer Center and the UGA Arch are the main transfer points for multiple routes and vehicles, there are several other stops that are used by a lot of passengers on the system. The following table outlines the most popular stops along each of the fixed routes, not including the MMTC and UGA Arch.

**TABLE 27:** HIGHEST USE BUS STOPS

| Route | Stop Description | Peak Time Period |
|---|---|---|
| 1 North Avenue | North Ave at APEX Express | Midday |
| | Fowler at Freeman Drive | Morning |
| 2 East Athens | Cone Drive at Zebulon Drive | Morning |
| 3 East Athens / North Side | Cone Drive at Zebulon Drive | Afternoon |
| 5 Beechwood/Baxter | Baxter Street at Dudley Street | Midday |
| | Prince Ave at Athens Regional | Morning |
| 6 West Broad/Atlanta Highway | Camelia Drive at midblock Gardenia Drive and Broad Street | Morning |
| 7 Prince Avenue | Baxter Street at Dudley Street (ACC Library) | Midday, Afternoon |
| 8 Barber/Chase Garnet Ridge | Ruth Street at Magnolia Bluff Drive | Afternoon |
| 9 Macon Highway Five Points | Timothy Road at Riverwalk Townhomes | Morning, Midday |
| | Macon Highway at River Club Apartments (office) | All day |
| 12 Riverbend | Riverbend Parkway at Players Club Apartments | All day |
| | College Park Apartments at Entrance On Property | All day |
| 14 East Campus/South Milledge | S. Milledge Ave at 2170 S. Milledge Ave | All day |
| | Lakeside Drive at Building A #1 | All day |
| 20 Georgia Square Mall | West Broad Street at North Newton Street | Afternoon |
| | Georgia Square Mall (main entrance) | All day |
| 21 West Athens/Ultimate Drive | Laurel Ridge | Midday |
| 22 East Athens/Highland Park Drive | International Drive at Polo Club Apartments | Midday, Afternoon |
| | International Drive at Reserve Apartments | Midday, Afternoon |
| 23 Oconee St Park and Ride | Park and Ride Lot | Morning |
| 24 Athens Tech | Old Hull Road at Athens Tech First Stop | All day |
| 25 Lexington Road/Gaines School | Lexington Road at Walmart Store Entrance | Midday, Afternoon |
| | International Drive at Polo Club Apartments | Morning |
| | International Drive at Reserve Apartments | Morning |

Table continued on next page

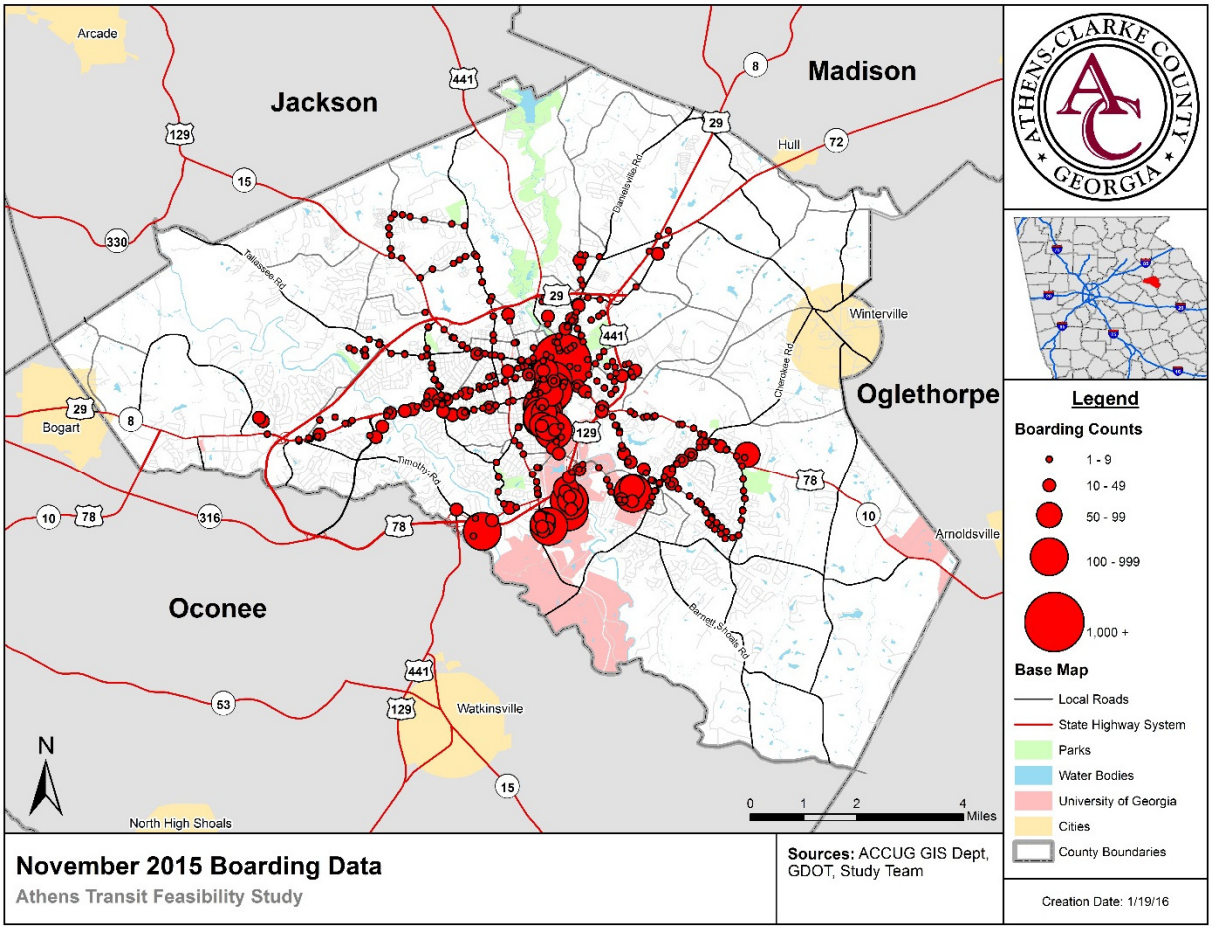
| Route | Stop Description | Peak Time Period |
|---|---|---|
| 26 College Station Barnett Shoals | International Drive at Polo Club Apartments | Midday, Afternoon |
| | International Drive at Reserve Apartments | Midday, Afternoon |
| 27 Barnet Shoals/Cedar Shoals | Lexington Road at Walmart Store Entrance | Midday, Afternoon |
| 28 College Station / Campus Express | International Drive at Polo Club Apartments | Morning |
| | International Drive at Reserve Apartments | Morning |
| 105 North Avenue/Barber Chase | n/a | n/a |
| 205 East Athens/W. Broad Brooklyn | Abbey West Apartments | Evening |
| 505 Beechwood/Baxter | n/a | n/a |
| 905 Macon Highway | Macon Highway at River Club Apartments (office) | Evening |
| 2005 GA Square Mall | Atlanta Highway at Buernstein Funeral | Evening |
| 2505 Lexington Road | Lexington Road at Walmart Store Entrance | Evening |

*Source: On-board survey, October 2015*

There are several bus stops that rank as the highest use throughout the system that are used by multiple routes. For the purpose of identifying future bus shelter locations, this information can be used to rank the priority of those shelters.

Figure 33 demonstrates the boarding and alighting performance for all Athens Transit stops.

**FIGURE 33:** SURVEY PASSENGER COUNTS



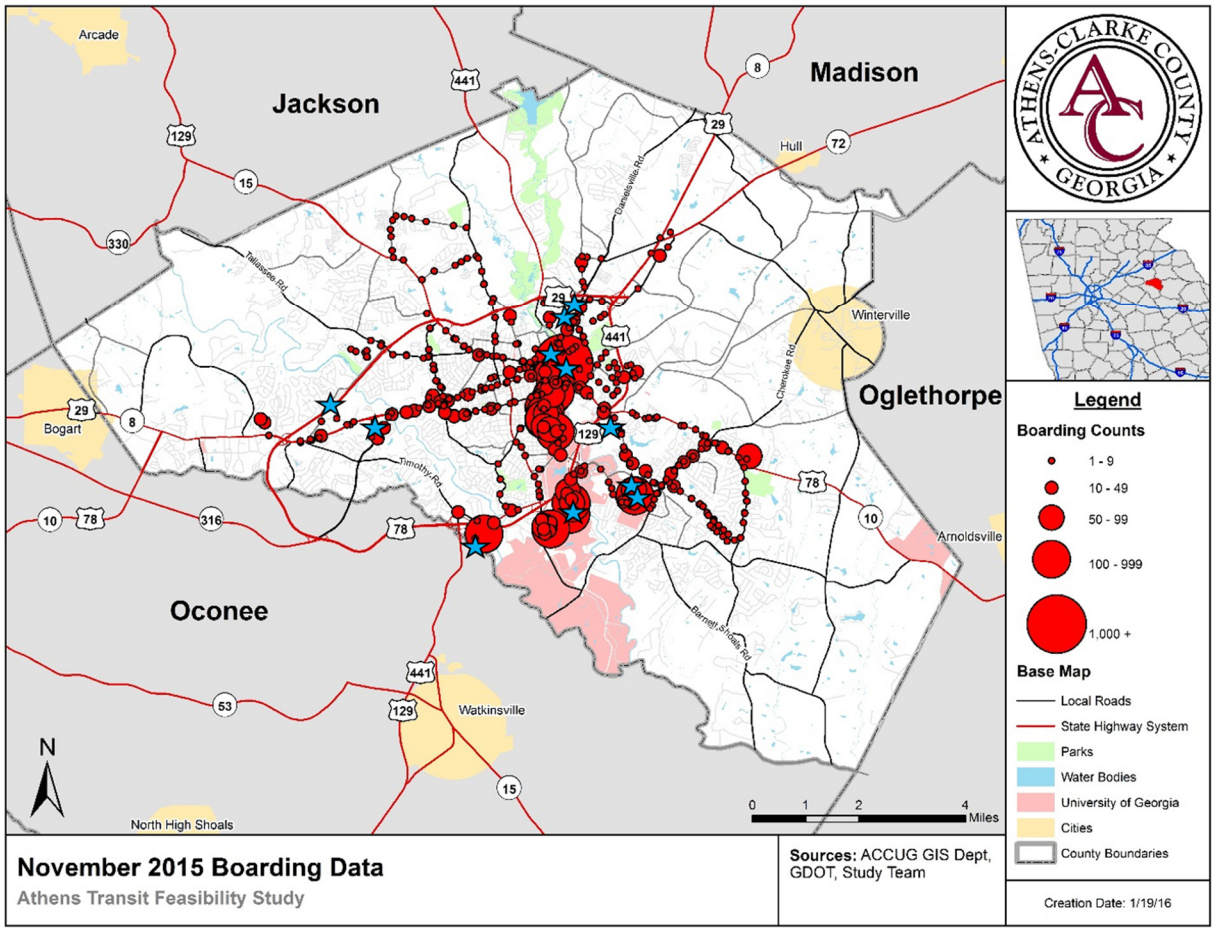

## *Private Apartment Complex Shuttle Systems*

In the *Service Providers* overview chapter of this analysis, apartment shuttle services were described in detail, which includes 11 private providers. Athens Transit staff and study stakeholders identified these private service providers as possible competitors to the fixed route transit system. These providers offer free shuttle trips as an amenity to residents of their property. The primary destinations for these shuttles includes the University of Georgia campus and downtown Athens. Due to the private operation of these systems, trip data is not reported to the National Transit Database (NTD) and therefore not available for analysis.

In order to determine the potential impacts that these providers have to the overall ridership potential for the fixed route service providers in Athens-Clarke County, the study team utilized the boarding and alighting survey data to map the service activity in comparison to these shuttle service locations. The following exhibit shows that while all of the apartments offering shuttle services are located within the Athens Transit service area, nine of these providers are cited along routes that experience the highest ridership. The public survey responses correlated to these service areas identify overcrowding and bus frequency as two primary factors that need to be addressed. Based on the results of the analysis, the

shuttle service providers are providing a service that complements the Athens Transit fixed route service by supplementing service where demand is exceeding the current capacity at peak service hours.

**FIGURE 34: APARTMENT SHUTTLES AND SURVEY PASSENGER COUNTS**




As Athens Transit continues to analyze and implement service modifications, close coordination with existing and future shuttle service providers should be conducted.

## PUBLIC PARTICIPATION

The Athens Transit Feasibility Study Public Outreach Program was implemented to educate the public on the project, as well as to gather travel behavior data from both transit and non-transit users. The data gathered were used to gain a better understanding of how transit services are being used and identify opportunities for service adjustments within the Feasibility Study. The public participation program for the study included a variety of methods to seek input and provide information about the study, including public meetings, presentation, educational handouts, interactive service maps, and a public survey. The Public Participation Strategy memorandum and program results are included as Appendix A of this report.

### *Public Survey*

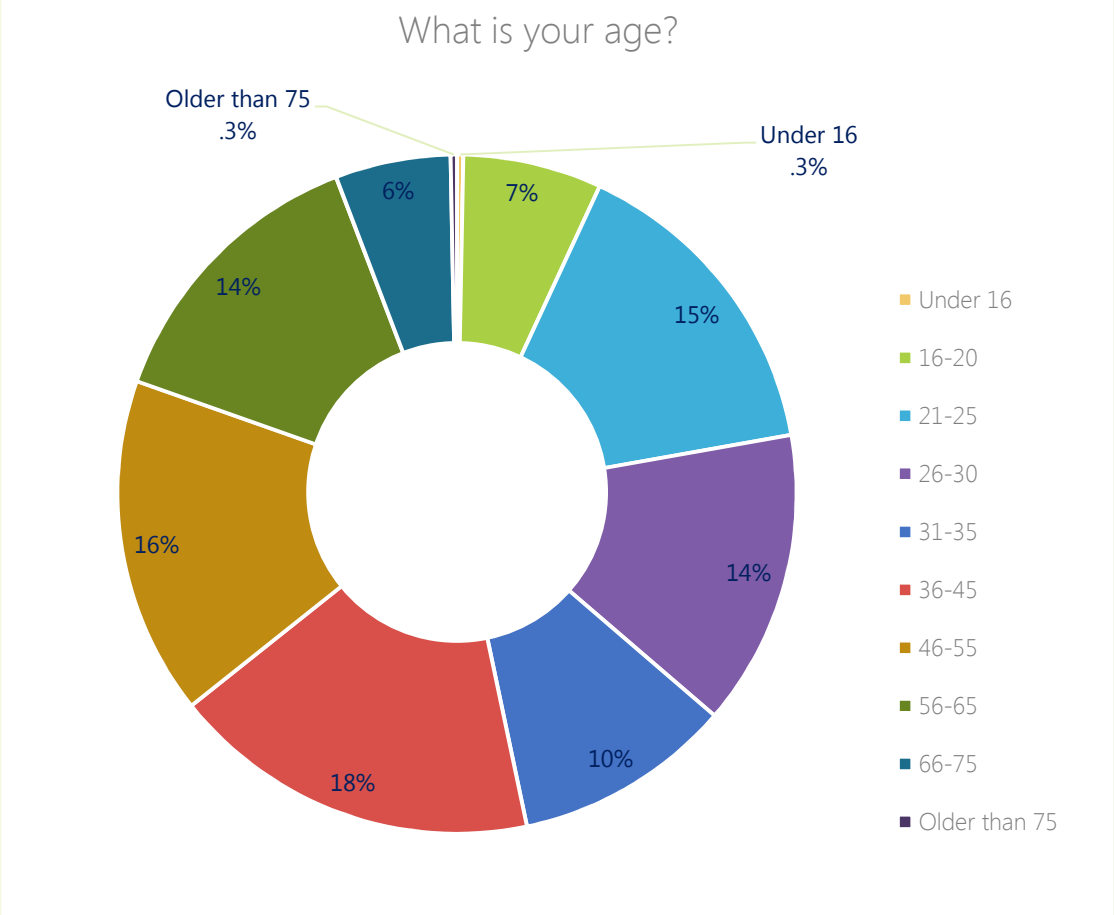
Survey Monkey was used to create a survey that collected information from both riders and non-riders. The survey was open from February 2, 2016 until March 7, 2016 and was available in both English and

Spanish. Approximately 400 surveys were completed over the 35 day period and represented 58 percent current transit riders versus 42 percent non-riders. The results of the survey were analyzed the respondents trips by type and purpose, origins and destinations, frequency of use, rider demographics, customer satisfaction, and opportunities for service expansion/modification.

## Demographics

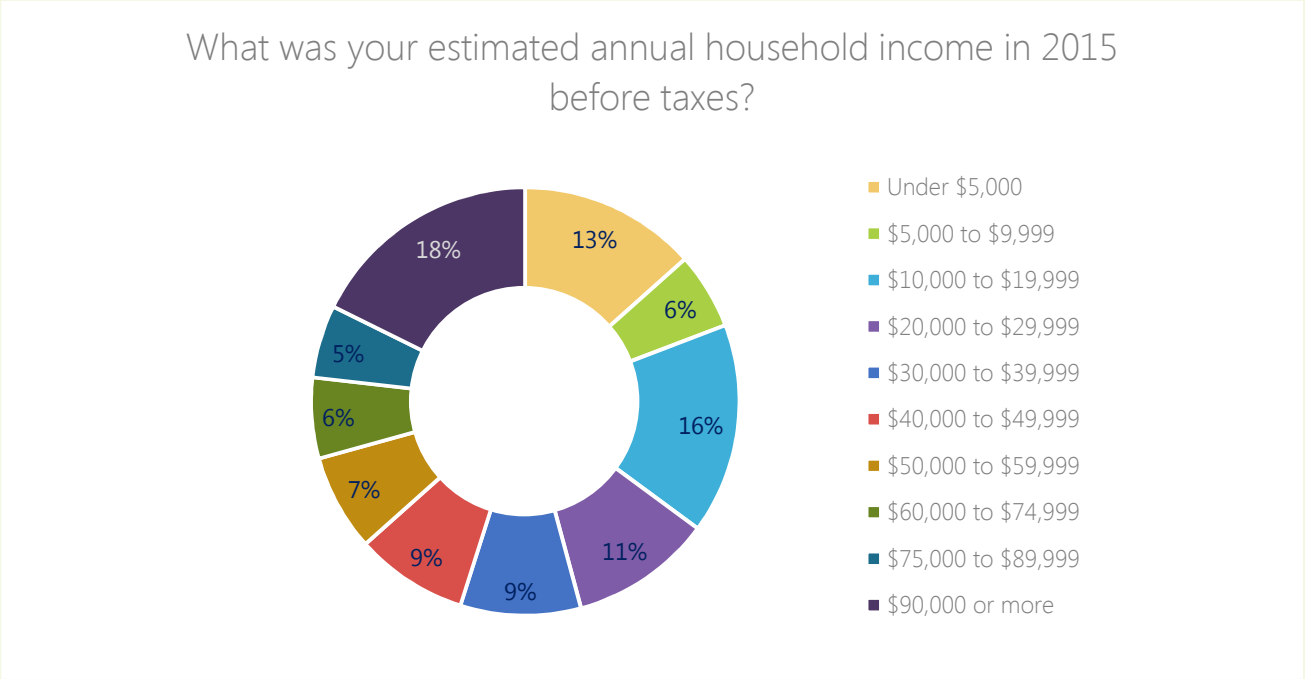
The survey respondents were very well rounded and included representatives from every age classification ranging from "under 16" to "older than 75". The largest percentage of respondents were between the ages of 36 – 55. The figure below demonstrates the percentage of respondents by age.

FIGURE 35: PUBLIC SURVEY RESPONSES - DEMOGRAPHICS



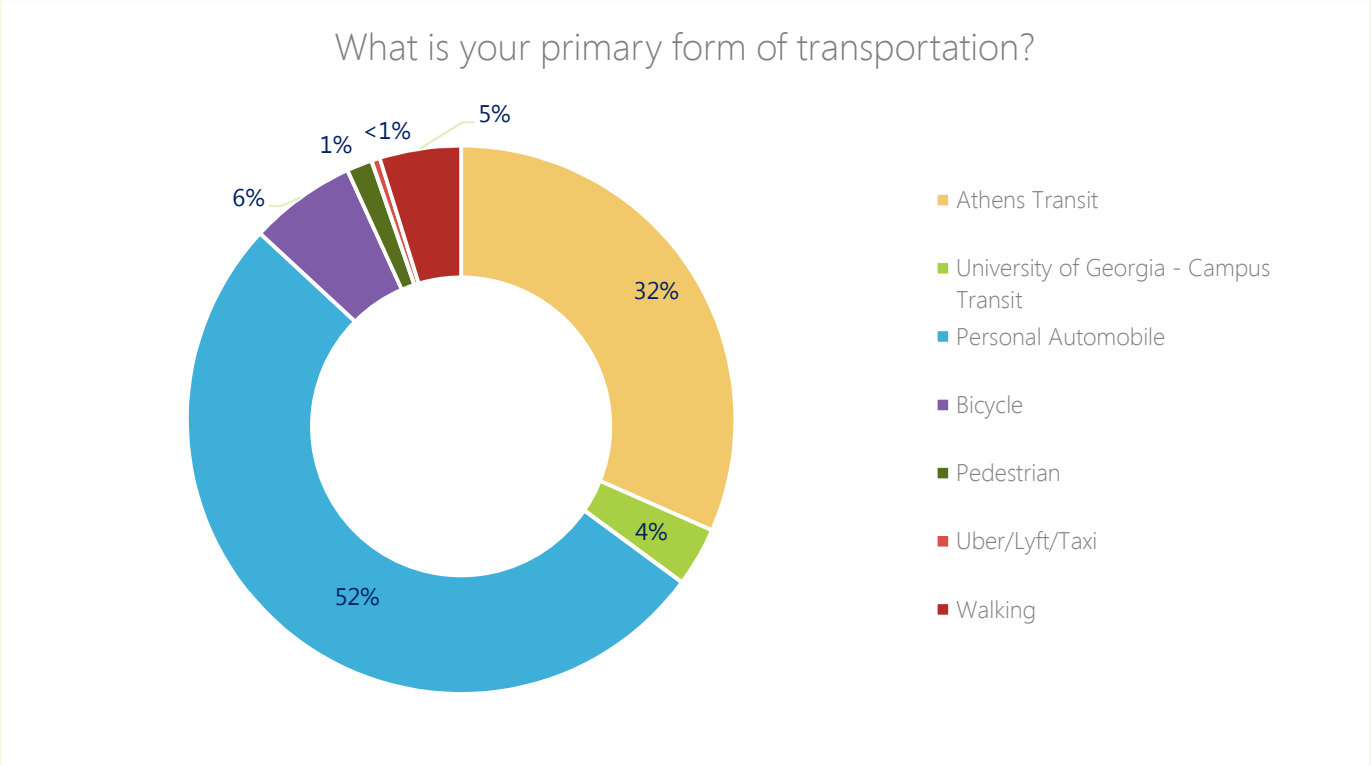

The annual household income before taxes was also distributed amongst all available response categories representing an extremely diverse range of respondents. The largest percentage reported an annual household income of over $90,000, while the second largest response group reported an annual household income of less than $5,000.

FIGURE 36: PUBLIC SURVEY RESPONSES - DEMOGRAPHICS




Respondents were also asked to specify their ethnicity; 67 percent of respondents identify as White/Caucasian, 23 percent as African American, and the remainder identified as Hispanic/Latino, Asian/Pacific Islander, Native American, or Other. Twenty (20) percent of respondents do not have access to a motor vehicle, while the largest percentage of respondents have 1-2 vehicles available for use by their household. Respondents were also asked to identify their primary form of transportation, to which 52 percent selected Personal Automobile and 32 percent Athens Transit.

FIGURE 37: PUBLIC SURVEY RESPONSES - DEMOGRAPHICS

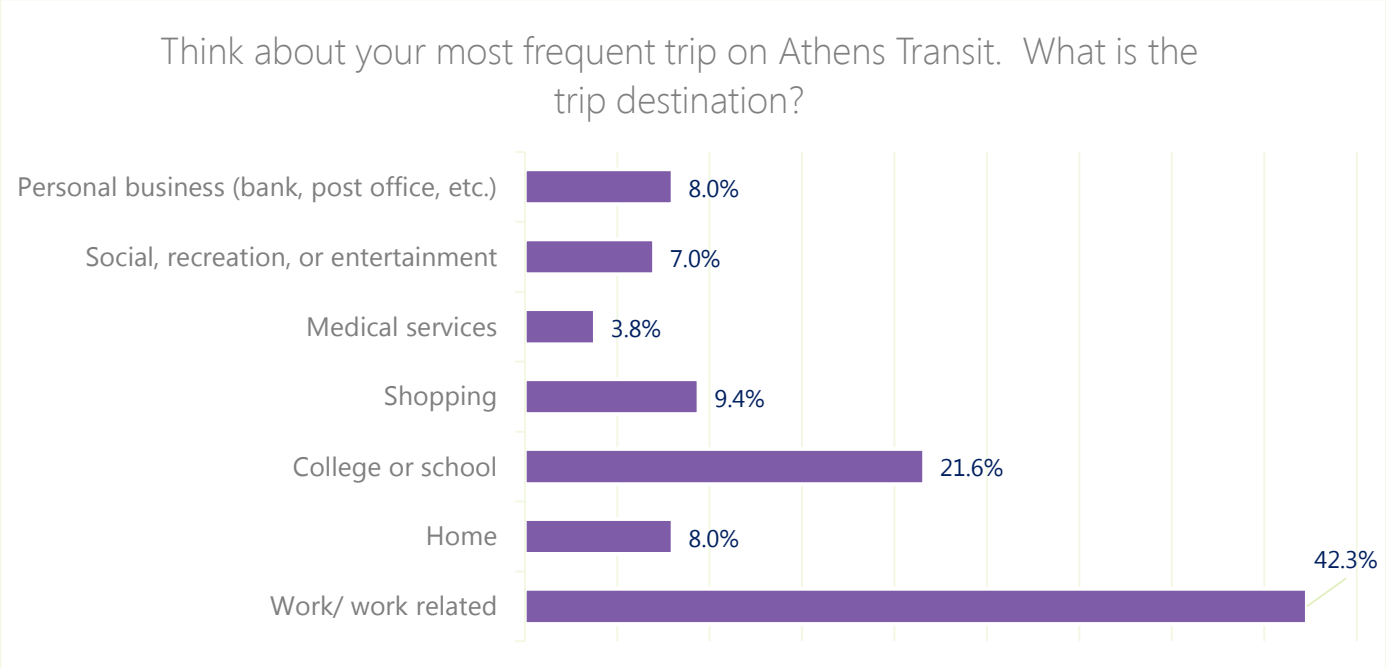



The survey included four percent of respondents from participants that identified a requirement for wheelchair accessible or specially equipped vehicles for travel.

## Trip Type and Purpose

The current transit riders identified their primary trip purpose as work/work related at 42 percent of responses and 22 percent as College or school related. The figure below shows the percentage of respondent's trips by type.

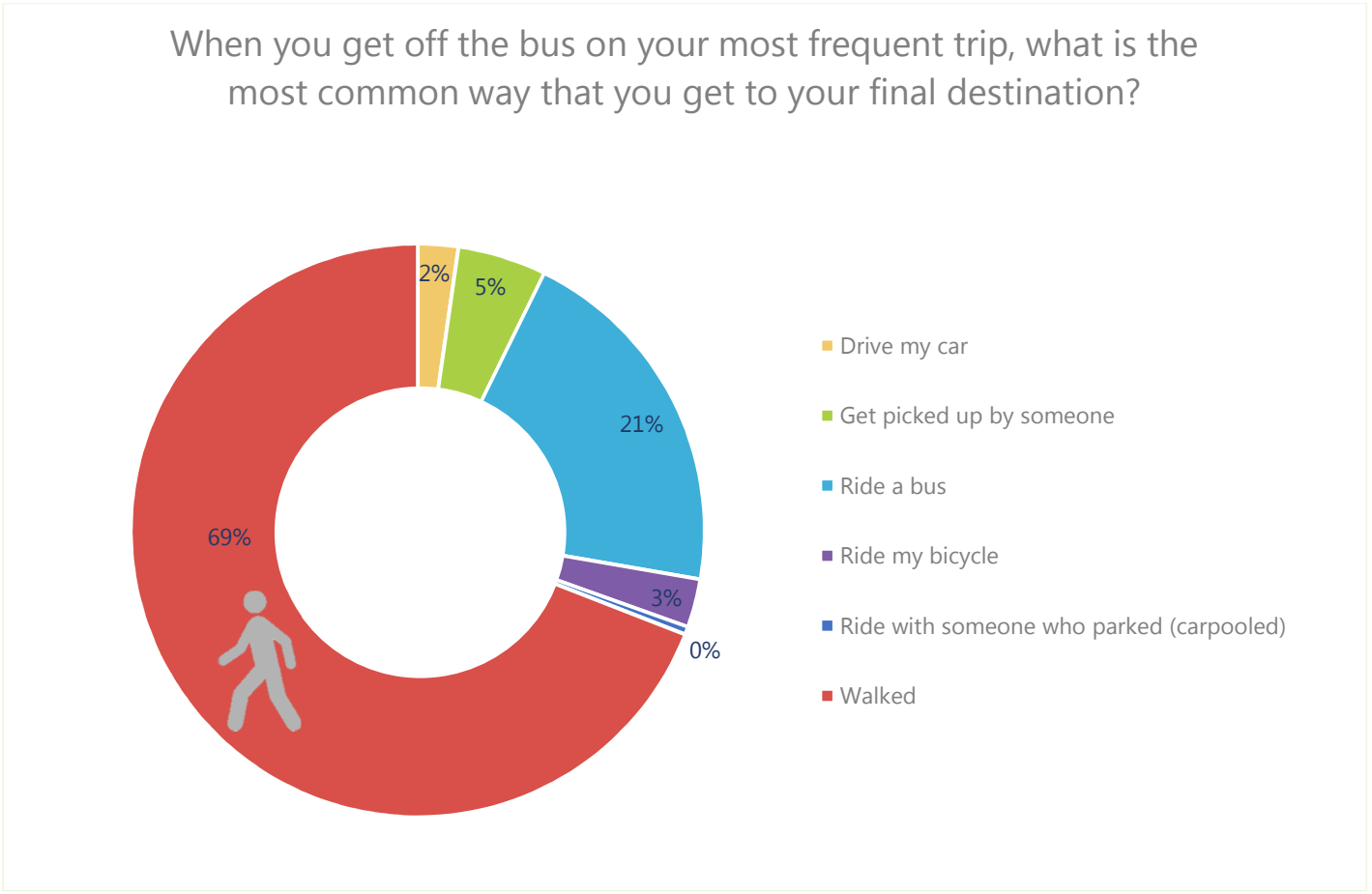
FIGURE 38: PUBLIC SURVEY RESPONSES – TRIP TYPE AND PURPOSE




The respondents were then asked how they would accomplish their trip if bus service was not available. The largest response categories were Drive (24%), Ride with Someone (25%) and Walk (25%), while 10 percent of respondents cited that they would not make the trip. Private providers are also represented with seven percent of respondents identifying Uber, Lyft or Taxi as their alternative mode of transportation if fixed route services were not available. Nine percent of respondents stated that they would utilize their bicycle to complete the trip.

Current riders were also asked how they get to their final destination when they get off of the bus on their most frequent trip; 69 percent of respondents identified walking between one and six blocks to complete their trip. The figure below demonstrates how respondents complete their trip once exiting the bus.

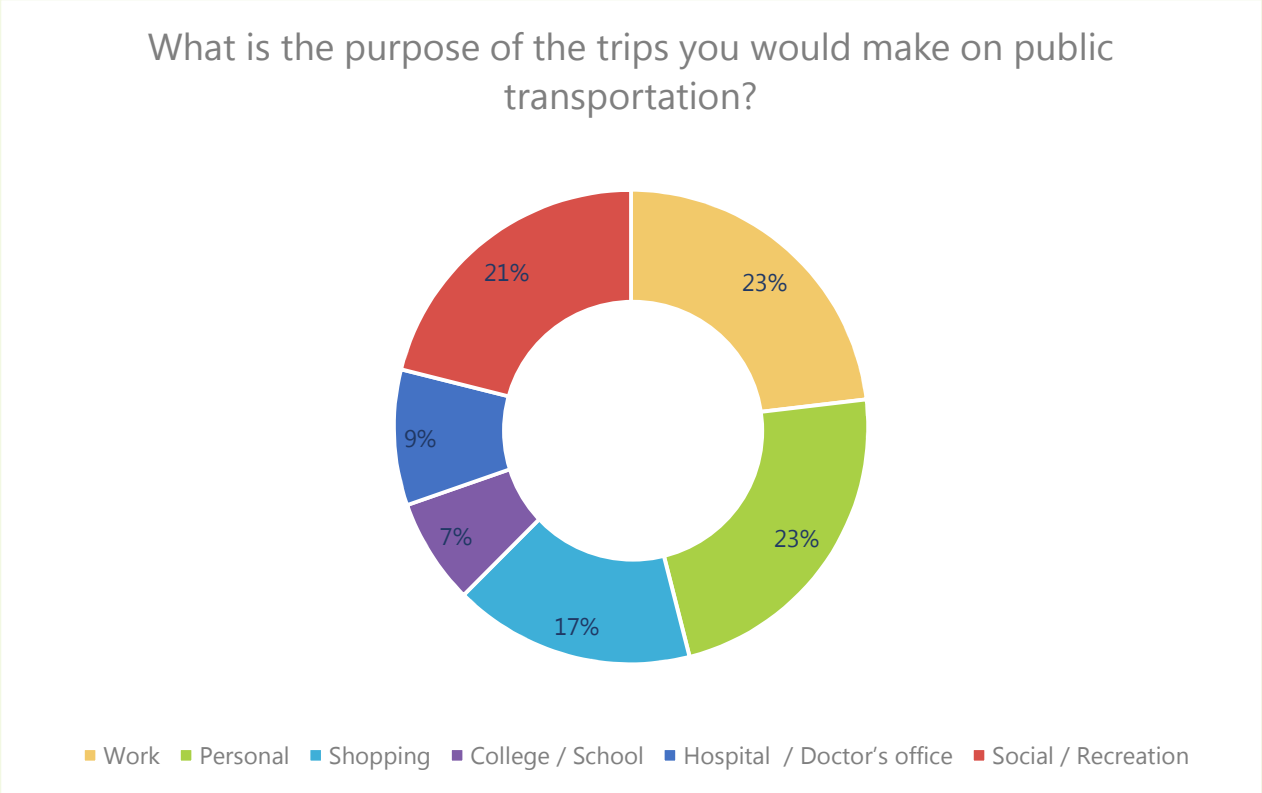
FIGURE 39: PUBLIC SURVEY RESPONSES – TRIP TYPE AND PURPOSE




Seventy-three (73) percent of current riders felt that there were adequate sidewalks from the bus stop to their most frequent destination while 59 percent of respondents stated that there were not adequate bicycle facilities available. Non-transit riders answered similarly with 51 percent of respondents stating that they felt there were adequate sidewalk facilities available and 76 percent identified that there were not adequate bicycle facilities available.

Non-transit riders were also asked about their trip purpose by type. The figure below demonstrates the response distribution by trip type with Work and Personal tied as the most frequently selected.

FIGURE 40: PUBLIC SURVEY RESPONSES – TRIP TYPE AND PURPOSE




### Frequency of Use

Current transit riders were asked to specify how frequently they use public transportation; 65 percent of respondents ride at least twice per week, while 16 percent ride less than once per week.

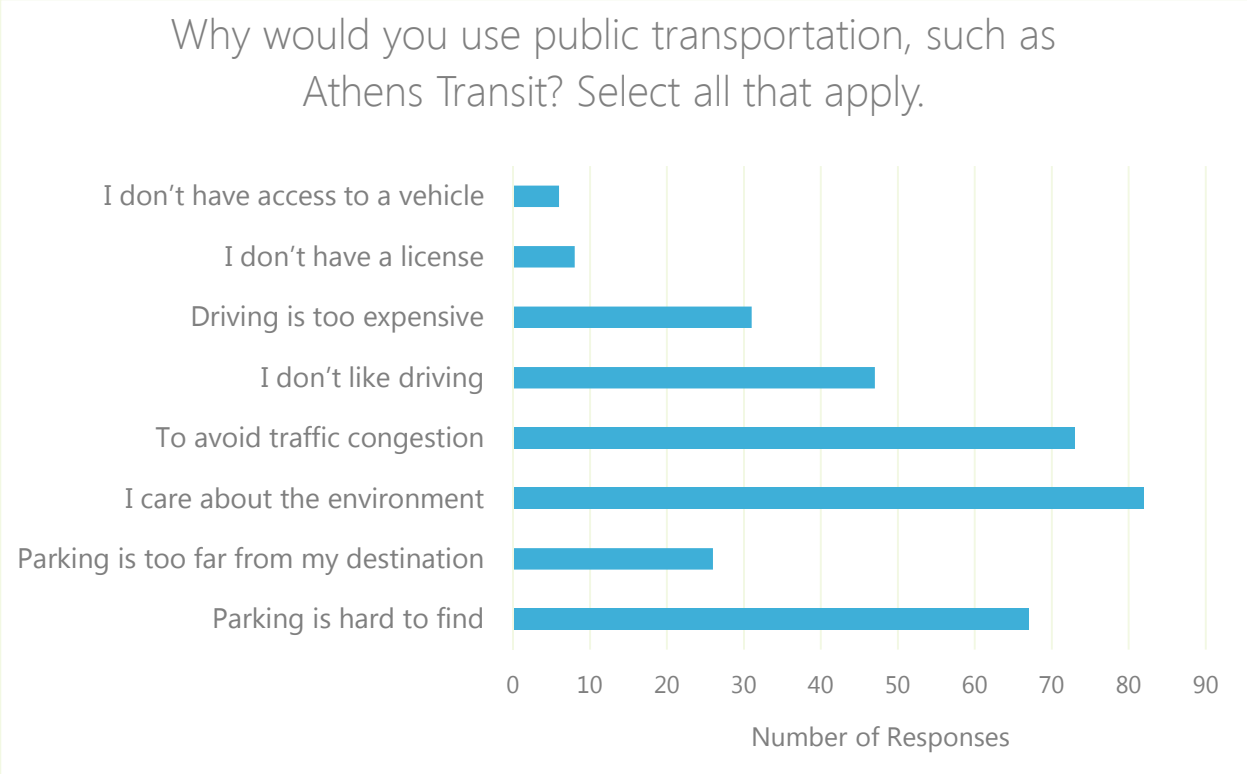
### Customer Satisfaction

Current transit riders were asked how satisfied they are with Athens Transit services overall. Seventy-two (72) percent of respondents felt either Satisfied or Very Satisfied with the current services, while nine percent felt Dissatisfied or Very Dissatisfied. All survey respondents were asked if adequate information about Athens Transit was available, to which 39 percent responded negatively.

Current customers were then asked what would most influence their decision to ride Athens Transit more frequently. The largest responses were Service Frequency, Service to New Areas and Later Evening Service.

Non-transit riders were asked to indicate what factors would influence their decision to use public transportation. Respondents were permitted to select all options that applied, and the most frequently selected were related to the Environment, Traffic Congestion, and Parking.

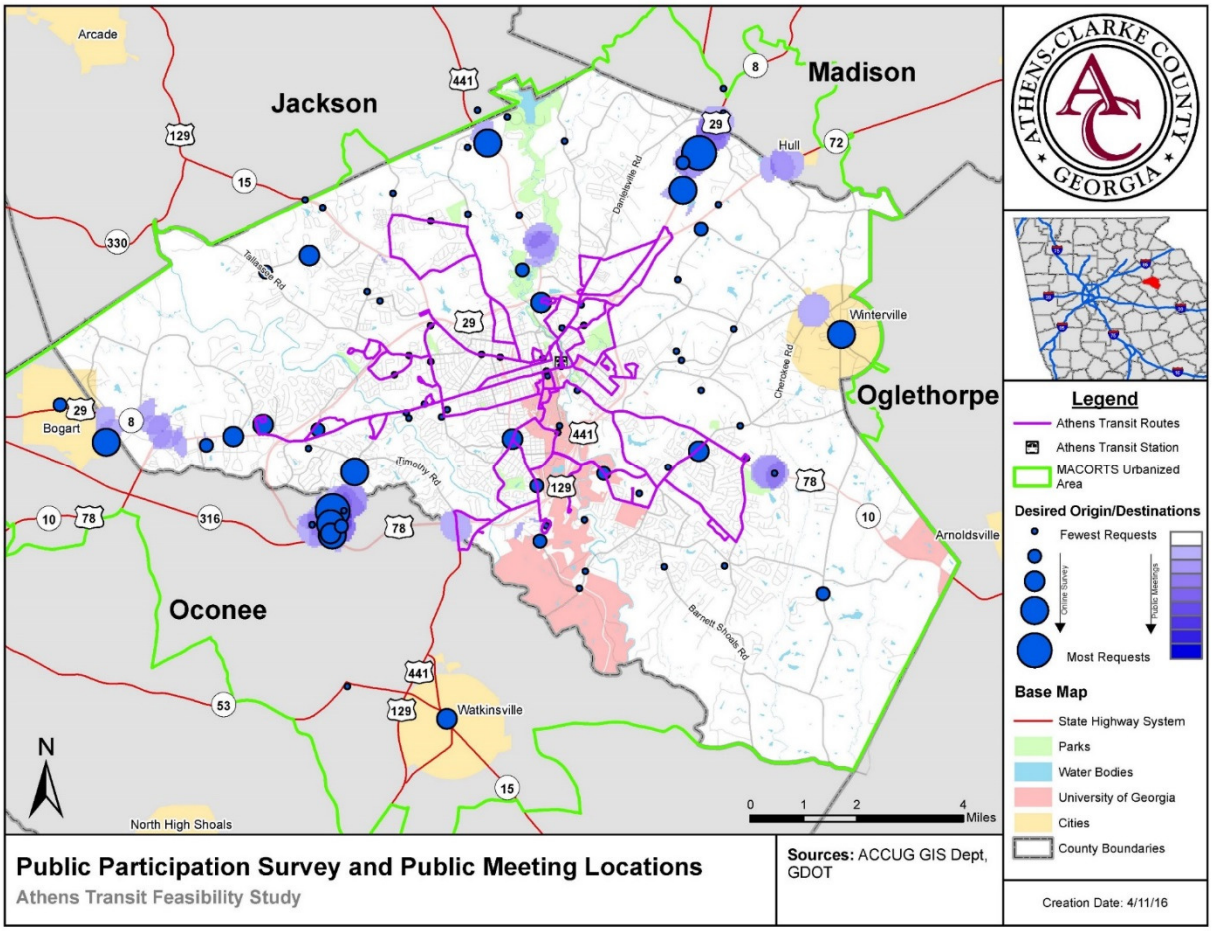
FIGURE 41: PUBLIC SURVEY RESPONSES – TRIP TYPE AND PURPOSE




## *Trip Origins and Destinations*

Participants at the public workshops held on February 9, 2016 and March 1, 2016 were asked to identify their most frequent points of trip origin and destination as well as desired service expansion destinations. These points were identified by participants and mapped for geographic analysis of origins and destinations. The public survey also allowed respondents to identify locations where service expansions were needed. The following exhibit shows the aggregated survey and public meeting responses.

FIGURE 42: PUBLIC SURVEY RESPONSES – TRIP ORIGINS AND DESTINATIONS




The desired service origins and destinations are generally consistent between the two data sources and are clustered at the periphery of the current service area, adjacent to or outside of the Athens-Clarke County municipal boundary.

## *Ridership Assessment Survey*

A ridership assessment survey was conducted for the ATS fixed route system the week of February 15, 2016. The survey was conducted over four days by UGA students. The students were located at various locations throughout the system to capture a cross-section of the fixed route transit passengers. The locations that were surveyed include:

- MMTC
- UGA Arch
- Walmart
- ACC Library
- Baxter @ Alps Shopping Center
- Bell Shopping Center

- North Avenue Apex

These locations were selected based on the passenger counts that were conducted earlier in this study. In order to get a good mix of student and resident responses, the survey sites were spread throughout the fixed route service area.

## Survey Form

The survey was designed to solicit information that would be helpful in determining the areas in which the ATS fixed route transit service could be improved. The survey form is shown in Appendix A.

The first section of the survey provided an opportunity for the respondent to identify themselves as either a student or a resident. Depending on their status, the first questions focused on identifying the location of their residency, including on- or off-campus, and the nearest fixed bus route to that residence.

The next section asked questions that dealt with the demographic profile of the respondent. The questions in this section focused on their sex, age and ethnicity. This information helps to identify if one or more groups of individuals are more or less prone to use the transit service. This information can also be helpful in identifying segments of the community to market for future service.

The remainder of the survey was focused on the respondent's use of the system, assessment of the current services and identification of future needs. The questions included in this section of the survey included starting point and destination of the current trip, frequency of ridership, improvements to the system, availability of a personal vehicle, fare payment, assessment of the current service and transfer requirements. There was also space provided for any additional comments.

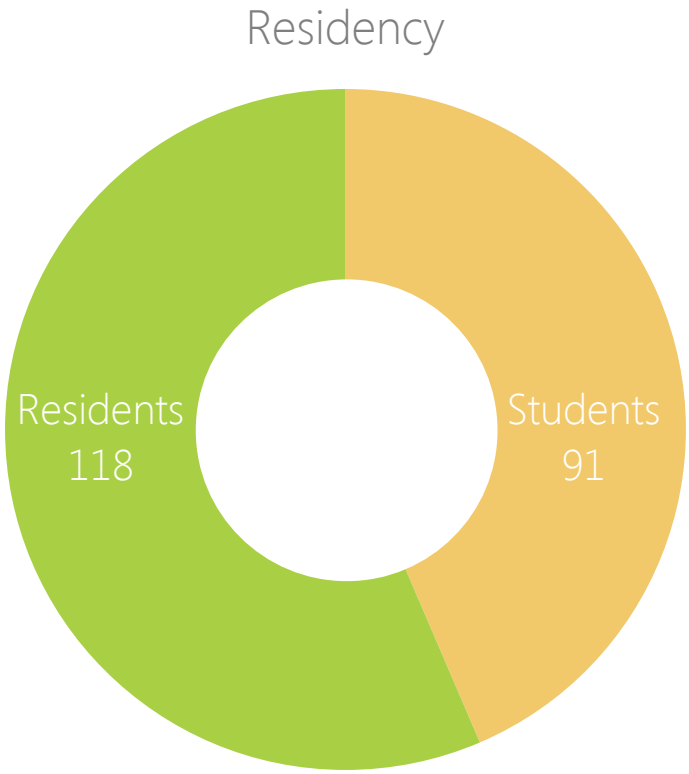
## Survey Results

Following four days of surveying ATS passengers, the surveyors collected 209 completed surveys. There were 118 surveys completed by residents, while 91 students completed the survey. The information gained from this survey instrument provides a snapshot of the type of passengers that use the ATS fixed route service, as well as information that can be used to improve the current service. The following is a summary of the results of the ridership assessment survey.

## Residency Location

The first section of the survey was developed to identify the respondent as a UGA student or a resident of Athens-Clarke County. Depending on the respondent's residency status, this section also provided an opportunity for them to provide more information on the route nearest to their residence. The following graphic shows the breakdown of the residency of the respondents.

FIGURE 43: RIDERSHIP ASSESSMENT SURVEY - RESIDENCY

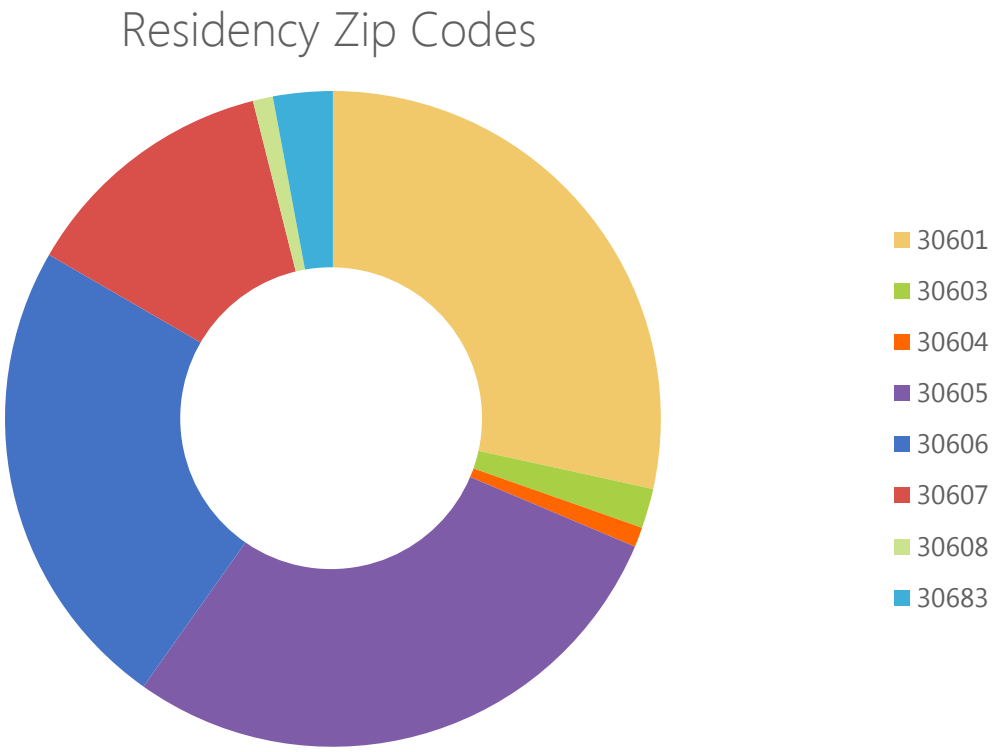



Of the 91 students that responded to the survey, 75 percent of them live off-campus. The most common off-campus locations identified by the respondents include:

- Abbey West
- Archer on North
- Highlands
- Polo Club
- River Club
- Stonecrest Apartments
- The Park

The residents of the Athens-Clarke County community responded to their residency location by identifying their home zip code. The following graph shows the zip codes that were collected through the survey effort.

FIGURE 44: RIDERSHIP ASSESSMENT SURVEY - RESIDENCY



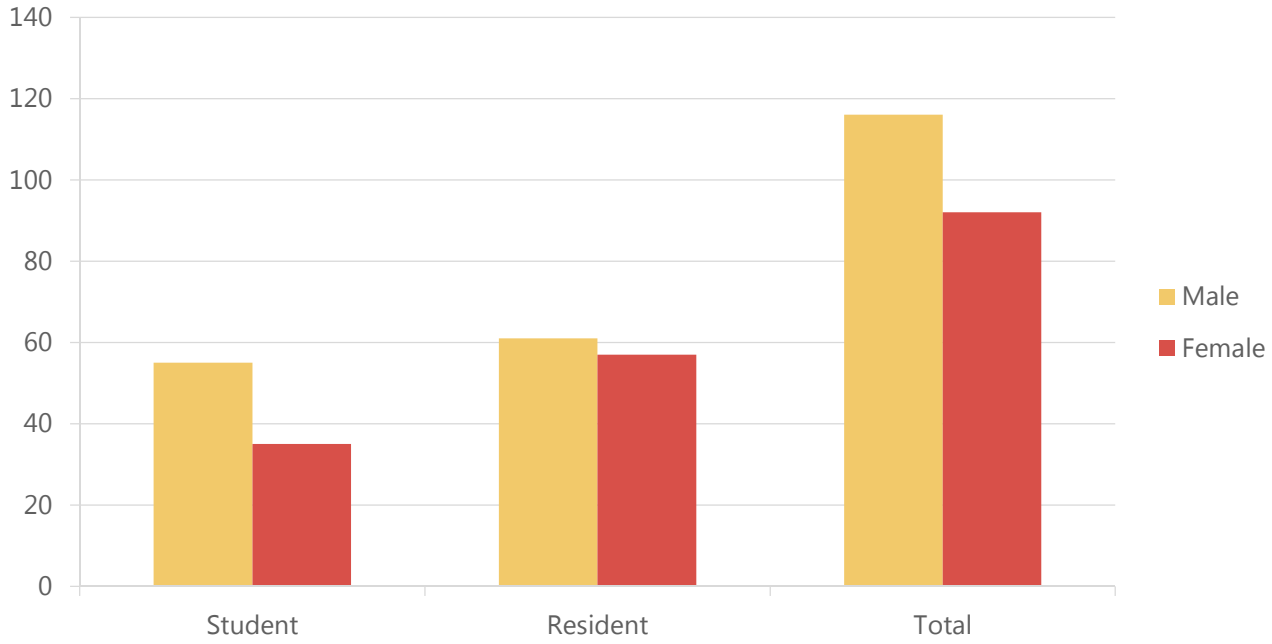

The most popular responses were zip codes 30601, 30605, 30606 and 30607. Zip code 30601 is the north-central portion of the Athens-Clarke County community; 30605 is the south-eastern portion of the county; 30606 is west of downtown Athens and stretches from the northern edge of the county to the southern edge; and, 30607 is located just outside the Athens Connector and west of the 30601 zip code. Based on the geographic location of the zip codes provided by the respondents, the responses represent a cross-section of nearly the entire county.

## *Demographic Profile*

The next section of the passenger survey included questions that identify the sex, age and race of the respondents. The demographic profile of the system ridership is important to identify the segments of the population that are utilizing the service and also those that are not currently using the transit service. This information can assist the agency in marketing decisions and to identify gaps in their ridership.

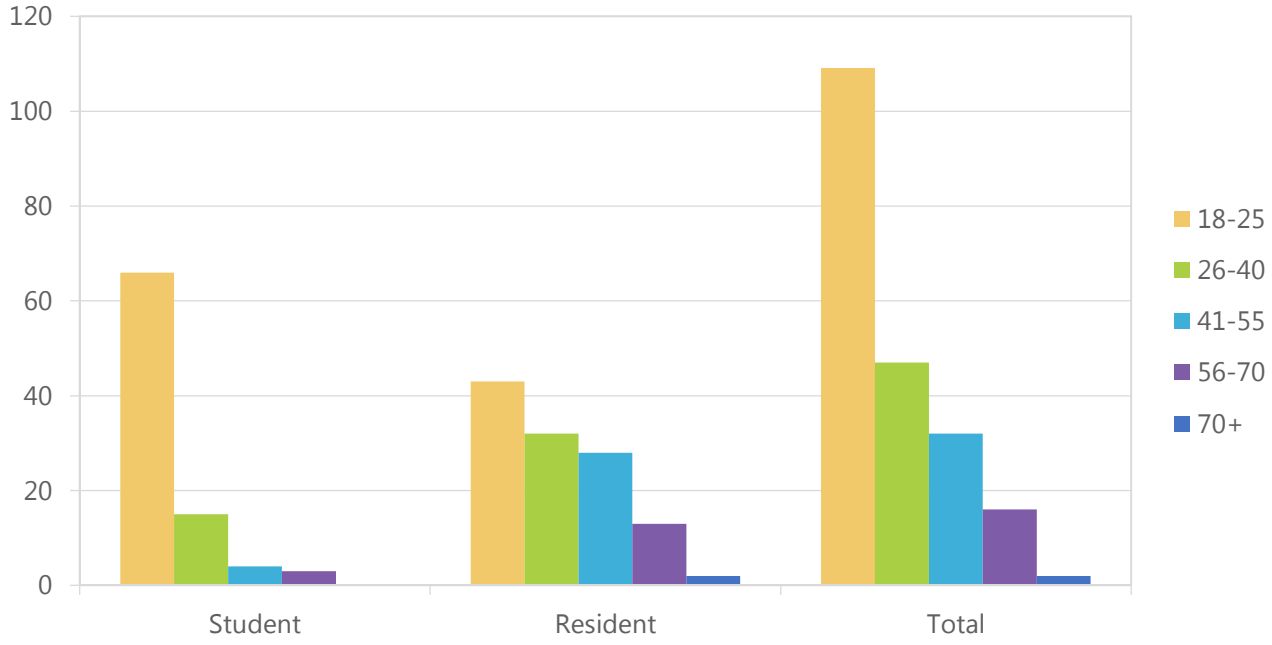
Overall, the ridership that responded to the survey were mostly male. For the student survey, males accounted for more than 60 percent of the survey responses, while the resident surveys were nearly 50/50. The graph below shows the breakdown by student, resident and total surveys.

FIGURE 45: RIDERSHIP ASSESSMENT SURVEY - DEMOGRAPHICS




As expected, the age distribution of the respondents are 25 years old or under. While more than 50 percent of the participants identified themselves in the youngest category, the resident responses did include at least 2 in each of the various age categories. The graph below shows the age distribution for each of the surveys and the total results.

FIGURE 46: RIDERSHIP ASSESSMENT SURVEY - DEMOGRAPHICS

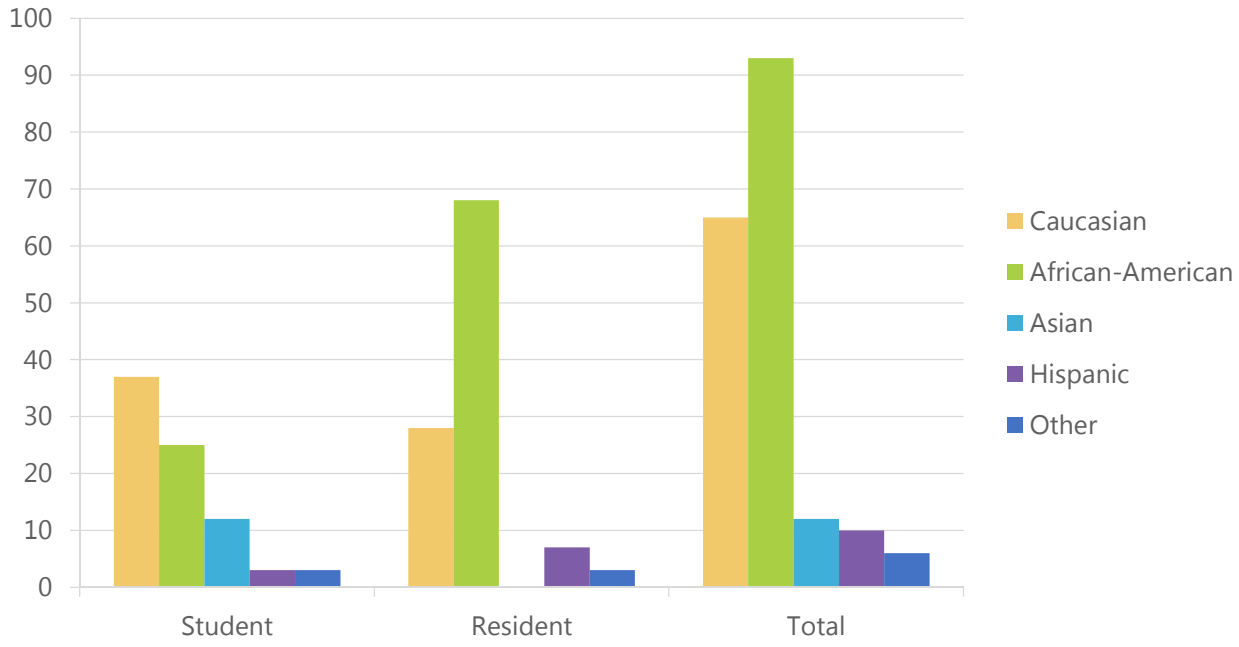


Finally, the question of race included the following options:

- Caucasian;
- African-American;
- Asian;
- Hispanic; and
- Other.

The predominant race identified by the respondents was African-American. Nearly 50 percent of the respondents identified with this race. The graph below shows the distribution of responses.

FIGURE 47: RIDERSHIP ASSESSMENT SURVEY - DEMOGRAPHICS



## Trip Information

The survey included several questions about the respondents' current trip. These questions are intended to get a better understanding of the respondents' typical travel. The following are summaries of the questions:

***5) Where did your trip start today?***

| Respondent | Home | School | Work | Business | Other |
|---|---|---|---|---|---|
| Student | 65 | 12 | 7 | 0 | 4 |
| Resident | 79 | 7 | 13 | 2 | 17 |
| Total | 144 | 19 | 20 | 2 | 21 |

***6) What is the purpose of your trip today? (check all that apply)***

| Respondent | School | Work | Medical | Shopping | Recreational | Other |
|---|---|---|---|---|---|---|
| Student | 63 | 15 | 1 | 3 | 3 | 6 |
| Resident | 4 | 47 | 8 | 21 | 18 | 25 |
| Total | 67 | 62 | 9 | 24 | 21 | 31 |

While the majority of the respondents started their trips at home, their destinations were quite diverse. The student respondents were predominantly headed to school; however, quite a few were headed to work. On the residents' responses, the destination of work ranked the highest, but shopping, recreational and other all scored around 15 percent of the responses. The written responses for other under question 6 included home, friend's house, job interview and looking for a job. These responses identify some of the day-to-day activities that people use the fixed route transit service to accomplish.

***7) How often do you ride Athens Transit?***

| Respondent | Rarely | Monthly | Weekly | Daily |
|---|---|---|---|---|
| Student | 11 | 3 | 27 | 48 |
| Resident | 11 | 10 | 38 | 58 |
| Total | 22 | 13 | 65 | 106 |

The majority of the respondents utilize the fixed route service on a daily basis, while about 10 percent rarely use the service. While the survey did not include a written portion to explain a person's tendency to ride the bus, the most common reason for using the service on a less frequent basis is the convenience factor. If the transit service has frequent service and provides a more convenient option than driving or finding another conveyance, then people tend to ride more often.

***13) How do you pay for your bus fare?***

| Respondent | UGA Student/Faculty/Staff | Single-Ride Ticket | Multi-ride Pass |
|---|---|---|---|
| Student | 64 | 13 | 3 |
| Resident | 1 | 76 | 43 |
| Total | 65 | 89 | 46 |

***13a. Was your fare/pass reduced for any of the following exceptions?***

| Respondent | Senior | Disabled | Youth |
|---|---|---|---|
| Student | 4 | 1 | 4 |
| Resident | 11 | 13 | 14 |
| Total | 15 | 14 | 18 |

As expected, the majority of student respondents used their UGA ID when boarding the transit vehicle. For the residents, the majority of them used a single-ride ticket to pay for their fare. More than a third of the residents utilized the multi-ride pass that is available for ATS patrons. The multi-ride pass provides a discount of about $0.35 per ride for an adult as compared to the single-ride ticket. Approximately 22 percent of the respondents indicated that they received a discount to their fare based on age or a recognized disability. ATS provides discounted fares during the off-peak hours of fixed route transit service.

***15) Did your trip require you to transfer between buses?***

| Respondent | Yes | No |
|---|---|---|
| Student | 40 | 40 |
| Resident | 97 | 20 |
| Total | 137 | 60 |

***15a) If you answered "Yes" to question #15, where did your transfer take place?***

| Respondent | Multimodal Transfer Center (MMTC) | UGA Arch | Other |
|---|---|---|---|
| Student | 33 | 6 | 1 |
| Resident | 91 | 0 | 2 |
| Total | 124 | 6 | 3 |

More than two-thirds of the respondents indicated that they had to perform a transfer during their trip. The majority of the transfers were made at the multimodal transfer center near downtown Athens. While making transfers between routes is necessary for riders of any transit system, transit systems that provide more direct service and connect patrons to their destinations without making transfers typically have a higher customer satisfaction.

# Future and Latent Demand Assessment

## *Latent Demand*

The purpose of this section is to describe the latent demand analysis conducted for the ATS fixed route service. Latent demand analysis was prepared in order to estimate the potential for generating additional fixed route transit ridership within the Athens-Clarke County area. Latent demand analysis is different than a ridership analysis done for existing transit systems. Ridership analysis is concentrated on the corridors where transit service is already provided. A latent demand analysis seeks to identify areas within a community, whether or not they are currently served, that have the potential for future ridership.

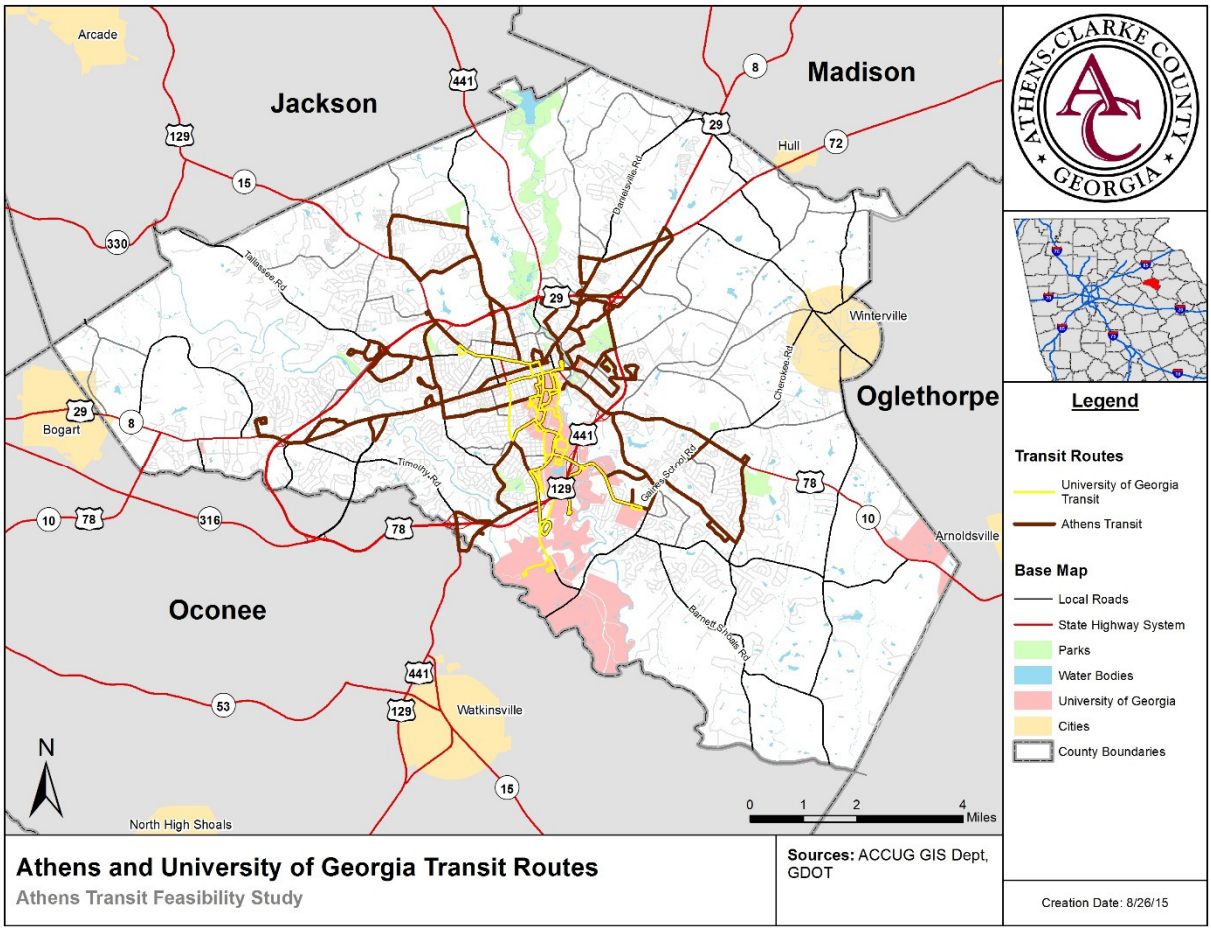
One of the factors that may have a major effect on the results of this section is the existence of other transit service provided by UGA. For the purpose of this discussion, we will assume that the UGA service only provides service to UGA students, faculty and staff.

### *Fixed Route*

As discussed earlier in the Existing Conditions section of this report, the ATS fixed route service area includes most of the Athens-Clarke County urban area, including portions of the UGA campus. The fixed route service includes 19 daily routes and 6 evening routes. The daily routes run from approximately 6 a.m. to 7 p.m. Monday through Friday. The evening routes operate until nearly 10 p.m. during the week. The Saturday and Sunday fixed route service includes 8 daytime routes that run from 7 a.m. to 7 p.m. and evening service that operates until 9:45 p.m. (5 routes on Saturday and 4 on Sunday).

The fixed route service runs year round. However, during the summer months, some of the fixed routes are discontinued when school is out. The routes that do not operate in the summer include 21, 22, 23 and 28. The route structure and major destinations can be seen in the graphic below.

FIGURE 48: EXISTING TRANSIT FIXED ROUTES




## Previous Plan Recommendations

As discussed in Section ***1.4 Review of Previous Plans***, recommendations were developed for the fixed route and demand response service in the 2009 TDP. A summary of the fixed route recommendations include:

- Improve headways from 60-minute to 30-minute on Routes 5, 6, 7, 9, 20, 25 and 26
- Implementation of schedule and bus priority treatments to improve operational consistency
- Extension of current days and hours of service
- Elimination or modification of routes, including reduction of "looping" by some routes

The recommendations from the 2009 TDP that have a direct effect on the latent demand analysis of the system are the improvement of the current headways from 60 to 30 minutes on the selected routes. In order to compete with any type of private conveyance (POV, Uber, shuttle, etc.), the fixed route transit system needs to be more convenient. The reduction in overall trip time is typically a major factor in why people do or do not use public transportation.

At the time of this report, ATS has implemented some of the recommendations of the 2009 TDP. The addition of more Saturday service and new Sunday service, as well as some route modifications have been widely accepted by the patrons of the system. While some of these recommendations have been

implemented in a limited capacity, most of the recommendations from that study have not been implemented to date.

## Methodology

Building on work completed earlier in this study, the latent demand analysis utilizes the transit propensity analysis previously described. The propensity analysis seeks to identify home locations of populations likely to utilize public transit as a primary mode of transportation. It is important to understand that this portion of the analysis does not attempt to consider desired trip destinations or choice ridership behaviors. The transit propensity analysis used the following demographic factors, taken from the US Census and other data sources, to analyze the community's likelihood of using the fixed route transit system:

- Low income;
- Minority;
- Households without cars;
- Persons with work disabilities;
- Persons with mobility limitations;
- Older workers;
- Females; and
- Recent immigrants.

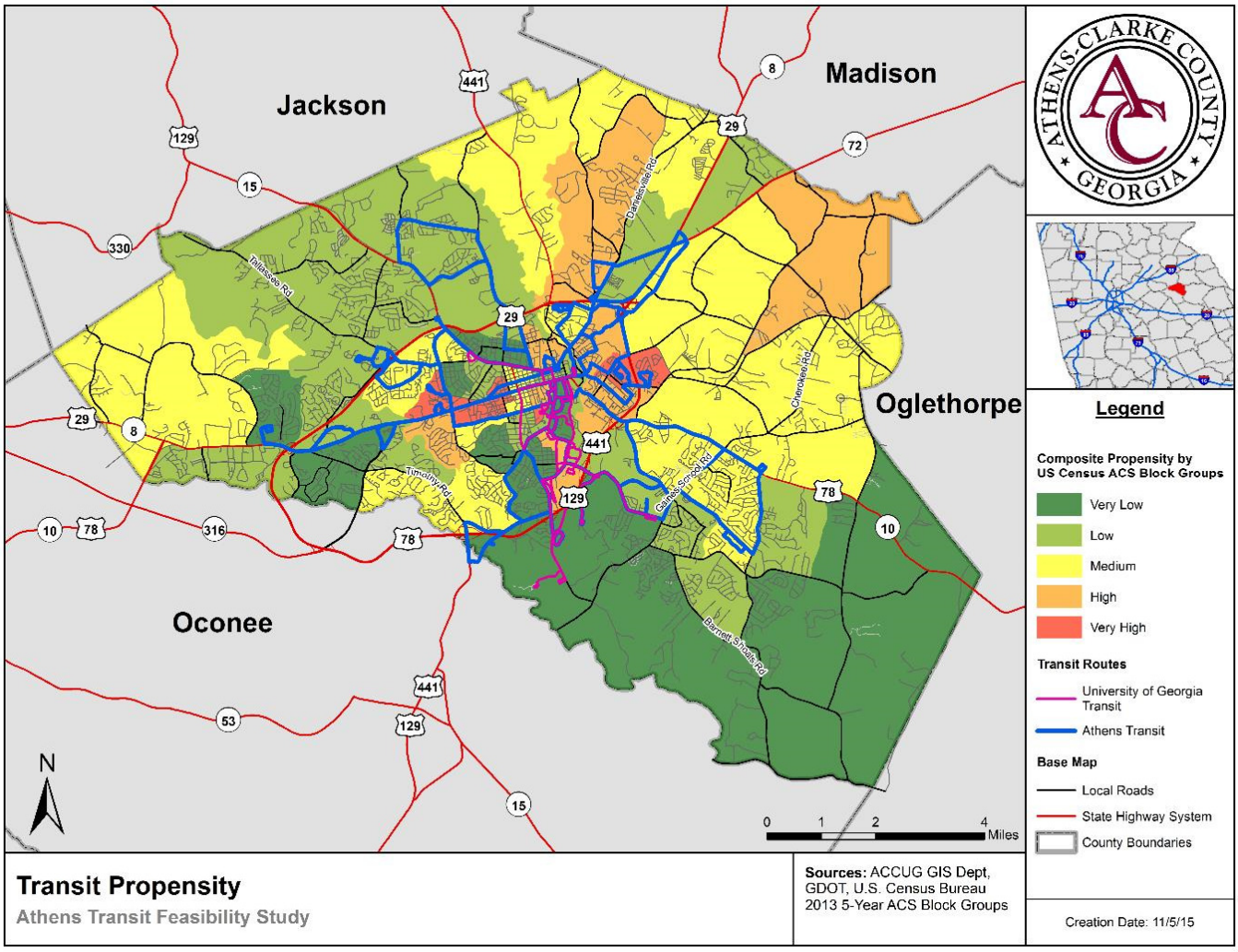
When combined, these factors define the areas that have higher concentrations of population that are more likely to utilize the fixed route transit system. Based on the demographic profile of the community, the transit propensity analysis identified areas of the Athens-Clarke County community with the following levels of transit propensity:

- Very Low
- Low
- Medium
- High
- Very High

The majority of the Very Low and Low areas were in the southern and western portions of the community, which have a mix of residential and agricultural land uses. Ironically, most of the UGA campus is shown as having Very Low and Low propensity for transit use. The reason for this anomaly is the Census data sets do not account for student activity areas that generate a significant amount of ATS' ridership on campus. For example, Routes 12 and 14 operate primarily on-campus and account for nearly 40 percent of the total ridership. The High and Very High propensity areas are located in the central and northern portions of the community, which contain the majority of the commercial, medical and recreational land uses in the community. Several of the areas around the UGA campus area that include apartment complexes are also shown as having a High or Very High propensity for transit use. The Medium propensity areas are spread throughout the entire community.

The following map shows the transit propensity analysis results:

FIGURE 49: TRANSIT PROPENSITY ANALYSIS RESULTS AND EXISTING FIXED ROUTES



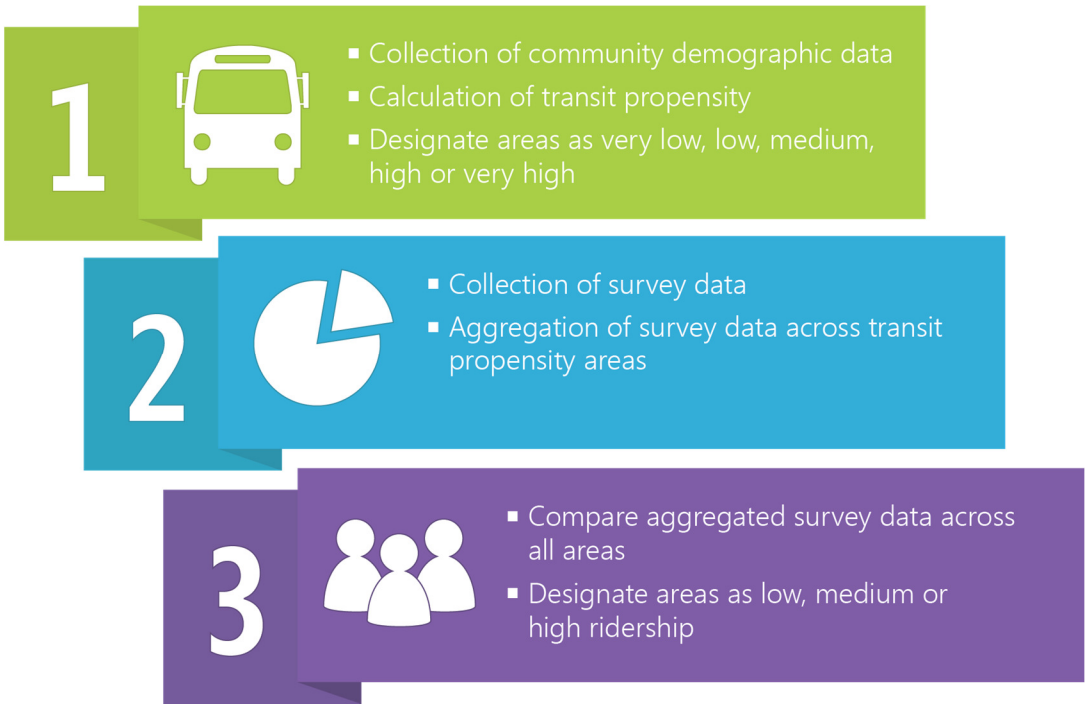

With the propensity analysis mapped in ArcGIS, the bus stop survey data was overlaid with the existing fixed bus routes to compare the level of current service and ridership across the community. The bus stop survey data was collected earlier in the academic year, during the first semester, and provided a snapshot of where the ridership boards and alights the system buses. This survey was performed on every bus for every hour of service throughout the day.

The use of the boarding and alighting data from the October 2015 ridership survey provides a comparison across the individual areas. Utilizing ArcGIS, the ATS bus stops were aggregated using the same geography as the transit propensity analysis. This approach provided a table that illustrated the amount of ridership (both boardings and alightings) in each of the transit propensity areas throughout the community. Areas with no current fixed route service were assigned a "no service" designation and were not included in the remaining calculations.

Once aggregated by transit propensity area, the ridership was analyzed using a standard deviation calculation. Areas that were more than one-quarter standard deviation below the mean of the group were assigned a "low" ridership category and areas that were more than one-quarter standard deviation above the mean were assigned a "high" ridership category. Areas within one-quarter of the mean, either above or below, were assigned a "medium" ridership category. There were 31 "low" ridership areas and 7 "high" ridership areas based on this calculation.

The following graphic summarizes the process described above:

FIGURE 50: PROPENSITY ANALYSIS PROCESS



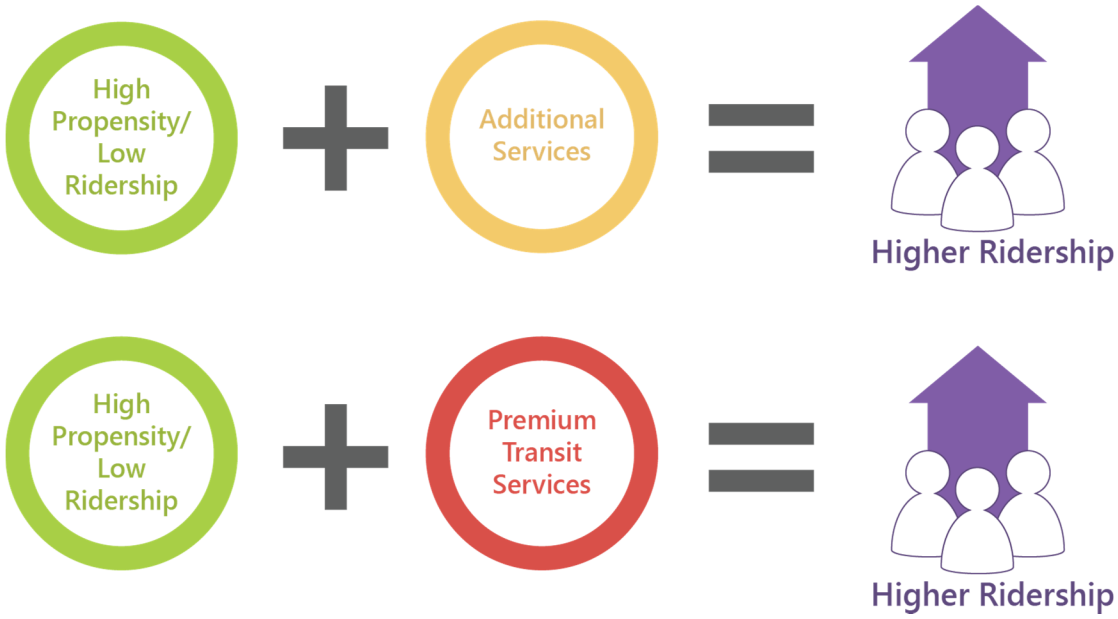

## Results

The results of the ridership calculations were combined with the transit propensity analysis in order to identify areas with High or Very High transit propensity that either have "high" or "low" ridership. Of the 31 "low" ridership areas, there were 7 areas that had a High or Very High propensity for transit usage, while only 2 of the "high" ridership areas were identified as having either a High or Very High propensity for transit usage. The reason for only evaluating the areas that have a High or Very High propensity for transit usage is that they provide the most realistic opportunity for additional ridership.

The areas with a High or Very High propensity for transit usage and a "low" ridership count are areas that may be underserved by transit and may be able to generate more ridership by providing more service. The areas with a High or Very High propensity for transit usage that have a "high" ridership count could experience higher ridership by providing more frequent or premium services.

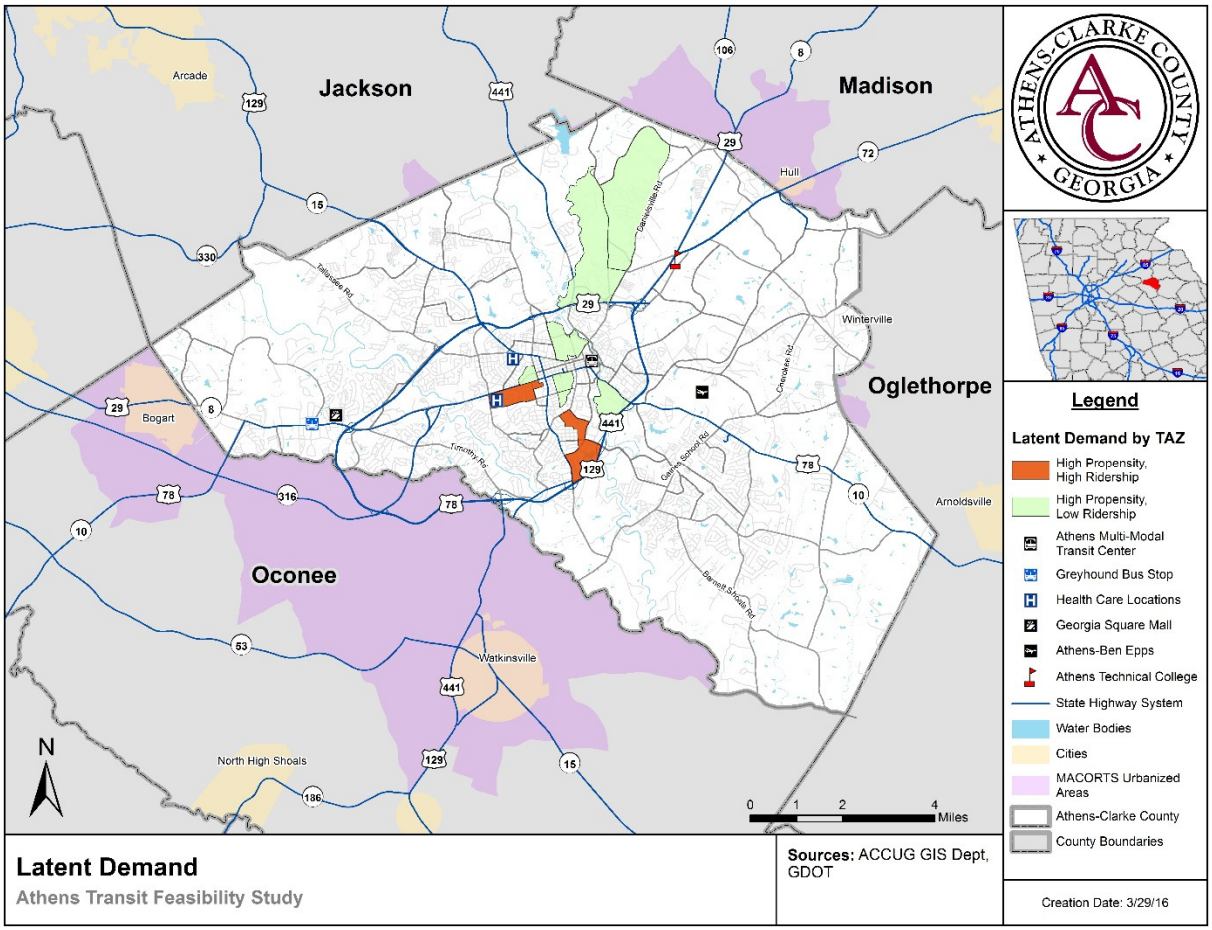
The following graphics depict the relationships described above:

FIGURE 51: PROPSENSITY ANALYSIS RESULTS PROCESS




The map below shows the results of the latent demand analysis and highlights the areas with the best opportunity for additional ridership in the short term.

FIGURE 52: LATENT DEMAND RESULTS

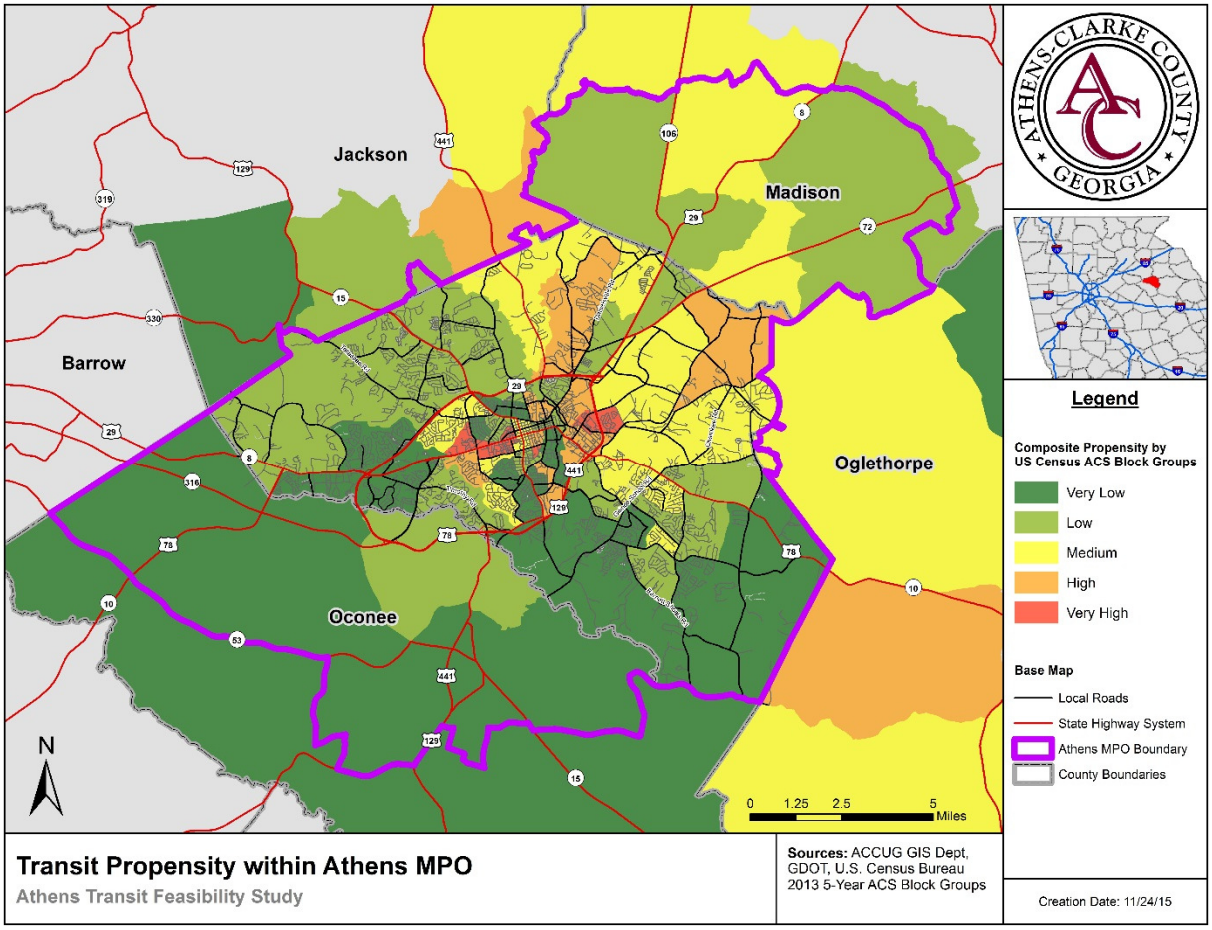



The highlighted areas shown on the above map provided information for developing recommendations to improve ridership in those areas.

Because Athens Transit is a recipient of federal funding[9], the transit propensity analysis was expanded to incorporate the urbanized areas within adjacent counties. The exhibit below shows the MACORTS urban area boundary overlaid on the propensity analysis results. While there are areas within Madison, Jackson, and Oglethorpe Counties demonstrating medium transit propensity, these counties do not have population densities sufficient to support hourly transit service.

[9] *The Urbanized Area Formula Funding program (49 U.S.C. 5307) makes Federal resources available to urbanized areas and to Governors for transit capital and operating assistance in urbanized areas and for transportation related planning. An urbanized area is an incorporated area with a population of 50,000 or more that is designated as such by the U.S. Department of Commerce, Bureau of the Census. www.fta.dot.gov*

FIGURE 53: TRANSIT RIDERSHIP PROPENSITY FOR MACORTS PLANNING AREA




## Future Demand

The Arkansas Model is one of several models used by transit planners to estimate annual transit ridership. Depending on the characteristics of the area or system under evaluation, there are other transit demand models, including the Minnesota Peer System Model, Arizona Model and Washington State Model, that may be used. For modelling a smaller urban transit system such as the Athens system, the Arkansas Model more closely emulates the actual ridership with the most accuracy. While the Minnesota Peer System Model can also be used in a rural setting, the Arizona and Washington State Models can only be used on rural systems.

To determine the potential future demand for the fixed route transit service in Athens-Clarke County, a 2-step process was followed. First, using the Arkansas Model, the level of participation in the fixed route program based on the following demographic groups was determined:

- Elderly;
- Disabled; and
- Low-income populations.

This modelled level of ridership was compared to the actual ridership to provide a usage rate factor. Since the 2010 Census data is used in the Arkansas Model, the FY2010 actual ridership was used in the comparison. The second step was to extrapolate the current usage rate to 2040 based on the population projections used by the Madison Athens-Clarke Oconee Regional Transportation Study Metropolitan Planning Organization (MACORTS MPO).

The calculation for the Arkansas Model is shown below:

***Unlinked Passenger Trip Demand=***
***8.4 X population 65 years and older + 30.0 X disabled population less than 65 years old +***
***14.5 X low income, non-disabled population less than 65 years old***

The following table outlines the Arkansas Model factors and the population totals for each of the transit usage groups.

**TABLE 28:** ARKANSAS MODEL CALCULATIONS

| Demographic Description | Arkansas Model Factor | Population | Total |
|---|---|---|---|
| Population 65 years and older | 8.4 | 10,404 | 87,394 |
| Disabled population less than 65 years old | 30.0 | 7,222 | 216,660 |
| Low income, non-disabled population less than 65 years old | 14.5 | 38,125 | 552,813 |
| Unlined Passenger Trip Demand | | | **856,866** |

The total number of unlinked passenger trips estimated using the Arkansas Model is 856,866. Based on the FY2010 ridership data, the actual number of non-UGA unlinked trips was 724,449. The actual number represents 84.5 percent of the estimated demand. This percentage was used to determine the low end of the estimated future demand.

The next step in calculating the future demand for fixed route transit service requires the use of the population projections. This analysis utilized projections generated by the MACORTS MPO in the latest Long Range Transportation Plan (LRTP) adopted October 8, 2014. The following table is taken from the LRTP and shows the projected population growth for Athens-Clarke County through 2040.

**TABLE 29:** ATHENS-CLARKE COUNTY POPULATION PROJECTIONS

| Geography | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|---|---|
| Athens-Clarke County | 116,714 | 123,590 | 130,465 | 138,151 | 145,836 | 154,427 | 163,018 |
| Growth Rate | -- | 5.89% | 5.56% | 5.89% | 5.56% | 5.89% | 5.56% |

*Source: MACORTS LRTP*

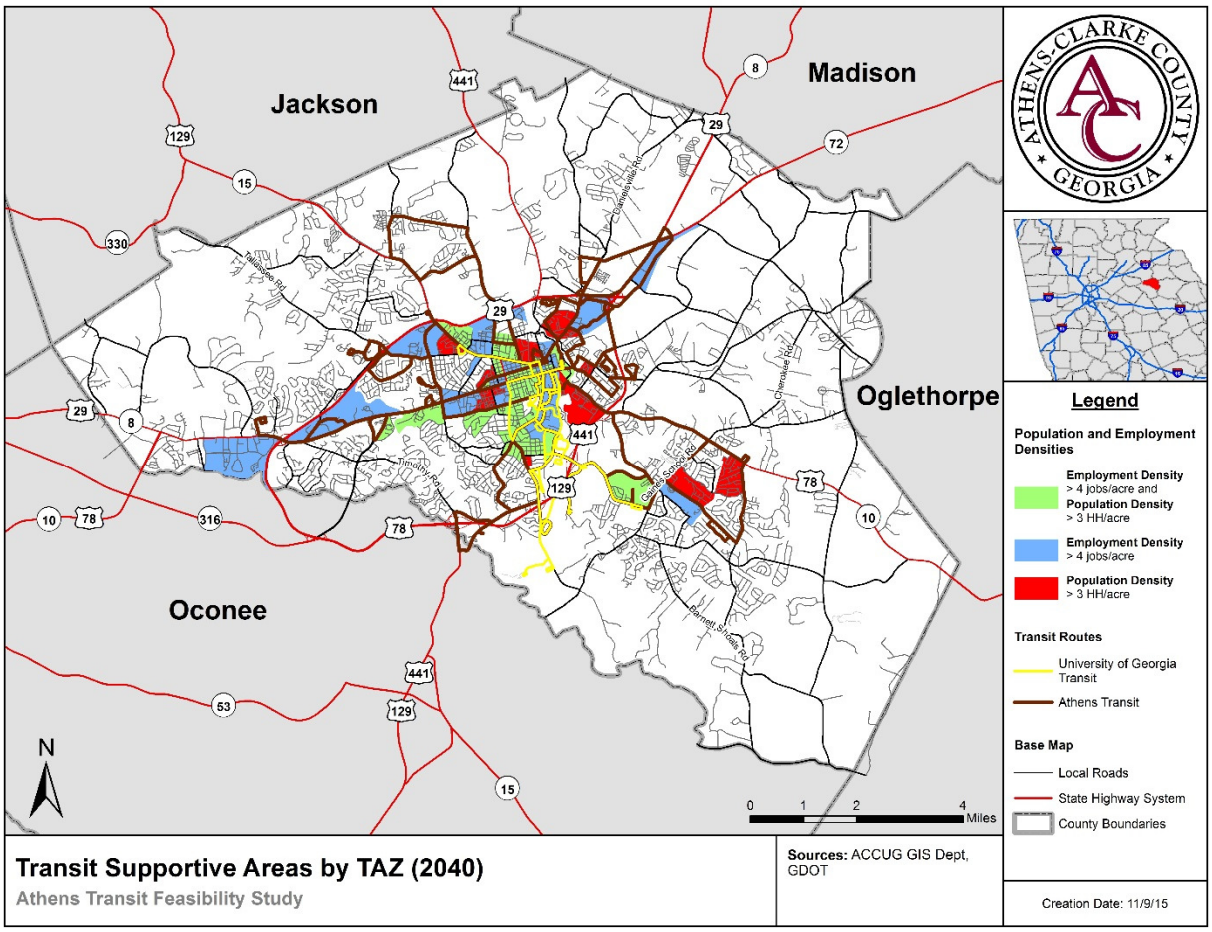
The population in Athens-Clarke County is expected to grow by 39.7 percent from 2010 to 2040. Assuming that the elderly, disabled and poverty populations grow at a similar rate, the demand for fixed route transit service is calculated as follows:

***Unlinked Passenger Trip Demand=***
***(8.4 X 10,404 + 30.0 X 7,222 + 14.5 X 38,125) X 1.397 =***
***1,197,042***

Since the current usage rate is 84.5 percent of the calculated demand, the actual non-UGA ridership demand in 2040 is expected to range between the high of 1.2 million and the low of 1 million. This future transit usage represents an additional 250,000 to 450,000 non-UGA passengers annually.

The MACORTS 2040 socioeconomic projections were utilized to identify future concentrations of population and employment densities. The following map shows projected employment densities greater than 4 jobs per acre and population densities greater than 3 households per acre. While there is projected growth throughout Athens Clarke County, the highlighted areas are those most likely to have densities that could support hourly transit service. These areas are generally located within the current Athens Transit service area, which indicates that the majority of future unlinked passenger trip demand will be located within the existing service area.

FIGURE 54: 2040 POPULATION AND EMPLOYMENT DENSITIES




In summary, the existing Athens Transit routes serve the largest majority of existing and future transit needs within Athens-Clarke County. The latent demand analysis demonstrated nine areas with potential

for transit ridership, and will be further analyzed to determine the viability of service extensions. The latent demand and propensity analysis does not consider trip ends or desired destinations, therefore the public input data will be utilized for this component of the study.

# Identification of Service Options

Throughout the study, data has been collected to identify potential improvements to the existing fixed route system, as well as future service that could be included in Athens Transit System's fixed route service plan. The data was collected through a variety of means including surveys, public information meetings and previous plans and studies, as well as meetings with transit staff members. While there has been a considerable amount of public input and analysis completed to identify these service options, additional public meetings will be conducted prior to the finalization of any service changes. Due to the potential impact of major transit service changes on current riders and the general public, FTA regulations require fair and equitable considerations prior to implementation. ATS will ensure all regulations are complied with prior to any service changes.

In order to disperse the fixed route transit service options over the next 15 years, the service options have been separated into short-, mid- and long-term time frames. Short-term options include the potential re-structuring of existing fixed routes and new fixed route services in the northern portion of the service area. Mid-term options could be implemented in 5 to 10 years and include additional re-structuring of existing routes, new fixed route service and frequency improvements on highly productive routes. The long-term service options include the implementation of new fixed routes, frequency improvements and additional weekend service. These options could be implemented between 10 and 15 years from the finalization of this plan.

A table outlining the costs associated with each of the service options will be shown at the end of this section. The costs will include the fully-allocated operating costs, or savings, of the re-structured or new routes and capital costs incurred due to the changes. The costs shown are based on 2016 pricing and the current cost of revenue vehicles of varying size.

## *Short-Term*

During the development of service options for the Athens Transit fixed route system, low- or no-cost options were identified that could be completed in the first five years of the plan. This strategy provides the agency with time to identify future funding sources or re-allocation of current funds that could be used for new or expanded service identified in the medium- and long-term options.

The following short-term fixed route transit service options are intended to improve the current service by providing more efficient and customer-friendly improvements to existing fixed routes. One of the major issues identified with the following routes was the lack of bi-directional service along many of the community's major corridors. The elimination of large loops on several of the existing routes was a recommendation in the 2009 TDP; however, to date, none of the routes identified in that plan have been restructured to reduce or eliminate the loops. Several of the service options in this section address this issue. Since any changes to the current fixed route service plan could have a potentially negative affect on existing riders and the under-represented general public, the ATS transit staff will ensure that additional public input will be collected and considered prior to the finalization of any service options.

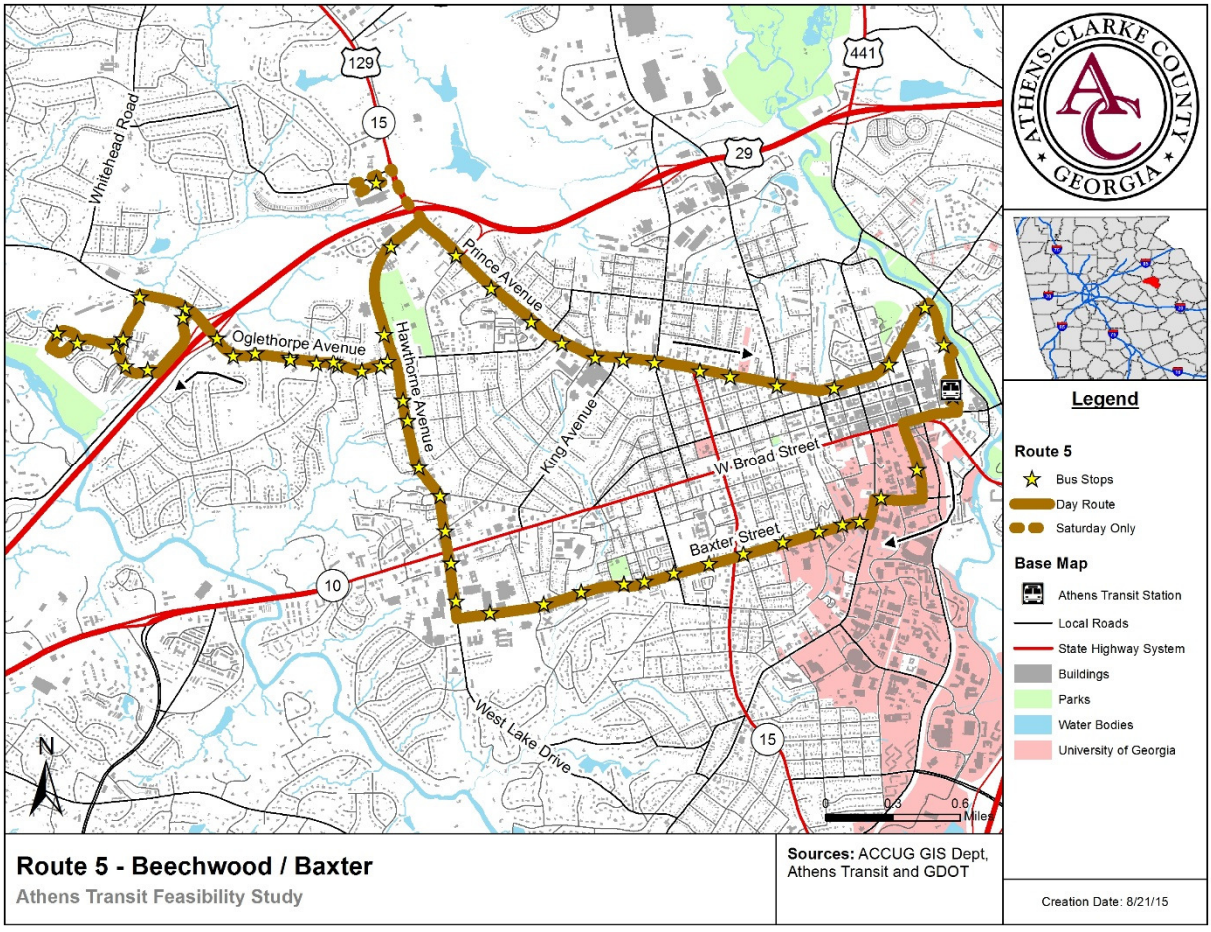
## Route 5

Currently, Route 5 operates out of the MMTC as a clockwise loop. This loop works in conjunction with the loop of Route 7 which operates in the opposite direction. This route has the following destinations:

- UGA Campus
- Clarke Central High School
- ACC Library
- St. Mary's Hospital
- Clarke Middle School
- Alps Road Elementary
- Beechwood Shopping Center
- Oglethorpe Avenue Elementary
- Westside Heights Apartments
- Athens Regional Medical Center

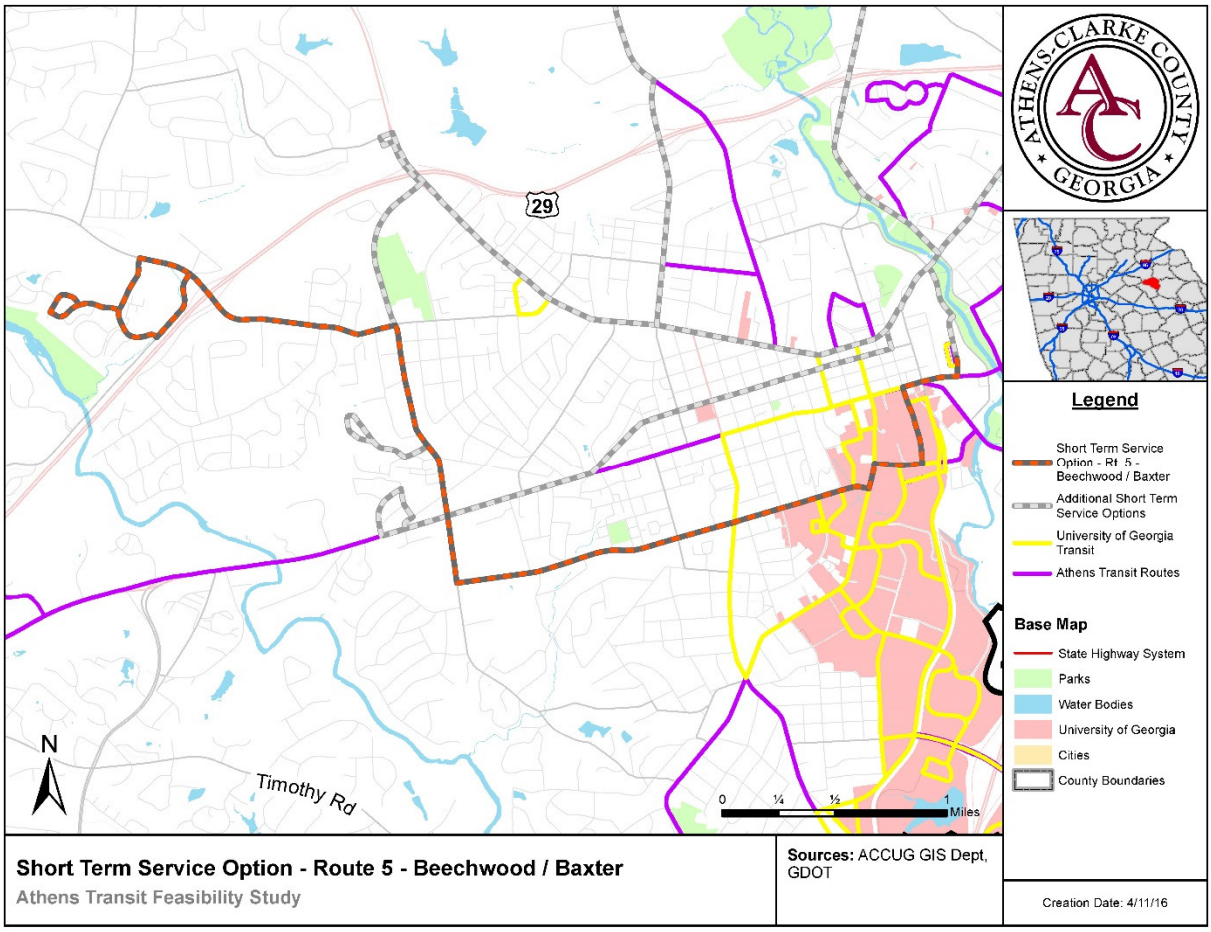
In addition to the destinations listed above, Route 5 makes additional stops along Baxter Street, Hawthorne Avenue, Oglethorpe Avenue, Prince Avenue and West Dougherty Street. The map below shows the existing Route 5 configuration.

FIGURE 55: EXISTING ATHENS TRANSIT ROUTE 5 ALIGNMENT




In order to improve the service to the residents along Route 5, a restructuring of the route that would eliminate the current loop and include more bi-directional service is recommended. This improvement is to be made in conjunction with the Route 7 recommendation that follows. The map below illustrates the re-structured Route 5.

FIGURE 56: PROPOSED ATHENS TRANSIT ROUTE 5 RE-ALIGNMENT




The re-structured Route 5 eliminates the northern portion of the loop along Hawthorne Avenue, Prince Avenue and West Dougherty Street. This area will be included in the Route 7 recommendation. Routes 5 and 7 will continue to have an overlap area along Hawthorne Avenue that allows passengers to switch between the routes if needed. This route is intended to continue to operate on the same hours as the current Route 5 with no immediate changes to the frequency.

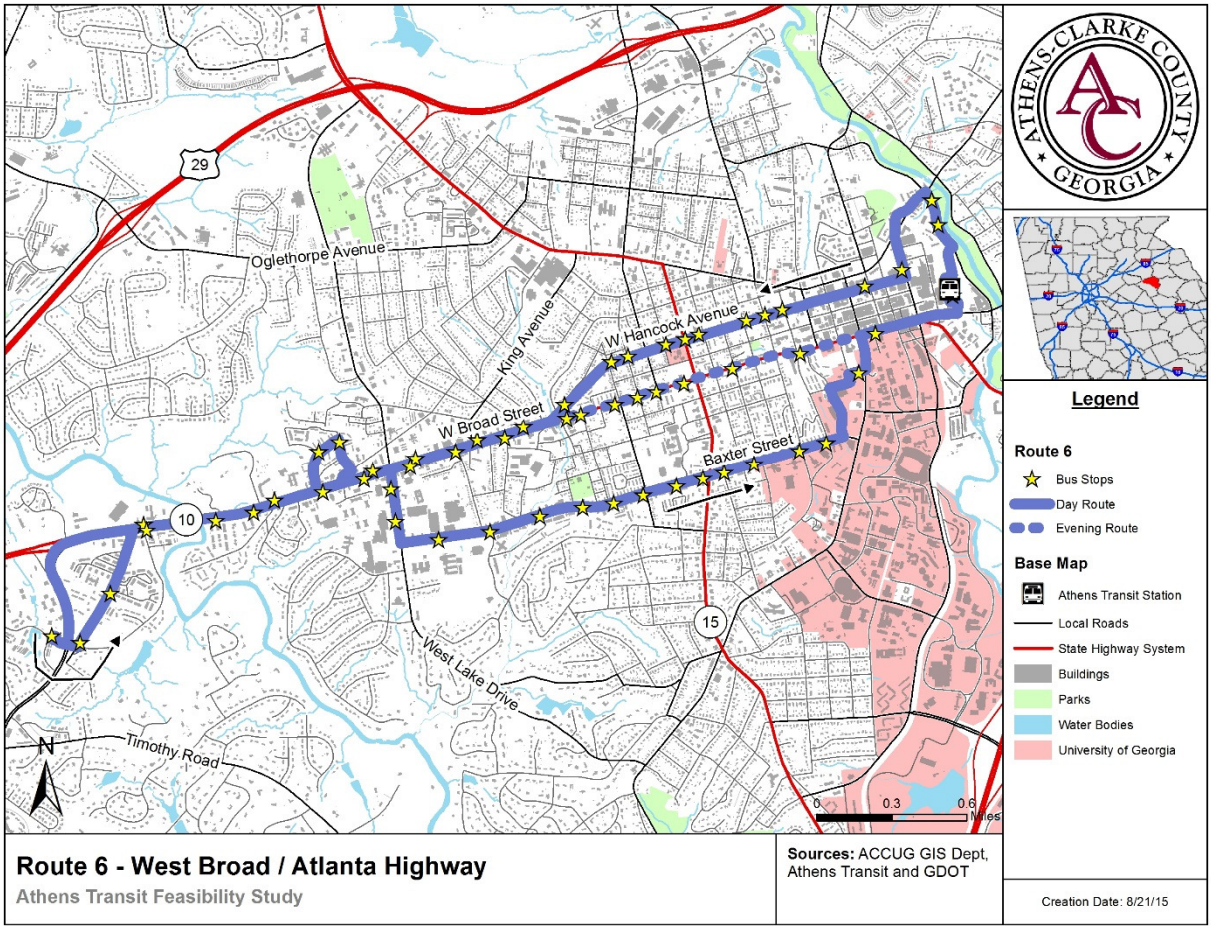
## *Route 6*

Route 6 serves the Hancock Avenue, Broad Street/Atlanta Highway and Baxter Street corridors running from the ATS MMTC to Epps Bridge Parkway. The majority of the area is served by loops, with only a short portion of the route on West Broad Street and Atlanta Highway having bi-directional service. Destinations along the current Route 6 include:

- Downtown Athens
- Abbey West Apartments
- Arbor Ridge Apartments
- Cascades on the River Apartments
- River's Edge Apartments
- Beechwood Shopping Center
- St. Mary's Hospital
- ACC Library
- UGA Campus

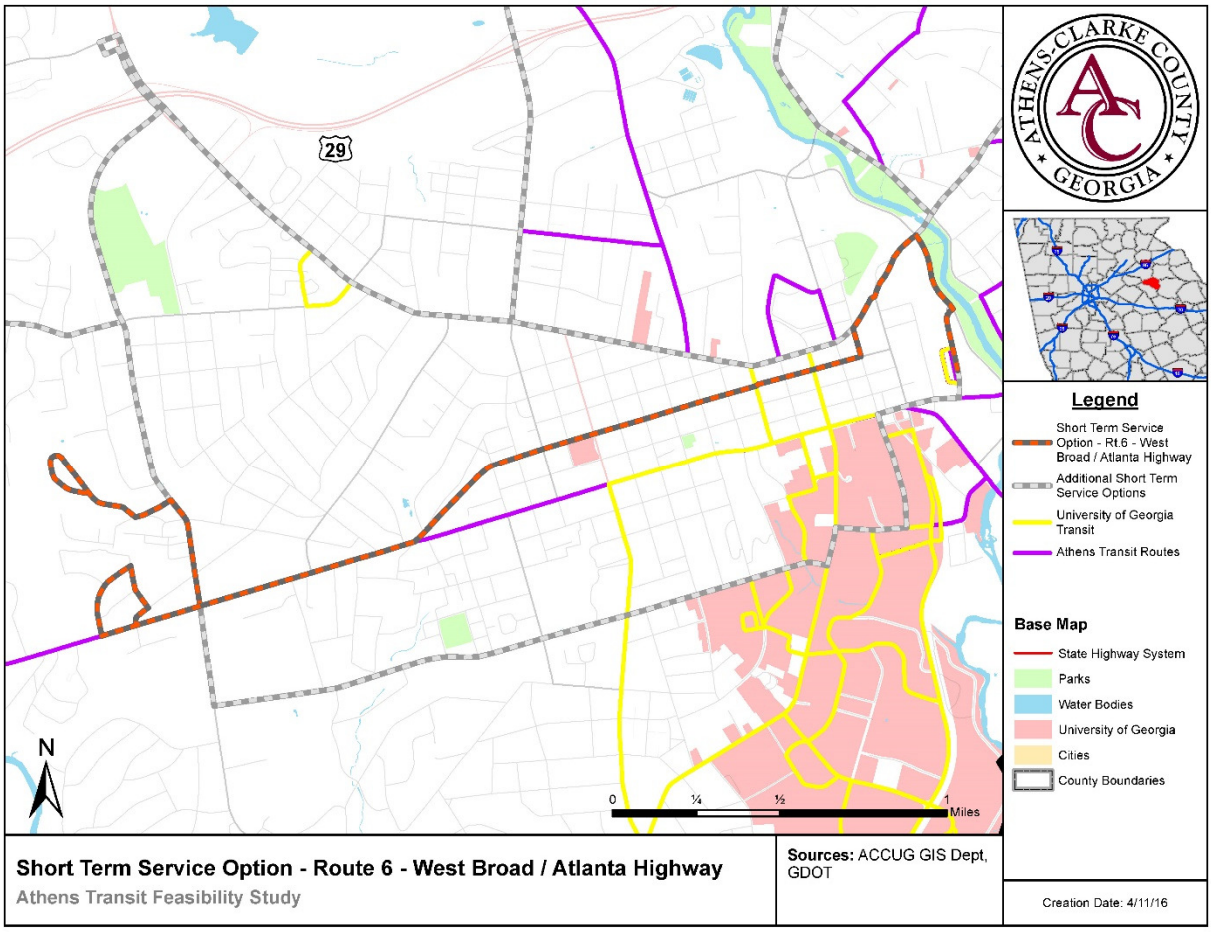
There is some overlap between Routes 5, 6 and 7, especially along the Baxter Street corridor. The following maps illustrates the current Route 6 alignment.

FIGURE 57: EXISTING ATHENS TRANSIT ROUTE 6 ALIGNMENT




In order to supply more bi-directional service with this East-West route, the elimination of service along Baxter Street and a portion of East Broad Street is recommended. Additionally, the elimination of the portion of the route west of Camelia Drive and the inclusion of the New Columbia Brookside development is also recommended. Atlanta Highway is served by Routes 20 and 21, throughout the majority of the year, while Baxter Street is currently served by Routes 5 and 7. The map shown below shows the recommended Route 6 re-structuring.

FIGURE 58: PROPOSED ATHENS TRANSIT ROUTE 6 RE-ALIGNMENT

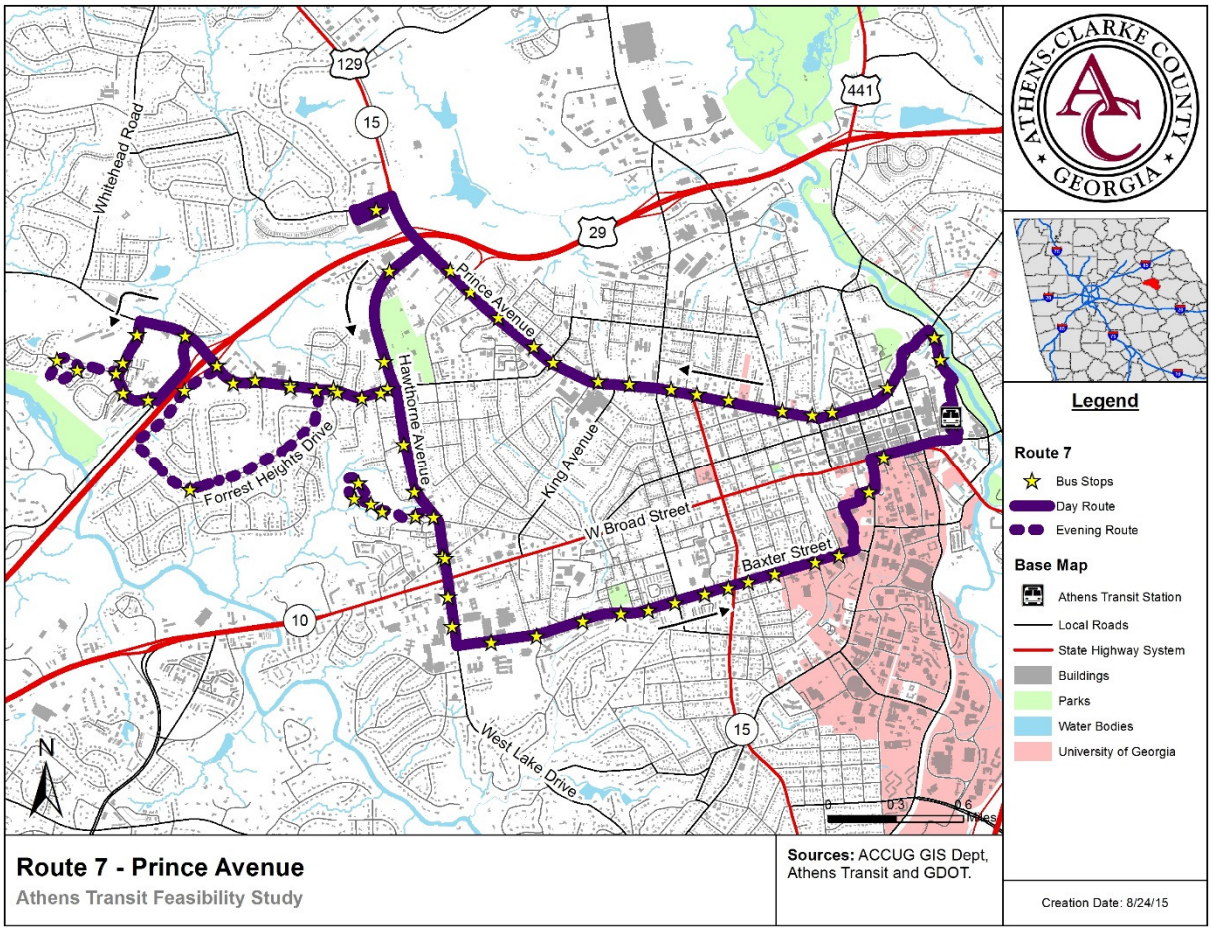



The re-structured Route 6 includes bi-directional service along West Broad Street and Hancock Avenue, as well as new service to the New Columbia Brookside development. The inclusion of this development allows for transfers between Routes 6 and 7, if needed.

## *Route 7*

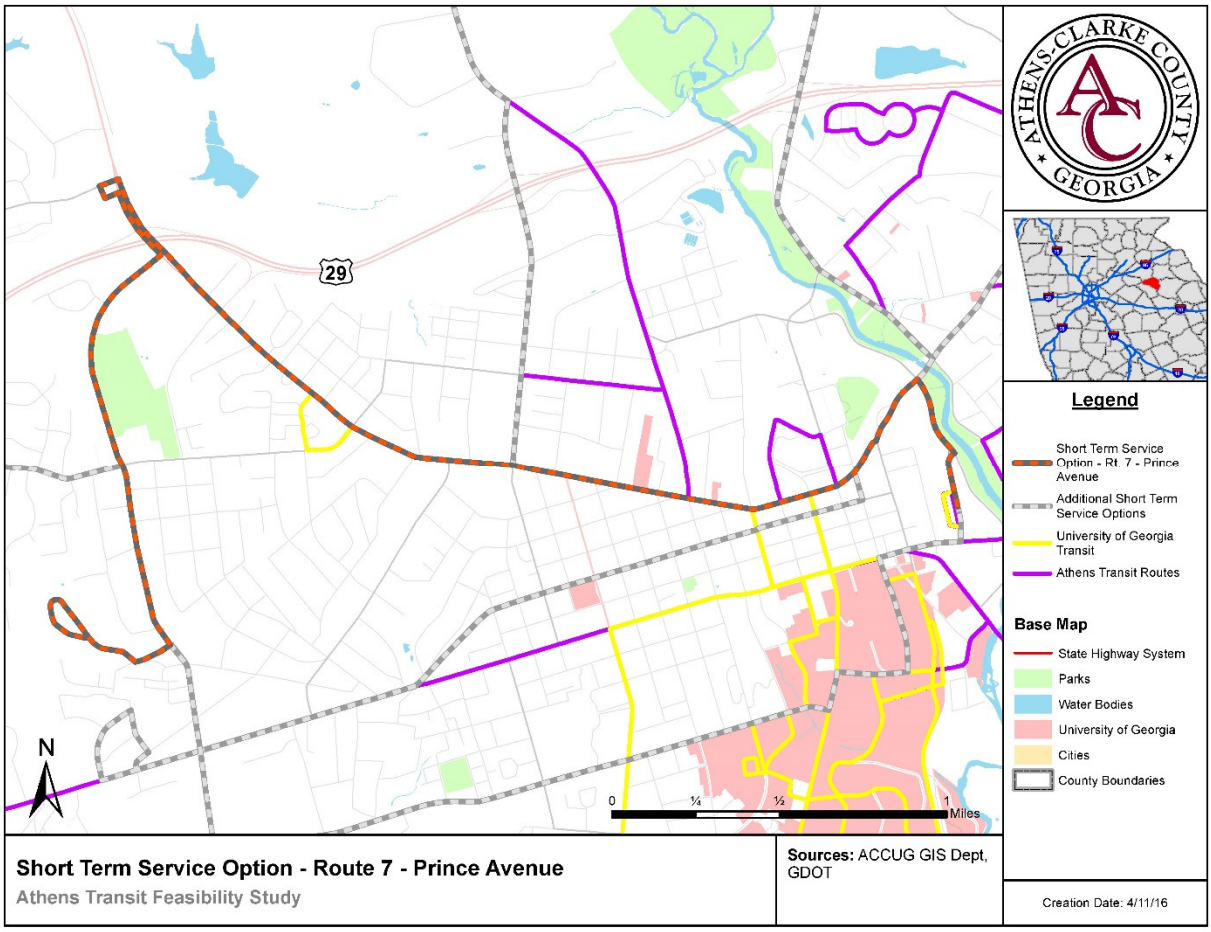
As noted above, Route 7 is recommended to be re-structured as part of the recommendations for Route 5. Route 7 currently operates as a counter-clockwise loop serving the same areas that are covered by Route 5. The map shown below illustrates the current Route 7 configuration.

FIGURE 59: EXISTING ATHENS TRANSIT ROUTE 7 ALIGNMENT




In order to ensure that the current service area is covered, the re-structured Route 7 will cover the northern half of the loop currently served by Routes 5 and 7. In addition, Route 7 will include the recently re-developed New Columbia Brookside area. Route 7 will include service along West Dougherty Street, Prince Avenue and Hawthorne Avenue. Route 7 will overlap with Route 5 along the Hawthorne Avenue Corridor. The map below shows the recommended configuration of Route 7.

FIGURE 60: PROPOSED ATHENS TRANSIT ROUTE 7 RE-ALIGNMENT

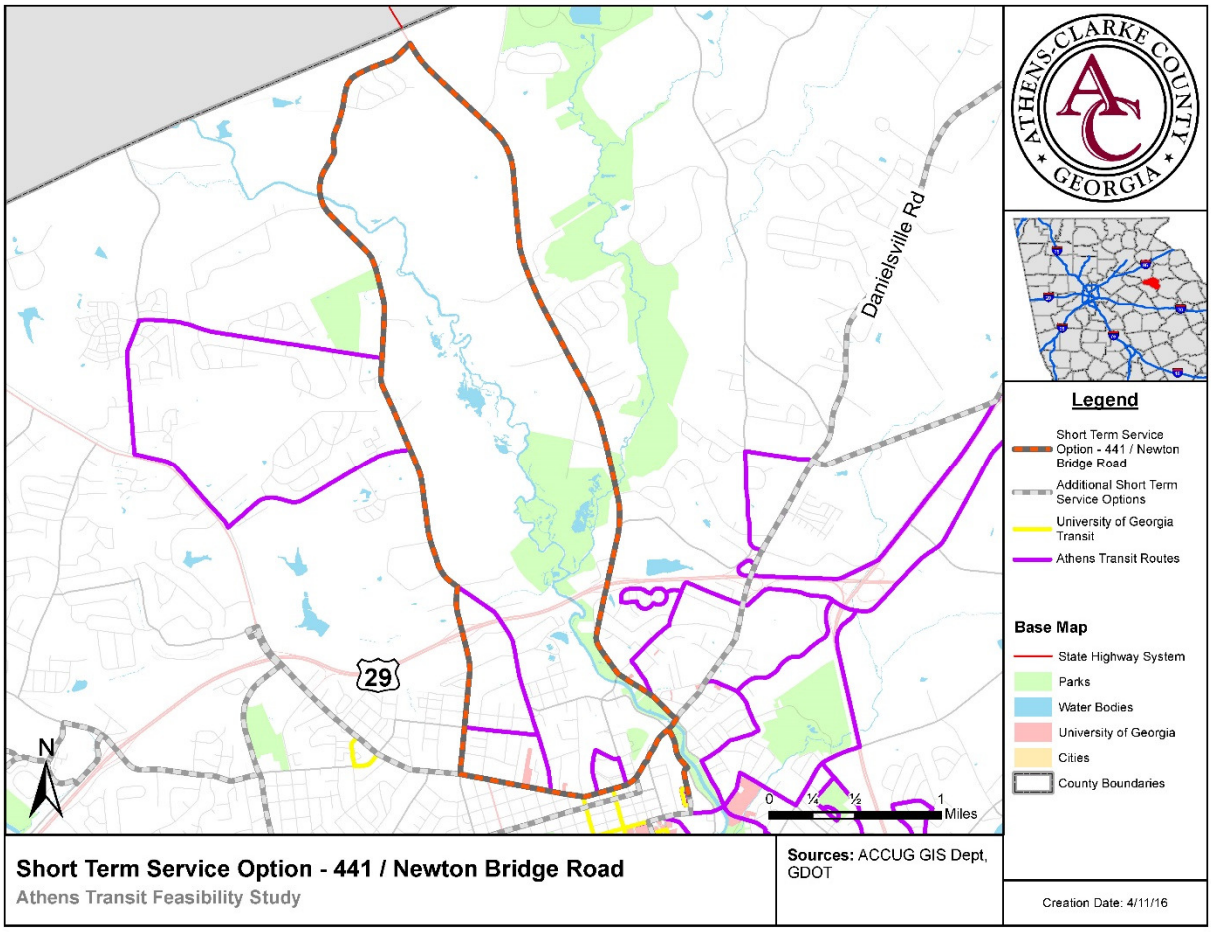



In addition to the restructuring of this route, the hours and days of service need to match those of Route 5. These changes to Route 7 should be implemented in conjunction with the recommended changes to Route 5.

## *MLK Parkway/Commerce Road/Newton Bridge Road – New Service*

The lack of fixed route transit service in the northern section of the County was identified by ATS staff members as a future need. Although development along portions of Commerce Road/US 441 is currently low density, there is potential for future development in that area for both industrial and residential uses. The map below shows the recommended new route.

FIGURE 61: PROPOSED ATHENS TRANSIT ROUTE – 441 / NEWTON BRIDGE ROAD

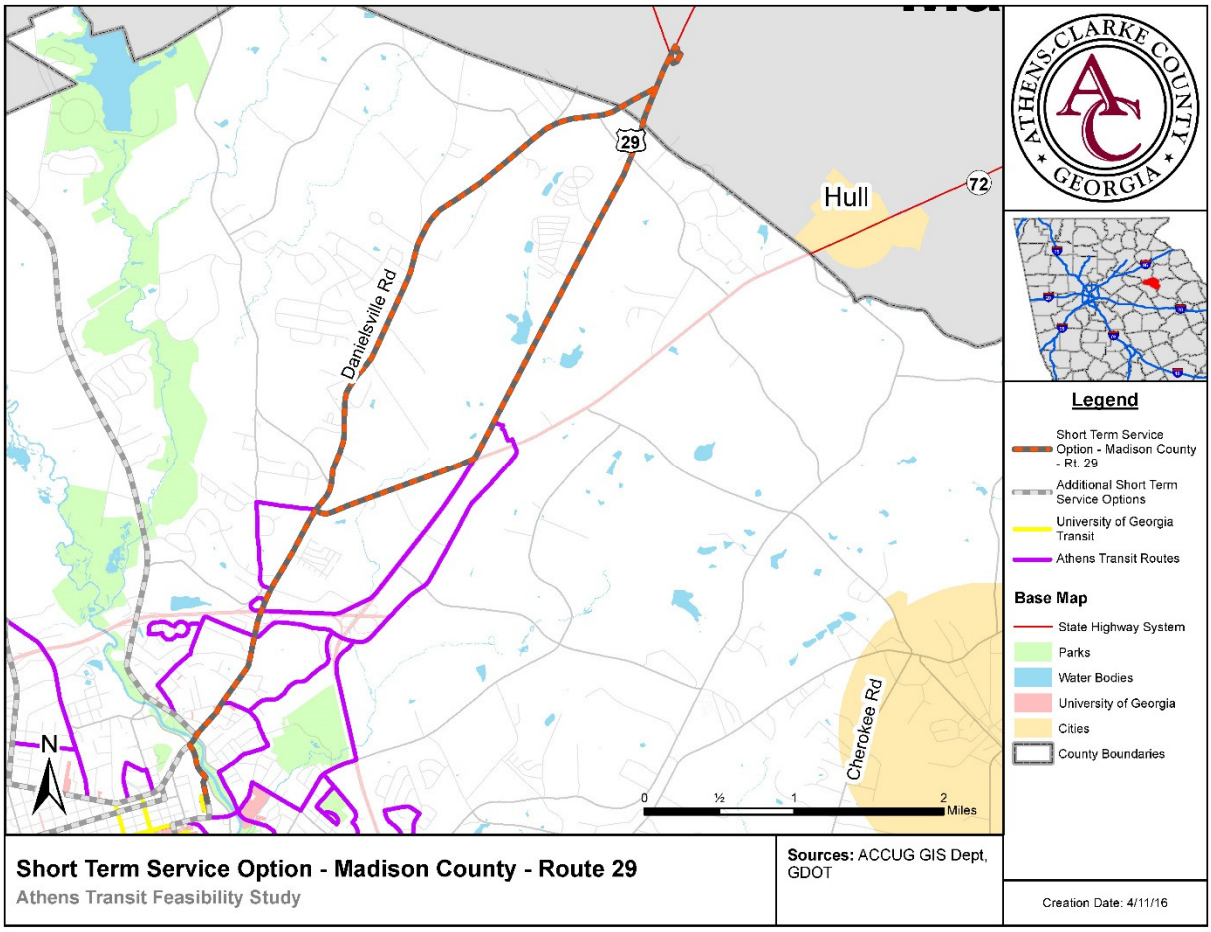



This new service covers a portion of the service eliminated from Route 8 in the short-term recommendations, but it also expands the current fixed route transit service in the northern end of the County. This route addition is recommended for long-term implementation period to provide time for development in this area to reach the point of supporting fixed route service. Also, this route should be implemented as a peak-hour service until the time that full day service can be supported.

## *US29/Danielsville Road – New Service*

Similar to the mid-term recommendation for new service along US441 and Newton Bridge Road, this new service recommendation addresses portions of northern Clarke County that was identified in the Latent Demand analysis for future ridership potential. In the Latent Demand analysis, an area bounded by Danielsville Road and US 441 north of Athens has a high propensity for transit usage. Due to the lack of fixed route service throughout this area of the County, the ridership has been very low. The recommended route is shown in the map below.

FIGURE 62: PROPOSED ATHENS TRANSIT ROUTE – MADISON COUNTY / ROUTE 29




In addition to serving an area with a high propensity for transit usage, the recommended route also extends the current fixed route service area into southern Madison County. The development of this recommendation as a long-term addition to the fixed route service allows for the northern portion of Clarke County and southern Madison County to continue to grow and potentially become more transit friendly. This route is recommended to start as a peak-hour service that may eventually become a full day operation.

## *Mid-Term*

The following mid-term service options are envisioned to occur between 5 and 10 years from the approval of this plan. The implementation timeframe of these options allows the transit agency to identify any additional funding that may be needed for these service improvements and new services. The service options in this section include more improvements of existing service and the introduction of new service to the transit system. Frequency improvements for Routes 5, 7, 9, 25 and 26 are recommended to occur during this period as well. These frequency improvements were identified in the 2009 TDP as well as during the public survey conducted for this plan.

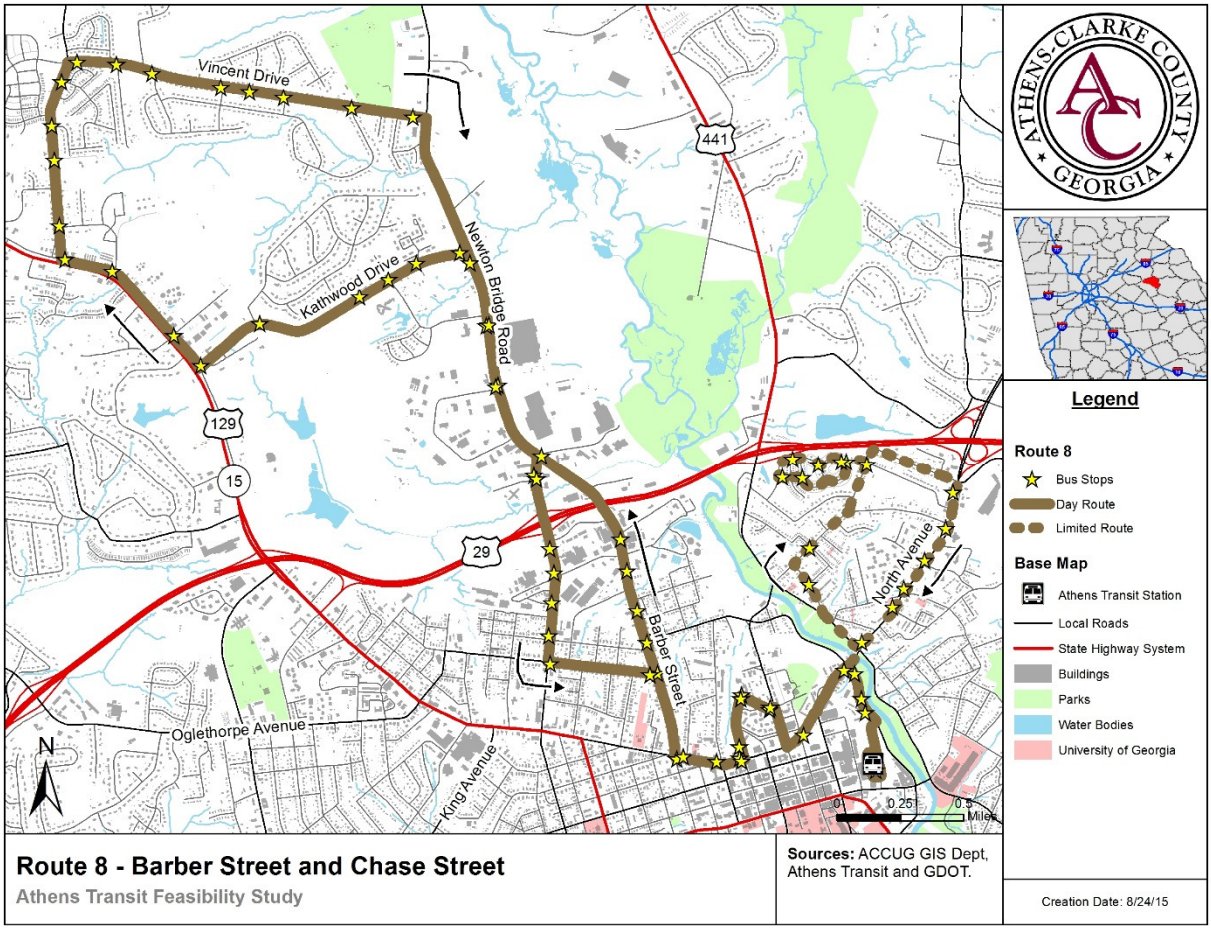
## Route 8

Route 8 operates on the north side of Athens with service along Newton Bridge Road, Kathwood Drive, Jefferson River Road, Vincent Drive, North Avenue and Ruth Street. Destinations along this route include:

- Bob Snipes Water Resource Center
- Rolling Ridge Apartments
- Athens Family Dental
- Hope Haven
- Holland Youth Sports Complex
- Garnett Ridge Boys and Girls Club
- Chase Street Elementary
- Bridgewater Community

The schedule for Route 8 includes two stops at the MMTC each hour throughout the day. Following service to the majority of the route, the bus makes its first stop at the MMTC. After the first stop, the bus continues on to serve the remainder of the route. Route 8 is the only fixed route that makes this additional stop in the middle of its designed service. The map below illustrates the current Route 8 service area.

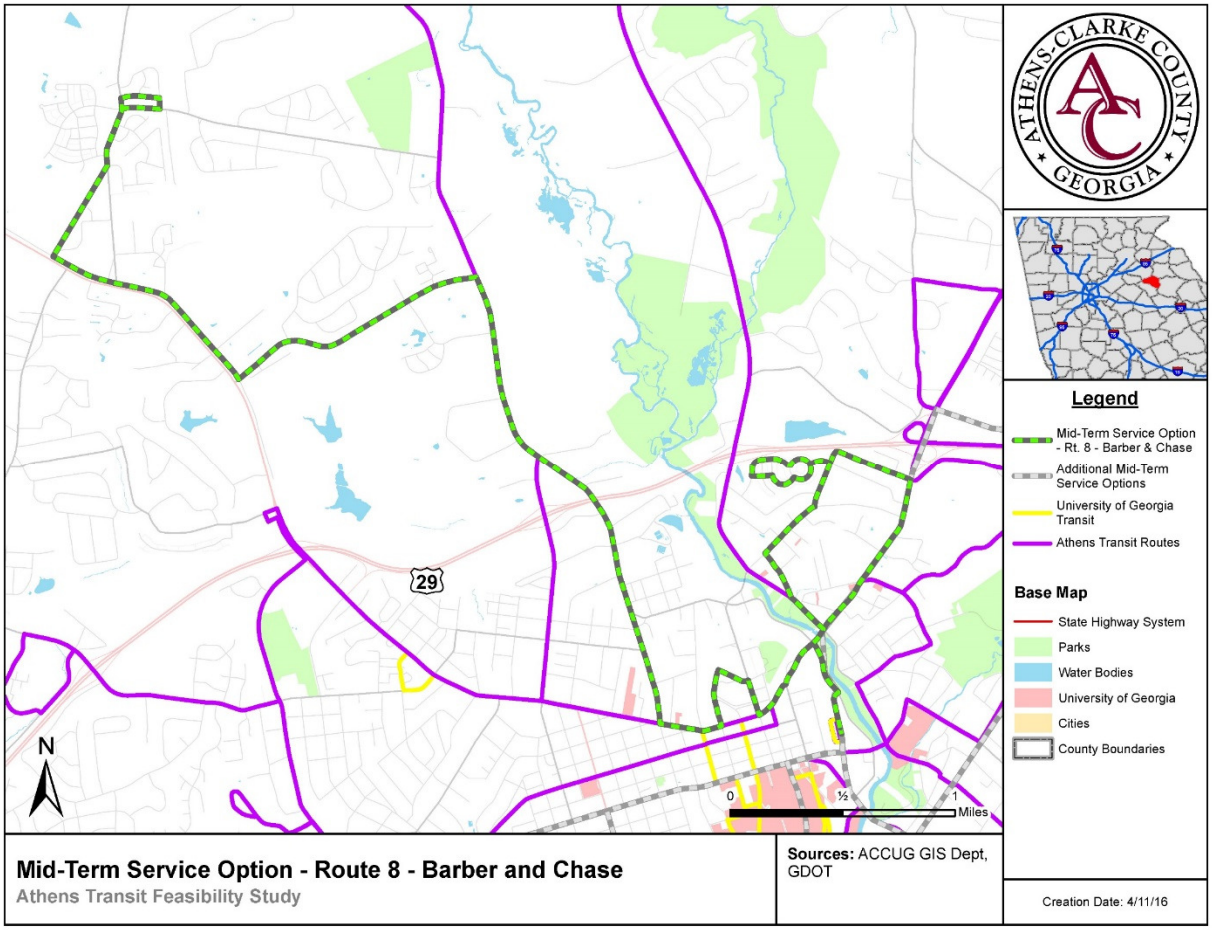
FIGURE 63: EXISTING ATHENS TRANSIT ROUTE 8 ALIGNMENT




In order to improve the service on this route, the elimination of some of the loops along this route is recommended. The first portion of the route includes two loops that could be eliminated; based on the

ridership survey taken in the fall of 2015, the recommendation calls for the elimination of the portions of the loops on Vincent Drive and Chase Street. The map below indicates the recommended changes.

FIGURE 64: PROPOSED ATHENS TRANSIT ROUTE 8 RE-ALIGNMENT




The Ruth Street and Bridgewater Community are currently served throughout the day, but do not receive fixed route service at night. The extension of the current service hours to these areas consistent with the remainder of the route is recommended. This extension of the current hours for that portion of the route will eliminate the shortening of the route in the evening hours. Since Route 8 is interlined in the evening with Route 1, this change also creates the opportunity for additional abbreviated evening service on another route in the system.

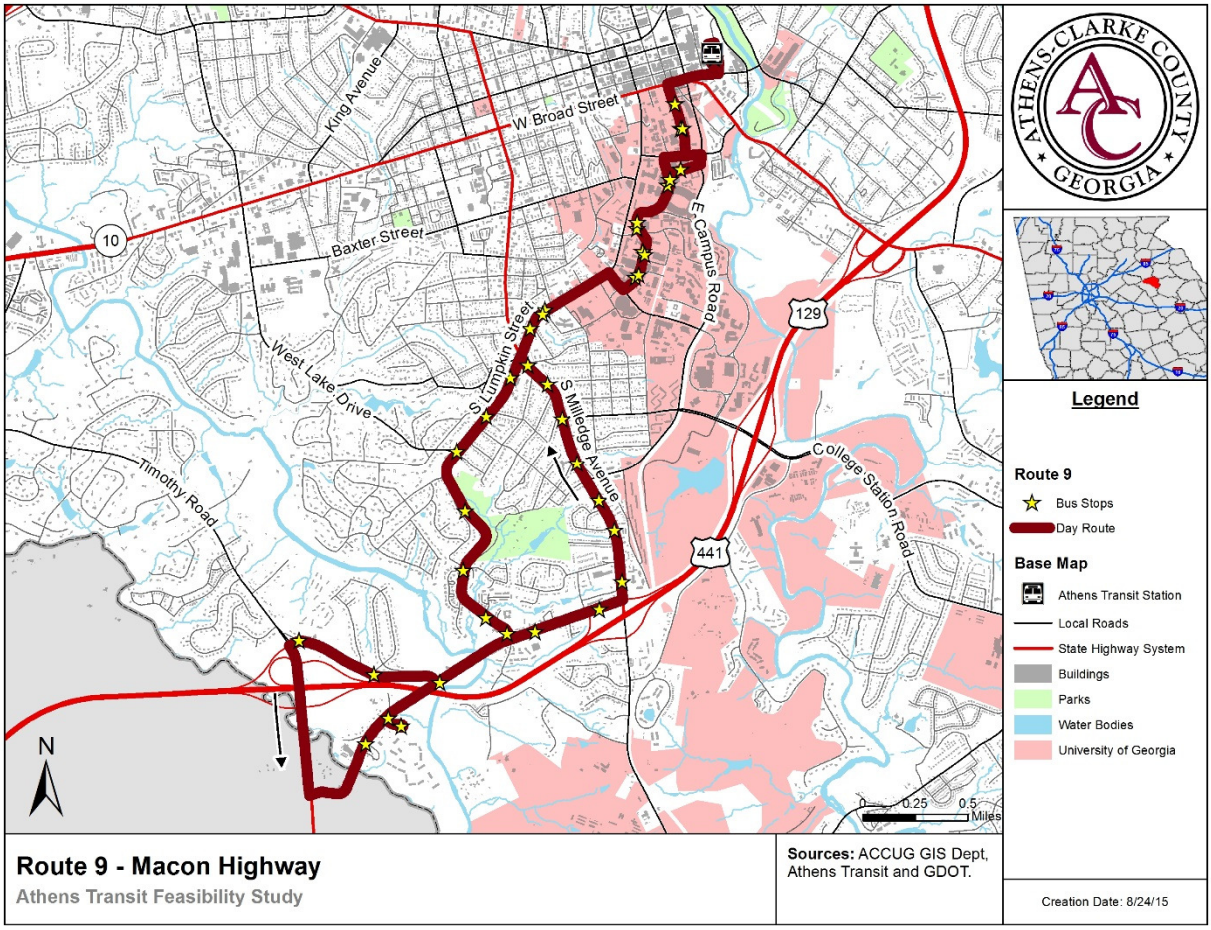
## *Route 9*

In its present state, Route 9 serves portions of the UGA campus, as well as areas several apartment complexes south of campus. In addition to the campus roads, the route has stops along South Lumpkin Street, South Milledge Avenue and Macon Highway. Destinations along this route include:

- UGA Campus
- Five Points
- Shops of South Athens
- River Walk Townhomes
- River Club Apartments
- Carousel Village Apartments

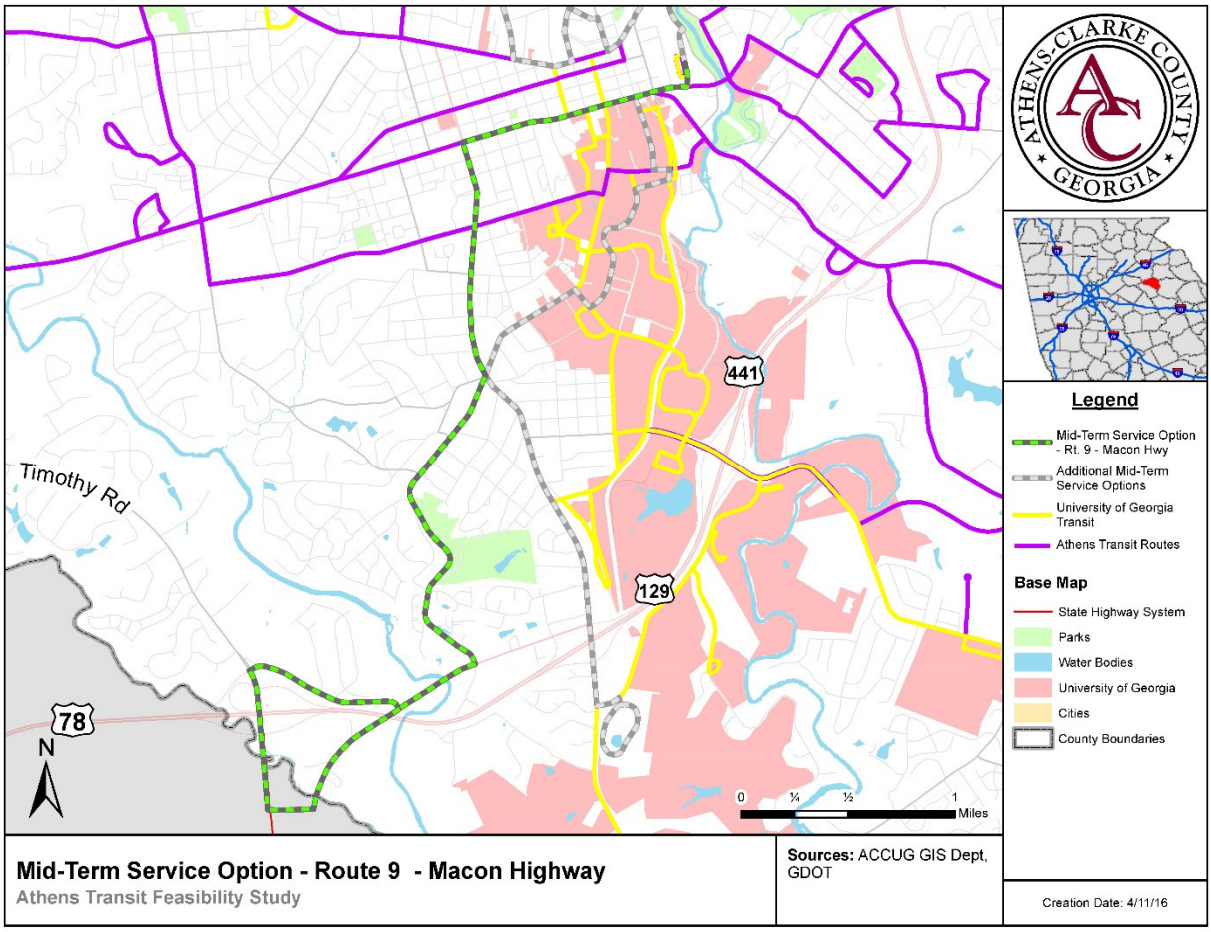
The predominantly north-south route operates seven days a week, including evening service during the week. On the weekend, service runs until 7p.m. The map below shows the current alignment of Route 9.

FIGURE 65: EXISTING ATHENS TRANSIT ROUTE 9 ALIGNMENT




Similar to the route improvements in the short-term recommendations, the elimination of the loop that includes the South Lumpkin Street and South Milledge Avenue service is recommended. Based on the ridership survey, the higher ridership exists along the South Milledge Avenue corridor on this route. However, to improve the overall operation of the route in conjunction with new service to be discussed below, the recommendation calls for the elimination of the South Milledge Avenue portion of this route. The map below illustrates the recommended new alignment of Route 9.

FIGURE 65: PROPOSED ATHENS TRANSIT ROUTE 9 RE-ALIGNMENT




The removal of the South Milledge Avenue section of the existing route also includes moving away from some of the Macon Highway service in the current route structure. The recommended changes to this fixed route should be implemented in conjunction with the new service listed below.

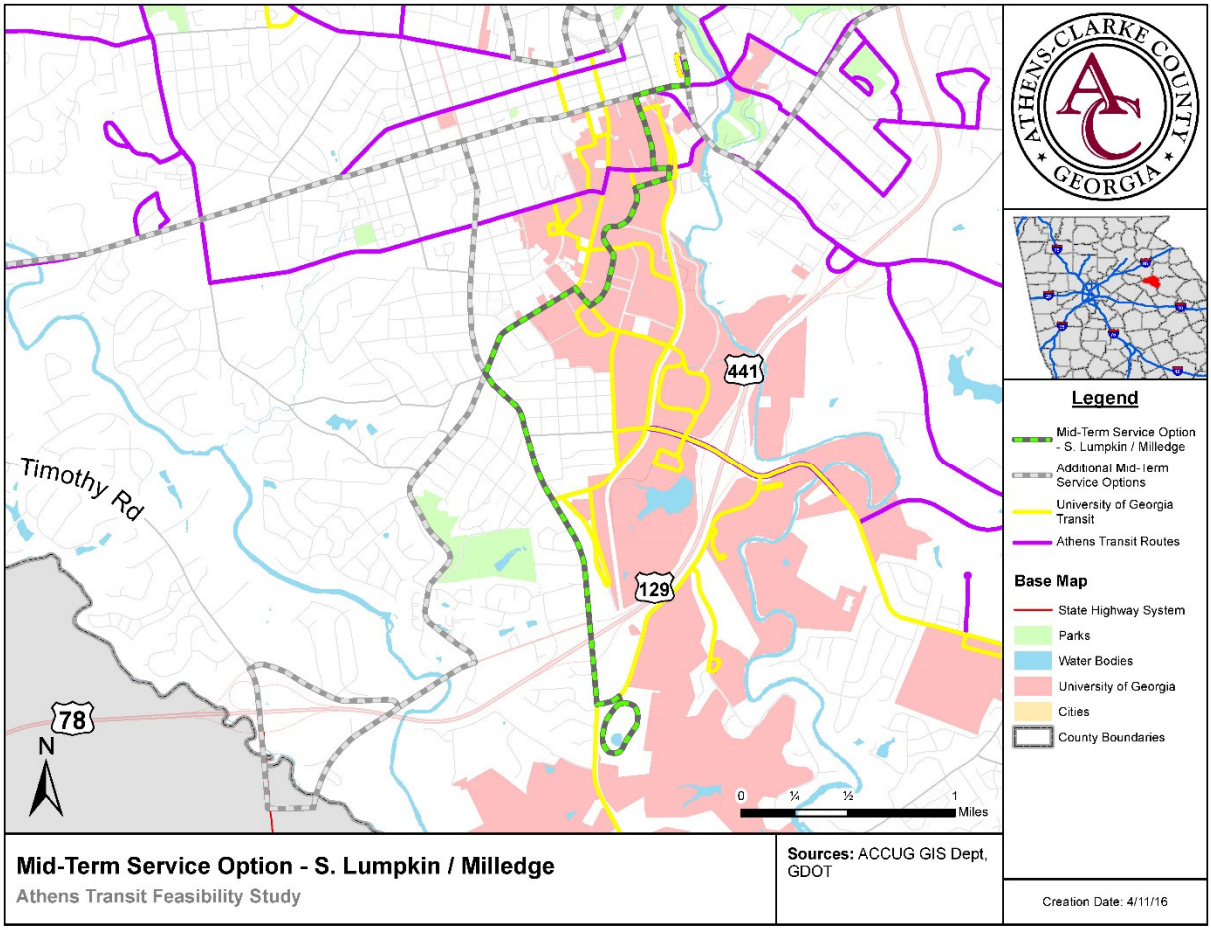
### *South Lumpkin Street/Milledge Avenue – New Service*

Based on several requests for additional service along Milledge Avenue and at the Five Points intersection, a new fixed route that runs from Lakeside Apartments to the MMTC in downtown Athens is recommended. This new service would include the portion of South Milledge Avenue that is recommended to be removed from Route 9. Some of the destinations along this new route include:

- The Park at Athens: Lakeside Apartments
- Five Points
- Fraternity/Sorority Row
- UGA Arch
- Downtown Athens

The map below shows the recommended new fixed route.

FIGURE 66: PROPOSED ATHENS TRANSIT ROUTE – SOUTH LUMPKIN / MILLEDGE




In addition to providing bi-directional service along the Milledge Avenue corridor, this route also provides additional service to the Five Points intersection. Both of those destinations were identified in the public survey conducted for this study. This service should be implemented along with the Route 9 service option list above and should have similar hours and days of service as Route 9.

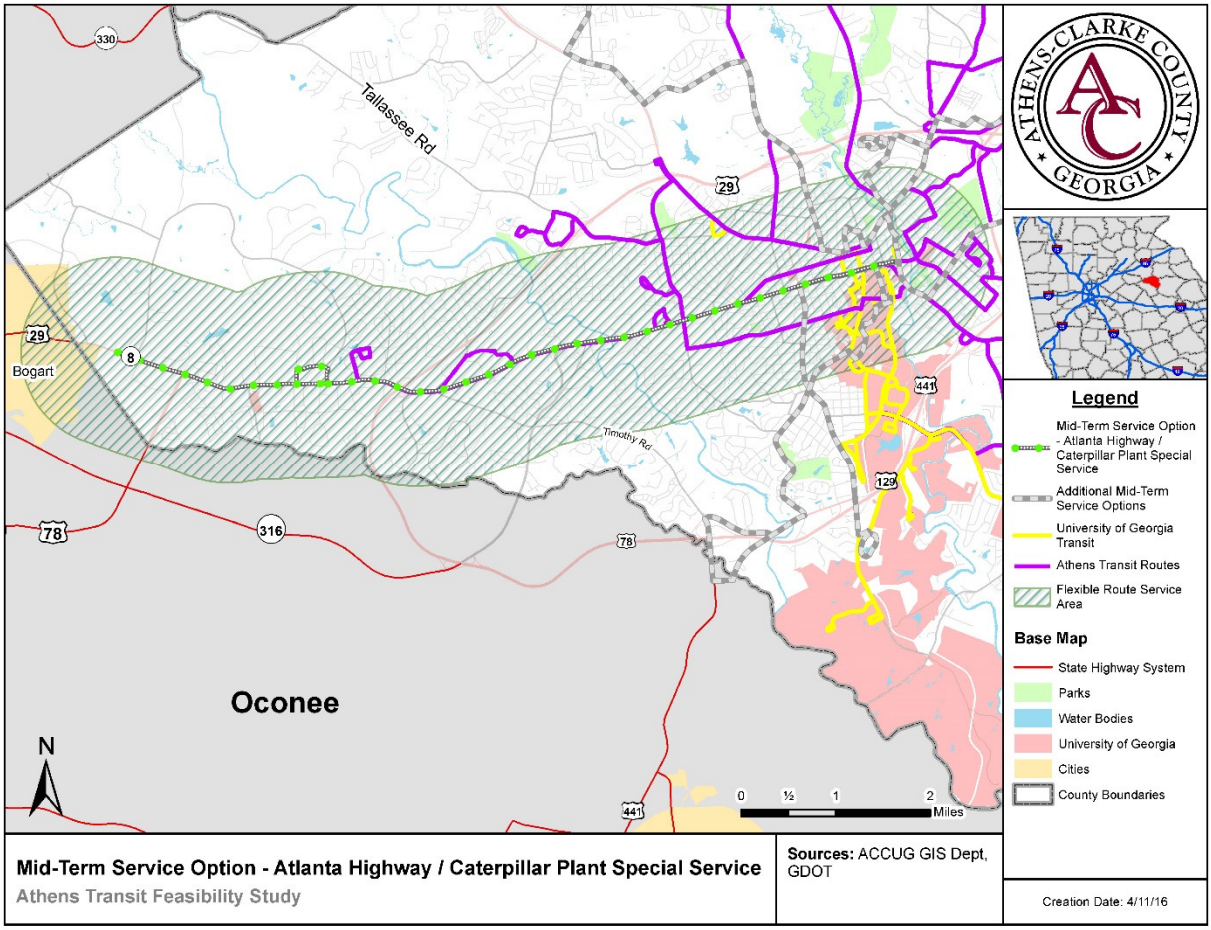
## *Atlanta Highway/Caterpillar Flexible Service*

During the existing conditions analysis the Atlanta Highway corridor was identified as an area experiencing significant population and employment growth and development. In addition to the new residential and commercial development planned/underway, the ridership survey respondents and study stakeholders also identified this corridor as a desired expansion area. Despite the new development and close proximity to the Caterpillar Plant employment center, the projected densities could not support traditional fixed route transit service operating at a minimum of one hour headways.

A "special service model" was developed for this corridor that would include flexible pre-scheduled service that would operate within 1 mile of the prescribed route along Atlanta Highway. The transit vehicle would deviate from the service area spine to pick up scheduled trips and link them to the fixed route transit

system. The map below shows the Atlanta Highway service corridor and denotes the 1 mile service buffer where service could be provided.

FIGURE 67: PROPOSED ATHENS TRANSIT SERVICE – ATLANTA HWY / CATERPILLAR FLEXIBLE ROUTE



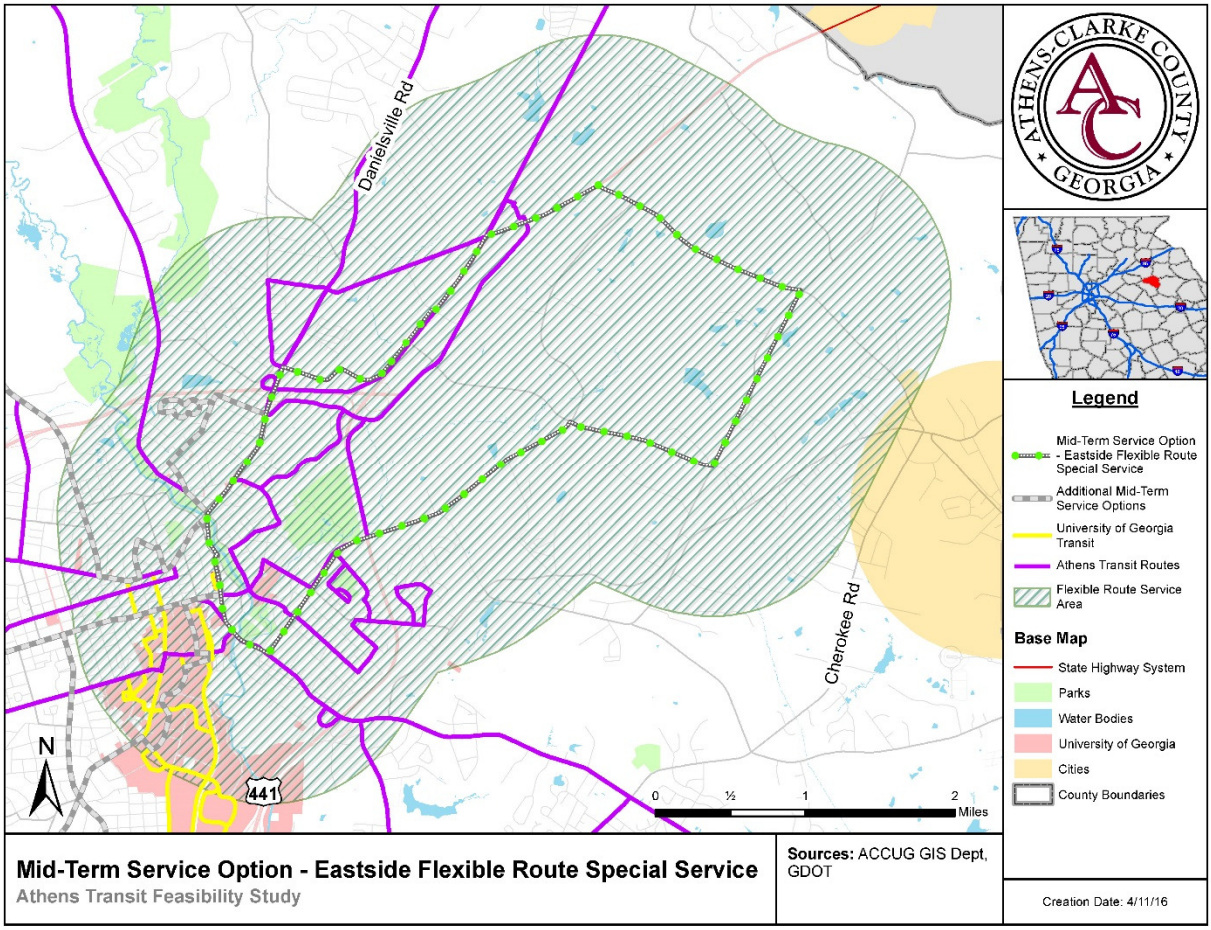

As development continues to expand along the Atlanta Highway corridor, the service could be modified to transition into traditional fixed route service.

## *Eastside Flexible Service*

During the existing conditions analysis the Eastside service area was also identified as an area experiencing population and shift based employment center growth. The ridership survey respondents and study stakeholders also identified this area for desired expansion. Similar to the Atlanta Highway corridor, the projected densities on the eastside could not support traditional fixed route transit service operating at a minimum of one hour headways.

The "special service model" was also recommended for this area and would also include flexible pre-scheduled service that would operate within 1 mile of the prescribed route. The transit vehicle would deviate from the service area spine to pick up scheduled trips and link them to the fixed route transit system. The map below shows the Eastside Flexible Route and denotes the 1 mile service buffer where service could be provided.

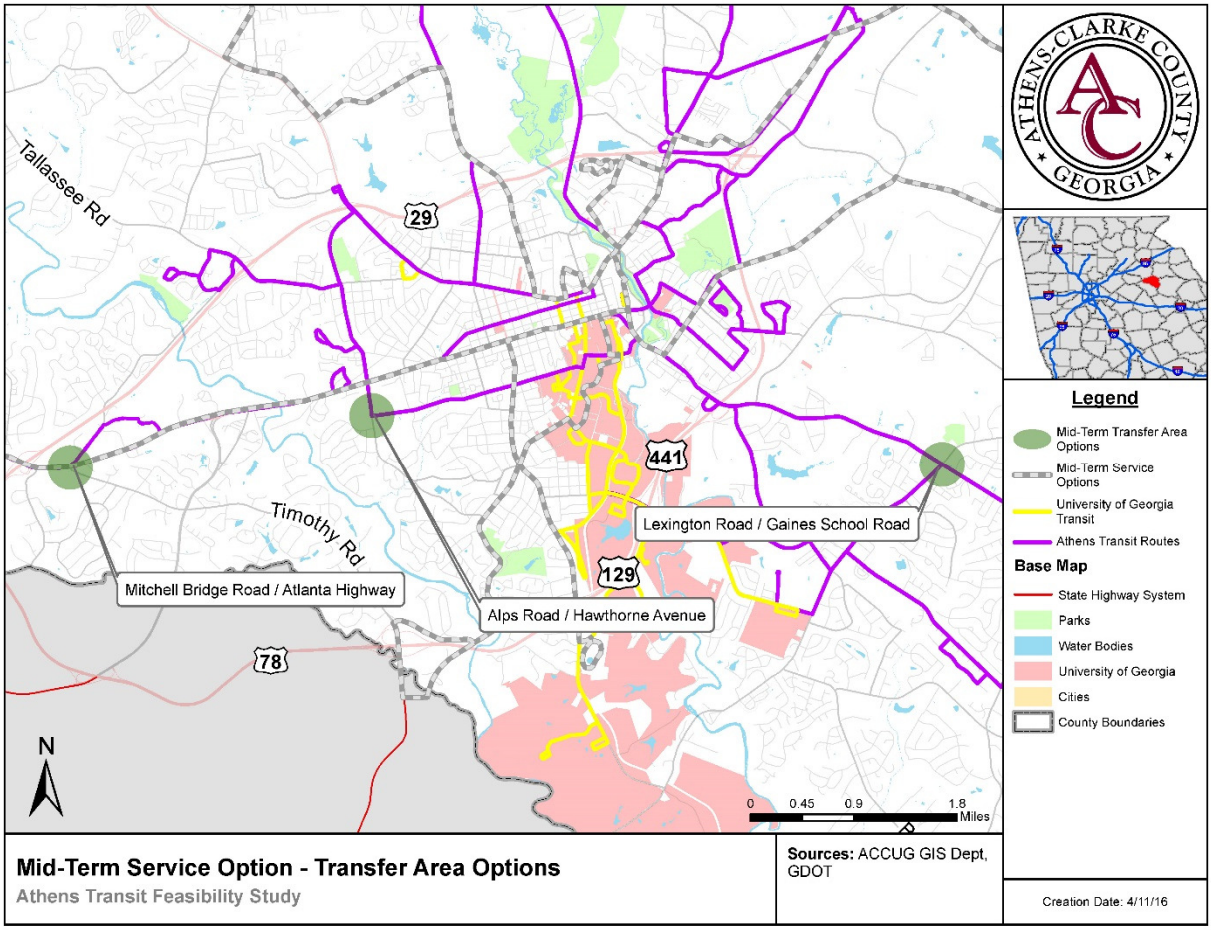
FIGURE 68: PROPOSED ATHENS TRANSIT SERVICE – EASTSIDE FLEXIBLE ROUTE




## *Decentralized Transfer Facilities*

Athens Transit is designed as a pulse system where all transfers occur at the Multi-Modal Transit Center. As the system extends beyond the current service area, the ability to reach the MMTC becomes compromised and an evolution of transfer options becomes a critical component of service expansions. A number of the service options identified during the Athens Transit Feasibility Study would require the addition of a decentralized transfer facility that would allow these routes to integrate with the existing system without returning to the MMTC during service. The map below identifies three potential transfer areas that would facilitate future service expansions.

FIGURE 69: PROPOSED ATHENS TRANSIT SERVICE – DECENTRALIZED TRANSFER LOCATIONS



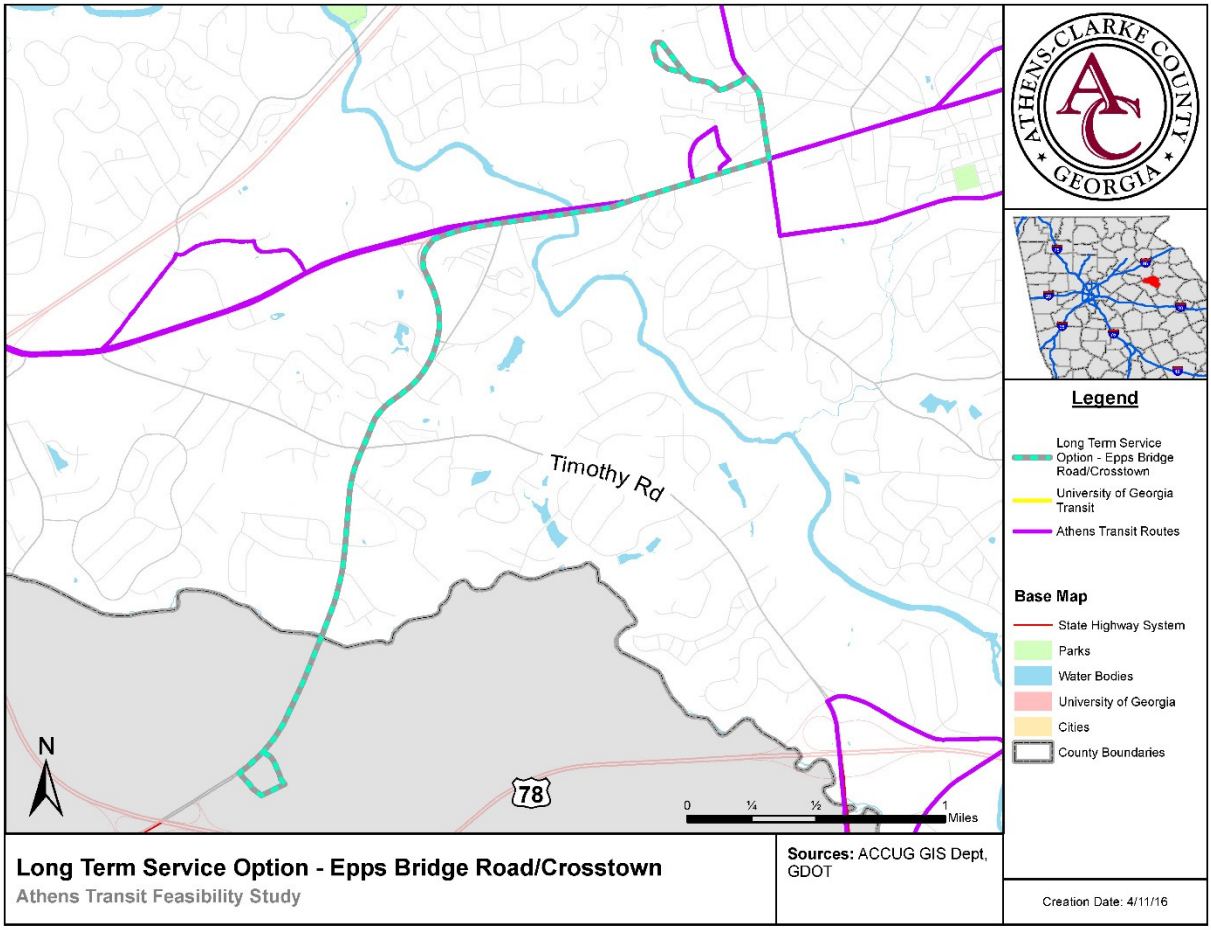

## Long-Term

The service options in the final phase of this plan are focused on the addition of a new crosstown fixed route service and increasing frequency of routes identified in the 2009 TDP and the public survey for this plan. Frequency improvements are recommended for all of the routes that were not increased during the mid-term plan. Since each of these options includes new service, the timeframe for implementation is 10 to 15 years. The timing of these recommendations allows the transit agency to identify future funding that can be used for the implementation of these new services.

### *Epps Bridge Parkway/Crosstown – New Service*

Based on public comments and to provide additional transfer connections between routes, the Epps Bridge Parkway/Crosstown route provides service from the Kroger and Walmart developments in northern Oconee County to the New Columbia Brookside area. The recommended route would allow for connections to the existing routes 5, 6, 7, 20 and 21. The map below shows the recommended alignment for this new service.

FIGURE 70: PROPOSED ATHENS TRANSIT ROUTE – EPPS BRIDGE ROAD / CROSSTOWN




While the remainder of the ATS fixed route operations work as a hub-and-spoke system, this crosstown service will offer the option to transfer to or from other fixed routes at a location other than the UGA Arch or the MMTC. This option will improve the transit experience for patrons that do not want or need to go downtown during their trip. In order to make transfers with other routes throughout the day, it is recommended that this route operate Monday through Sunday, including evening service each day. ATS policies or procedures for handling transfers may need to be adjusted or updated for this service change.

## Cost Estimations

In order to understand the financial commitments required during the short-, mid- and long-term phases of recommendations, planning-level cost estimates were developed. The operating costs are based on the latest fully-allocated costs, while the capital costs include the installation of bus shelters along new routes. Additional costs that will need to be considered include the purchase of new revenue vehicles to support the new service recommendations.

**TABLE 30:** SERVICE OPTIONS COST ESTIMATES

| Service Option | Annual Operating Costs[1] | Capital Costs[2] | Additional Vehicle |
|---|---|---|---|
| **Short Term** | | | |
| Route 5 Reroute | -- | -- | No |
| Route 6 Reroute | -- | -- | No |
| Route 7 Reroute | $192,579 | -- | No |
| MLK Parkway/Commerce Road/ Newton Bridge Road New Service | $467,114 | $600,000 | Yes |
| US29/Danielsville Road New Service | $467,114 | $630,000 | Yes |
| **Sub-Total** | $1,126,807 | $1,230,000 | |
| **Mid-Term** | | | |
| Route 8 Reroute | $100,847 | -- | No |
| Route 9 Reroute | $41,125 | -- | No |
| South Lumpkin/Milledge Avenue New Service | $476,792 | $510,000 | Yes |
| Atlanta Highway/Caterpillar New Service | $950,669 | $200,000 | Yes |
| Eastside Flexible Route New Service | $475,334 | $130,000 | Yes |
| Route 5 Frequency | $490,451.44 | $450,000 | Yes |
| Route 7 Frequency | $452,881 | $450,000 | Yes |
| Route 9 Frequency | $476,792 | $450,000 | Yes |
| Route 25 Frequency | $497,152 | $450,000 | Yes |
| Route 26 Frequency | $663,844 | $450,000 | Yes |
| Decentralized Transfer Points | -- | $1,500,000 | No |
| **Sub-Total** | $4,625,888 | $4,590,000 | |
| **Long-Term** | | | |
| Epps Bridge Parkway/Crosstown New Service | $476,792 | $120,000 | Yes |
| Route 1/3 Frequency | $501,052 | $450,000 | Yes |
| Route 2/24 Frequency | $597,473 | $450,000 | Yes |
| Route 8 Frequency | $467,114 | $450,000 | Yes |
| Route 12 Frequency | $1,215,037 | $450,000 | Yes |
| Route 14 Frequency | $961,080 | $450,000 | Yes |
| Route 20 Frequency | $502,952 | $450,000 | Yes |
| Route 21 Frequency | $756,902 | $450,000 | Yes |
| Route 22 Frequency | $756,913 | $450,000 | Yes |
| Route 27 Frequency | $679,286 | $450,000 | Yes |
| Route 28 Frequency | $317,316 | $450,000 | Yes |
| **Sub-Total** | $7,231,917 | $4,620,000 | |

[1] Annual operating costs are estimated using $79.07 per revenue hour for full size bus and $77.26 per revenue hour for cutaway vehicle use, 255 weekday service days and 102 weekend service days, when appropriate.

[2] Capital costs are estimated using $30,000 per new bus shelter along new service routes. This cost is based on ATS' cost on average for standard equipment, (sign, post, trashcan, bench, shelter, maps and

customer info), site work, engineering drawings, labor, etc. Full size buses are estimated at $450,000 per vehicle while cutaways are estimated at $70,000.

Costs do not include installation of bus stop improvements.

# Transit Systems Consolidation

The Athens Transit Feasibility Study goals include the evaluation of long term system operational improvements, such as elimination and/or consolidation of redundant infrastructure and services. A primary component of this study element is to evaluate existing transit services provided within Athens-Clarke County and determine if there are opportunities for partial or complete consolidation of services. The analysis screened all service providers, previously described in this report, for redundancies, and the following section will focus on the Athens Transit and University of Georgia fixed route transit systems.

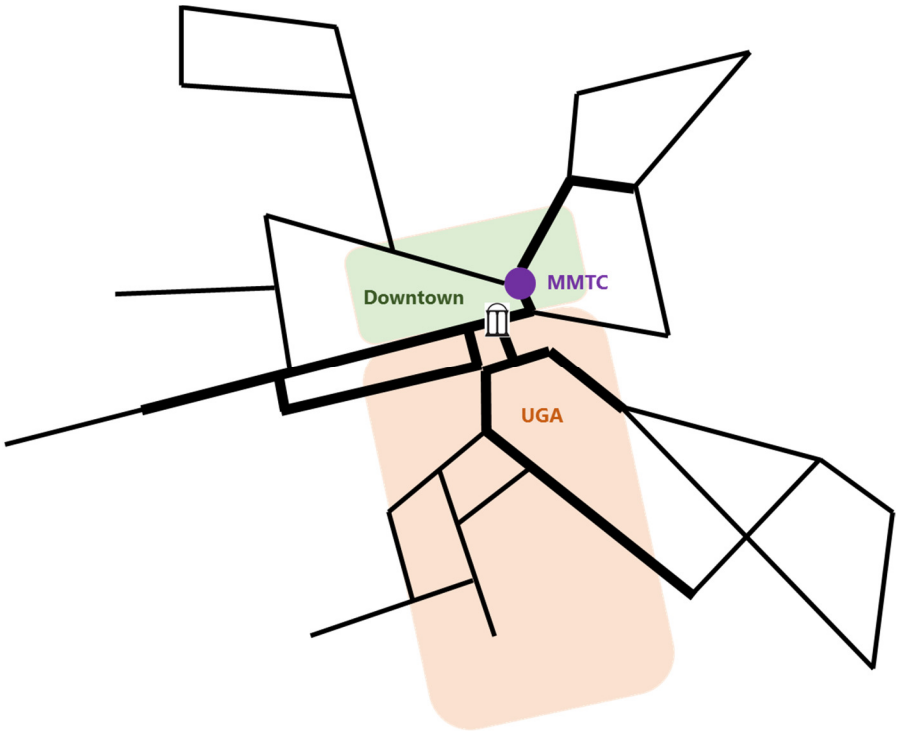
## *SYSTEM ATTRIBUTES*

System attributes are broadly defined as characteristics of a transit system as seen from the passenger's perspective. These attributes distinguish one system from another and fall within four general categories: General Service, Operations and Labor, Administrative/Governance, and Capital Facilities/Equipment. These attributes are examined individually in the following sections to provide clear comparison of the two fixed route providers.

### *General Services*

The Athens Transit fixed route system gathers trips from origins throughout Athens-Clarke County and distributes to various destinations including residential, shopping, employment, medical, and others. The University of Georgia system is constrained to the campus moving students, faculty and staff between campus locations and the Multi-Modal Transit Center. Higher levels of ATS service is provided where concentrations of population, employment, and service demand are the greatest, which results in many occurrences of services interlining on UGA campus. The diagram below shows the locations of the University campus, Downtown Athens, the UGA Arch, and the Multi-Modal Transit Center in comparison to the abstracted ATS fixed routes.

FIGURE 80: ABSTRACTED ATHENS TRANSIT SERVICES




A comparison of the general services provided by the transit systems was detailed in the existing conditions report and peer analysis. Additional service characteristics for the UGA and ATS systems that are applicable to the consolidation analysis are described in the following table.

**TABLE 31:** UGA AND ATS GENERAL SERVICE CHARACTERISTICS

| General Service Characteristics | | |
|---|---|---|
| | **ATS** | **UGA** |
| **Functional Service Model** | Pulse system | Shuttle/campus circulator |
| **System Classification** | Public system | Private system |
| **Fare Structure** | Fare based service | Free service |
| **Service Frequency** | 50 - 60 minutes | 7 - 20 minutes |
| **Service Area Constraints** | MACORTS urbanized area | UGA campus w/ access to MMTC |
| **Charter Services** | Not Allowable | Allowable and operated |
| **Service Modification Constraints** | Federal required participation process | Maximum flexibility |
| **System Goals/Mission** | Serve the General Public | Serve Students, Faculty, and Staff |
| **Demand Response Services** | Requirements established and monitored by FTA | Operates private demand response for students, faculty and staff. |
| **National Transit Database** | Monthly/annual reporting required | Voluntary reporting |

## Operations and Labor

The general operations of the UGA and ATS systems are functionally similar in many ways. Both systems are managed, maintained and operated internally as a department within their respective organizations. Both systems operate out of independent facilities where administrative and customer service are functionally separate from maintenance and repair facilities. Additionally, both systems utilize a combination of full time and part time positions to staff their various functional categories, including maintenance, operations, and administration.

The primary differentiator between the two system's operational and labor models is the volume of part time operators employed by the University system in comparison to the ATS system. The UGA transit system has +/- 200 operators of which approximately 175 (87.5%) are part-time operators. These UGA operators are primarily comprised of students enrolled at the university. In contrast, Athens Transit employs approximately 82 operators of which 23 (28%) are part-time operators. Part time UGA transit operators are compensated at a lower average hourly rate in comparison to the ATS wage rates, and are not eligible for employer paid benefits. The vast quantity of students enrolled at the University seeking part-time employment creates a regenerating labor pool from which the UGA transit system can draw. The approximate average wage rate for part-time UGA operators ranges from $9 - $11/hour in comparison to the average part-time wage rate of approximately $15/hour for ATS operators. The Athens Transit system must maintain competitive salary and benefit programs in order to attract and retain qualified operators.

*UGA Student Driver and Passengers – Source: John Roark, www.redandblack.com*

## Administration and Governance

The Athens Transit System operates as a department of the Athens-Clarke County Unified Government. The service goals and annual budget are approved by the ACCUG Mayor and Commissioners while the delivery of the service is overseen by the County Administrator and managed by the Athens Transit Director. The UGA transit system is housed within the University Transportation Department and is

governed by the University Board, overseen by the University President and his departmental Vice Presidents, and managed by the UGA Campus Transit Director.

The Athens Transit system receives federal funding from the Federal Transit Administration (FTA) through various formula and discretionary/competitive programs, and is therefore subject to federal rules and regulations associated with service delivery and reporting. These federal requirements are established at the national level and non-compliance often carries the penalty of discontinuation of federal funding. While the University is subject to oversight by the Board of Regents, they are not subject to rules and regulations associated with the operations, maintenance and service delivery of their transit system. This lack of regulation allows significantly greater flexibility for the campus transit system. If federal funding was received by the University system they would become subject to all federal regulations and reporting requirements.

### *Capital Facilities and Equipment*

According to the FTA, "In 2013, more than 40 percent of buses and 25 percent of rail transit assets were in marginal or poor condition." As a result, in 2016 the FTA published a Final Rule regarding the National Transit Asset Management System, which requires recipients of federal formula funding to develop asset management, state of good repair, and safety plans, comply with new reporting requirements, and maintain a prescribed level of asset maintenance for the transit system's capital facilities and equipment.[10]

Athens Transit owns and operates 40 rolling stock transit vehicles that will be subject to the new rule, in addition to the support vehicles, maintenance facilities and equipment, passenger shelters and notification equipment, and operations/administrative facilities. The University of Georgia does not receive federal funding from the FTA and will therefore not be subject to the federal rule making 49 U.S.C. § 5326(a)(3).

## CONSOLIDATION ASSESSMENT

Current conditions and service models for the UGA and ATS transit systems do not support full system consolidation. However, opportunities for coordinated and/or consolidated services were identified for two specific routes:

- Prince Avenue to Health Sciences
- South Milledge to Veterinary School and Equestrian Center

Figure 81 demonstrates the general location of these routes in relation to the UGA campus and ATS services. The route maps for these existing service are provided below in Figures 82 and 83.

[10] Federal Transit Administration National Asset Management System Final Rule https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Transit%20Asset%20Management%20Final%20Rule.pdf

FIGURE 81: ABSTRACTED ATHENS TRANSIT SERVICES / CONSOLIDATION COORIDORS

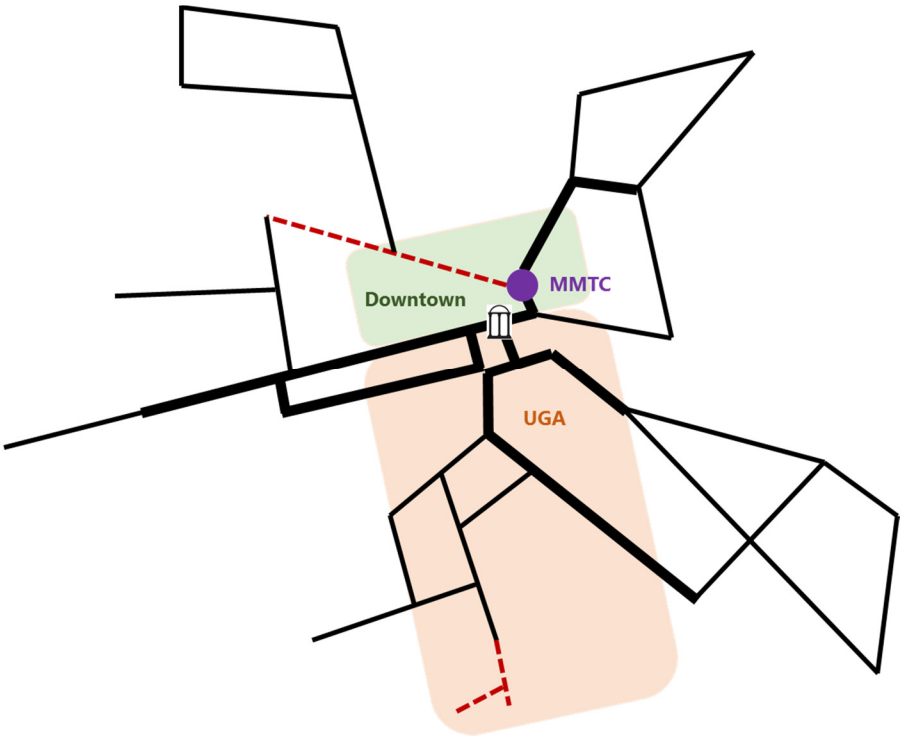


FIGURE 82: UNIVERSITY OF GEORGIA EXISTING ROUTE MAP

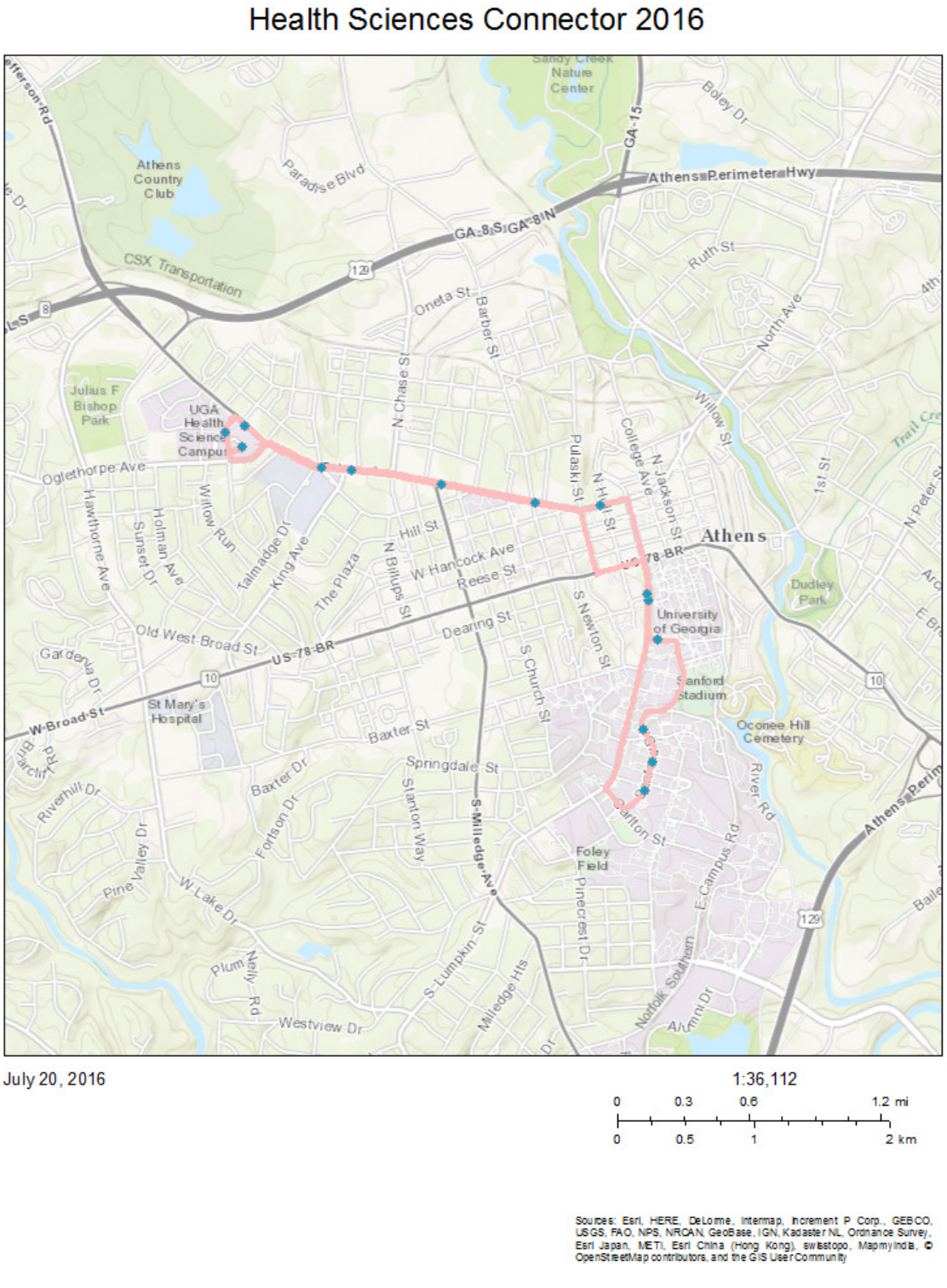
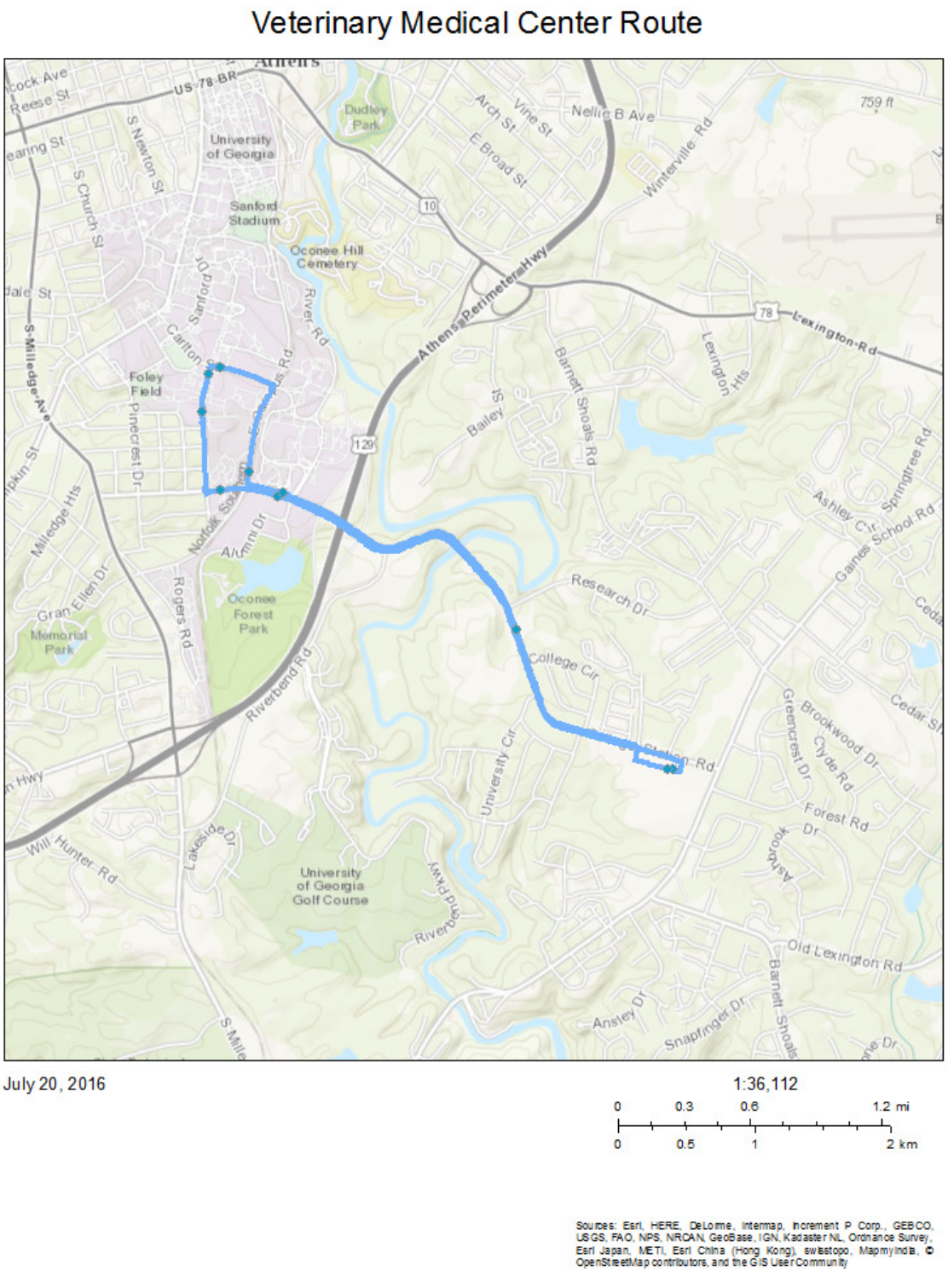


FIGURE 83: UNIVERSITY OF GEORGIA EXISTING ROUTE MAP



During the development of the Transit Development Plan, these routes should be coordinated with the University of Georgia to determine further evaluate the feasibility of service consolidation.

## Coordination

In addition to route specific consolidation recommendations, this analysis also includes coordination opportunities to enhance the services for local transit providers.

1. Continue UGA and ATS coordination on the following items:
    - Route modifications, new service, and coordinated/contracted services
    - Opportunities for shared support infrastructures (e.g. alternative fueling stations, etc.)
    - Operational policies and procedures (e.g. bus stacking at stops, etc.)
    - Long range alternatives and service models beyond the horizon of the plan (e.g. rail, etc.)
    - Marketing and outreach for students, faculty, and staff

2. Establish an annual transit forum to facilitate ongoing and focused coordination with all transit providers within the community. The participants in this forum should include representatives of both private and public transportation providers including but not limited to:
    - Athens Transit
    - University of Georgia Transit
    - Private Providers (Uber/Lyft/Taxi)
    - Apartment Shuttle Providers
    - Private Non-Emergency Human Services (NEHS) Providers
    - Inter-city Providers (Megabus, Greyhound)
    - Bicycle and Pedestrian Advocacy Representatives
    - Metropolitan Transportation Planning Representatives (MACORTS)
    - Other Stakeholders

    This forum should be convened on an annual basis, and topics should include current transportation program updates, issues, opportunities, and planned service changes.

3. Continue to monitor conditions and future opportunities for consolidation of services.

# Plan Recommendations

The following proposed recommendations have been stratified into three separate categories, each of which have a specific focus area including Branding and Marketing, User Enhancements, Multimodal Enhancements, and Financial Strategies.

## BRANDING/MARKETING

Branding of the transit system and marketing it is critical in enticing choice riders to utilize transit. ATS has taken significant steps with the implementation of creative bus stops in certain locations and the focus on the smart phone transit app development in coordination with UGA. However, comments received from some potential riders who want to ride the bus, but are unsure of where/how to access the bus system indicates the need for additional marketing and branding.

### *Update the branding for Athens Transit.*

In order to be competitive with the alternative services such as the apartment shuttles and Uber, Athens Transit must project an image that is enticing as well as modern. A transit agency rebranding effort is often accompanied by changes in service, whether adding service or realigning existing services to better serve areas of high transit demand. The operational recommendations resulting from this study provides an opportunity to evaluate the current transit system's brand, and logo to ensure the aesthetics and visual message is effectively reaching the intended audiences. Athens Transit should seek professional services in order to develop a new logo, style guide, and brand for Athens Transit. This rebranding effort should also reflect that Athens Clarke County became a unified local government in 1990. Following the merger, local government departments have rebranded to include the ACC moniker, with the exception of "Athens Transit". The rebranding and logo development effort should be coordinated closely with implementation of service modifications.

### *Update the 2008 -2009 Athens Transit Marketing Plan.*

The Athens Transit Marketing Plan was developed in 2008 in collaboration with students of the University of Georgia Marketing program. During the Athens Transit Feasibility Analysis, a public survey was conducted where respondents were asked whether adequate information about the transit system was available. Thirty nine percent of respondents felt that the level of information available was inadequate and only twelve percent stated that they had learned of services online or via advertisements. An update to the Athens Transit Marketing Plan is critical in order to recognize the significant changes in technology and aptitude for choice ridership that have developed over the last 8 years. The Plan update should develop marketing strategies that provide direction for both existing as well as future riders, including information regarding stop locations, upgrades to the mobile app with real time information, and other pertinent information. Providing these types of information about the system, its use, and the use of technology enhances the chances of increased ridership from choice users.

FIGURE 84: PUBLIC SURVEY RESULTS – MARKETING AND OUTREACH

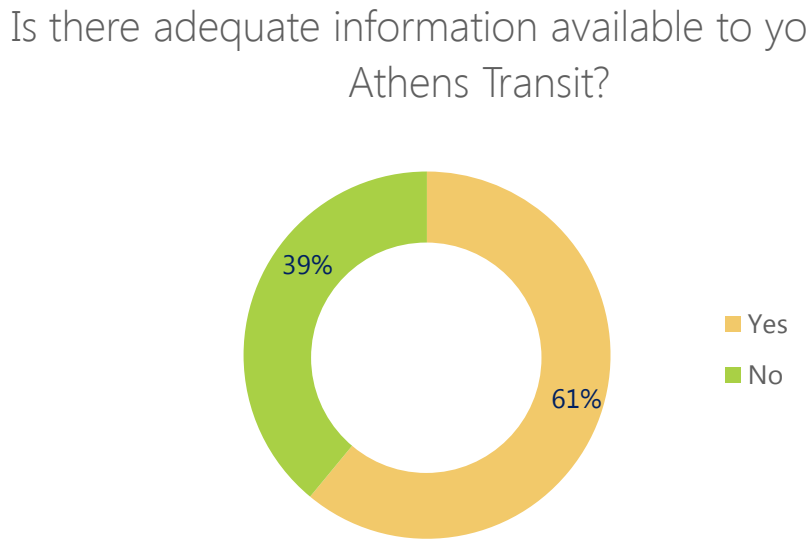
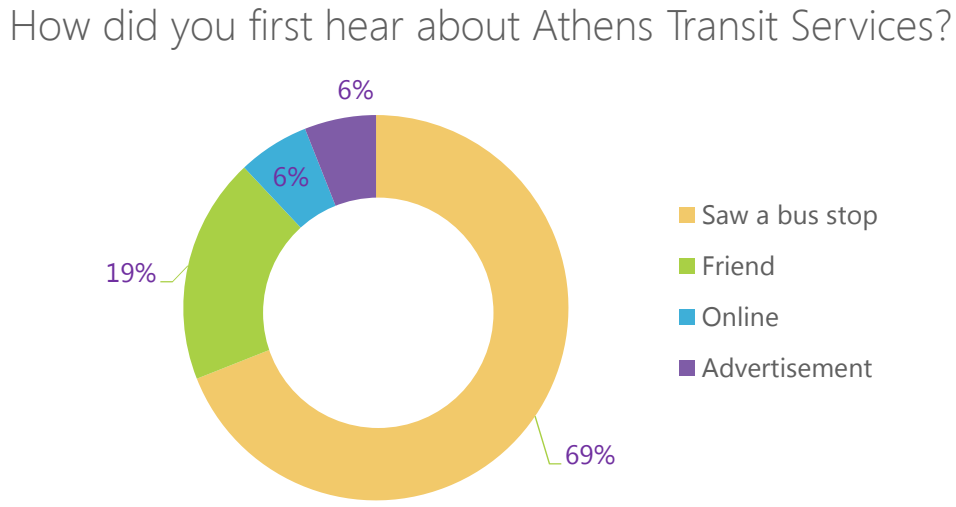



FIGURE 85: PUBLIC SURVEY RESULTS – MARKETING AND OUTREACH



### *Hire staff to manage marketing and outreach initiatives.*

*Georgia Transit Association 2015 Innovation Award*

Current marketing and outreach efforts are carried out by Athens Transit staff who must balance these responsibilities with other core system responsibilities. As a result, it is not feasible for focused marketing and outreach initiatives to be consistently prioritized and carried out. The Athens Transit Feasibility Study included a public survey which identified additional marketing and information as a critical need for the system. While Athens Transit staff utilize all available resources for marketing and outreach, and have been recognized by local, state, and national agencies for their efforts, they also recognize the need for additional resources to make this element of the system a priority. In order to effectively advance marketing and outreach initiatives, Athens Transit staff should be expanded to include 1 full time equivalent (FTE) position to manage all marketing and outreach efforts, including the update of the Athens Transit Marketing Plan.

### *Route 23 Park and Ride marketing campaign.*

During the 100% sampled boarding and alighting counts conducted in November 2015, very low ridership on the Route 23 Park and Ride Express was documented. Exhibit X shows the current alignment for this route. The low ridership trend was confirmed both by review of annual ridership for this route, as well as confirmation from Athens Transit staff.

The public survey that was administered in January through February of 2016 resulted in respondents expressing desire for additional information about services offered by Athens Transit, and concerns about traffic congestion and lack of parking facilities in the community. In order to address both the underperforming route utilization and the public concerns, a Park and Ride Marketing Campaign should be initiated. The campaign effort should identify target audiences, develop mechanisms to share information, and incentivize utilization of this transportation resource.

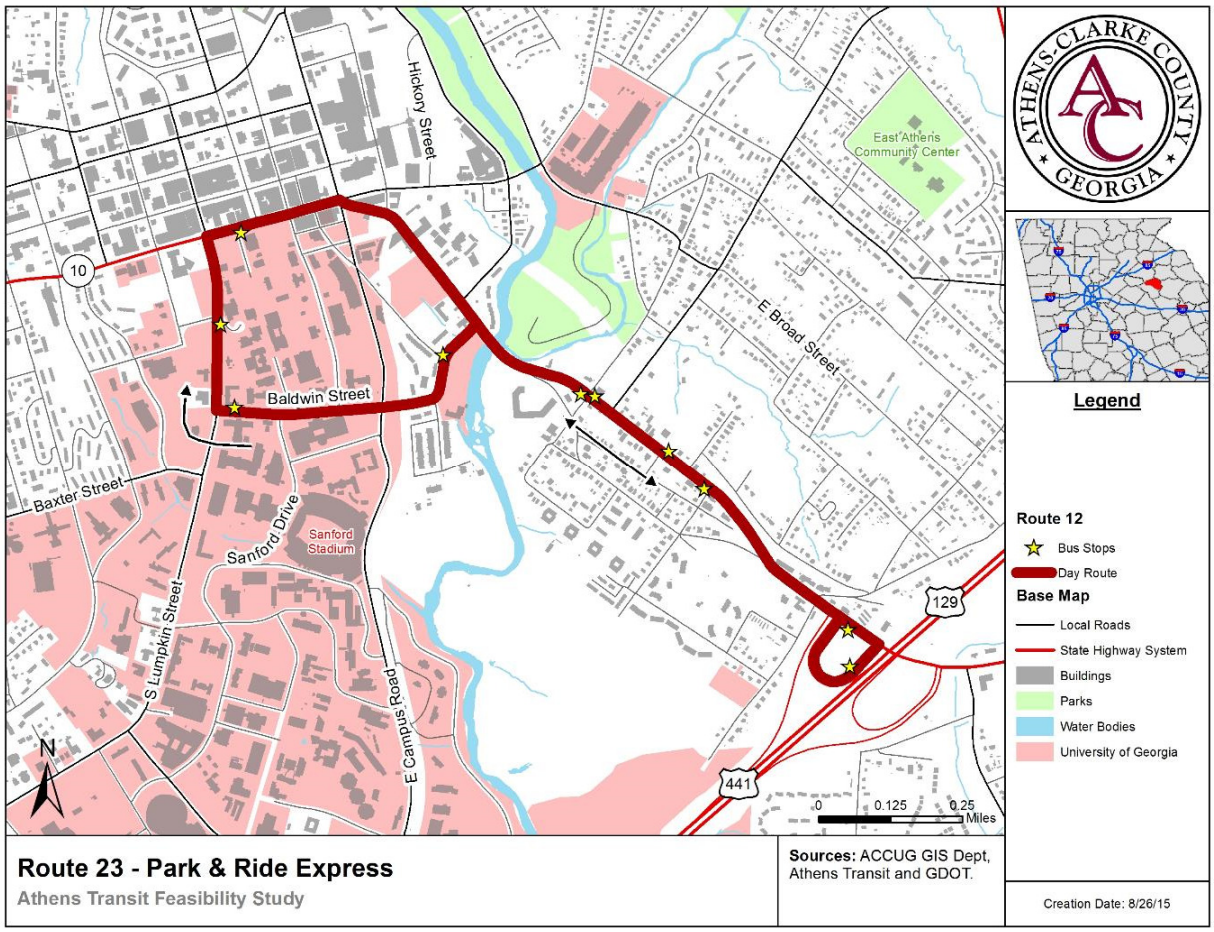
### *Route 23 Park and Ride utilization coordination.*

Over the course of the analysis, the study team conducted a series of meetings with key transportation service providers in Athens Clarke County, including the University of Georgia. Availability of parking facilities on UGA campus was identified as an issue, as existing demand has exceeded the available infrastructure. Focused coordination with the University should be conducted regarding available parking capacity at the Lexington Park and Ride facility for students, faculty and staff unable to acquire parking permits for campus parking. This facility is currently served by Route 23 with direct service to the University campus shown in Figure 86.

Coordination with the Athens Clarke County Downtown Development Authority is also recommended. As infill development continues in the downtown area and parking infrastructure demand exceeds the available capacity, the park and ride facilities will need to be evaluated as an available resource.

If park and ride partnerships result from the recommended coordination with the University and Downtown Development Authority, collaborative marketing, branding and outreach initiatives should be developed for target audiences.

FIGURE 86: EXISTING ATHENS TRANSIT ROUTE 23 – PARK AND RIDE EXPRESS




## USER ENHANCEMENTS

### Wi-Fi

Athens Transit recognizes the importance of adapting to the changing transit user needs and preferences. With the dependence of many people on mobile devices, particularly millennials who are more apt to utilize transit, the incorporation of on-board Wi-Fi would be a significant enhancement. This amenity is focused on improving the user experience and was heard frequently in the surveys and comments received from both current and potential transit users.

In conjunction with the Wi-Fi user agreement that must be recognized by users each time they access the service, Athens Transit can implement a secondary "splash page" to seek feedback from patrons or share system updates. This approach uses Wi-Fi as an information sharing platform for the system operator and users.

Existing routers and supporting equipment should be assessed to determine if they can be leveraged to provide Wi-Fi internet access to transit riders on board the vehicle. Athens Transit should then establish a pilot Wi-Fi program for select routes and incorporate a survey "splash page" to assess the user experience and impacts to new/choice ridership. Once the pilot program has accrued sufficient user survey data, it should be assessed to determine its viability for continuation and/or expansion. Costs associated with Wi-Fi enabled vehicles and facilities vary based on a number of factors including the number of vehicles equipped, the provider cost per GB of data, capital equipment procured, and internal policies and procedures regarding data overage protections. Estimates were obtained from three providers and averaged to provide planning level cost parameters for this program as follows:

- Capital equipment for 40 vehicle fleet including 3 year maintenance plan - $1,200/vehicle
- Estimated monthly data fees - $67/vehicle/month

Procurement of Wi-Fi capital equipment and data must follow all federal, state and local procurement processes.

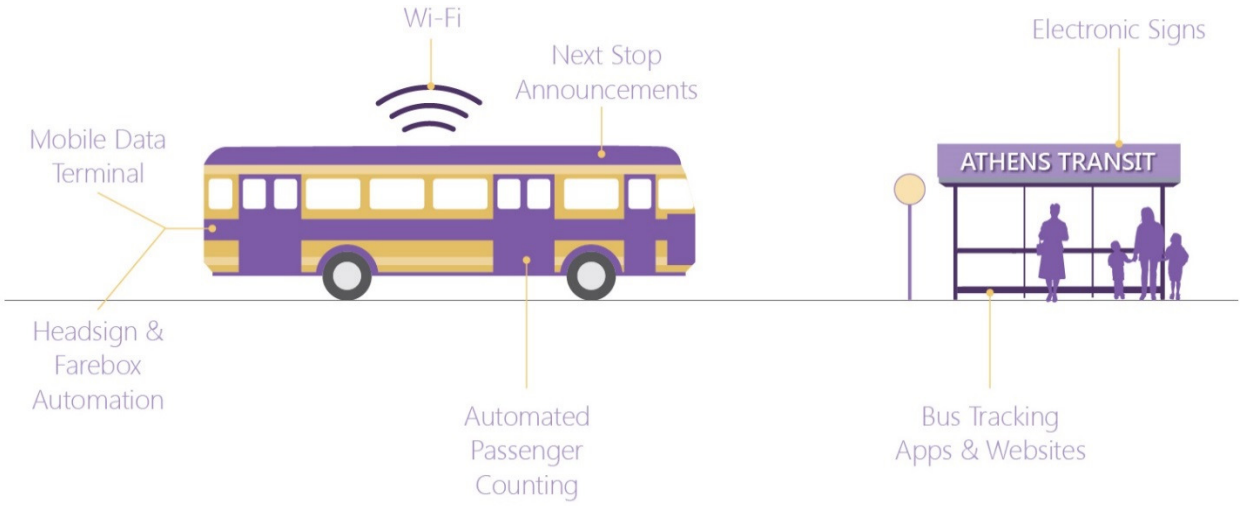
### *Intelligent Transportation Systems (ITS)*

Recent investments in upgraded ITS hardware have been made by Athens Transit to ensure the system meets industry standards for performance monitoring and reporting. This equipment enables the vehicles to transmit performance data for real-time service monitoring, in contrast to the practice of uploading data at the end of the service day.

While the data can be transmitted from the revenue service vehicles in real-time, interpreting this data from multiple platforms can be a cumbersome and inefficient process. As the transit industry moves to technology based integrated monitoring, a number of software providers have emerged that specialize in creating cloud based analytical interface programs. These programs provide a user-friendly platform for transit service operators to view various system performance metrics including farebox reports, passenger counts, GPS locations of rolling stock, vehicle speed, fuel consumption, etc. In addition to operators receiving real-time system information, ITS can also expand the transit user's access to system information through upgraded mobile apps, digital passenger information signage, and the Athens Transit website.

Athens Transit should initiate additional research on ITS based technology providers in order to identify integrated monitoring and information sharing software to advance performance monitoring capabilities and advance user access to system information. The diagram below demonstrates a fully integrated ITS transit system.

FIGURE 87: INTELLIGENT TRANSPORTATION SYSTEMS DIAGRAM




*Screen corridors identified by citizens as "unsafe" or "uncomfortable" for bicycle and/or pedestrian access to transit facilities.*

The public participation component of the study included a survey that encouraged current and potential transit riders to identify areas that need supporting infrastructure upgrades for bicycle and pedestrian connections to the Athens Transit system. Five specific areas were identified:

- Jefferson River Road – No sidewalks or streetlights for connection to route 8 on Newton Bridge Road.
- Route 9 – Lack of sidewalks and road crossings.
- Milledge Road – Lack of bicycle facilities on Milledge Road.
- Lexington Road – Lack of bicycle infrastructure serving the Lexington Road Park and Ride.
- Increased lighting at the Lexington Road Park and Ride facility for safety and security while parking and waiting at the on-site shelter.

These areas identified as unsafe should be further assessed in order to identify project level improvements, and an internal project list should be established to document non-motorized project needs. Existing relationships with the MACORTS MPO and the Local Governing Agencies should be utilized to enter the Non-motorized Project List into the established planning process for funding consideration. As issues and complaints regarding bicycle and pedestrian accessibility are registered with Athens Transit, they should be documented in the non-motorized needs list and transmitted annually to the MACORTS MPO, Local, State and Federal agencies, and other organizations that could leverage grant funding for needed projects.

## MULTIMODAL ENHANCEMENTS

### *Incorporate a non-motorized facility analysis during route modifications.*

As Athens Transit initiates modifications to individual routes, a bicycle and pedestrian facilities screening should be conducted. This screening should be performed along the current and proposed route alignment, as well as within a 1 mile buffer surrounding the proposed route alignment. The screening should identify deficiencies in sidewalks, bicycle lanes, and safety features such as street lighting and road crossings on, or adjacent, to public roadways. These findings should be identified as safety/security, upgrades/amenities, and long range connectivity projects.

The safety and security projects should be addressed in conjunction with the implementation of proposed route modifications and coordinated with MACORTS, ACCUG and state agencies to identify funding. For the non-motorized facility upgrades/amenities and long range connectivity projects that are not fiscally achievable during route modifications, Athens Transit should work with peer agencies to ensure inclusion in the local transportation planning process. All projects identified during the facility screening should be incorporated into the Athens Transit Non-motorized Projects List.

### *Conduct a system-wide bicycle and pedestrian accessibility study.*

According to APTA's Profile of Public Transportation Passengers, nearly 60% of transit users walk to and from transit. This makes walking by far the most common way people access transit. The Athens Transit Feasibility Study identifies a number of service options throughout the metropolitan area, including route modifications and expansions. As the transit service footprint expands into new areas, bicycle and pedestrian accessibility surrounding these resources will be critical to connect residential and commercial areas to the service. A system-wide bicycle and pedestrian analysis should be conducted in order to define non-motorized goals and objectives, evaluate exiting non-motorized facilities within the current and proposed transit service area, identify and prioritize projects, identify funding sources, and establish an implementation plan.

The analysis should build upon the 2001 Athens-Clarke County Bicycle Master Plan, the 2011 University of Georgia Bicycle Facility Study, and the MACORTS 2040 Metropolitan Transportation Plan to minimize duplication of effort and potential conflicts in local initiatives. As with all non-motorized planning and project initiatives, these efforts should be conducted in close coordination with the MACORTS MPO, Local governing authority, state and federal transportation agencies, and local stakeholders.

## FINANCIAL RESOURCES / STRATEGIES

The potential avenues for funding improvements identified by the Athens Transit Feasibility Study will be investigated in this section. The funding options discussed will include both traditional and non-traditional funding sources including federal, state, local, and private sources. During the development of the Athens Transit Development Plan, these sources should be evaluated for applicability to the projects included in the ten year implementation plan and included in the project delivery process.

## *Identify Funding Sources*

### Federal Funding Sources

On December 4, 2015, President Obama signed into law the first long-term funding legislation in over a decade called the Fixing America's Surface Transportation Act or "FAST Act". The FAST Act maintains much of the Moving Ahead for Progress in the 21st Century (MAP 21) legislation's program structures and funding shares, however the horizon for the FAST Act provides long term funding certainty for transportation agencies. Federal funding categories that can be leveraged for transit improvement projects are detailed below.

**A. Surface Transportation Program (STP) 23 U.S.C. 133**

The STP program provides a national annual average of $10 billion in flexible funding that may be used for projects to preserve or improve conditions and performance on any Federal-aid highway, bridge projects on any public road, facilities for non-motorized transportation, transit capital projects and public bus terminals and facilities. STP funds make up the largest funding resource for Georgia transportation projects.

**B. Urbanized Area Formula Grant – Section 5307**

The 5307 formula grant provides transit capital and operating assistance to urbanized areas with populations of more than 50,000. Grant funds are utilized to support the development, maintenance and improvement of public transportation in urbanized areas. Eligible projects include planning, engineering design and evaluation of transit projects, capital investments in bus and bus-related activities such as replacement and overhaul of buses, rebuilding of buses, crime prevention and security equipment, construction of maintenance and passenger facilities and capital investments in new and existing fixed guideway systems. All preventive maintenance and some Americans with Disabilities Act (ADA) complementary paratransit service costs are considered eligible.

Established under MAP-21 and upheld by FAST Act legislation, the 5307 grant also includes Job Access and Reverse Commute (JARC) 5316, which focuses on providing services to low-income individuals to access jobs. These activities include operating assistance with a 50 percent local match for job access and reverse commute activities. In addition, the urbanized area formula for distributing funds now includes the number of low-income individuals as a factor. There is no minimum or maximum on the amount of funds that can be spent on job access and reverse commute activities.

**C. Bus and Bus Facilities Grant – 5339**

Bus and Bus Facilities is a formula grant program created by MAP-21 legislation, replacing the previous Section 5309 discretionary Bus and Bus Facilities program. This capital program provides funding to replace, rehabilitate, and purchase buses and related equipment, and to construct bus-related facilities. Distribution of this grant is formula based and requires a 20% local match.

**D. Congestion Mitigation and Air Quality Improvement (CMAQ)**

The CMAQ program provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. All CMAQ projects must demonstrate the three primary elements of eligibility including transportation identity, emissions reduction, and location in or benefitting a nonattainment or maintenance area. Recipients of CMAQ funds

are subject to substantial documentation and reporting requirements. The FHWA uses these yearly submissions to maintain an active database of CMAQ investments, trends within the program, and other anecdotal information focusing on the program's performance.

### E. FTA Major Capital Investment Program - Section 5309

Fixed Guideway Capital Investment Grant (New/Small Starts) is the primary federal program for funding major transit capital investments. Projects eligible to utilize this resource include new development or extensions to existing fixed guideway transit systems including commuter rail, light rail, heavy rail, bus rapid transit, streetcars, and ferries. The 5309 grant program categorizes capital assistance by primary activity:

- New Starts Program – Provides funds for construction of new fixed guideway systems or extensions to existing fixed guideway systems. To be awarded a New Starts grant, the project must be recommended in FTA's annual New Starts report to Congress. The New Starts budget is determined by Congress during its yearly appropriations process. FTA judges proposed projects on whether they are cost effective, improve mobility, and offer land use planning that supports transit. FTA's current cost effectiveness criterion favors submittals with requests for less than 50% of the total project cost.
- Small Starts Program – These projects are low cost projects that qualify for a highly simplified project evaluation and rating process by FTA. In order to qualify projects must be less than $75 million, with a total project cost under $250 million. Small starts provides funds to capital projects that either (a) meet the definition of a fixed guideway for at least 50 percent of the project length in the peak period or (b) are corridor-based bus projects with 10 minute peak/15 minute off-peak headways or better while operating at least 14 hours per weekday.
- Very Small Starts Program – Projects that cost less than $50 million qualify as very small starts. This program has a significantly streamlined application process with project qualifiers comparable to the Small Starts Program.

### F. TIGER Grant

The Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grant program, provides funding for the U.S. Department of Transportation to invest in road, rail, transit and port projects. In order to be selected, TIGER grant funded projects must demonstrate an ability to achieve critical national transportation objectives. The TIGER grant is a competitive application process with popularity amongst applicants. Each of the projects that have been selected are multi-modal, multi-jurisdictional or considered challenging to fund through traditional funding programs.

### G. TIFIA Loans

The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides Federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance. Utilization of this program may allow for cost savings due to expediting projects; however this funding must be paid back.

## State Funding Sources

Various funding programs are available through GDOT to assist local government and transportation agencies in the advancement and maintenance of Georgia's transportation network and transit programs. The following funding sources have been selected from the GDOT transportation program and grant funding directory for this analysis:

### A. State Road and Toll Authority (SRTA)/Georgia Transportation Infrastructure Bank (GTIB) Improvement Grant

A revolving infrastructure investment fund was established by House Bill 1019 in April 2008 and policies approved by SRTA's Board of Directors on June 29, 2009 to provide grants and loans to Community Improvement Districts (CIDs), state, regional and local government entities. These funds are used to support transportation improvement projects throughout the state through a competitive application process. The objectives of this grant program are to increase viability for projects limited by traditional funding sources, advance and accelerate projects with a strong match component, add transportation and economic value to the State and encourage innovation. The average award for the SRTA/GTIB grant is one million dollars and includes a strong match. While all phases of a project are eligible, the most competitive project applications are construction/capital improvement based.

### B. Public/Private Partnerships (P3)

A Public Private Partnership (P3) is a contractual agreement between a public and private entity used to facilitate the development of new transportation facilities or improvement of existing facilities. P3s are growing in interest and generating resources for transportation infrastructure by leveraging the limited state transportation funds through partnerships with the private sector. P3 project funding takes many forms including special taxing districts, land or cash donations, impact fees and other arrangements. There is also a diverse range of partnership agreement types including:

- Design-Build (DB): The private sector designs and builds infrastructure to meet public sector performance specifications, often for a fixed price, so the risk of cost overruns is transferred to the private sector.
- Finance Only: A private entity, usually a financial services company, funds a project directly or uses various mechanisms such as a long-term lease or bond issue.
- Operation & Maintenance Contract (O & M): A private operator, under contract, operates a publicly-owned asset for a specified term. Ownership of the asset remains with the public entity.
- Build-Finance: The private sector constructs an asset and finances the capital cost only during the construction period.
- Design-Build-Finance-Maintain (DBFM): The private sector designs, builds and finances an asset and provides hard facility management (hard fm) or maintenance services under a long-term agreement.
- Design-Build-Finance-Maintain-Operate (DBFMO): The private sector designs, builds and finances an asset, provides hard and/or soft facility management services as well as operations under a long-term agreement.

- Build-Own-Operate (BOO): The private sector finances, builds, owns and operates a facility or service in perpetuity. The public constraints are stated in the original agreement and through on-going regulatory authority.
- Concession: A private sector concessionaire undertakes investments and operates the facility for a fixed period of time after which the ownership reverts back to the public sector.

### C. Health and Human Services Programs

The Rural and Human Service Transportation Program (RHST) provides transportation services to disadvantaged, disabled, and elderly populations in the State of Georgia via Department of Health and Human Services (DHS), Department of Community Health (DCH) and the Georgia Department of Transportation (GDOT). These programs are predominantly federally funded by more than 60 programs. State dollars provide approximately one fourth of the annual funds for the RHST program and are primarily used to match federal funding sources. Key funding sources include the DCH's Medicaid Non-Emergency Transportation (NET), the Enhanced Mobility of Seniors and Individuals with Disabilities program (Title 49 U.S.C section 5310), the Rural Transit Assistance Program (Title 49 U.S.C section 5311) and DHS's human services funds. For the purposes of this analysis, this program is categorized as a state funding source because states and MPOs with populations greater than 200,000 function as grant recipients and distribute funding to sub-recipients/service providers. As the primary grant recipient, the State ensures that local applicants and project activities are eligible and in compliance with Federal requirements. The State agency also ensures that private not-for-profit transportation providers have an opportunity to participate as feasible, and that the program coordinates with transportation services assisted by other Federal resources.

Under MAP-21 and upheld by the FAST Act, the Transportation for Elderly Persons and Persons with Disabilities program (5310) and the New Freedom program (5317) were consolidated to form the Enhanced Mobility of Seniors and Individuals with Disabilities program. The New Freedom program provided grants to support services for individuals with disabilities that exceeded the requirements of the ADA.

### D. Bonds

The State of Georgia has the ability to issue bonds used to construct roads and transit facilities. Through this funding mechanism, bonds can be backed and projects funded by a variety of anticipated revenue sources including state motor fuel tax funds, federal transportation funds, and/or toll revenue. Bonds are used to expedite delivery of projects beyond what current revenues would otherwise allow. SRTA operates as the financing arm for state and local governments throughout Georgia and has the authority to finance transportation improvement projects using traditional finance methods such as bonds, loans, notes and equity partnerships. An example of SRTA's ability to expedite projects is demonstrated by their Grant Anticipation Revenue Vehicle (GARVEE) bonds issued for non-toll projects on behalf of GDOT, underwritten by the state's future federal transportation funds. GARVEEs are a form of Grant Anticipation Note (GAN) which is also highly utilized by transit agencies to expedite transit capital purchases such as buses.

SRTA also operates the Georgia Transportation Infrastructure Bank (GTIB), a revolving infrastructure investment fund that provides loans with low interest terms to state, regional and local government agencies.

## Local and Private Funding Sources

### A. Special Purpose Local Option Sales Tax (SPLOST)

Special Purpose Local Option Sales Tax (SPLOST) is a 1% sales tax levied at the City or County level. With voter approval, the local sales tax rate can be increased and used for specific capital outlays including transportation projects. The revenue generated by SPLOST cannot be used for maintenance projects or towards operating expenses.

### B. Transportation Investment Act of 2010 (TIA) – Future Referendums

In 2010 the General Assembly adopted the Transportation Investment Act of 2010 (TIA) which created twelve (12) Special Districts in the State of Georgia based on existing regional commission boundaries. TIA authorized elections to be held in each District which, if approved would authorize the imposition of a transportation sales and use tax to fund transportation projects within the respective district. GDOT established the project eligibility criteria while local governments and MPOs developed a project list to be considered by the selection committee called the "Regional Transportation Roundtable". According to the TIA legislation 'Project' means, without limitation, any new or existing airports, bike lanes, bridges, bus and rail mass transit systems, freight and passenger rail, pedestrian facilities, ports, roads, terminals, and all activities and structures useful and incident to providing, operating, and maintaining the same. The investment list approved by the roundtable was sent to referendum where Georgia voters determined whether the sales tax would be levied in their region.

Only three of the 12 Georgia regions were successful in passing the 2010 TIA referendum including Central Savannah, Heart of Georgia, and River Valley regions. Athens-Clarke County passed the referendum locally, however the Northeast Georgia Region collectively did not pass the referendum. TIA contains provisions by which state legislators can take action to reauthorize a referendum for regions that were unsuccessful in the 2012 referendum either as individual Counties or grouped to form regions.

### C. Improvement Districts

1) **Community Improvement District (CID)** - A CID is a limited taxing mechanism with a specific geographical area used for funding certain governmental services including street and road construction, maintenance, and public transportation systems. The additional tax revenues created by a CID are spent on area improvements within the defined district. A CID can be administered by a city governing authority and can levy taxes, fees and assessments not to exceed 2.5 percent of the assessed value of the real property used for non-residential purposes. Georgia law regulates the creation of CIDs by requiring voluntary participation by a certain portion of property owners with a certain portion of the tax value in the area. Although the tax is collected by the County Tax Commissioner, a CID is created under state law by a majority of the area's property owners, not by the county.

2) **Business Improvement District (BID)** – Within a BID, businesses agree to pay an additional tax or fee in order to fund improvements within the area. While sharing similar goals with

CIDs, BIDs are voluntary assessments on businesses only and do not have the ability to leverage state and federal monies for infrastructure construction and improvements.

3) **General Improvement District (GID)** - The purpose of a GID is to provide municipal services to an area that does not wish to incorporate with a City in order to acquire the full range of services. The implementation of a GID is most effective when used in an area that will require ongoing operation and maintenance of the facilities chosen for implementation. County Commissioners have significant authority in determining whether or not a GID can be formed considering the necessity of the district for public convenience and the economic feasibility of the district. Methods for obtaining finances for a GID are fairly broad and include levying ad valorem taxes, fees, special assessments, borrowing and/or issuing securities such as bonds.

### D. Tax Increment Financing (TIF)

Tax Increment Financing (TIF) is a method to use future gains in taxes to subsidize current improvements. In this approach, a special district, called a Tax Allocation District (TAD), is created and improvements are made within the district. For Cities to designate an area a TAD, a specific geographic area must be identified that has the potential for redevelopment, but which suffers from blight or "economically or socially distressed" conditions. Generally, improvements implemented using TIF funding will stimulate private sector development increasing the value of surrounding real estate and therefore generating additional tax revenue. Before development begins or improvements are made, the tax rate within the taxing district is frozen. Taxes continue to be paid but the difference between the original assessed tax and the tax on assessed value after the improvements (the tax increment) is deposited into an account that is used to pay off the bonds that were sold to finance the improvements. The tax increment funds collected can be leveraged for more improvements within the district.

### E. Voluntary Assessments

Also known as Project Investment Fees, Voluntary Assessment Fees function as a supplemental sales tax. This tax is typically imposed on a voluntary basis by landlords on their tenants. An example of this funding mechanism is a voluntary tax assessment imposed by a shopping center to fund project-area infrastructure improvements.

### F. Developer Contributions

Developer Contributions are facilities or services provided by a developer that will be required to support the future growth and impacts associated with the development. These contributions can be made in the form of payments to the local governing authority or via in-kind work. Developer contributions should be assessed in accordance with local ordinances detailing the specific requirements developers will adhere to.

### G. Development Impact Fees

One-time fees applied to new developments assessed by local governing authorities. Impact fees are a financial tool used to reduce the gap between available resources and funding needed to provide additional public facilities. More commonly, developers may contribute right of way, or contribute to the cost of certain improvements in the vicinity of a development voluntarily or as an exaction during the development review process. Under State Law O.C.G.A. § 36-71, exactions must be relatively proportional

to the anticipated impact of the development and the funds collected cannot be used for operation, maintenance, repair, alteration or replacement of existing capital facilities.

**H. Local Government General Funds**

The General Fund is an accounting mechanism used by government agencies and non-profit entities to budget for revenues not specifically designated to be accounted for by any other fund. The general fund provides resources to maintain day-to-day functions and pays for administrative and operating expenses. The primary sources of revenue for local government General Funds are property taxes. Funding for transportation investments from local government general funds often varies from one budget cycle to another and depends heavily on local priorities and available resources. General fund resources are most commonly used for operations and maintenance of local transportation facilities.

## *Intergovernmental Agreements*

A number of the service options identified by the Athens Transit Feasibility Study recommend linkages of current bus service to activity centers located outside the Athens Clarke County municipal boundary. The Athens Transit system is owned and operated by the Athens-Clarke County Unified Government and does not currently have agreements with adjacent municipalities to facilitate multi-jurisdictional service.

During the 2016 update to the Athens Transit TDP, the service options suggesting extension into adjacent counties should be further analyzed and preliminary discussions with officials from these communities should be conducted. If service extensions are incorporated in the TDP ten-year implementation program, Intergovernmental Agreements should be established to facilitate operating parameters and financial obligations for each entity.

# ATHENS TRANSIT



# *FEASIBILITY STUDY*

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