



Market Analysis

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1 INTRODUCTION

Xpress provides freeway-based commuter services from 14 different counties to major employment areas in the Atlanta region. All but three existing routes have a route terminus in either Midtown or downtown Atlanta. One of the goals of the Direct *Xpress* COA is to determine what current unserved or underserved markets are. Three different data sets were used to provide insight into the Atlanta region's travel markets, including:

- Data from the Atlanta Regional Commission (ARC) travel demand model
- Mobile phone data provided by AirSage
- Data from the U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) program

ARC data were used to determine where existing and future employment densities exist. The existing and projected travel patterns from the identified employment clusters were analyzed using both the ARC trip tables as well as mobile phone data. The travel pattern analysis identified multiple different potential markets. The LEHD data were then used to conduct a fine-grained analysis of park-and-rides and employment centers to identify potential new markets for *Xpress* service.

A phone survey of non-riders was also conducted to help achieve the goals and objectives of the COA. The purpose of the survey was to capture demographics, brand awareness, usage patterns, and attitudinal data from non-riders who were employed outside their home and/or a student living 10 or more miles from employment/school. Detailed findings from the non-rider survey are available in Appendix E.

This memorandum summarizes the travel demand data analysis and results and identifies a series of markets that may successfully accommodate regional commuter services.

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2 EMPLOYMENT ZONE SELECTION

Employment Zone Selection

A successful commuter express transit market must have a high number of jobs within walking distance of its destination transit stops. Thus, higher employment density indicates an environment where a route could attract more riders in the walk-shed of each stop. In addition to employment density, the total number of jobs is an indicator of the market's ability to support consistent transit service. High employment density, while important, will not support transit if the total number of jobs is low.

To better understand these dynamics in the GRTA service area, employment and employment density levels were assessed within the 12-county service area. Employment density by traffic analysis zone (TAZ) was mapped for the base year 2015 and future year 2030 using ARC travel demand model data. The majority of high employment density areas are contained within 12 employment centers (employment zones) defined by ARC. However, some of the employment zones, such as Southlake and Fulton Industrial, do not contain high employment density relative to other zones. Figure 1 shows that the relative ranking of **employment densities** between 2015 and 2030 do not change. While employment density will increase overall, the highest density employment centers in 2015 will remain highest density in 2030.

Figure 1: Employment Density by Center, 2015 & 2030 (Jobs per Acre)

Employment Center	2015 Emp. Density	2015 Rank	2030 Emp. Density	2030 Rank
CBD (Downtown)	119.53	1	134.58	1
Midtown	46.58	2	58.99	2
Buckhead	41.12	3	45.89	3
Perimeter	25.68	4	30.94	4
Cumberland	18.01	5	20.71	5
Airport	12.89	6	15.85	6
Northpoint	8.86	7	11.79	7
Norcross/Peachtree Corners	8.58	8	10.85	8
Gwinnett Place/Discover Mills	8.49	9	9.79	9
Town Center	6.19	10	6.75	10
Fulton Industrial	2.22	11	2.50	11
Southlake	1.79	12	1.94	12

Source: Atlanta Regional Commission.
 Note: Top ten rankings emphasized with shading.

Figure 2 reflects the **total jobs** by employment center around the region. Most employment centers maintain the same relative ranking between 2015 and 2030 with the exception of Northpoint, which has the 8th highest number of jobs in 2015 and the 7th highest number of jobs in 2030. There is no magic “threshold” for total number of jobs in an employment zone to support transit. However, the numbers serve as a “check” to ensure that employment centers showing high employment densities also have high total numbers of jobs, warranting further investigation for potential service.

Figure 2: Total Jobs by Employment Center, 2015 and 2030

Employment Center	2015 Total Jobs	2015 Rank	2030 Total Jobs	2030 Rank
CBD (Downtown)	152,798	1	172,039	1
Perimeter	84,914	2	102,335	2
Airport	72,171	3	88,731	3
Midtown	67,405	4	85,370	4
Buckhead	63,080	5	70,403	5
Cumberland	50,952	6	58,597	6
Gwinnett Place/Discover Mills	45,301	7	52,242	8
Northpoint	41,611	8	55,381	7
Norcross/Peachtree Corners	40,084	9	50,679	9
Town Center	33,844	10	36,917	10
Fulton Industrial	32,244	11	36,414	11
Southlake	14,504	12	15,754	12

Source: Atlanta Regional Commission.
Note: Top ten rankings emphasized with shading.

Market Size

In addition to the density of jobs in an employment center zone, another major factor related to the success of commuter transit services is the number of trips that could potentially be served by *Xpress* on the commute to work (market size). For planning purposes, we have defined GRTA’s specialization as long-distance commute trips, or trips greater than 10 miles from the employment center zone.

Figure 3 lists the top 15 employment center zones, which includes those defined by the ARC and others that have show higher employment density. Given that employment zones are different sizes, the zones are normalized using number of trips (greater than 10 miles) per acre as the ranking metric. Similar to the employment density analysis, the CBD tops the list, with similar zones composing the top five. In this list, Old Fourth Ward/Inman Park is listed 7th. However, it is likely that this market would be combined with the CBD given its proximity and lower relative number of trips as compared to other employment zones. Druid Hills (Emory University) has been included in this list and rounds out the top eight employment zones.

Figure 3: Total Trips by Employment Center Zones

Employment Center Zone	Trips > 10 Miles	Acres	Trips/Acre
CBD (Downtown)	65,232	1,278	51.0
Midtown	29,969	1,447	20.7
Buckhead	20,242	1,534	13.2
Perimeter	28,478	3,307	8.6
Cumberland	14,320	2,472	5.8
Airport	27,473	5,597	4.9
Old Fourth Ward/Inman Park	6,158	1,399	4.4
Druid Hills (Emory University)	19,059	5,277	3.6
Upper Westside	8,361	3,096	2.7
West End	5,257	1,967	2.7
Norcross/Peachtree Corners	11,789	4,672	2.5
Northpoint	11,840	4,698	2.5
South Buckhead	10,057	4,584	2.2
Gwinnett Place/Discover Mills	10,130	5,338	1.9

Source: Atlanta Regional Commission.
Note: Top ten rankings emphasized with shading.

Employment Centers with Potential to Support GRTA Service

Based on the analysis above, and discussions with GRTA staff, it was determined that eight different employment centers should be the focus of the GRTA travel demand analysis. Figure 4 lists the employment center zones and reasoning for their selection.

Figure 4: Employment Centers with Potential to Support GRTA Service

	Employment Center	Justification
1	CBD (Downtown)	Across ranking metrics, the CBD contains the highest employment density, total jobs, and has the largest potential market size. In addition, it is the destination of the majority of <i>Xpress</i> services.
2	Midtown	Similar to the CBD, Midtown contains high employment density, total jobs, has a large potential <i>Xpress</i> market size, and is served by a major portion of existing routes.
3	Buckhead	Buckhead currently has high employment density, potential market size and supportive local infrastructure (local circulator services, pedestrian connectivity, and local transit). Outside of the Downtown/Midtown area, it also has good freeway access (GA-400) and a BID/TMA that is continuing to make the area more transit-friendly.
4	Airport	The Airport makes the list given its high employment density, total jobs, local circulators (ATL Skytrain, airport shuttles), transit services, and good freeway access (I-75/I-85). In addition, employee parking is typically not available on-site and many employees take a shuttle to the main terminal.
5	Perimeter	Perimeter has relatively high employment density, total jobs, potential market size, and also is part of the existing GRTA service area. In addition, employment centers at Perimeter are focused along freeway-accessible corridors including access to local shuttle services and MARTA.
6	Druid Hills/Emory University	The Druid Hills/Emory employment center is the only location that is not within relative proximity to a major freeway. However, given its high density of jobs within a compact land area, walkable environment, managed (priced) parking, and high level of local transit circulator services, it is a strong overall potential market for commuter express services.
7	Cumberland	Cumberland has good employment density, total jobs, and potential market size. However, it is prioritized lower than Druid Hills/Emory given the disaggregated nature of job centers, limited local circulation, and relatively limited pedestrian connectivity.
8	Northpoint	Like Cumberland, Northpoint is a suburban employment center with a high number of jobs and potential market size. However, its overall employment density is lower.

3 DATA ANALYSIS

ARC DATA ANALYSIS

The ARC travel demand model data were mapped to gain an understanding of travel patterns in the Atlanta region. Home-based work and home-based university trips were combined together, as people making these types of trips are more likely to use express bus service than people making other types of trips, such as shopping. Initially, all travel connections in the region longer than 10 miles¹ and above a 500-trip threshold were mapped to show region-wide travel patterns. In addition, the travel patterns for the eight most significant zones (CBD, Midtown, Buckhead, Airport, Perimeter, Druid Hills/Emory University, Cumberland, and Northpoint) were examined. The maps can be found in Figures 12 to 21 in the Appendix A and are summarized below.

- **Overall Region** – From a regional perspective, the destinations that stand out the most are the CBD, Midtown, and Perimeter. In the northern Atlanta region, there are trips to many other employment destinations as well. There are fewer employment destinations in the south, so most significant travel flows are to either Airport or the CBD/Midtown. This suggests that commuting distances are longer for people living in the southern half of the region because there are fewer employment centers than in the north, so workers must travel farther to get to an employment area.
- **Airport** – Most commuter travel to the Airport comes primarily from the south, along the I-85 and I-75 corridors, but also from the east, west, and central Atlanta. The most significant travel flows are from the Jonesboro/Lovejoy and Newnan analysis zones.
- **Buckhead** – Roswell South to Buckhead is the only travel flow that is longer than 10 miles and has more than 500 trips.
- **CBD** – Due to its central location and high employment levels, the CBD attracts significant trips from all over the region. The heaviest travel flows tend to follow the expressway corridors into central Atlanta, and most are close to park-and-rides served by *Xpress* service. Zones that have significant travel flows but don't have convenient access to park-and-rides are Tucker and the portions of the Lithia Springs/Austell zone along I-20.
- **Cumberland** – The most significant travel flows to Cumberland come from the north and west, from places such as Kennesaw, Woodstock, and Powder Springs. In addition, there is demand from central Atlanta to Cumberland, indicating a reverse commute market.

¹ On the Airport and Cumberland markets, the distance threshold was set at 9 miles to show “reverse commute” trips from central Atlanta to the Airport and Cumberland employment areas.

- **Druid Hills** – The largest travel flows to Druid Hills, which includes Emory University and the Centers for Disease Control and Prevention, come from zones along the US-78 corridor. In addition, there is demand from the Redan area close to the I-20 corridor.
- **Midtown** – Like the CBD, Midtown serves as a regional destination due to its strong employment and central location, and attracts trips from all directions.
- **Northpoint** – The most significant travel to Northpoint comes from the northeast, with the strongest connection from Cumming.
- **Perimeter** – Perimeter is a regional destination. Most trips come from the northern part of the region, but there are significant travel flows from other areas as well, including central Atlanta, a market currently served by MARTA.

MOBILE PHONE DATA ANALYSIS

Mobile phone companies have the ability to track the movement of their subscribers. AirSage, a company that mines anonymous travel data from cell phone users, provided a database of travel patterns, as well as what time the travel occurs. The demographics, as well as a determination of trip purpose, are also available from the dataset.

For each of the eight highest employment density zones (CBD, Midtown, Buckhead, Airport, Perimeter, Druid Hills/Emory University, Cumberland, and Northpoint), AirSage provided data for trips between each selected zone and the ARC-defined employment zone. Data were stratified by trip purpose (home-based work, home-based other, non home-based), time of day, income, and vehicle ownership.

The travel flows between the eight employment areas and their origins were analyzed. Figures 22 to 29 in Appendix B show home-based work flows during the AM peak (6 a.m. to 10 a.m.) time period, which is when *Xpress* service generally operates to employment centers.² The minimum threshold for identifying a travel flow was set at 150 trips and a travel distance of 10 miles.³ The following is a summary of each market.

- **Airport** – The largest flows of work trips to Airport are from the south along the I-85, I-75, and US-41 corridors. In addition, there are significant flows from the Redan area and Central Atlanta.
- **Buckhead** – Commuters from Buckhead generally travel along corridors from the north, east, and west, with few coming from the south. The strongest connection is from Roswell South.
- **CBD** – Given its large employment levels, the CBD stands out from the other markets in terms of the number of origins of travel. As would be expected, there are heavy travel flows along every major corridor into the CBD. Most of these connections are well served by *Xpress* routes given the extensive route network and park-and-ride coverage. Two zones with more than 300 trips to the CBD that are not near existing park-and-rides are Clifondale and Tucker. These areas may be good candidates for new *Xpress* service.

² The Airport map shows all day trips and is not restricted to the AM peak time period due to the nature of airport jobs, under the assumption that employee arrivals are spread throughout the day and are not concentrated in the AM peak like in other areas.

³ Like the ARC data maps, the distance threshold was set at 9 miles on the Airport and Cumberland markets to show “reverse commute” trips from central Atlanta to the Airport and Cumberland employment areas.

- **Cumberland** – Cumberland generally attracts commuters from the north and west. Strong travel flows exist from Kennesaw, Woodstock, Powder Springs, and other areas of Cobb County. There are also significant flows from Central Atlanta to Cumberland.
- **Druid Hills** – The strongest travel flows to Druid Hills come from the east along the US-78 and I-20 corridors. This employment area has highly specialized employment as the home of Emory University and the Centers for Disease Control and Prevention and likely attracts employees from all over the metropolitan area.
- **Midtown** – Like the CBD, trips to Midtown are attracted from areas due to its central location. Overall trip volumes are significantly lower than the CBD.
- **Northpoint** – Northpoint has the lowest employment of any of the employment areas studied, so few travel flows cross the 150 trip threshold. The strongest connection is with Cumming along the GA-400 corridor.
- **Perimeter** – Perimeter is a major employment hub and attracts trips from across the Atlanta area. Strong connections exist along all major corridors, including from Central Atlanta. One strong connection that is not currently served is from Johns Creek North to Perimeter along GA-141.

The travel patterns from the AirSage dataset, including those with all trip types and home-based work trips for the AM peak period are found in Appendices B and C.

Overall, the travel patterns for all trip types combined are similar to the home-based work patterns with larger trip volumes and additional connections visible because they are above the 150-trip threshold.

LEHD DATA ANALYSIS

Data from the Longitudinal Employer-Household Dynamics (LEHD) program from the U.S. Census Bureau provide travel flows from home location to work location at the Census block level, which provides more geographic detail than the mobile phone data. These data were used in an additional step to identify potential markets for new *Xpress* service.

The top 100 origin-destination patterns identified in the mobile data (AirSage) analysis were evaluated using LEHD data. The closest park-and-ride to the home location of a zone was used as the origin, and the employment area defined by ARC was used as the destination.

A buffer was drawn around the park-and-ride to represent a catchment area for travelers using the facility. The most relevant research related to the size and shape of a park-and-ride catchment area is from a study conducted in Seattle in the 1990s.⁴ This study found that the catchment area for a park-and-ride is a parabola that extends upstream from the park-and-ride and is oriented toward the destination of transit from the park-and-ride, most typically the CBD. Approximately 85% of a park-and-ride's ridership comes from a parabola that extends up to 2.5 miles downstream and 10 miles upstream with a spread of 12 miles. The study also found that 50% of ridership comes from a circle around the park-and-ride with a radius of 2.5 miles, and that using this circular area to estimate facility demand was as effective as using the parabolic area.

The 2.5 mile circular catchment area, rather than a larger parabola, was used in this analysis for several reasons. First, many of the travel flow connections evaluated were suburb-to-suburb connections. Given that the freeway network in the Atlanta region is radial in nature with most

⁴ Robert J. Spillar. *Park-and-Ride Planning and Design Guidelines*. New York: Parsons Brinckerhoff Inc., 1997.

roads oriented toward the Atlanta CBD, suburb-to-suburb travel can involve significant out-of-direction travel if utilizing expressways, but can also be direct if using surface streets. For many connections, the route of choice is not obvious, making it difficult to determine what the orientation of the parabola would be. Second, a large parabola can in some cases cover two parallel corridors, which may make the catchment area unrealistic. Although many of the park-and-rides in the Atlanta region likely have large catchment areas, given the reasons stated above and the fact that the circular catchment area can be as effective as using a parabolic area when estimating facility demand, the 2.5-mile circular catchment area was used for this analysis. A 3-mile buffer around the CBD was drawn to estimate a catchment area for reverse commute trips from central Atlanta to suburban employment centers.

After gathering data using the LEHD OnTheMap tool⁵ for all connections, the list was narrowed to a list of connections that could potentially support an *Xpress* route. Multiple screening criteria were used. First, connections were excluded if they are already served by an express bus route or MARTA rail line. Second, the threshold for the number of daily work trips was set at 450. It is assumed that at least 1,000 people commuting from a park-and-ride area to an employment area are needed to sustain an express bus route; a 5% transit mode share would mean that 50 people would ride each way, for a total of 100 daily trips. Based on the park-and-ride draw area referenced above, it is assumed that the number of trips within a 2.5-mile circular area represents 50% of the demand, so 450 trips originating in the catchment area represent 900 trips that could potentially use a park-and-ride. The threshold was set at 450 trips rather than 500 to be conservative, understanding that no data source is perfect and that a connection may have fewer than 500 trips but still have enough demand to sustain a bus route.

An exception was made for the Cumming to Northpoint connection, which showed up strongly in the mobile data analysis but only had 429 daily trips in the LEHD analysis. Due to its location on the periphery of the metropolitan area, the Cumming park-and-ride likely has a very large catchment area, so a 2.5 mile circle may underestimate the true demand for a route from the facility. Figure 5 below lists the markets identified in the LEHD analysis that should be evaluated further to determine if they could sustain express bus service.

⁵ <http://onthemap.ces.census.gov/>

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Figure 5: Potential Park-and-Ride Draw Areas to Employment Center Connections Selected for Further Analysis

Connection Number	Park-and-Ride	Employment Center	Daily Work Trips
1	BrandsMart/Stockbridge Rd	Airport	1,025
2	Newnan	Airport	1009
3	Panola Rd	Druid Hills	729
4	Woodstock (His Hands Church)	Perimeter	647
5	Woodstock (His Hands Church)	Cumberland	583
6	Panola Rd	Airport	533
7	Busbee Dr	Cumberland	523
8	Town Center - Big Shanty	Cumberland	519
9	Sugarloaf Mills	Perimeter	514
10	Busbee Dr / Town Center Big Shanty	Perimeter	513
11	Hewatt Rd	Perimeter	506
12	Marietta Transfer Center	Perimeter	506
13	Riverdale	Midtown	486
14	Mableton	Perimeter	474
15	Acworth	Perimeter	473
16	Stone Mountain	Druid Hills	471
17	Central Atlanta	Northpoint	467
18	Indian Trail	Buckhead Employment Center	467
19	McDonough	Airport	465
20	Panola Rd	Buckhead Employment Center	461
21	Central Atlanta	Cumberland	458
22	Cumming	Northpoint	429

Source: U.S. Census LEHD

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4 MARKET ANALYSIS RESULTS

Three different methods were utilized to assess demand for long-distance transit services with the goal of identifying potential markets for new GRTA *Xpress* service. Using ARC, mobile phone, and LEHD data allows for a comprehensive look at travel demand in the region; however, since each method is derived from a different data set, variances in travel demand are to be expected. An evaluation of combined results from the three data sets suggests that there are multiple markets that are viable GRTA corridors for peak hour service as well as all day service. These markets are summarized below, and Figures 39 to 44 in Appendix D illustrate the markets graphically on maps.⁶

Additional CBD / Midtown Markets

GRTA currently provides extensive service to the CBD and Midtown along major expressway corridors, so there are limited opportunities to serve new markets. Based on the analysis described above, the three markets listed below in Figure 6 are potential markets for new service to the CBD or Midtown. There is an existing park-and-ride at Riverdale that could be used for a Riverdale to Midtown route. The Tucker to CBD and Clifftondale to CBD markets would require new park-and-ride facilities.

Figure 6: CBD/Midtown Commute Markets

Origin	Destination	Daily Work Trips
Tucker (park and ride does not currently exist)	CBD	1,369
Clifftondale (park and ride does not currently exist)	CBD	696
Riverdale	Midtown	486

Source: U.S. Census LEHD

Reverse Commute Markets

Two reverse commute markets were identified that are not currently served by MARTA rail: Central Atlanta to Northpoint and Central Atlanta to Cumberland. (It should be noted that Northpoint is served by MARTA bus service, connecting to rail service at the North Springs MARTA station.) Each market is roughly the same in size. It is assumed that riders located in or

⁶ Each summary table includes an estimated market size measured in daily trips. Daily work trips are provided for commute markets and total daily trips are provided for all day markets. These numbers were computed using LEHD data (for commute markets) or AirSage mobile data (for all day markets). The totals are for trips originating in a 2.5-mile catchment area around the park-and-ride that are destined for the employment area. For reverse commute trips, a 3-mile buffer was drawn around the CBD, and it is assumed that passengers will take local service to the CBD and then transfer to reverse commute GRTA *Xpress* service.

close to the CBD and Midtown would take local transit to the CBD and then transfer to *Xpress* service.

Figure 7: Reverse Commute Markets

Origin	Destination	Daily Work Trips
Central Atlanta	Northpoint	467
Central Atlanta	Cumberland	458

Source: U.S. Census LEHD

Buckhead/Druid Hills Markets

As shown in Figure 8, four markets to Buckhead and Druid Hills were identified, all located to the east of Atlanta. The most significant market is Panola Road to Druid Hills.

Figure 8: Buckhead/Druid Hills Commute Markets

Origin	Destination	Daily Work Trips
Panola Rd	Druid Hills	729
Stone Mountain	Druid Hills	471
Indian Trail	Buckhead Employment Center	467
Panola Rd	Buckhead Employment Center	461

Source: U.S. Census LEHD

Suburb-to-Suburb Connections

As shown in Figure 9 below, there are numerous suburb-to-suburb connections that could potentially be served by *Xpress* service. Each connection is from an existing park-and-ride to the Airport, Perimeter, Cumberland, or Northpoint. The two most significant markets by a wide margin are BrandsMart/Stockbridge Rd to Airport and Newnan to Airport. The most significant connections in the north are Woodstock to Perimeter and Woodstock to Cumberland.

Figure 9: Suburb to Suburb Commute Markets

Origin	Destination	Daily Work Trips
BrandsMart/Stockbridge Rd	Airport	1,025
Newnan	Airport	1,009
Woodstoch (His Hands Church)	Perimeter	647
Woodstoch (His Hands Church)	Cumberland	583
Panola Rd	Airport	533
Busbee Dr	Cumberland	523
Town Center - Big Shanty	Cumberland	519
Sugarloaf Mills	Perimeter	514
Busbee Dr / Town Center Big Shanty	Perimeter	513
Hewatt Rd	Perimeter	506
Marietta Transfer Center	Perimeter	506
Mableton	Perimeter	474
Acworth	Perimeter	473
McDonough	Airport	465
Cumming	Northpoint	429

Source: U.S. Census LEHD

All Day Markets

The CBD and Airport were identified as potential destinations for all day service due to their high levels of activity throughout the day, parking restrictions that encourage transit use, and in the case of the CBD, a central location that provides transfer opportunities. Criteria for selecting markets included a significant number of trips and easy expressway accessibility so that more than one market could be tied together to create a bus route. Mobile phone data from AirSage were used to select these zones.

The CBD markets that may have potential to support all-day service (Figure 10) are located along the I-75, I -85, and I-20 corridors:

- I-75: Busbee Dr/Town Center – Big Shanty and Marietta Transfer Center (could also include service to Cumberland on the way to the CBD)
- I-85: Sugarloaf Mills and Indian Trail
- I-20: East Conyers, West Conyers, and Panola Road

Figure 10: CBD All Day Markets

Origin	Destination	Daily Trips – All Types
Panola Rd	CBD	1,999
Indian Trail	CBD	1,201
Marietta Transfer Center	CBD	1,104
Sugarloaf Mills	CBD	802
Busbee Dr / Town Center – Big Shanty	CBD	770
East Conyers	CBD	606
West Conyers	CBD	522

Source: AirSage Mobile Phone Data

Potential all day markets to the Airport zone were identified along the I-75, GA-400, and I-85 corridors, as shown in Figure 11. These park-and-rides had some of the highest trip totals among all markets to the Airport and are located far from the Airport, making travelers in these areas more likely to use an express bus. The trip totals for these markets are significantly lower than the all-day CBD trip totals, but they may be viable markets for *Xpress* service if they draw from a large area and can capture significant market share.

- I-75: Busbee Dr/Town Center – Big Shanty and Marietta Transfer Center
- GA-400: Windward Pkwy and Mansell Rd (currently served by MARTA, but not GRTA *Xpress*)
- I-85: Sugarloaf Mills and Indian Trail

In addition to these markets, the markets to the Airport identified in the Suburb-to-Suburb Connections section may be viable all-day markets due to the fact that many Airport jobs do not follow the traditional 8:00 a.m. to 5:00 p.m. schedule, making it necessary to serve the markets all day instead of peak periods only.

Figure 11: Airport All Day Markets

Origin	Destination	Daily Trips – All Types
Windward Pkwy	Airport	268
Mansell Rd	Airport	230
Indian Trail	Airport	208
Busbee Dr/Town Center – Big Shanty	Airport	194
Marietta Transfer Center	Airport	172
Sugarloaf Mills	Airport	165

Source: AirSage Mobile Phone Data

NEXT STEPS

The analysis suggests that there are multiple viable corridors for GRTA to explore further. It should be noted that not all corridors identified as having demand should have regional express bus service operating on it, as there are multiple other determinants that influence whether transit can serve a market effectively or not. The next steps include assessing park-and-ride capacity, draft routing, and a determination of whether or not the origin and destination can readily be served. The market analysis will form the basis for the formation of any new GRTA corridors.

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5 NON-RIDER SURVEY

ETC Institute conducted a non-rider survey during October and November of 2014. The purpose of the survey was to capture demographics, brand awareness, usage patterns, and attitudinal data from non-riders who were employed outside their home and/or a student living 10 or more miles from employment/school. Only those 18 years or older qualified for the survey. The data elements captured in the survey were used to help achieve the goals and objectives of the COA.

The survey was administered by phone to a random sample of 1,652 residents that were non-users of GRTA *Xpress* service living within six predefined zones surrounding the Atlanta metro area. The survey was administered to a minimum of 400 non-riders in the south zone, and 250 in each of the remaining five zones. The overall results of the survey have a precision of at least +/-5.0% at the 95% level of confidence. The results of the individual sub-samples have a precision of at least +/-6.9% at the 95% level of confidence. Figure 12 shows the margin of error achieved for each of the 6 zones. Detailed findings from the non-rider survey are available in Appendix E.

Figure 12: Completed Surveys by Sampling Area

Zones	Number	Percentage	Margin of Error (at 95% level of confidence)
North (GA400)	208	12.59%	+/- 6.8%
East (GA78, I-20E)	257	15.56%	+/- 6.0%
Northwest (I-75N, 575N)	254	15.38%	+/- 6.1%
Northeast (I-85N, GA316)	254	15.38%	+/- 6.1%
South (I-85S, I-75S, GA19-41)	402	24.33%	+/- 5.0%
West (I-20W)	202	12.23%	+/- 6.9%
Other Non-Verified Zips	75	4.54%	NA
Total	1652	100.00%	+/- 2.4%

Source: ETC

For the purposes of this non-rider survey, a survey was considered complete if the individual met the qualifications for the survey (i.e. non-rider, 18 years or older, lived 10+ miles away from school/work, and was employed/student), provided an answer to each question on the survey, and could verify their home zip code fell within one of the six sub-areas. A total of 75 respondents either declined to verify their home zip code or provided a zip code that was not encompassed by one of the six sub-areas. For this reason, these 75 completes were excluded from the sub-area analysis.

CHALLENGES EXPERIENCED DURING ADMINISTRATION

ETC Institute conducted a pilot test of the GRTA non-rider survey on October 2-6. The purpose of the pilot test was to: (1) Evaluate the questions to be sure respondents, (2) Assess the length of the survey, and (3) assess the response rate.

Evaluation of the Survey Design – There were no problems with the wording of any questions on the survey. Respondents were able to understand each question and respond in the manner that was expected. For this reason, no changes to the survey questions were needed.

Assessment of Survey Length – The average length of the survey was 11.4 minutes. Since the desired length of the survey was to be between 10-15 minutes, ETC Institute felt the length of the survey was acceptable. Only one person who was qualified to take the survey quit the survey.

Assessment of Response Rate and Completion Rate – Although the design of the survey questions, the length of the survey, and overall willingness to complete the survey were acceptable, the completion rate was not acceptable because most respondents were not qualified to participate. Of the 284 people contacted who initially agreed to do the survey, only 62 (21%) were qualified to participate. The primary reason that people were not qualified was due to the requirement that the respondents must work or go to school more than 10 miles from their home.

ETC Institute's effort to recruit eligible candidates for the survey was four times the amount of work that was originally expected, which nearly doubled the hours of interviewing time required to obtain a completed survey from an eligible respondent.

For this reason, ETC Institute recommended decreasing the sample size from 400 completed surveys from each of the six planning areas to 250 surveys per planning area and 400 in the south sub area for a total of 1,650 completed surveys instead of 2400 surveys. The decrease in the sample size allowed our team to perform statistically valid analysis for each of the six areas.

Impact on the Overall Results – The overall results for a sample of 1,652 completed surveys had a precision of +/- 2.4% at the 95% level of confidence. The overall results for a sample of 2,400 completed surveys will have a precision of +/- 2.0% at the 95% level of confidence.

Impact on the AREA Level Results – The overall results for a sample of 250 completed surveys had a precision of +/- 6.2% at the 95% level of confidence. The overall results for a sample of 400 completed surveys will have a precision of +/- 5.0% at the 95% level of confidence.

Charts depicting the overall results as well as GIS mapping of selected questions and a copy of the survey script are included following our findings.

MAJOR FINDINGS

- **How People Commute in the Metropolitan Atlanta Area** – Those surveyed were asked what method of transportation they normally use to go to work/school. Ninety-three percent (93%) indicated they drive alone in a car/truck, 3% carpool, 3% use public transportation, and 1% vanpool.
- **Performance of Transit Agencies Serving the Atlanta Area** – When asked to rate the overall performance of each of the transit agencies that serve residents in the Atlanta area, GRTA *Xpress* ranked the highest, with 70% rating it between a 6 and 10 on a 10-point scale. Ratings for the other transit agencies were: Cobb Community Transit (65% rating it a 6 to 10), MARTA (63% rating it a 6 to 10), and Gwinnett County Transit (58% rating it a 6 to 10).
- **Familiarity with GRTA *Xpress* Services** – More than two-thirds (69%) of those surveyed were not familiar with GRTA *Xpress* services; 4% indicated they were “very familiar” with the service, 7% were “familiar” and 20% were “somewhat familiar.”
- **Likelihood of Using Public Transit** – When respondents were asked how likely they are to use public transit at least once a week based on certain factors, 57% indicated they are “very likely” or “likely” to do so to avoid traffic on their commute. Other factors that would make people “very likely” or “likely” to use public transit at least once a week include: having bus stops located closer to work or destination (54%), saving money on the commute (54%), time savings on the commute (53%), and locating park-and-ride lots closer to home (53%).
- **Reasons for Not Using GRTA *Xpress*** – Fifty-two percent (52%) of those surveyed indicated they do not use GRTA *Xpress* service in the Atlanta region because service is not offered to places they need to go. Other reasons include: prefer to drive (51%), not enough information/don’t know how to use the bus (46%), and length of time it takes compared to travel by car (40%). The reason given the least was poor customer service (10%).
- **Length of Time for One-Way Travel** – Nearly half (49%) of respondents indicated it takes them 30 minutes or less to commute one way to work, school, or their most frequent destination. Twenty-nine percent (29%) indicated it takes 31 to 45 minutes; 13% said 46 to 60 minutes, and 9% said it takes more than 60 minutes to commute one way to work, school, or their most frequent destination.
- **Potential for Future Express Bus Service** – Respondents were asked how many days per week they would use express bus service to get to/from work or school if it were made available near their home in the next few years. Sixty-four percent (64%) indicated they would use the service at least one day per week; of those, one-third said they would use the service five or more days per week.
- **Adequacy of Public Transportation in the Atlanta Suburbs** – Eleven percent (11%) of those surveyed indicated the adequacy of public transportation in the Atlanta suburbs is either “excellent” or “good”; 21% said it was “average,” 46% said it was “poor,” and the remaining 22% did not have an opinion.
- **Communication from GRTA *Xpress*** – Of the respondents who indicated they were either “very familiar” or “familiar” with *Xpress* services, 55% were either “very satisfied” or “satisfied” with the quality of the GRTA *Xpress* webpage, and 52% were “very satisfied” or “satisfied” with the availability of information about *Xpress* services. Respondents

were least satisfied with efforts by GRTA *Xpress* to involve the public in planning and investment decisions (26% satisfaction).

- **Efficiency of GRTA *Xpress*** – When asked to rate the overall efficiency of GRTA *Xpress* on a scale of 1 to 10, with 1 meaning “very inefficient” and 10 meaning “very efficient,” 40% rated the service between an 8 and a 10. Only 5% of respondents indicated that GRTA *Xpress* was “very inefficient” (a “1” rating).
- **Overall Satisfaction with GRTA Service** – When asked to rate the overall satisfaction with major areas of service provided by GRTA, quality of customer service ranked the highest, with 74% rating it between a 6 and 10 on a 10-point scale. Ratings for other areas of service included: efforts to protect/preserve the environment (62% rating it a 6 to 10), efforts to keep customers informed (57% rating it a 6 to 10), quality of the transit system in the metropolitan Atlanta area (47% rating it a 6 to 10), and quality of public transit where respondents live (42% rating it a 6 to 10).