CONNECT GWINNETT TRANSIT PLAN

Existing Conditions

Technical Memorandum

October 2017

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INTRODUCTION

This memorandum is the first component of the Connect Gwinnett: Transit Plan, which is a Comprehensive Transit Development Plan (CTDP) for Gwinnett County.

Gwinnett County Transit (GCT) began express route service in November 2001 and local bus service in November 2002. There have been numerous service updates over the years, but for the most part, service coverage remains relatively unchanged. In the meantime, Gwinnett County demographics have changed significantly. The County's population has grown from approximately 590,000 in 2000 to almost 900,000 in 2016. The County has grown with such a strong ethnic diversity that the County now reflects a majority minority population. After 15 years of operation with no significant changes, now is the appropriate time for Gwinnett County to take a long-range view of its transit needs and vision, using this study as the blueprint for achieving that vision for existing, future, and underserved transit riders.

A CTDP is a roadmap for how the County would like to develop its transit networks to serve current and future needs. The plan aims to achieve the following outcomes:

- Short-term improvements that improve service, ridership, and reach key untapped markets of latent demand
- Medium-term service enhancements that expand transit accessibility and desirability with efficient service and infrastructure enhancements
- Long-term plan that will allow the County to meet economic growth objectives and enhance the lives of its residents through the provision of high-quality and sustainable transit
- A countywide vision with broad-based support for a future dedicated transit funding and implementation
- Make transit a mode of choice for work and leisure trips

To inform the development of short-, medium-, and long-term plans, it is important to first assess the existing transit system and the existing population within Gwinnett County. This memorandum serves to document this assessment, which includes the following:

- A review of ridership, service levels, utilization, and demographics of the existing transit system
- A peer review of local and national transit systems similar to Gwinnett County
- An assessment of the transit markets in Gwinnett County

EXISTING GWINNETT TRANSIT SERVICES

Gwinnett County Transit (GCT) was formed in 2000 and first provided transit service in November 2001 with the operation of three express routes into downtown Atlanta. In the fall of 2002 and winter of 2003, five local routes were added to the service.

Service levels grew through 2007, which represented the historical peak service level for GCT. Service reductions were implemented in 2008, 2009, 2010, and 2011, reducing the overall service level, as measured by annual revenue hours of operation, 18 percent below 2007 levels. Meanwhile, productivity grew from 13.4 passengers per revenue hour in 2007 to a high of 19.1 passenger per revenue hour in 2012. A 2012 fare increase impacted ridership and productivity.

Recently, service levels have started to increase towards their previous levels. In 2015, Saturday service was restored for all local routes, and there were service restorations for the express services. In the winter of 2016, a new express route was created, providing service to Emory University from the Indian Trail and Sugarloaf Mills Park & Rides.

GCT provides service with a fleet of 75 vehicles; 32 buses are used for local service and 43 buses are used for express service. GCT maintains the Gwinnett Transit Center and four park & ride lots, and shares in the use of MARTA rail stations. Gwinnett County owns and maintains the Indian Trail Park & Ride facility. The Georgia Department of Transportation owns the Sugarloaf Mills, I-985, and Hewatt Road park & ride facilities, which are maintained by Gwinnett County. GCT provides express bus service from the Sugarloaf Mills, Indian Trail, and I-985 park & ride facilities, while GRTA provides commuter bus service from the Hewatt Road park & ride.

Park & ride lots include security lighting, parking, passenger pavilions, informational signage and wayfinding, benches, waste receptacles, and digital message signs. Bus stops include bus shelters, benches, information signage and wayfinding, and waste receptacles. GCT recently upgraded the Sugarloaf Mills Park & Ride to improve bus circulation and provide better passenger amenities.

GCT is funded from a combination of farebox, federal/state, and local funds. Approximately one-third of the funding comes from each category. Federal funds are primarily sourced from the FTA Section 5307 Urbanized Area formula category. All service is contracted to and operated by Transdev – a private transit service provider.

GCT currently operates six local bus routes and five express routes. Communities served by GCT include Doraville, Norcross, Lawrenceville, Lilburn, Peachtree Corners, and Duluth. Major destinations served by transit include Sugarloaf Mills, the Gwinnett Place Mall, MARTA Doraville Station, the Gwinnett Justice & Administration Center, Gwinnett Civic Center & Arena, Emory University, several park & rides along I-85, and downtown Atlanta. GCT local routes are shown in **Figure 1** and GCT express routes are shown in **Figure 2**.

Figure 1. GCT Local Bus Service Map

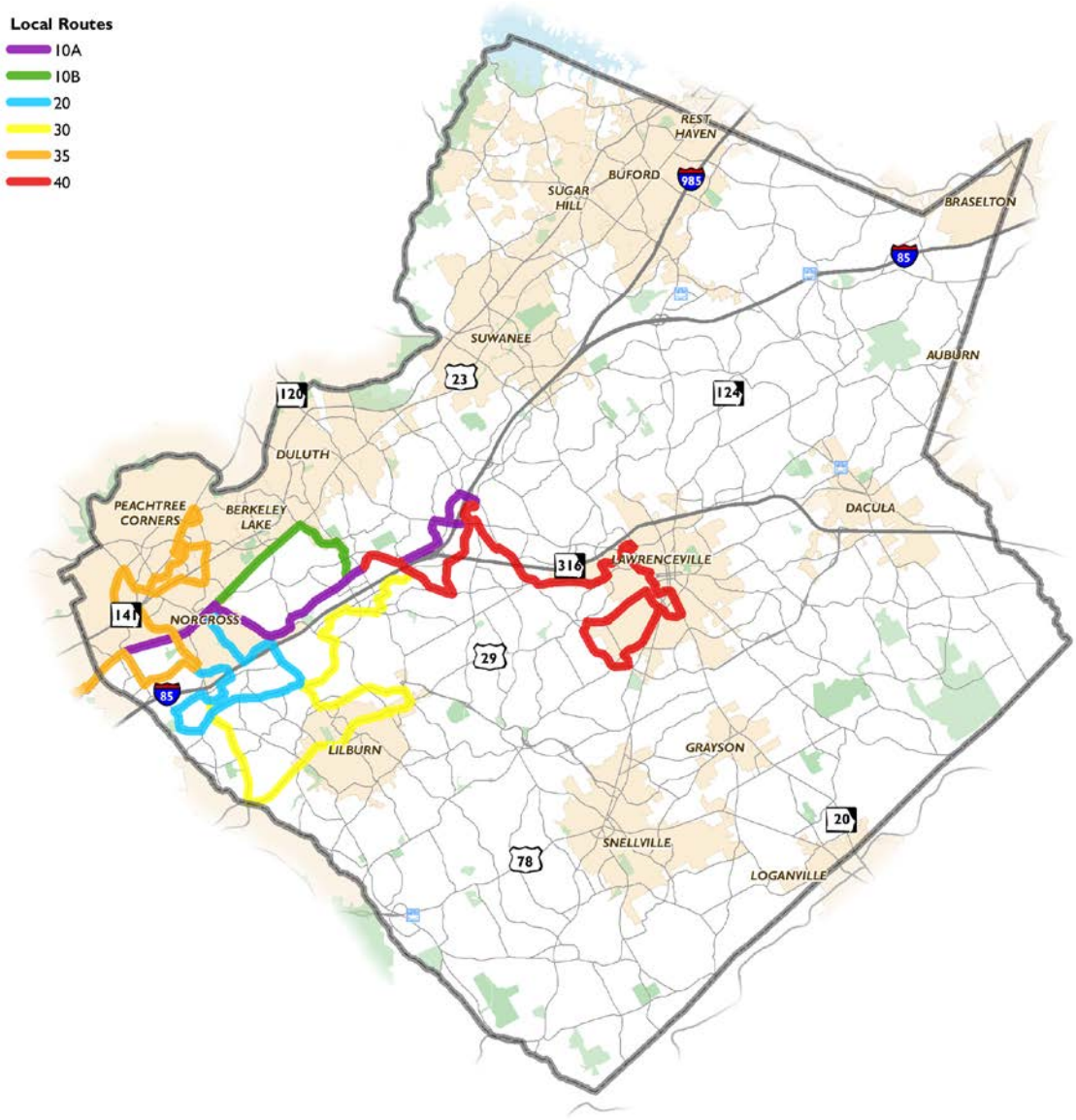
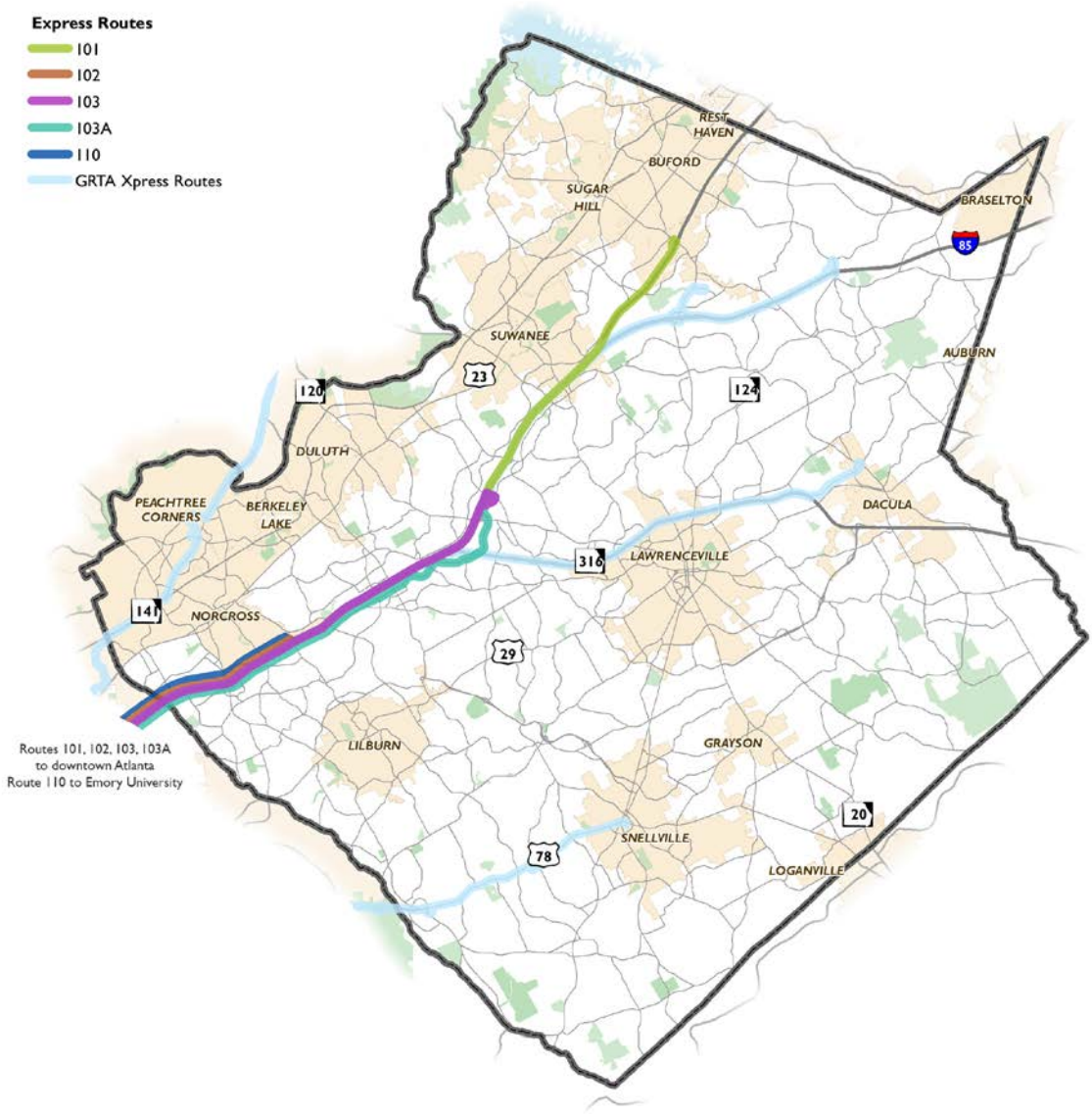


Figure 2. GCT Express Bus Service Map



Route Characteristics

An overview of route characteristics for the six GCT local routes and five express routes is provided in **Table 1** and **Table 2**, respectively.

As shown in **Table 1**, all local routes have peak headways of 30 minutes. The span of service varies for local routes, with service starting between 5:30 AM and 6:15 AM and continuing until between 7:57 PM and 9:05 PM. The exception is Route 10A, which continues until 10:30 PM. The routes are all between 15 and 21 miles in length and peak one-way trip time is between 58 and 72 minutes.

As shown in **Table 2**, the peak headway and span of service varies between each of the express routes. All express routes head into Atlanta in the morning and out of Atlanta in the evening, except for Route 103A, which acts as a reverse-commute express route, and Route 110, which provides service to and from Emory University. There is greater variation in trip length and running time between express routes than local routes.

Table 1. Local Bus Service Characteristics

Characteristics (Local Bus)	10A	10B	20	30	35	40
Weekday Peak Headway (mins)	30	30	30	30	30	30
Weekday Off-Peak Headway (mins)	60	60	60	60	60	60
Weekday Span of Service	5:30 AM-10:30 PM	6:15 AM-7:57 PM	5:34 AM-9:05 PM	5:55 AM-8:50 PM	5:50 AM-8:50 PM	6:00 AM-8:50 PM
Saturday Headway (mins)	60	60	60	60	60	60
Saturday Span of Service	6:00 AM-10:00 PM	6:30 AM-9:30 PM	6:09 AM-8:02 PM	6:41 AM-8:34 PM	6:25 AM-8:15 PM	6:44 AM-8:43 PM
Route Length – Inbound (mi)	15.8	16.9	18.1	20.5	15.1	20.2
Route Length – Outbound (mi)	15.1	16.1	17.4	20.7	15.2	19.4
Peak Hour Actual Running Time – Inbound/Outbound (mins)	58/60	60/63	62/61	72/69	62/66	62/63
Average Actual Running Time – Inbound/Outbound (mins)	52/53	53/55	56/56	63/61	52/58	58/57

Table 2. Express Bus Service Characteristics

Characteristics (Express Bus)	101	102	103	103A	110
Weekday Peak Headway (mins)	15	30	10	60	30
Weekday Span of Service	5:30 AM-9:12 AM; 3:03 PM-7:12 PM[1]	6:10 AM-8:55 AM; 3:08 PM-6:28 PM[1]	5:40 AM-9:55 AM; 3:05 PM-7:04 PM[1]	7:00 AM-9:15 AM; 3:10 PM-6:30 PM	5:30 AM-8:39 AM; 3:45 PM-7:20 PM
Route Length – Inbound (mi)	36.8	21.0	28.1	27.9	15.5 - 23.7[2]
Route Length – Outbound (mi)	36.0	21.3	28.0	32.5	15.4 - 22.3[2]
Peak Hour Actual Running Time – Inbound/Outbound (mins)	78/75	53/48	62/78	59/74	39/37[2]
Average Actual Running Time – Inbound/Outbound (mins)	74/68	51/46	58/67	59/73	38/36[2]

1. Two daily "sweeper" buses pick up all 101/102/103 passengers in Atlanta and stop at all 3 park & ride lots. These two trips have service spans of 2:15 PM-3:12 PM and 6:45 PM-7:44 PM.
2. As of April 2017, some Route 110 trips stop at both Sugarloaf Mills and Indian Trail Park & Ride lots; the route length for these trips is longer than it is for those that only stop at Indian Trail Park & Ride. Actual running times are based on March 2017 AVL data and thus do not reflect the running times of trips which stop at Sugarloaf Mills.

Figure 3 and **Figure 4** Error! Reference source not found.below show a breakdown of fare types for local and express routes, respectively. Express bus riders rely more heavily on 10-ride ticket books than do local riders, who primarily pay the standard cash fare. **Figure 5** and **Figure 6** show a breakdown of payment method for local and express routes, respectively. Both express and local bus riders primarily pay with Breeze cards. Outside of Breeze cards, local riders primarily use cash, while express riders primarily use paper tickets.

Figure 3. Fare Type – Local Routes

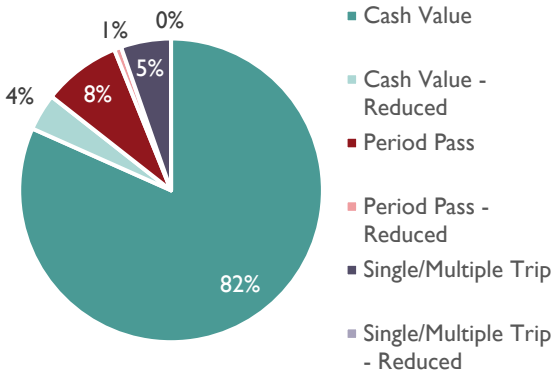


Figure 4. Fare Type – Express Routes

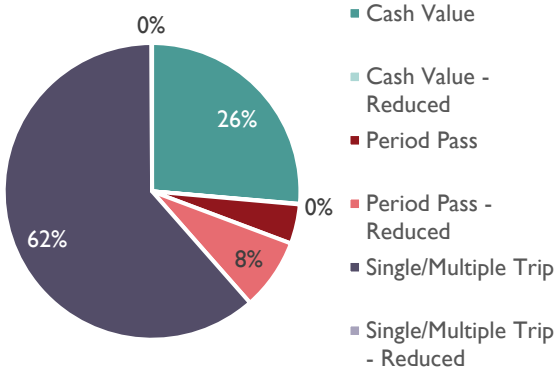


Figure 5. Payment Method – Local Routes

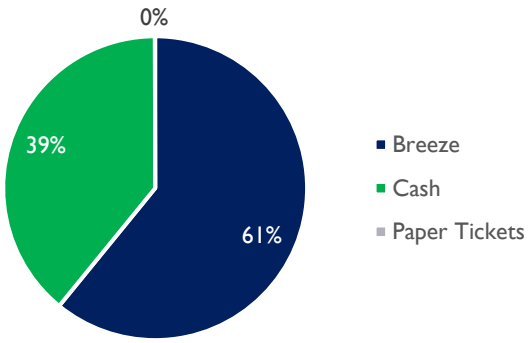
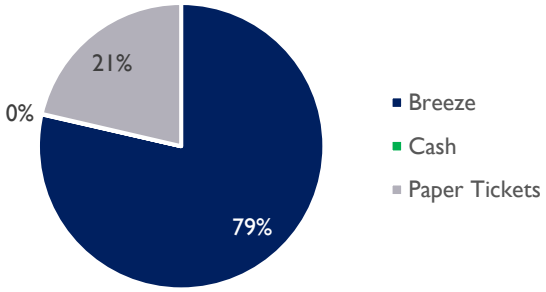


Figure 6. Payment Method – Express Routes



Route Performance

An overview of route performance for GCT local routes and express routes is provided in **Table 3** and **Table 4**, respectively. Route profiles showing ridership by stop, key performance attributes, and boarding and alighting locations are shown in **Appendix A**. All performance measures are based on ridership and vehicle location data provided by GCT for the month of March 2017, except for on-time performance, which was determined based on vehicle location data from February 2017.

Table 3. Local Bus Performance Metrics

Metrics (Local Bus)	10A	10B	20	30	35	40
Average Weekday Boardings	1,068	548	693	371	534	420
Average Weekend Boardings	515	442	303	218	238	211
Passengers/Revenue Mile	1.5	1.2	0.9	0.4	0.8	0.5
Passengers/Revenue Hour	27.1	21.8	17.7	8.5	13.9	10.0
Average Maximum Load - Inbound	18.1	13.8	11.3	3.8	9.0	5.4
Average Maximum Load - Outbound	14.8	11.6	9.5	3.4	7.2	6.5
Riders Transferring (%)	84%	89%	81%	61%	65%	61%
On-Time Performance	81%	80%	72%	66%	79%	73%

Data Source: GCT March 2017 APC & AVL data; GCT February 2017 APC & AVL data (on-time performance only); GCT March 2017 farebox data; March 2017 Breeze usage data; March 16th, 2017 Breeze transactions.

Table 4. Express Bus Performance Metrics

Metrics (Express Bus)	101	102	103	103A	110
Average Weekday Boardings	363	223	991	43	53
Pax/Revenue Mile	0.6	1.1	1.0	0.4	0.4
Pax/Revenue Hour	18.0	27.6	26.4	9.8	7.8
Average Maximum Load - Inbound	19.9	20	22.8	9.2	3.5
Average Maximum Load - Outbound	21.4	21.5	26.8	9.6	6.4
Riders Transferring (%)	22%	28%	21%	100%	11%
On-Time Performance	77%	80%	69%	73%	73%

Data Source: GCT March 2017 APC & AVL data; GCT February 2017 APC & AVL data (on-time performance only); GCT March 2017 farebox data; March 2017 Breeze usage data; March 16th, 2017 Breeze transactions.

Figure 7 and **Figure 8** show average weekday daily boardings by stop for local and express routes, respectively. **Figure 9** shows average weekend daily boardings by stop for local routes. High ridership locations include the three express bus park & ride lots, Gwinnett Transit Center, and stops along Buford Highway and Satellite Boulevard.

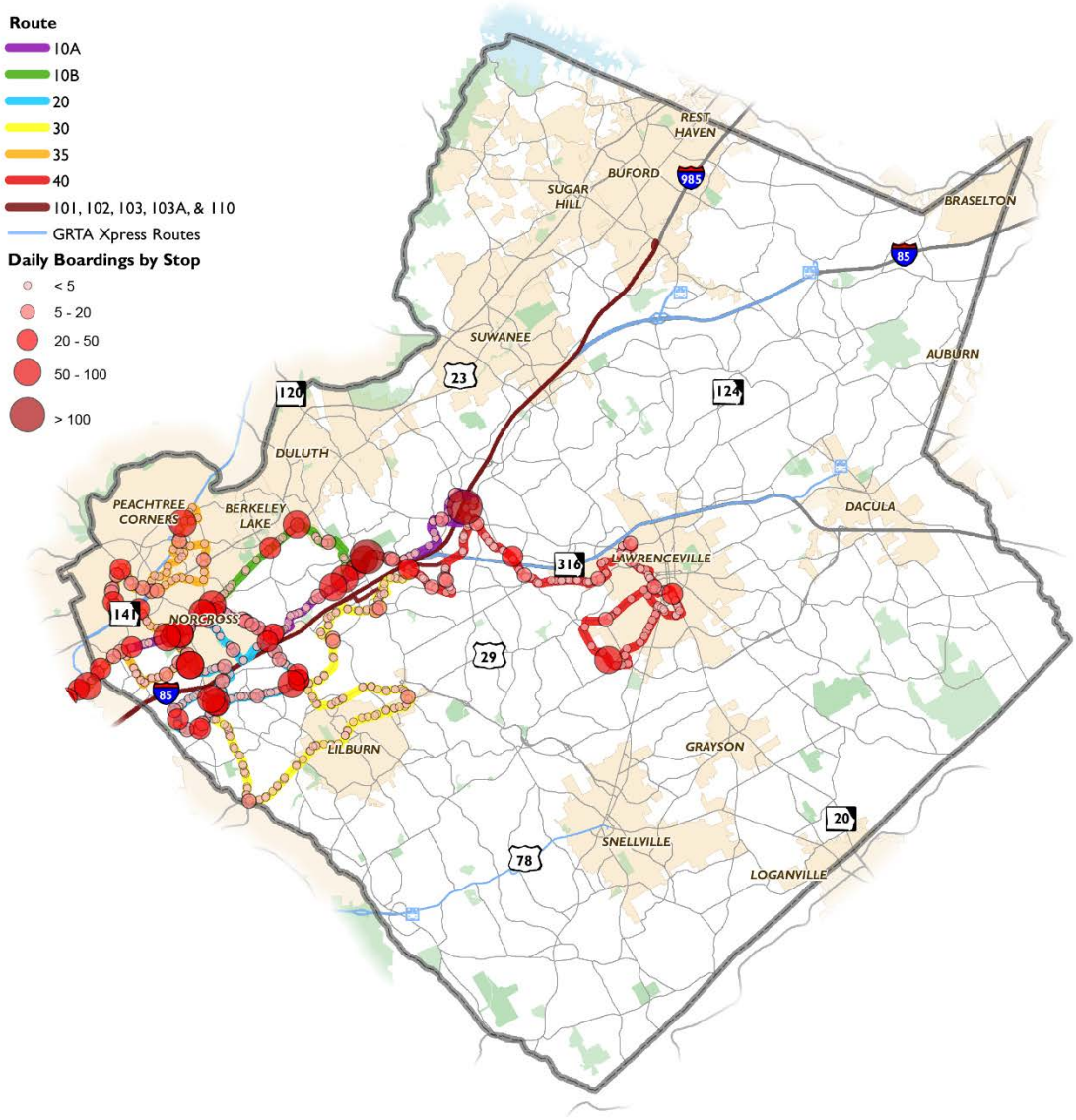
As shown in **Table 3**, Route 10A was the highest performing local route with nearly 30 passengers per revenue hour. Routes 30 and 40 were the lowest performing routes with approximately 10 passengers per revenue hour each; these two routes also reflect the lowest performing routes for on-time performance. The second to-last row in **Table 3** shows the percentage of riders who transfer to another transit route, including MARTA rail, GCT, and other bus services. All local routes have significant transfer activity, with Routes 10A, 10B, and 20 being the busiest.

As shown in **Table 4**, Routes 102 and 103 were the highest performing express routes with nearly 30 passengers per revenue hour. Routes 103A and 110 were the lowest performing routes. The second-to-last row in **Table 4** shows the percentage of people who ride each route who transfer to another transit route. Most riders on Route 103A transfer, while most riders on all other express routes did not transfer.

A summary of a day's worth of Breeze card transfer activity related to GCT is shown in **Table 5**. This table accounts for all transfer activity recorded on Breeze cards for the day of March 16, 2017 where a user made at least one trip on a GCT bus. Note that cash users are not represented in this analysis, as their transfer activity cannot be tracked. Among the GCT passengers who used Breeze cards, 64% made at least one transfer and 20% made at least two transfers. MARTA rail was the largest attractor of transfer trips: 43% of all trips involved both a MARTA rail and GCT bus, and 58% of all two-transfer trips involved MARTA rail. Within the GCT system, the route pair which generated the most transfer activity was Route 10 and Route 30.

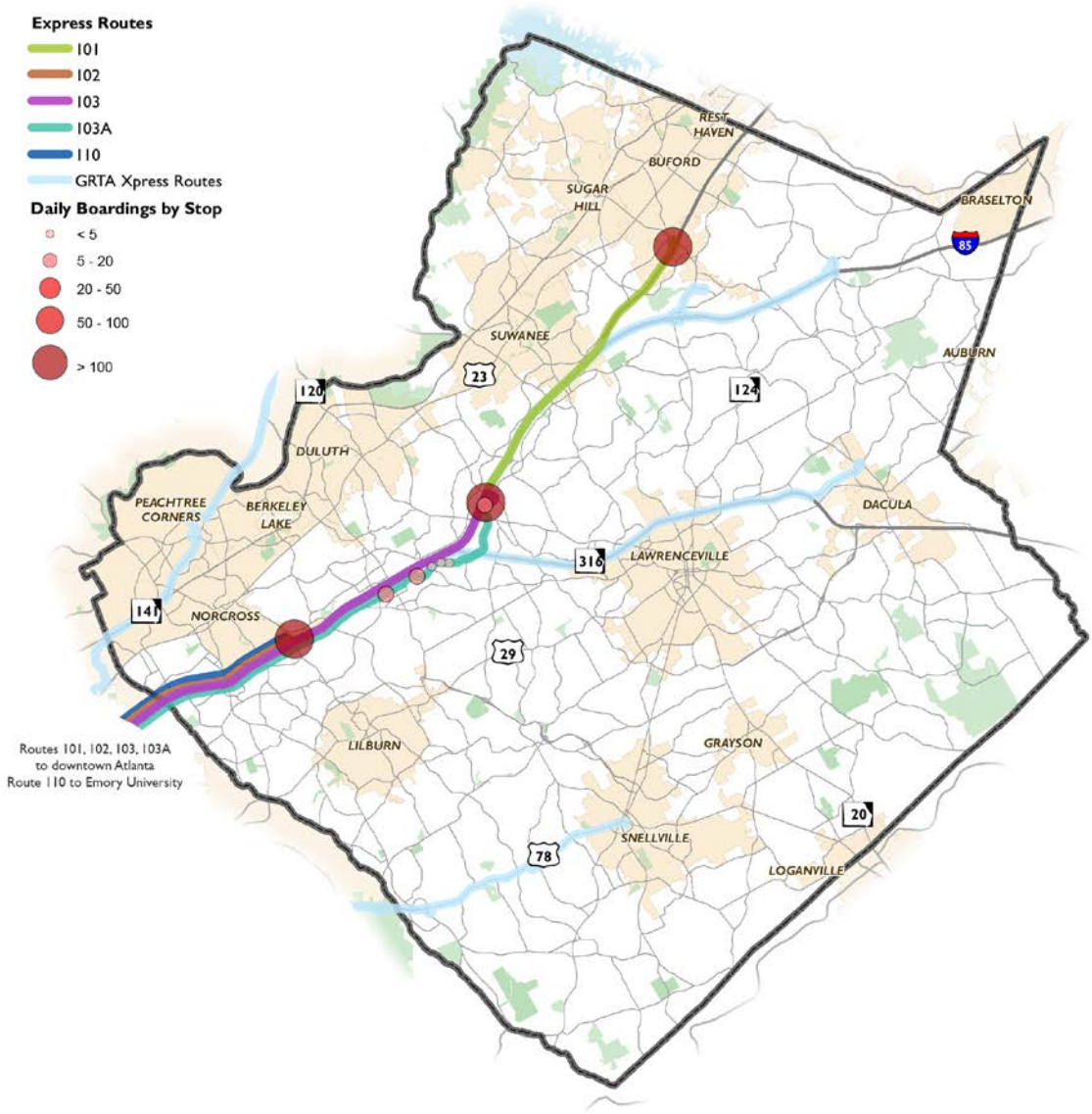
Transfer patterns for non-Breeze users were estimated using the on-board survey conducted as part of the 2015 Gwinnett County Transportation Plan. For non-Breeze users, the routes with the most transfer activity were the 10A and 10B; the routes with the least transfer activity included the express routes which head into Atlanta, and Route 35.

Figure 7. Weekday Daily Boardings by Stop – Local Routes



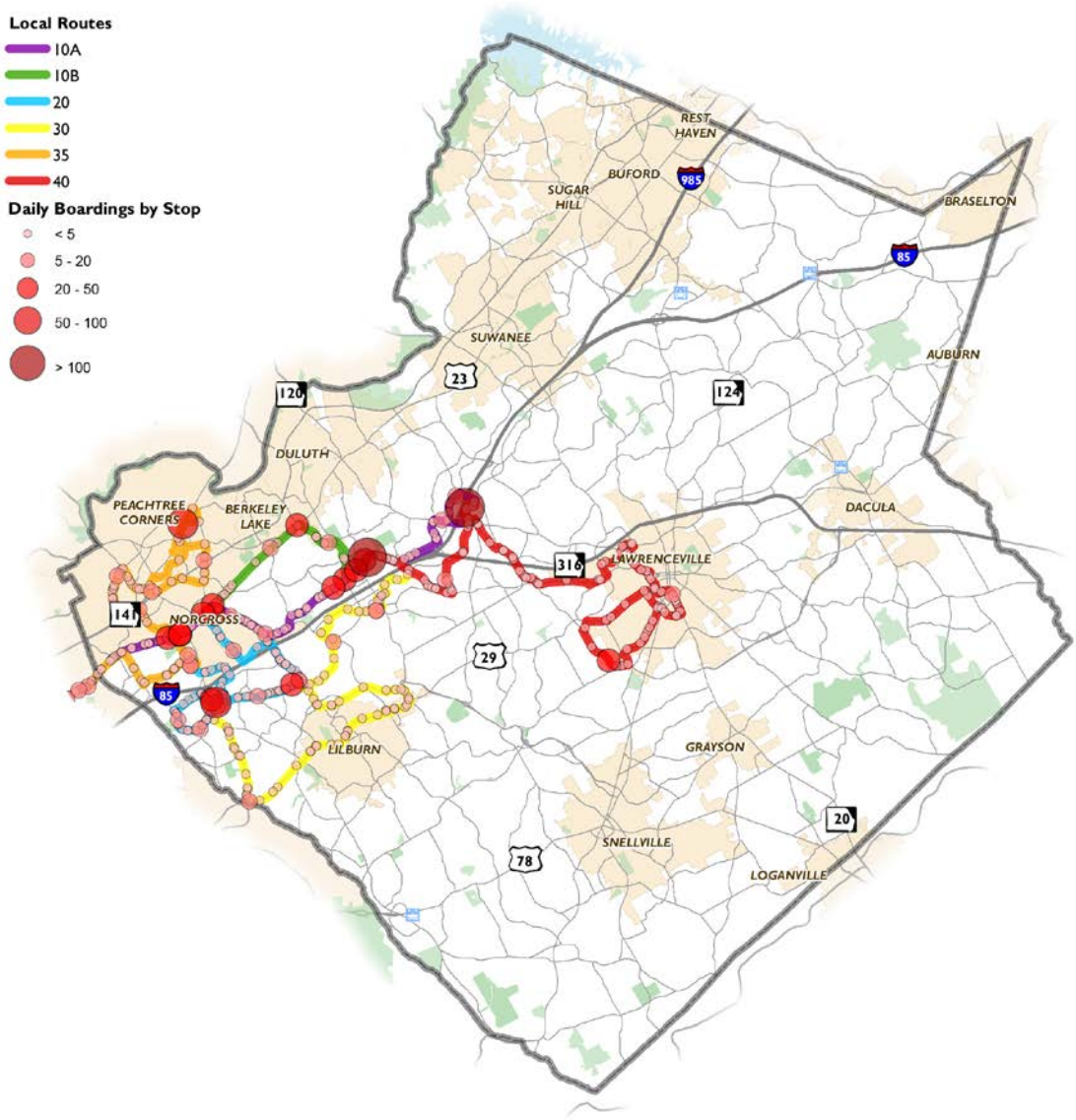
Data Source: GCT March 2017 APC & AVL data

Figure 8. Weekday Daily Boardings by Stop – Express Routes



Data Source: GCT March 2017 APC & AVL data

Figure 9. Weekend Daily Boardings by Stop



Data Source: GCT March 2017 APC & AVL data

Table 5. Transfer Matrix

Transfer Issued		Transfer Received													
		CobbLinc	GRTA	GCT									MARTA Bus	MARTA Rail	Total
				10	20	30	35	40	101	102	103	110			
CobbLinc		5	-	-	-	-	-	-	-	-	-	-	-	18	**23**
GRTA		-	-	1	-	1	-	-	-	-	-	-	-	9	**11**
GCT	**10**	-	-	-	5	57	3	12	1	-	1	-	33	217	**329**
	20	-	-	5	-	16	3	1	-	-	-	1	16	86	**128**
	30	-	-	28	7	-	-	-	-	1	-	-	1	2	**39**
	35	-	-	2	-	-	-	-	-	-	-	-	11	53	**66**
	40	-	-	9	-	2	-	-	2	-	1	-	-	3	**17**
	101	-	-	-	-	-	-	-	-	-	-	-	-	24	**24**
	102	-	-	-	-	-	-	-	-	-	-	-	-	22	**22**
	103	-	-	-	-	3	-	5	-	-	-	-	1	50	**59**
MARTA Bus		-	-	53	16	2	12	-	-	-	3	-	64	444	**594**
MARTA Rail		23	10	467	189	4	121	-	31	15	77	-	393	-	**1,331**
Total		**28**	**10**	**565**	**217**	**85**	**139**	**18**	**34**	**16**	**82**	**1**	**519**	**928**	**2,643**

Note: Includes only passengers using a Breeze card
Data Source: March 16th, 2017 Breeze transactions

TRANSIT PEER ASSESSMENT

The transit peer assessment compares GCT's system characteristics and performance measures with five other transit systems that have comparable size and operational characteristics. A transit peer assessment provides one way of evaluating various performance characteristics of a service provider to public transit systems with a similar operating environment. It can be informative for planning purposes for a transit agency to know how its service provision and financial characteristics compare with other agencies.

Appendix B at the end of this Tech Memo presents the full peer assessment that was completed for this project. Summaries of the analysis and findings are presented below.

Peer Selection Process

This assessment identifies peer systems that have similar operational size, service area, and demographics to GCT. While the peer analysis does not capture all of the unique characteristics found in Gwinnett County, it does provide a basis for comparison to evaluate the performance of the system. A two-step screening process was used to select GCT's peers.

The peer assessment uses data reported by transit agencies annually for publication in the National Transit Database (NTD). The most recent NTD data available is for Report Year (RY) 2015. In addition to the NTD data, route-specific information was derived from the individual websites of the peer agencies.

For the initial screening, all urban transit agencies in the 2015 NTD were filtered based on three criteria, which yielded 13 candidate peers. The criteria used were as follows:

- Agency operates Commuter Bus (CB) and Motor Bus (MB) modes,
- Agency reports CB and MB modes separately, and
- Agency operates between 10 and 100 peak buses for either CB or MB.

For the secondary screening, the 13 peer candidates were narrowed down to five based on the following:

- Suburban transit operator within a major metro region with rail transit
- Urbanized area (UZA) population
- Distance range from park and ride lots to UZA central city
- Service area characteristics (population, size in square miles, population density)[1]
- Number of local and commuter routes
- Agency "Likeness Score"[2]
- GCT staff input

[1] Calculated by CTG based on ¾ mile buffer areas around local routes, consistent with NTD policy
[2] From the peer selection module of the Urban iNTD application in FDOT's Florida Transit Information System (FTIS). The closer to zero the likeness score, the more similar the system is to GCT.

Table 6 shows the peer systems with their characteristics from the secondary screening process, peer averages, and comparisons with GCT. The transit systems selected as peers are:

- Clark County Public Transportation Benefit Area (C-TRAN), Clark County, WA
- Cobb County Department of Transportation (CobbLinc), Cobb County, GA
- City of Elk Grove Transit (e-tran), Elk Grove, CA
- Laketran, Lake County, OH
- Potomac and Rappahannock Transportation Commission (PRTC), Prince William County, VA

Each of these systems serves a suburban county, with the exception of e-tran. E-tran serves the City of Elk Grove, with its local service extending slightly beyond its boundary to provide a connection to Sacramento's LRT system.

The peer systems also provide demand responsive service meeting the requirements of the Americans with Disabilities Act of 1990 (ADA), either in the form of a separate complementary paratransit system or in the form of flexible local route service that meets ADA requirements. This peer assessment, however, focuses exclusively on each system's local and commuter bus service offerings.

It should also be noted that in 2015, both GCT and CobbLinc reported data to the NTD including the Xpress services for GRTA each provided. At the direction of GCT staff, data for its Xpress routes has been removed from the commuter bus analysis. Likewise, data for Xpress routes operated by CobbLinc has been removed to provide for an equal comparison.

Service Area, Service Level, and Financial Characteristics

While not direct indicators of performance, a comparison of GCT characteristics against its peers provides important context for the peer assessment. Looking at **Table 6**, it is interesting to note that while GCT's service area population is 10 percent higher than the peer average, its service area is half the size of the peer average in square miles, resulting in a service area population density that is twice the peer average and higher than of all its peers.

On average, GCT operates fewer local and commuter routes than its peers, though the local and commuter route average numbers are skewed upward by C-TRAN and PRTC, respectively. Thus, while GCT operates less routes over a smaller area, it has done a good job of concentrating service in the densest areas of the county.

Turning to combined local and commuter bus service level and cost characteristics, shown in **Table 7**, it becomes even more evident that GCT provides less service than most of its peers. Only e-tran and Laketran operate fewer hours and miles of service. Also noteworthy is how much lower GCT's ridership is compared to the peer average.

Table 6. Selected Peers

Peer	UZA Served	Miles to Central City	UZA Population	Service Area Population	Service Area Size	Service Area Density	Local Routes	Commuter Routes	Agency Likeness Score
C-TRAN	Portland, OR	10-17	1,849,898	427,743	478	895	22	7	1.32
CobbLinc	Atlanta, GA	17-30	4,515,419	487,370	208	2,343	11	6	0.50
e-tran	Sacramento, CA	13-18	1,723,634	287,113	167	1,719	10	12	0.69
Laketran	Cleveland, OH	14-51	1,780,673	219,688	189	1,162	6	4	0.83
PRTC	Washington, DC	23-32	4,586,770	382,812	273	1,402	7	16	0.62
Peer Average		**15-30**	**2,891,279**	**360,945**	**263**	1,504	11	9	**0.79**
GCT	**Atlanta, GA**	**19-35**	**4,515,419**	**395,774**	**132**	2,998	6	5	**0.00**

Table 7. Service and Cost Characteristics (Local Plus Commuter Bus)

Peer	Peak Vehicles	Revenue Hours	Revenue Miles	Passenger Trips	O&M Cost	Farebox Revenue
C-TRAN	94	253,299	3,864,253	5,856,838	$35,100,600	$7,211,499
CobbLinc	73	151,517	2,532,803	3,062,172	$13,640,935	$4,678,289
e-tran	44	57,039	889,360	1,004,509	$7,479,493	$1,500,177
Laketran	23	46,786	804,284	475,320	$4,678,547	$797,474
PRTC	122	169,519	3,339,135	3,076,409	$30,915,407	$10,701,496
Peer Average	**71**	**135,632**	**2,285,967**	**2,695,050**	**$18,362,996**	**$4,977,787**
GCT	**51**	**89,925**	**1,821,303**	**1,348,431**	**$10,896,768**	**$3,020,290**

Performance Comparisons

The performance of GCT's local bus and commuter bus services in 2015 were compared to the five peer systems based on the following four general categories of evaluation measures:

Service Utilization and Productivity. Service utilization measures how passengers use the service, while service productivity measures how many passengers are served per unit of service provided (e.g., hours, miles, or vehicles).

Resource Utilization. Measures how well the agency deploys it resources.

Cost Effectiveness and Efficiency. Cost effectiveness measures how much an agency spends per passenger trip, while cost efficiency measures the cost required to provide a unit of service (e.g., vehicle hours or miles).

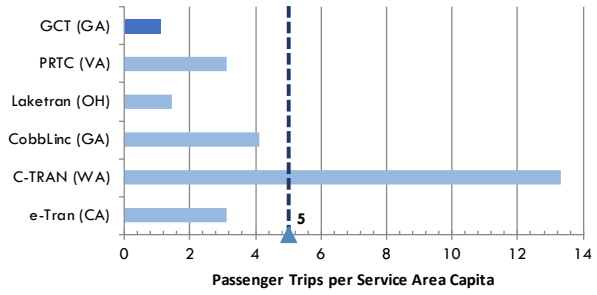
Service Coverage. Measures the degree to which service is provided within the coverage area.

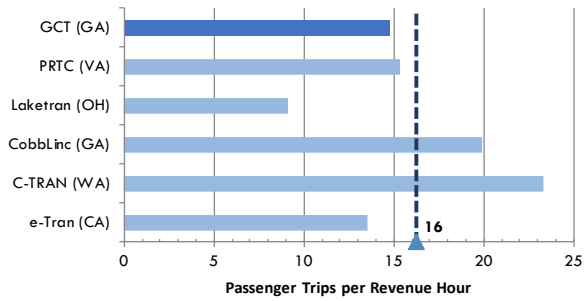
Local Bus

Key findings and charts from the analysis of evaluation measures for local bus service are presented below.

Service Utilization and Productivity

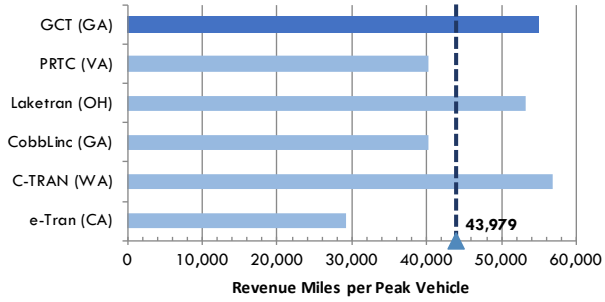
- GCT's local bus service utilization measures in terms of total trips and passenger trips per capita are significantly below the peer averages, with Gwinnett ranking last in passenger trips per capita.
- GCT's local bus service productivity measures fare better, but are also below the peer averages. GCT carries slightly fewer passengers per revenue hour and per peak vehicle than average, but is significantly below average in terms of passenger trips per revenue mile.

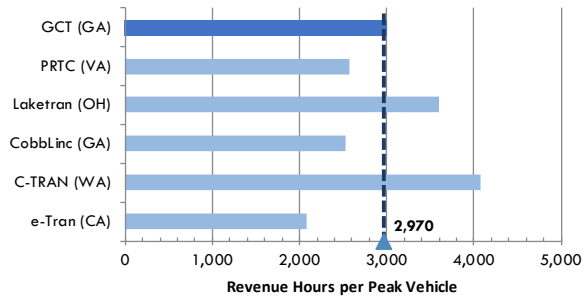




Resource Utilization

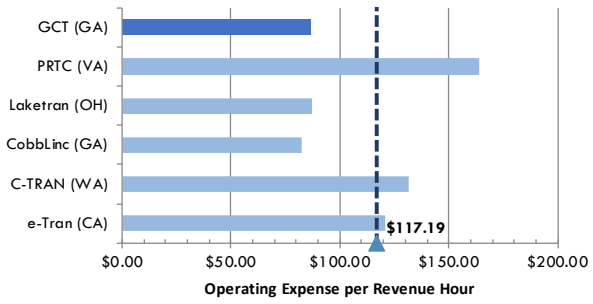
- GCT generally utilizes its local bus fleet efficiently.
  - GCT put more revenue miles on each of its peak vehicles, and is on par with the peer average for revenue hours per peak vehicle.
  - 90 percent of GCT's total vehicle miles are incurred during revenue service, on par with the peer average.

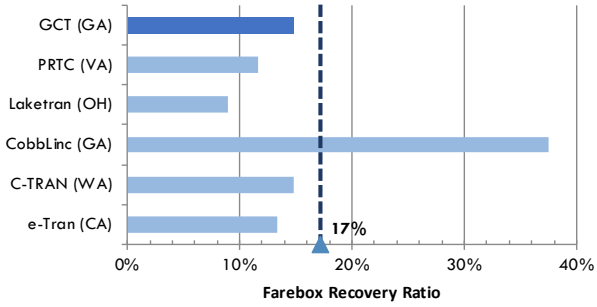




Cost Efficiency and Effectiveness

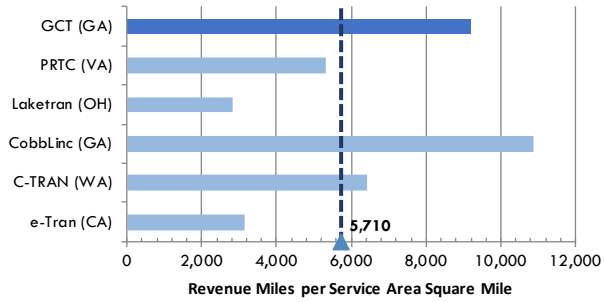
- GCT's local bus service is among the most cost efficient and effective of the peer group, performing better than the peer group averages for nearly all measures.
  - GCT has the lowest total operating expense per revenue hour and second-lowest total operating expense per revenue mile of its peers.
  - GCT ranks third among its peers for total operating expense per passenger trip and total operating expense per peak vehicle.
  - GCT's farebox recovery ratio is generally on par or slightly better than its peers, but is slightly below the peer average due to CobbLinc's unusually high farebox recovery ratio.

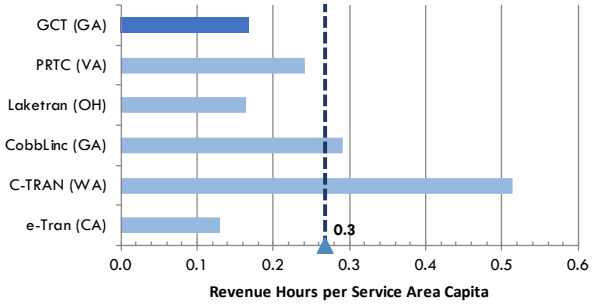




Service Coverage

- Within its service area, GCT provides more local service (revenue mile and hours) per square mile than its peers.
- However, it falls below its peers in service provided per capita.



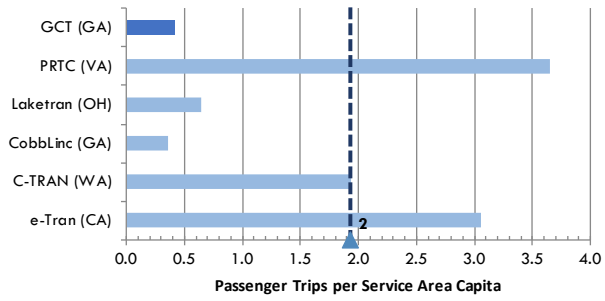


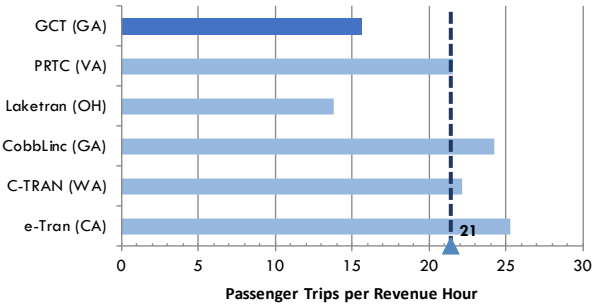
Commuter Bus

Key findings from the analysis of evaluation measures for commuter bus service are presented below.

Service Utilization and Productivity

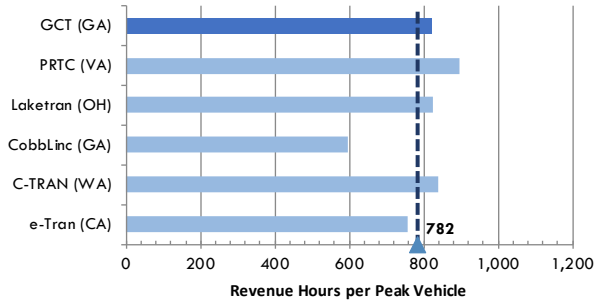
- GCT's service consumption as measured by passenger trips is well below the peer average. Only Laketran and CobbLinc have less commuter bus ridership.
- GCT's passenger trips per capita is significantly below the peer average, and ranks second to last ahead of CobbLinc.
- GCT's commuter bus service is also less productive than the peers in terms of trips per revenue mile and per revenue hour, and ranks second to last in both categories ahead of Laketran.

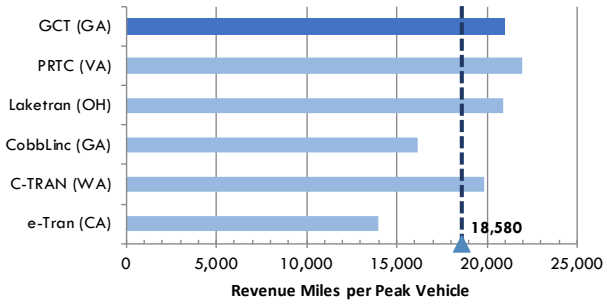




Resource Utilization

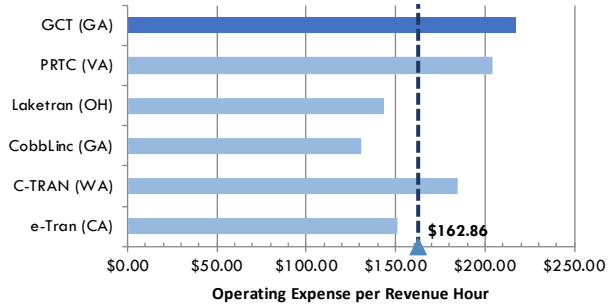
- Similar to its local bus operation, GCT utilizes its fleet efficiently for the most part.
  - Revenue hours and miles per peak vehicle are above the peer averages.
  - Revenue miles per vehicle mile is on par with the peer average.

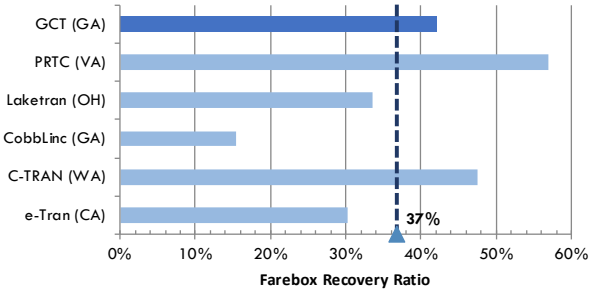




Cost Efficiency and Effectiveness

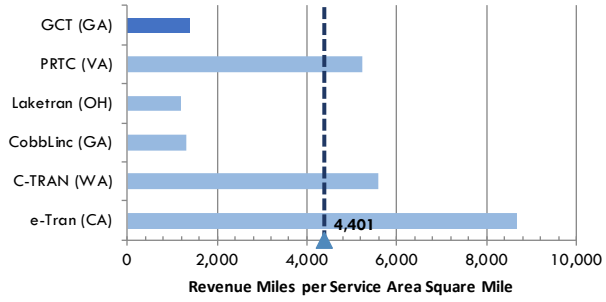
- GCT's commuter bus service is generally less cost efficient and effective than its local bus service.
  - GCT ranks last among its peers for total operating expense per passenger trip, per revenue mile, and per revenue hour.
  - GCT ranks second to last for total operating expense per peak vehicle.
  - However, GCT's commuter bus farebox recovery is 15 percent better than the peer average. It appears that the average is being skewed by CobbLinc's unusually low farebox recovery ratio.

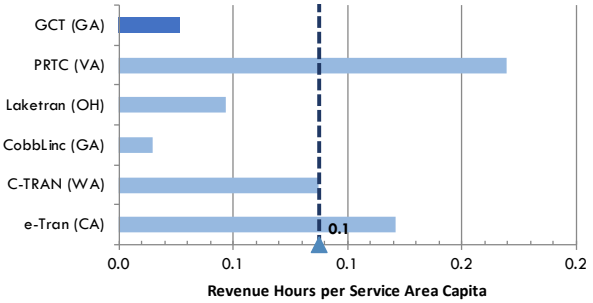




Service Coverage

- GCT's commuter bus provides substantially less service per service area capita and per service area size than the peer averages.





Peer Conclusions

Five main conclusions on the characteristics and performance of the GCT system can be drawn from the peer assessment:

- Gwinnett County is underfunding its transit system. On average, its peers are operating much more service relative to their jurisdiction and service area, and are spending more per capita to do it.
- This underfunding means the system isn't very useful. As a result, GCT is much less productive in attracting riders.
- While GCT operates less service over a smaller area, it has done a good job of concentrating local service in the densest areas of the county.
- GCT does better on resource utilization, on both the local and commuter bus sides. The agency gets a lot of service out of its vehicles.
- Results are mixed for cost efficiency and effectiveness, with local bus service performing better than its peers and commuter bus service generally performing worse.

TRANSIT MARKET ASSESSMENT

The transit market assessment identifies potential existing and future transit markets within Gwinnett County. The market assessment has used 2015 data for purposes of assessing existing and near-term transit markets, and 2030 and 2040 data for purposes of existing medium- and long-term future transit markets. Analysis efforts included the following:

Existing Service to County Major Trip Destinations. Locations of major trip destinations (colleges, hospitals, major shopping centers, etc.) were mapped. Existing service to these major trip destinations were identified. Major destinations with no existing transit service were noted.

Existing and Future Local Transit Market Assessment. Data from Atlanta Regional Commission's (ARC's) travel demand model (demographic data and trip tables by traffic analysis zone) were used to determine areas that may be suitable for new or increased transit services for the short-term, medium-term, and long-term. Existing transit routes were included on maps to determine the extent to which GCT's existing local route network is serving this market. Characteristics that were reviewed were combined to arrive at an overall transit propensity score for each traffic analysis zone (TAZ).

Existing and Future Express Transit Market Assessment. Home-based work (HBW) trip data from ARC's travel demand model were used to determine travel markets to major employment activity centers in the Atlanta region to determine the potential for new or expanded express bus services.

Transit-Dependent Populations Market Assessment. As service plans are developed and evaluated, it will be important to take into consideration potential impacts to Title VI population groups (minorities and low income populations). Data from the 2011 – 2015 American Community Survey (ACS) was used to complete this analysis. Existing transit routes were included on maps to determine the extent to which GCT's existing local route network is serving this market.

Appendix C at the end of this Tech Memo presents the full transit market assessment that was completed for this project. Summaries of the analysis and findings are presented below.

Existing Service to Major Trip Destinations

There are many businesses, agencies, and institutions located within Gwinnett County that are likely destinations for transit riders. **Figure 10** illustrates locations of shopping centers, major retail stores, and major private employers in relation to existing transit service. **Figure 11** illustrates locations of government and social service agencies, major hospitals, colleges and universities, and special event facilities in relation to existing transit service. Places of interest with little to no transit service are as follows:

- The Mall of Georgia is only served by existing GRTA-operated express services that operate peak period, peak direction service to and from major employment centers outside of Gwinnett County.
- There are several Walmarts and Targets with no nearby local transit service. Most are located in Buford, Suwanee and Snellville where there currently is no local service.
- One community health center (The Buford Health Center) has no nearby local service.
- Eastside Medical Center in Snellville and the Duluth campuses of the Gwinnett Medical Center have no nearby local service. There are approximately 1,200 employees at the Eastside Medical Center.
- Georgia Gwinnett College has no nearby local service. This college has an enrollment of 11,500 students. The University of Georgia Gwinnett campus also has no nearby transit service.

Figure 10. Gwinnett County Major Retail Destinations

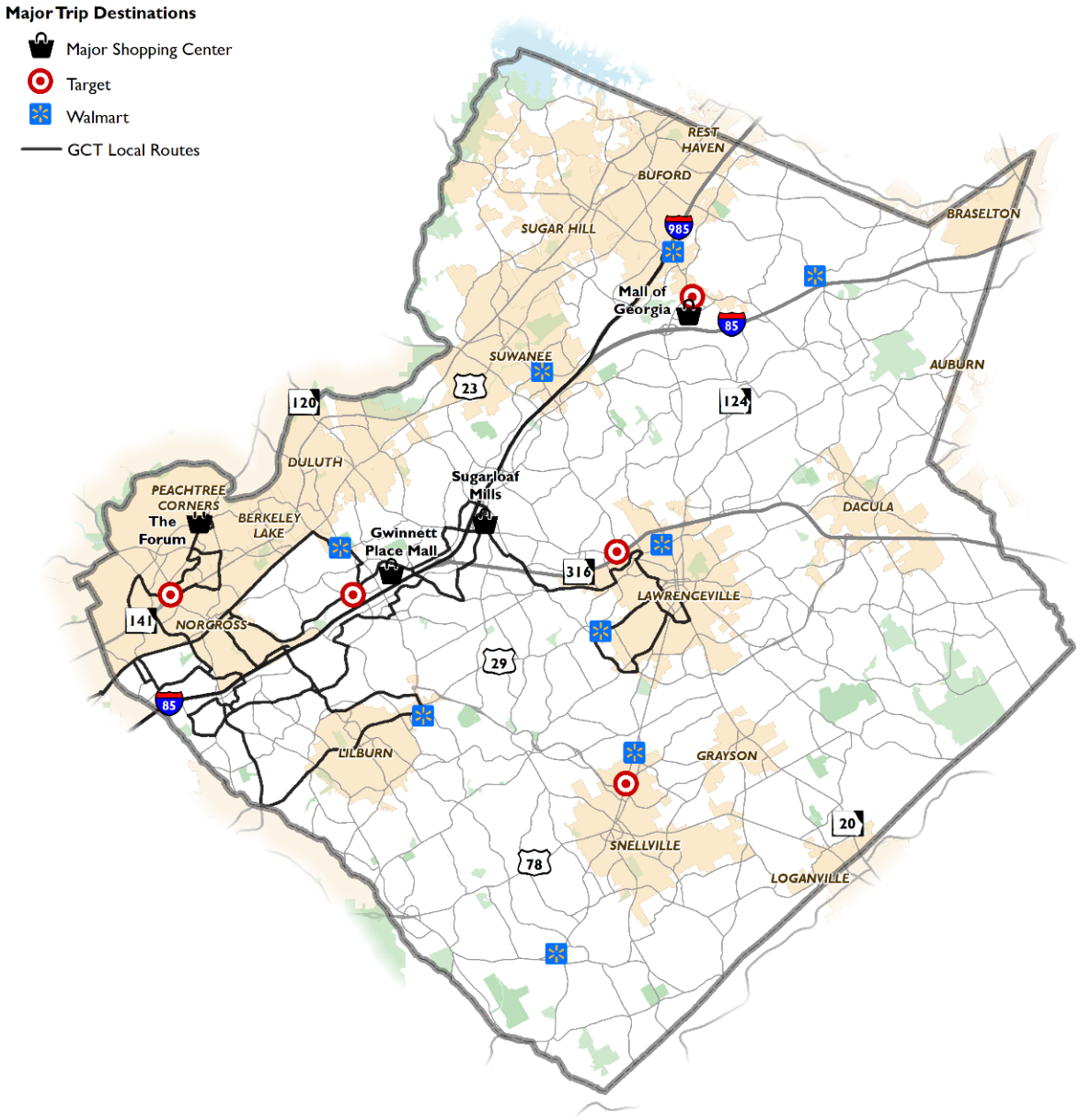
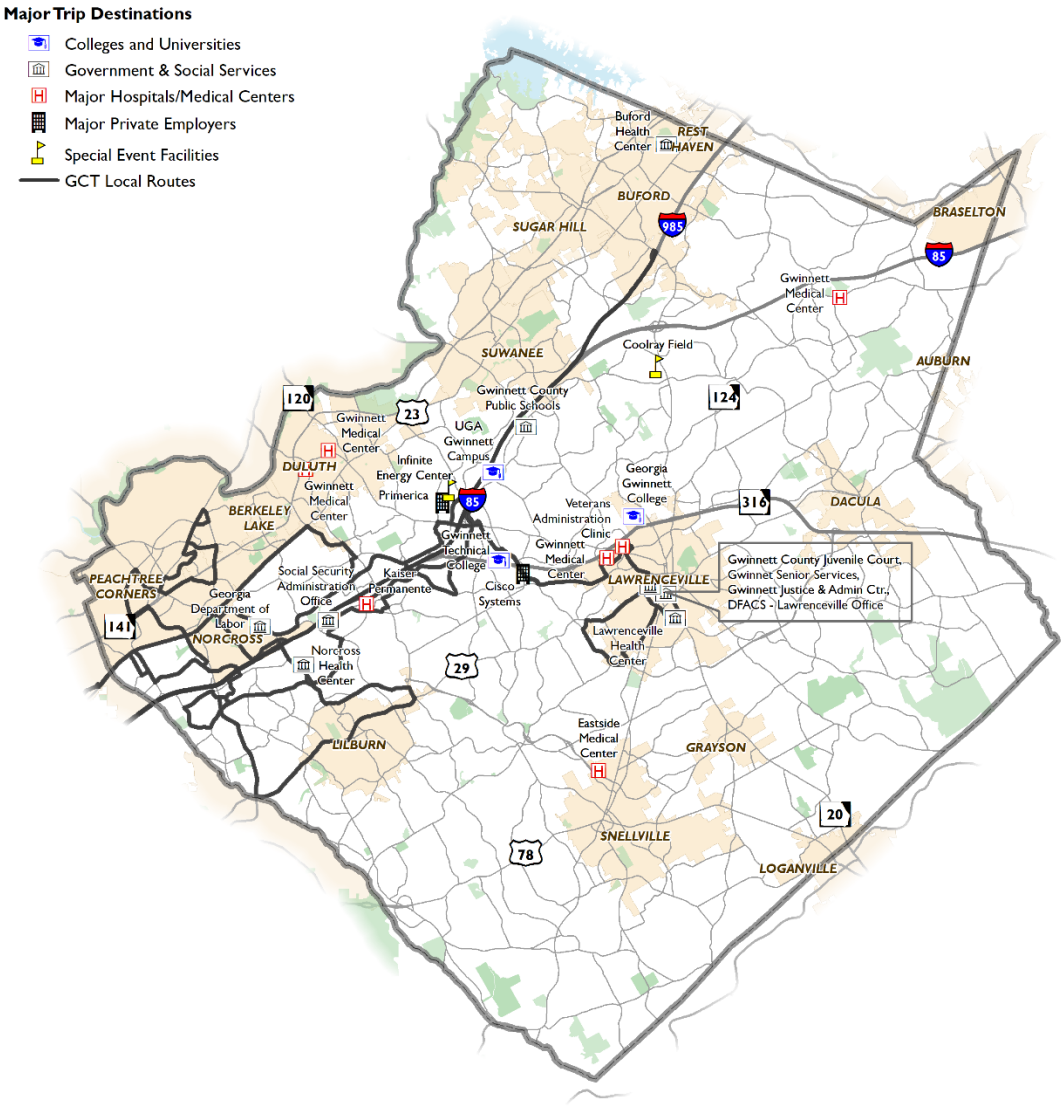


Figure 11. Gwinnett County Major Non-Retail Destinations



Existing and Future Local Transit Market Assessment

This assessment identifies geographic areas within the county that have characteristics conducive for local transit. Information available from the ARC activity-based travel demand model was used for this assessment. The ARC model provides demographic and trip table information on a traffic analysis zone (TAZ) basis. The ARC model has 498 TAZs within Gwinnett County. The local travel market assessment was completed for 2015 (to represent existing conditions), 2030 (to represent future mid-range conditions) and 2040 (to represent future long-range conditions).

Characteristic Findings

Key findings from this analysis of six demographic and trip table characteristics are as follows:

- **Population.** Gwinnett County's population is expected to grow by 57% from 2015 to 2040 (from 854,000 to 1,341,000). The portion of Gwinnett County residents that are or will be located close to an existing GCT local route stop remains around 16-17 percent for all three analysis years (2015, 2030, and 2040).
- **Households.** Households in Gwinnett County are projected to grow by 62% from 2015 to 2040, resulting in a smaller household size (from 2.81 persons per household to 2.72 persons per household). The portion of Gwinnett County households that are or will be located close to an existing GCT local route stop remains around 17 percent.
- **Low Income Households**. The ARC travel demand model includes input variables that identify households by income range. The lowest range is $25,000 or below (current year dollars). This variable was used to represent low income households in the analysis. There are 27,700 households in Gwinnett County within the lowest income bracket in 2015, growing to 47,700 by 2040 (a 73 percent increase). Approximately 27 percent of these households are served by existing local GCT transit for all three analysis years (2015, 2030, 2040).
- **Employment.** County employment is anticipated to grow by almost 40 percent between 2015 and 2040 (from 392,200 to 547,900). The estimated 2015 ratio of employment to population in Gwinnett County is 46 percent. This decreases to 41 percent by 2040. The percentage of workers in Gwinnett County that are or will be located close to an existing GCT local route stop remains around 38-39 percent for all three analysis years.
- **Work Trip Destinations.** The ARC model was used to estimate work trip destinations for work trips that originate within Gwinnett County. County work trips that remain within Gwinnett County grow by approximately 48 percent from 2015 to 2040. Approximately 28-29 percent are located close to an existing GCT local route stop for all three analysis years.
- **Total Person Trip Activity.** The final characteristic considered was total trip activity from the ARC travel demand model. Only trips with both the trip origin and destination within Gwinnett County were considered for this local transit market assessment. Total trip ends are projected to grow by 50 percent between 2015 and 2040. Approximately 25-26 percent are located close to an existing GCT local route stop for all three analysis years.

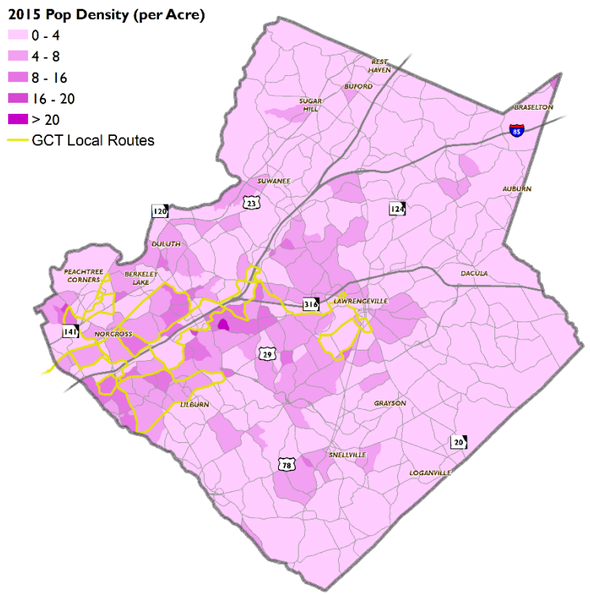
Figure 12 and **Figure 13** present population and employment densities for all three analysis years. Figures for other characteristics are provided in **Appendix C**.

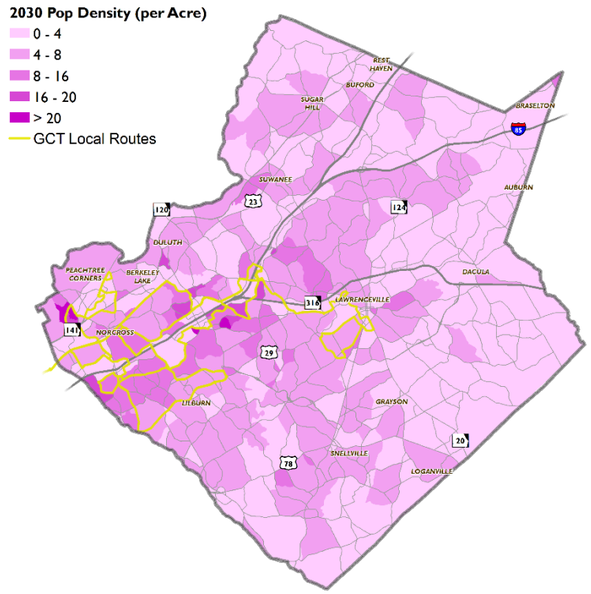
Compiled Transit Propensity Analysis

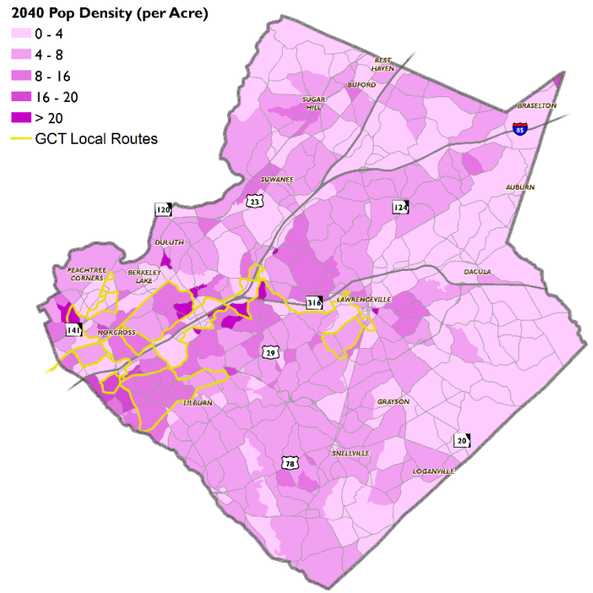
Resulting density calculations from the above-noted demographic and trip characteristics were compiled to generate an overall transit propensity score. The maximum total score in this propensity analysis is 100 points. **Figure 14** presents results of this compiled propensity analysis for 2015, 2030, and 2040. Findings of interest are as follows:

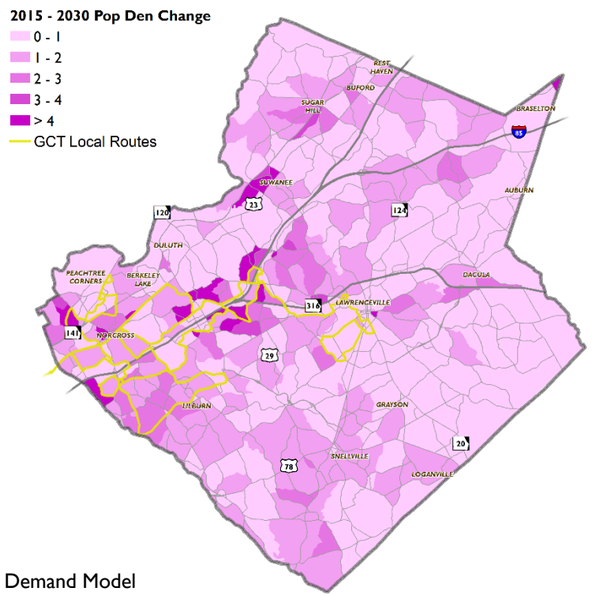
- TAZs with existing high propensity scores are often located along the I-85 corridor between Peachtree Industrial Blvd. and Lawrenceville Highway, in addition to zones located in the Lawrenceville area. Propensity scores increase significantly for many zones in these areas by 2040. Much of this area is served by existing GCT local transit service. Consideration should be given to increased transit service levels to serve projected growth in this area of the county.
- Other areas with increasing propensity scores that might warrant new local transit service include:
  - Georgia Gwinnett College area, north of Lawrenceville
  - Suwanee/Sugar Hill/Buford corridor
  - Mall of Georgia
  - I-85 corridor north of SR 316 and south of I-985
  - Snellville area

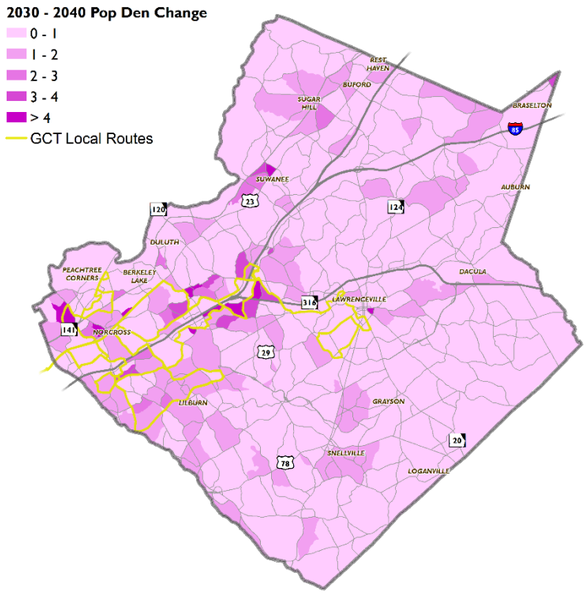
Figure 12. 2015, 2030, and 2040 Population Densities





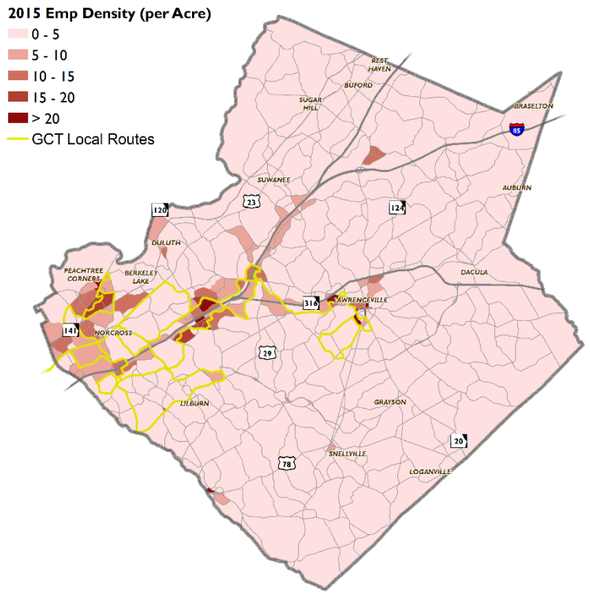


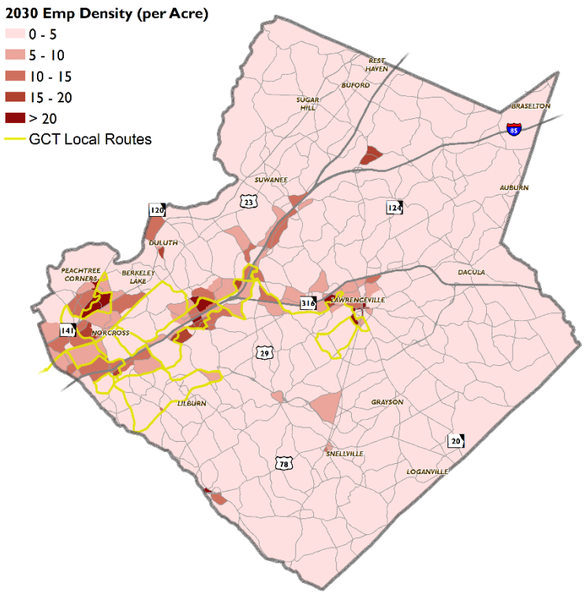


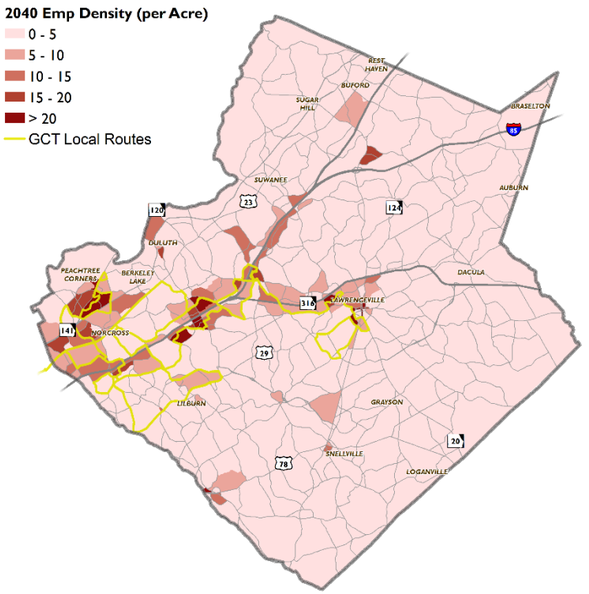


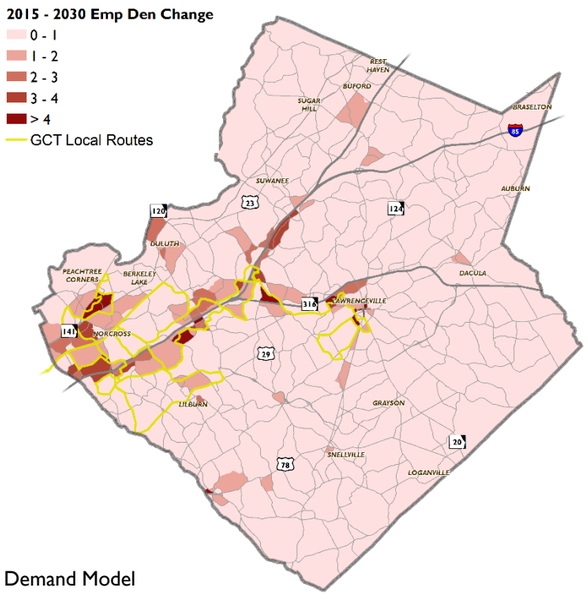
Data Source: Atlanta Regional Commission Travel Demand Model

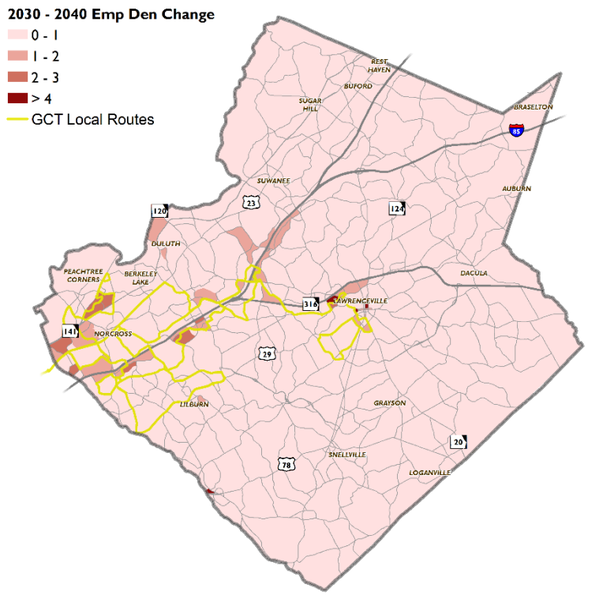
Figure 13. 2015, 2030, and 2040 Employment Densities





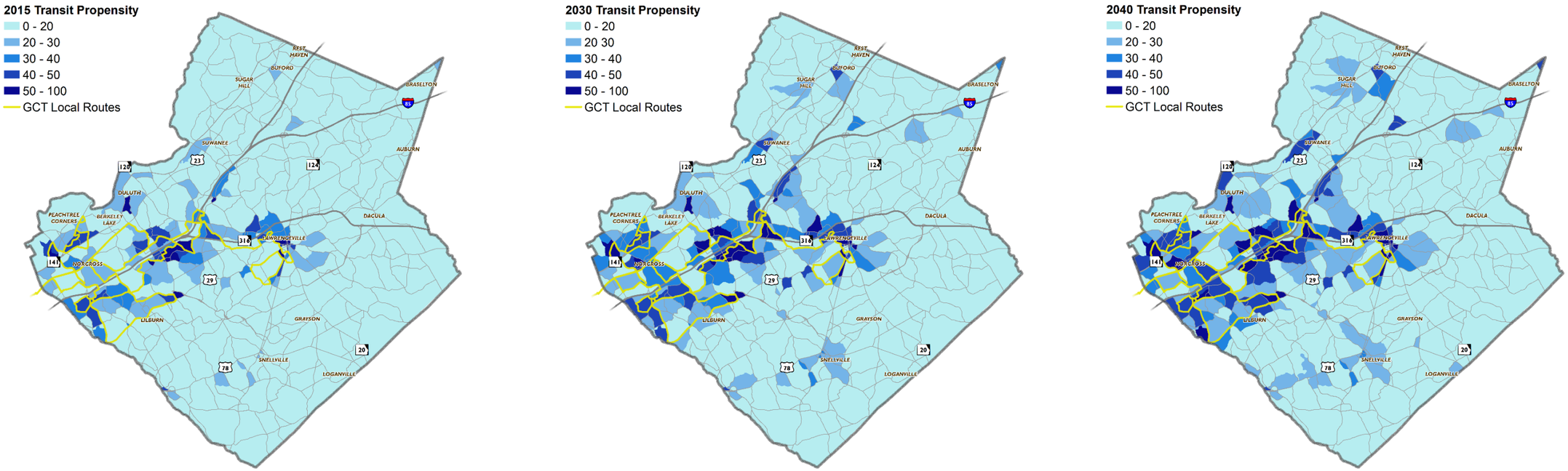






Data Source: Atlanta Regional Commission Travel Demand Model

Figure 14. 2015, 2030, and 2040 Compiled Transit Propensities



Data Source: Atlanta Regional Commission Travel Demand Model

Existing and Future Express Transit Market Assessment

This assessment addresses the express transit market in Gwinnett County. The ARC travel demand model was used to determine estimated work trips to major activity centers in the Atlanta region for 2015, 2030, and 2040. Countywide population growth rates are anticipated to grow faster than countywide employment rates, thus reflecting more Gwinnett County residents crossing county borders to travel to/from work.

Specific activity centers evaluated are as follows:

- Downtown Atlanta
- Midtown Atlanta
- Emory University/CDC
- Buckhead
- Perimeter Center
- North Point/North Fulton

Activity center definitions are consistent with those used by ARC. Work trips originating in Gwinnett County to each of these activity centers were tabulated and mapped.

The ARC travel demand model estimates there are over 872,000 daily work-related trips generated in Gwinnett County in 2015, growing to over 1.24 million by 2040 (43 percent growth). Of this total, approximately 69 percent are estimated to remain within Gwinnett County in 2015, growing to 72 percent by 2040. There are 268,000 daily work-related trips leaving the county in 2015, growing to 350,000 by 2040. Major activity centers that attracts work-related trips are listed above.

As shown below in **Table 8**, the Perimeter Center market is the largest of all activity center markets. However, when combined, the Downtown and Midtown markets are similar in size. Work trip growth rates range from 15.4 percent (North Point/North Fulton) to 36.7 percent (Emory University/CDC).

Downtown/Midtown and the Perimeter Center areas are high attractors of work trips from Gwinnett County. There presently is no express service from Gwinnett County to Perimeter Center, however, GRTA is planning to implement a new Route 417 this fall to serve this market from Sugarloaf Mills. Projected employment increases in Downtown and Midtown also suggest potential need for increased service levels to those destinations.

Table 8. Gwinnett County Work Trips to Activity Centers

Activity Center	2015	2030	2040	2015-2040 % Growth
Downtown Atlanta	8,035	9,934	10,613	32.1%
Midtown Atlanta	4,867	5,724	6,365	30.8%
Emory University/CDC	4,536	4,616	6,200	36.7%
Buckhead	6,624	8,026	8,534	28.8%
Perimeter Center	12,043	15,071	16,384	36.1%
North Point/North Fulton	7,595	8,558	8,766	15.4%

Data Source: Atlanta Regional Commission Travel Demand Model Trip Tables

Transit-Dependent Populations Market Assessment

Finally, existing minority/Hispanic populations and low income households were identified with Census Bureau ACS data. This analysis found that for the most part, existing GCT local route service is serving areas with high concentrations of minority populations and low income households. There are, however, some areas with high minority populations and/or low income households without transit service – particularly in the Snellville, Lawrenceville, and Buford areas.

APPENDICES

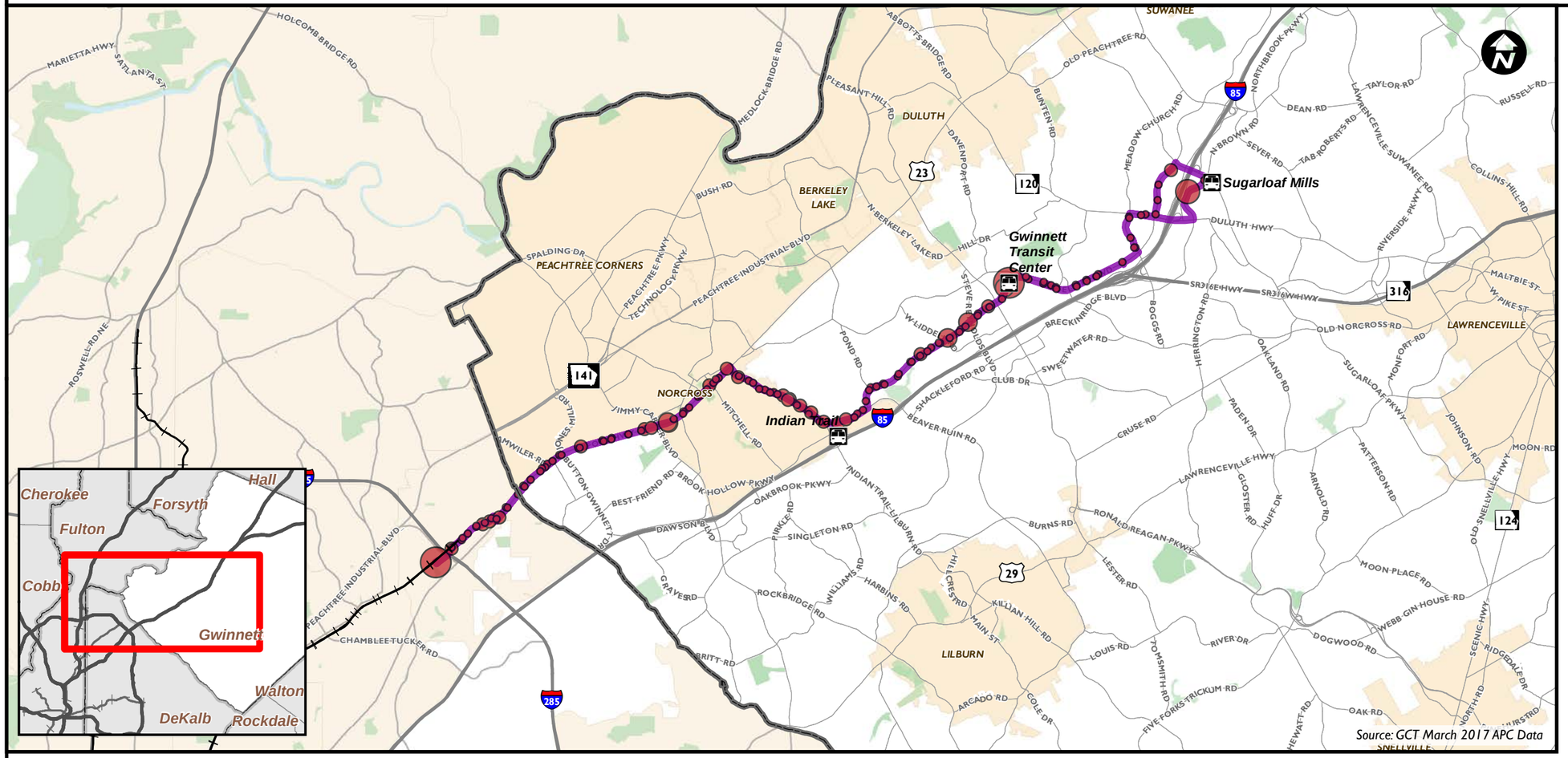
Appendix A: GCT Route Profiles

Appendix B: Transit Peer Assessment

Appendix C: Transit Market Assessment

APPENDIX A: GCT ROUTE PROFILES

GWINNETT COUNTY TRANSIT



Source: GCT March 2017 APC Data

ROUTE 10A

Route Metrics - GCT 10A	
Service Characteristics	
Weekday Peak Headway (mins)	30
Weekday Off-Peak Headway (mins)	60
Weekday Span of Service	5:30 AM-10:30 PM
Saturday Headway (mins)	60
Saturday Span of Service	6:00 AM-10:00 PM
Route Length - Inbound (mi)	15.8
Route Length - Outbound (mi)	15.1
Peak Hour Actual Running Time – Inbound/Outbound (mins)	58/60
Average Actual Running Time – Inbound/Outbound (mins)	52/53
Route Performance	
Average Weekday Boardings	1068
Average Weekend Boardings	515
Passenger/Revenue Mile	1.5
Passenger/Revenue Hour	27.1
Average Maximum Load - Inbound	18.1
Average Maximum Load - Outbound	14.8
Riders Transferring (%)	84%
On-Time Performance (%)	81%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	47%
Minority Riders (%)	91%

Gwinnett County Transit

Park and Ride Locations

GCT Route 10A

Daily Boardings by Stop

< 5

5 - 20

20 - 50

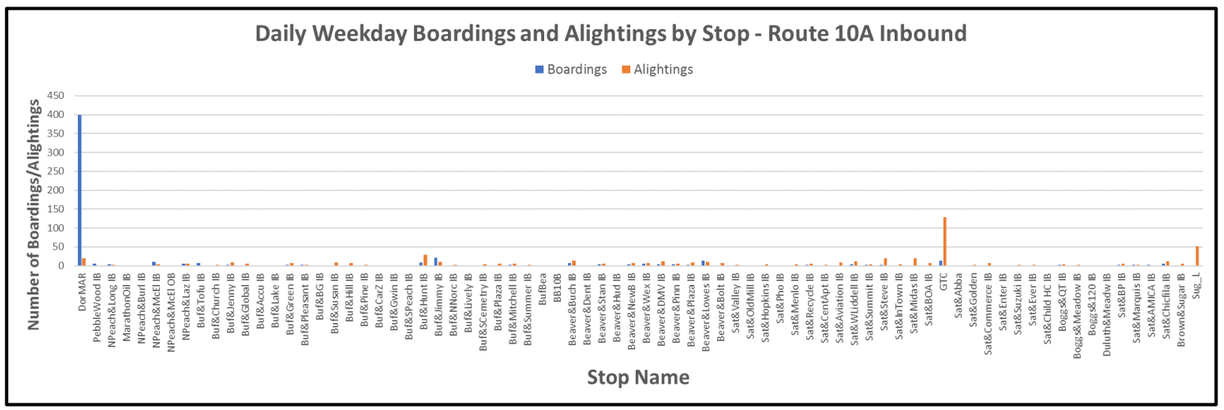
50 - 100

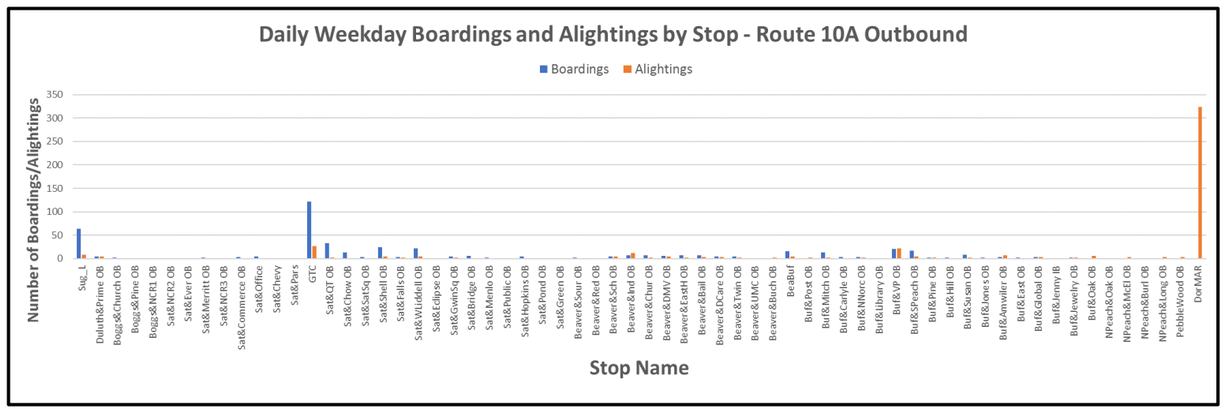
> 100

0 0.75 1.5 3 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

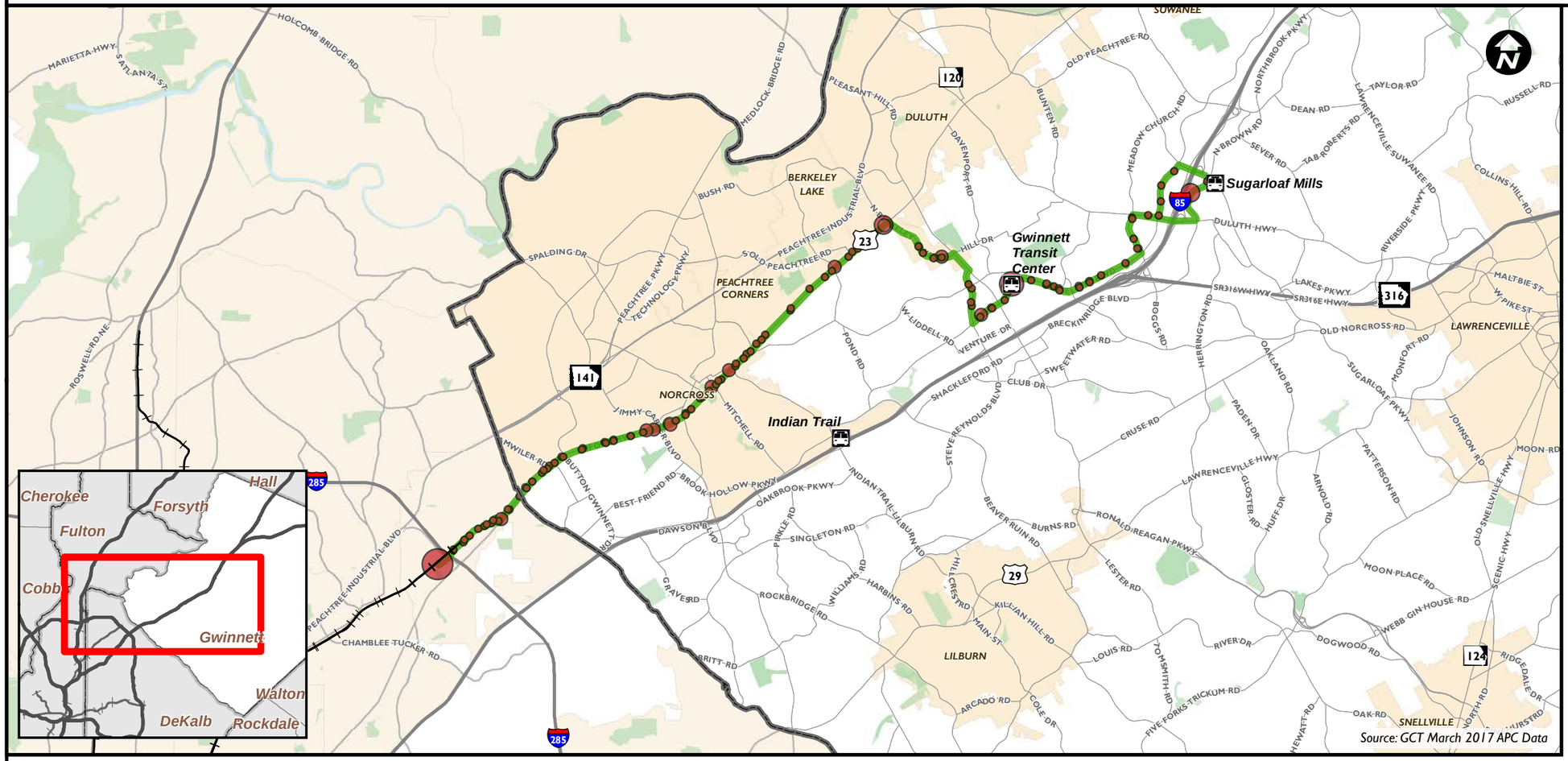




Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT



ROUTE 10B

Route Metrics - GCT 10B	
Service Characteristics	
Weekday Peak Headway (mins)	30
Weekday Off-Peak Headway (mins)	120
Weekday Span of Service	6:15 AM-7:57 PM
Saturday Headway (mins)	60
Saturday Span of Service	6:30 AM-9:30 PM
Route Length - Inbound (mi)	16.9
Route Length - Outbound (mi)	16.1
Peak Hour Actual Running Time – Inbound/Outbound (mins)	60/63
Average Actual Running Time – Inbound/Outbound (mins)	53/55
Route Performance	
Average Weekday Boardings	548
Average Weekend Boardings	442
Passenger/Revenue Mile	1.2
Passenger/Revenue Hour	21.8
Average Maximum Load - Inbound	13.8
Average Maximum Load - Outbound	11.6
Riders Transferring (%)	89%
On-Time Performance (%)	80%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	54%
Minority Riders (%)	89%

Gwinnett County Transit

Park and Ride Locations

GCT Route 10B

Daily Boardings by Stop

< 5

5 - 20

20 - 50

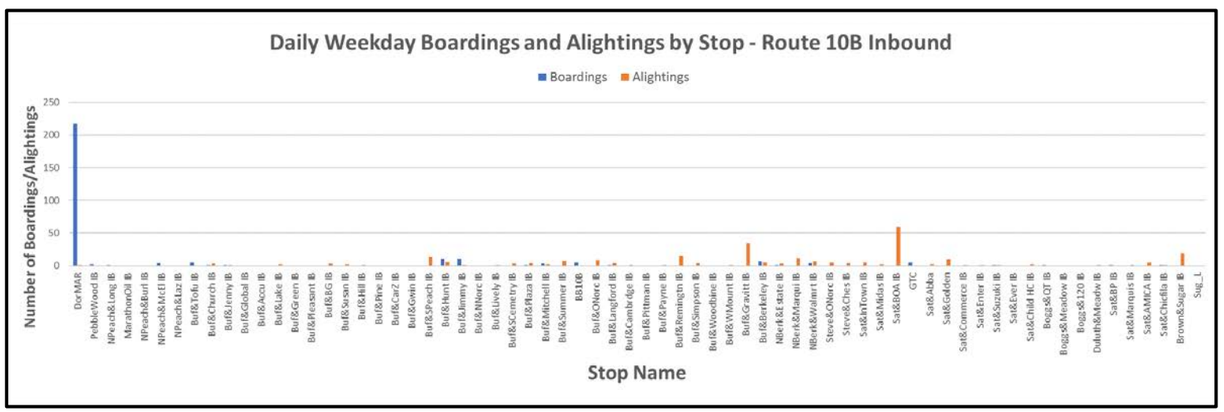
50 - 100

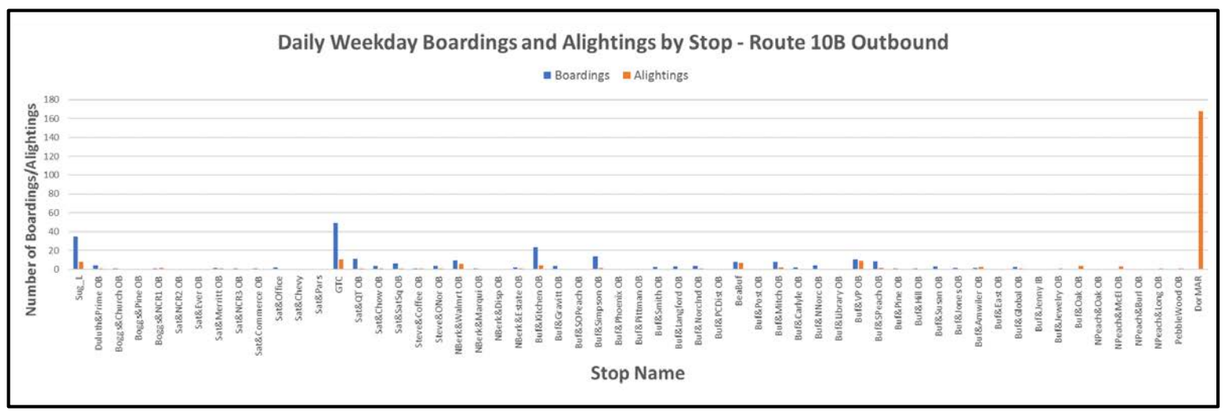
> 100

0 0.75 1.5 3 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

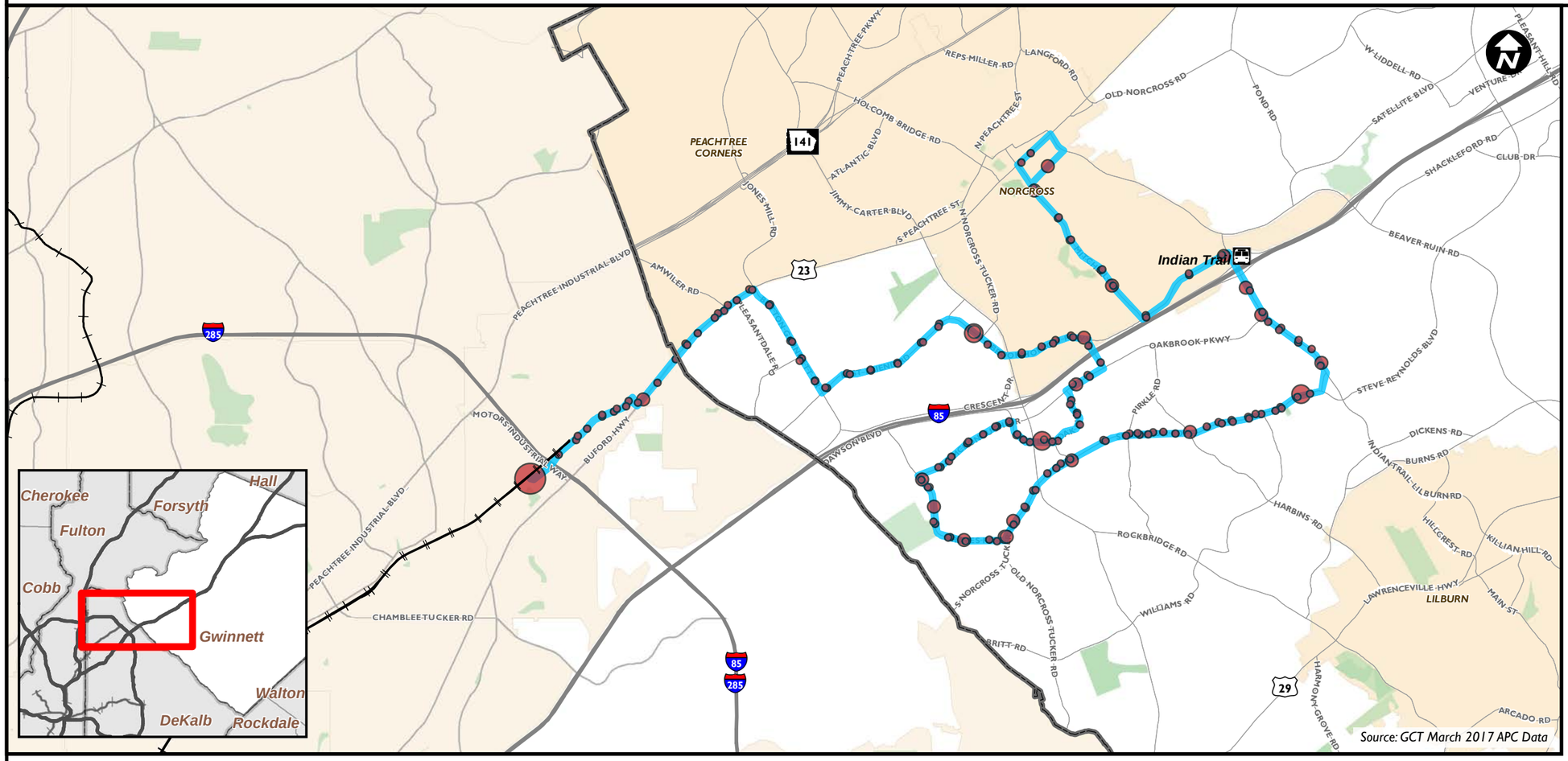




Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT



Source: GCT March 2017 APC Data

ROUTE 20

Route Metrics - GCT 20	
Service Characteristics	
Weekday Peak Headway (mins)	30
Weekday Off-Peak Headway (mins)	60
Weekday Span of Service	5:34 AM-9:05 PM
Saturday Headway (mins)	60
Saturday Span of Service	6:09 AM-8:02 PM
Route Length - Inbound (mi)	18.1
Route Length - Outbound (mi)	17.4
Peak Hour Actual Running Time – Inbound/Outbound (mins)	62/61
Average Actual Running Time – Inbound/Outbound (mins)	56/56
Route Performance	
Average Weekday Boardings	693
Average Weekend Boardings	303
Passenger/Revenue Mile	0.9
Passenger/Revenue Hour	17.7
Average Maximum Load - Inbound	11.3
Average Maximum Load - Outbound	9.5
Riders Transferring (%)	81%
On-Time Performance (%)	72%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	49%
Minority Riders (%)	92%

Gwinnett County Transit

Park and Ride Locations

GCT Route 20

Daily Boardings by Stop

< 5

5 - 20

20 - 50

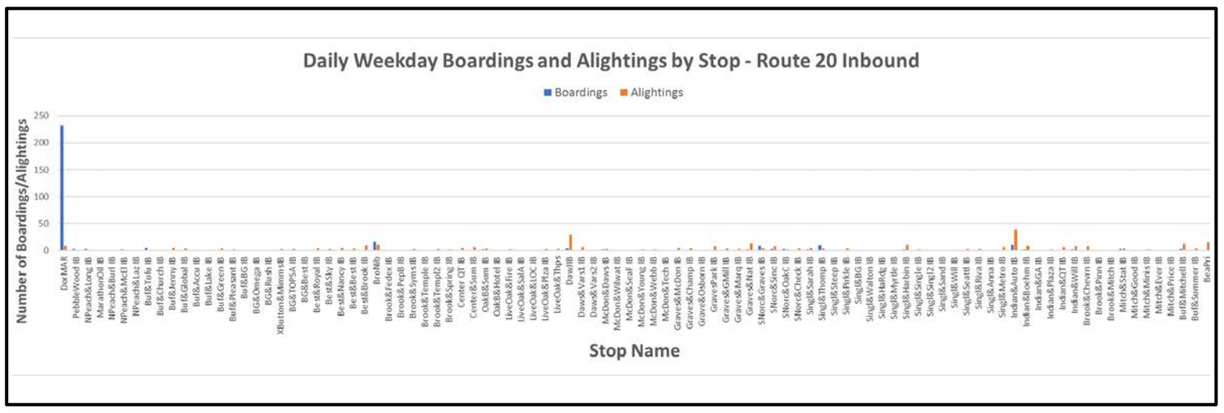
50 - 100

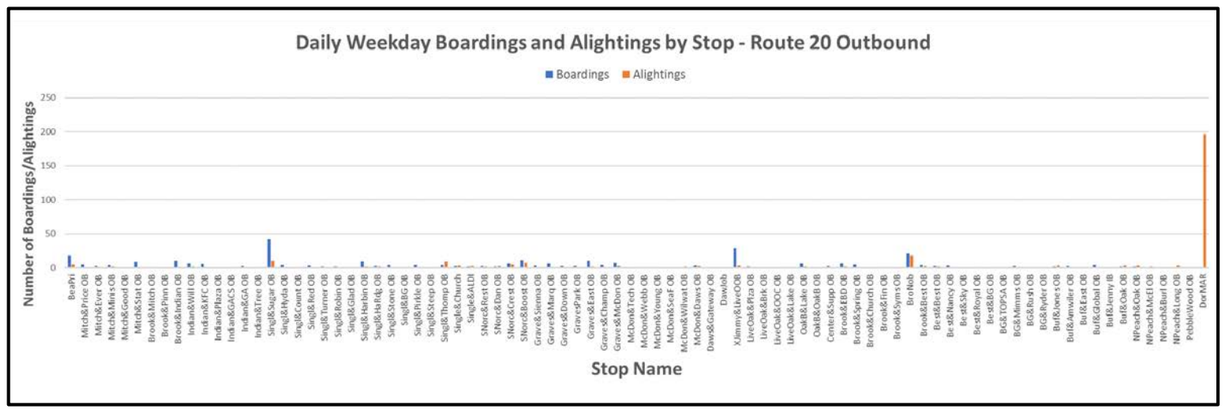
> 100

0 0.5 1 2 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

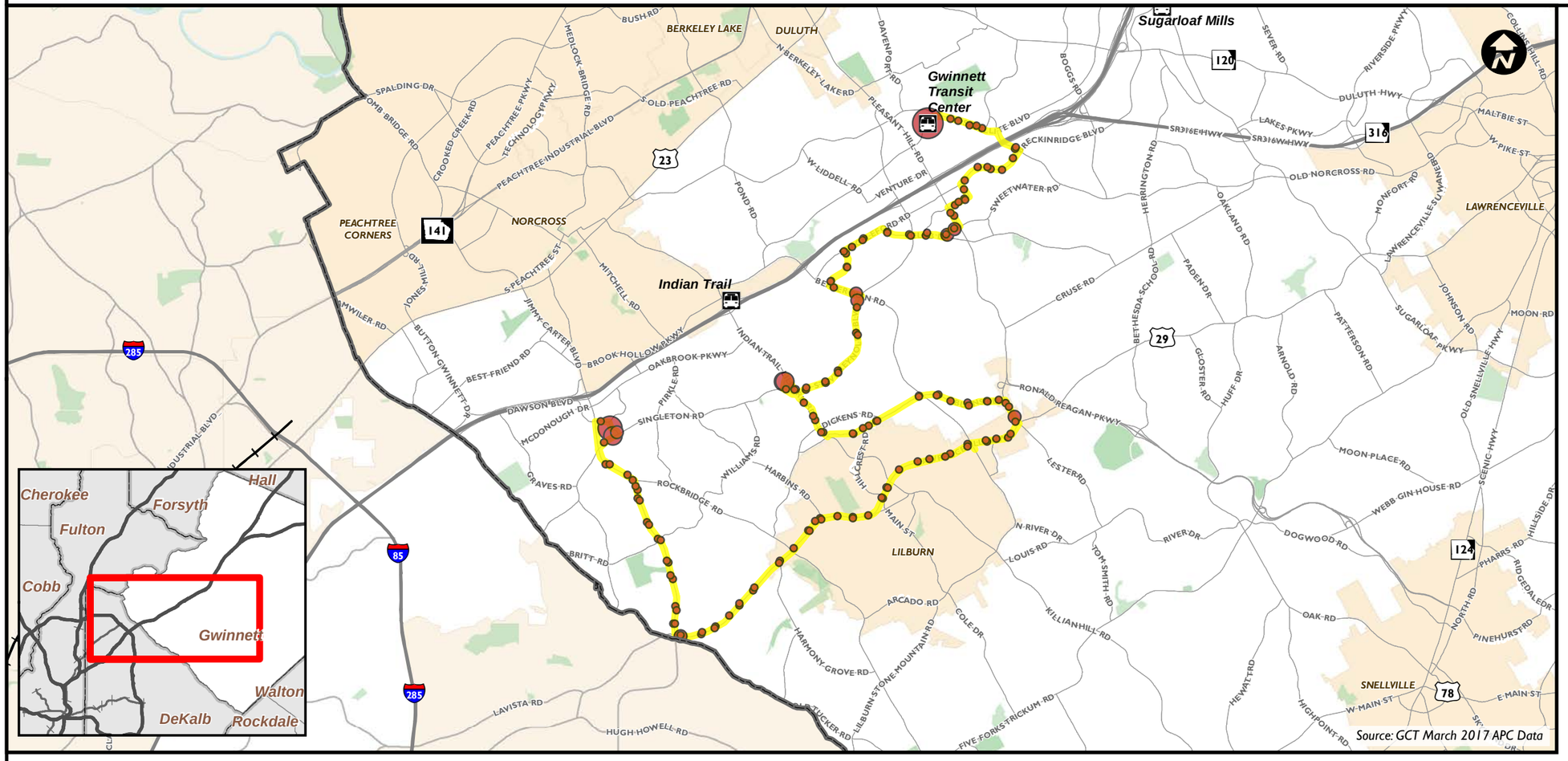




Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT



ROUTE 30

Route Metrics - GCT 30	
Service Characteristics	
Weekday Peak Headway (mins)	30
Weekday Off-Peak Headway (mins)	60
Weekday Span of Service	5:55 AM-8:50 PM
Saturday Headway (mins)	60
Saturday Span of Service	6:41 AM-8:34 PM
Route Length - Inbound (mi)	20.5
Route Length - Outbound (mi)	20.7
Peak Hour Actual Running Time – Inbound/Outbound (mins)	72/69
Average Actual Running Time – Inbound/Outbound (mins)	63/61
Route Performance	
Average Weekday Boardings	371
Average Weekend Boardings	218
Passenger/Revenue Mile	0.4
Passenger/Revenue Hour	8.5
Average Maximum Load - Inbound	3.8
Average Maximum Load - Outbound	3.4
Riders Transferring (%)	61%
On-Time Performance (%)	66%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	71%
Minority Riders (%)	97%

Gwinnett County Transit

Park and Ride Locations

GCT Route 30

Daily Boardings by Stop

< 5

5 - 10

10 - 20

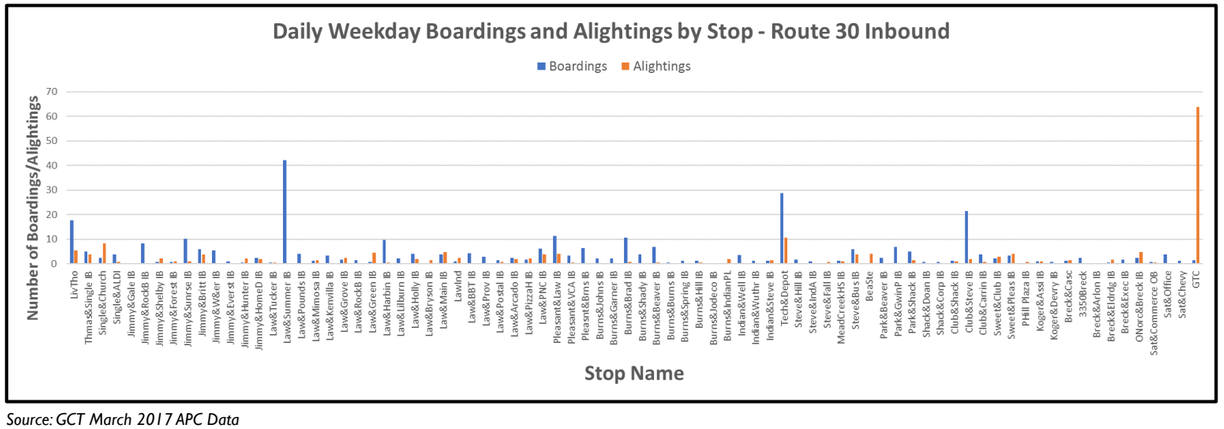
20 - 50

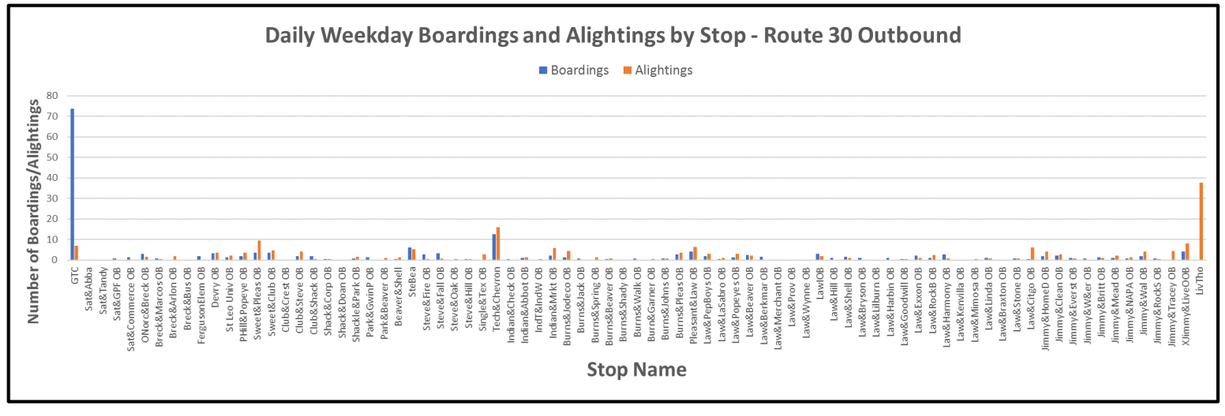
> 50

0 0.5 1 2 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

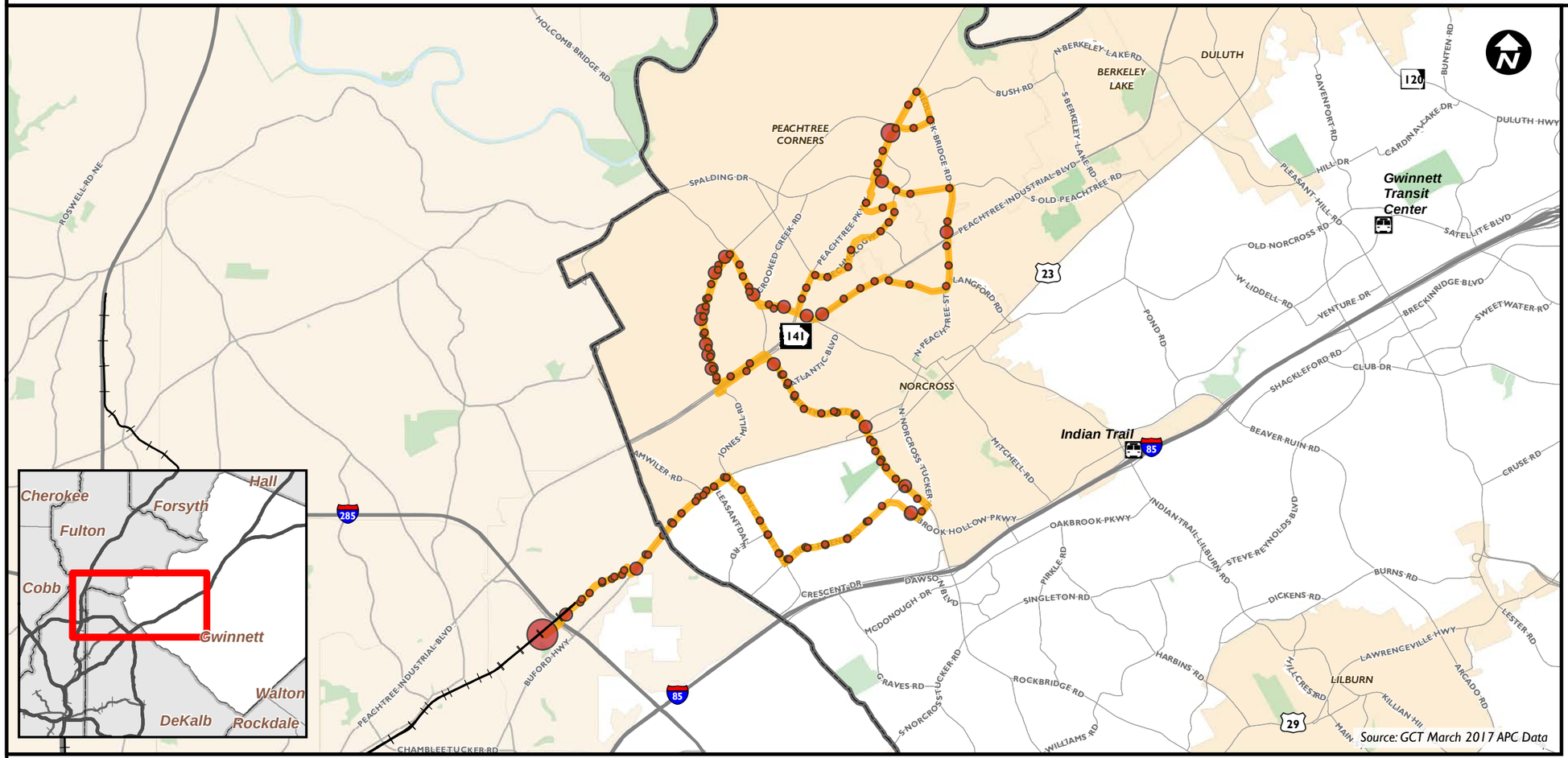




Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT



Source: GCT March 2017 APC Data

ROUTE 35

Route Metrics - GCT 35	
Service Characteristics	
Weekday Peak Headway (mins)	30
Weekday Off-Peak Headway (mins)	60
Weekday Span of Service	5:50 AM-8:50 PM
Saturday Headway (mins)	60
Saturday Span of Service	6:25 AM-8:15 PM
Route Length - Inbound (mi)	15.1
Route Length - Outbound (mi)	15.2
Peak Hour Actual Running Time – Inbound/Outbound (mins)	62/66
Average Actual Running Time – Inbound/Outbound (mins)	52/58
Route Performance	
Average Weekday Boardings	534
Average Weekend Boardings	238
Passenger/Revenue Mile	0.8
Passenger/Revenue Hour	13.9
Average Maximum Load - Inbound	9
Average Maximum Load - Outbound	7.2
Riders Transferring (%)	65%
On-Time Performance (%)	79%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	38%
Minority Riders (%)	86%

Gwinnett County Transit

- Park and Ride Locations
- GCT Route 10A
- GCT Route 35

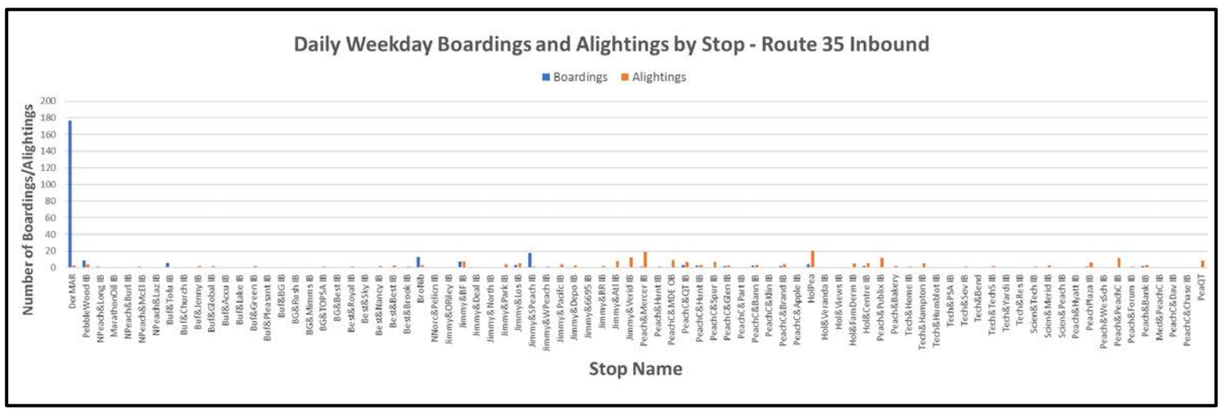
Daily Boardings by Stop

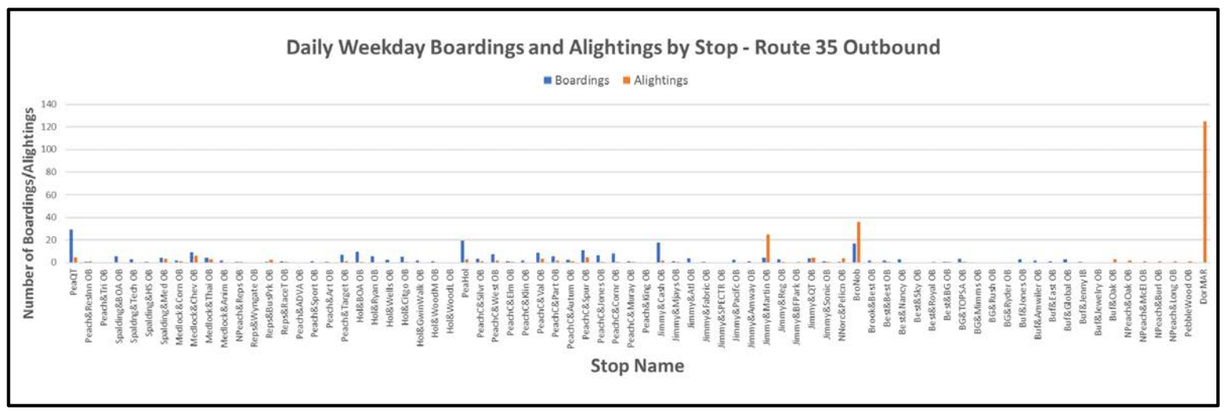
- < 5
- 5 - 20
- 20 - 50
- 50 - 100
- > 100

0 0.5 1 2 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

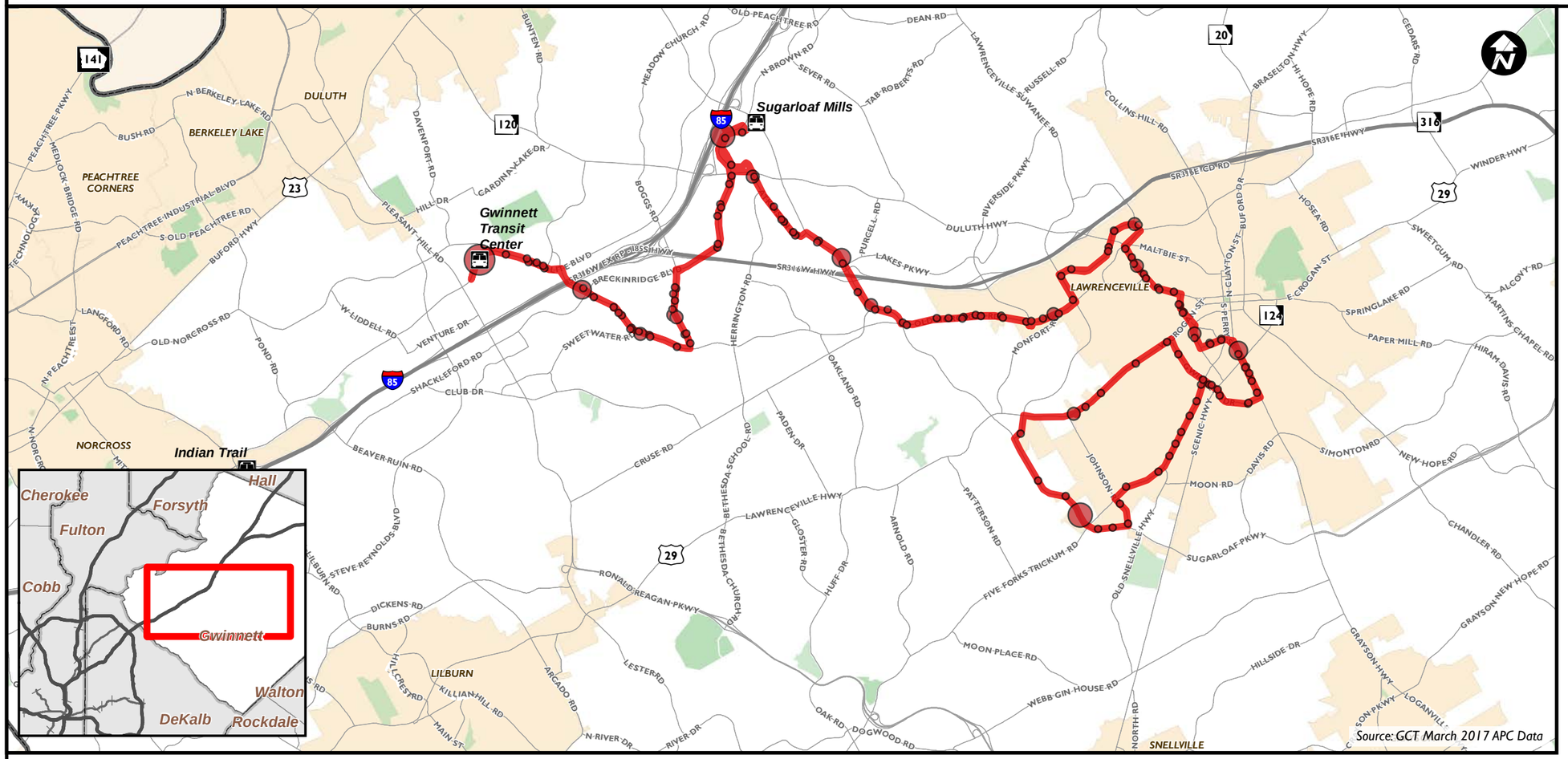




Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT



ROUTE 40

Route Metrics - GCT 40	
Service Characteristics	
Weekday Peak Headway (mins)	30
Weekday Off-Peak Headway (mins)	60
Weekday Span of Service	6:00 AM-8:50 PM
Saturday Headway (mins)	60
Saturday Span of Service	6:44 AM-8:43 PM
Route Length - Inbound (mi)	20.2
Route Length - Outbound (mi)	19.4
Peak Hour Actual Running Time – Inbound/Outbound (mins)	62/63
Average Actual Running Time – Inbound/Outbound (mins)	58/57
Route Performance	
Average Weekday Boardings	420
Average Weekend Boardings	211
Passenger/Revenue Mile	0.5
Passenger/Revenue Hour	10.0
Average Maximum Load - Inbound	5.4
Average Maximum Load - Outbound	6.5
Riders Transferring (%)	61%
On-Time Performance (%)	73%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	63%
Minority Riders (%)	98%

Gwinnett County Transit

Park and Ride Locations

GCT Route 40

Daily Boardings by Stop

< 5

5 - 10

10 - 20

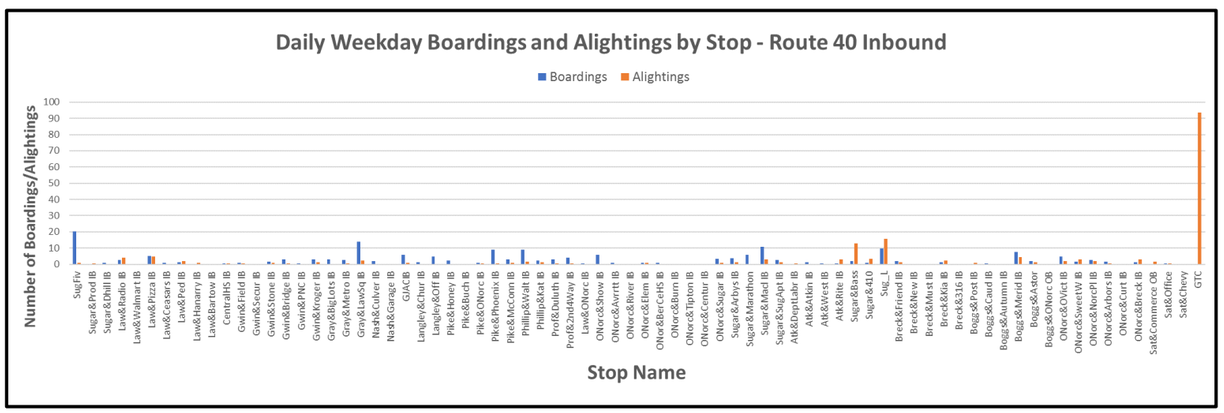
20 - 50

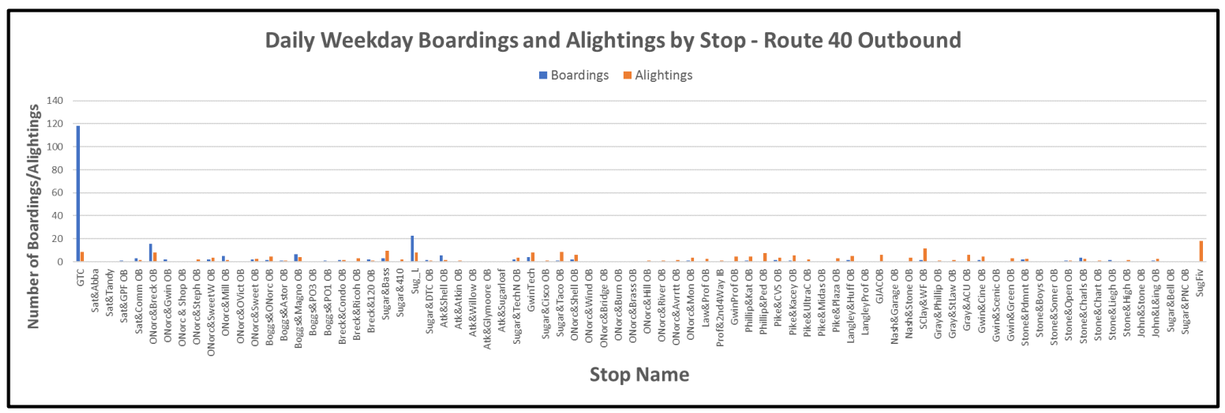
> 50

0 0.5 1 2 Miles

Kimley»Horn

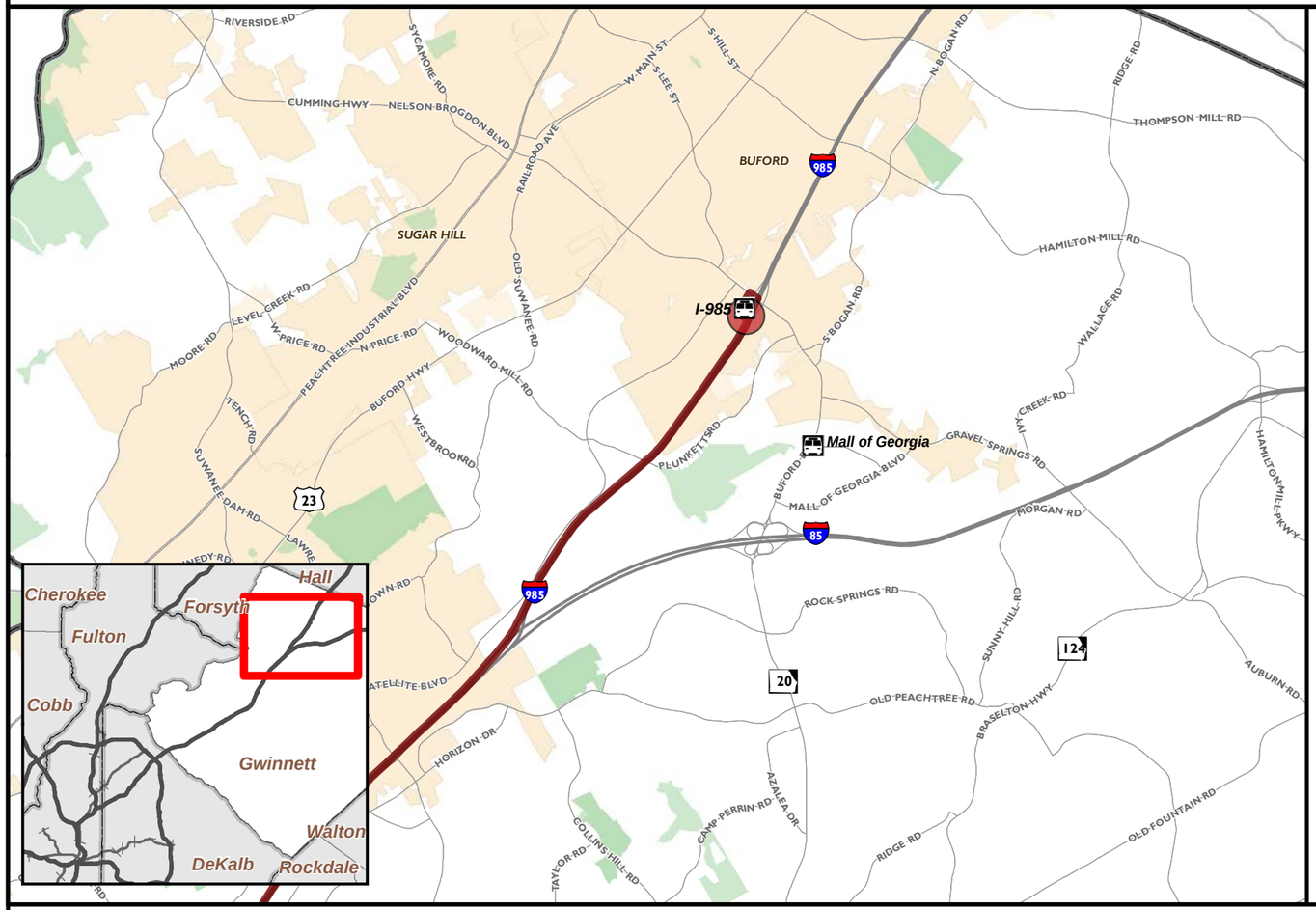
CONNECT GWINNETT TRANSIT PLAN

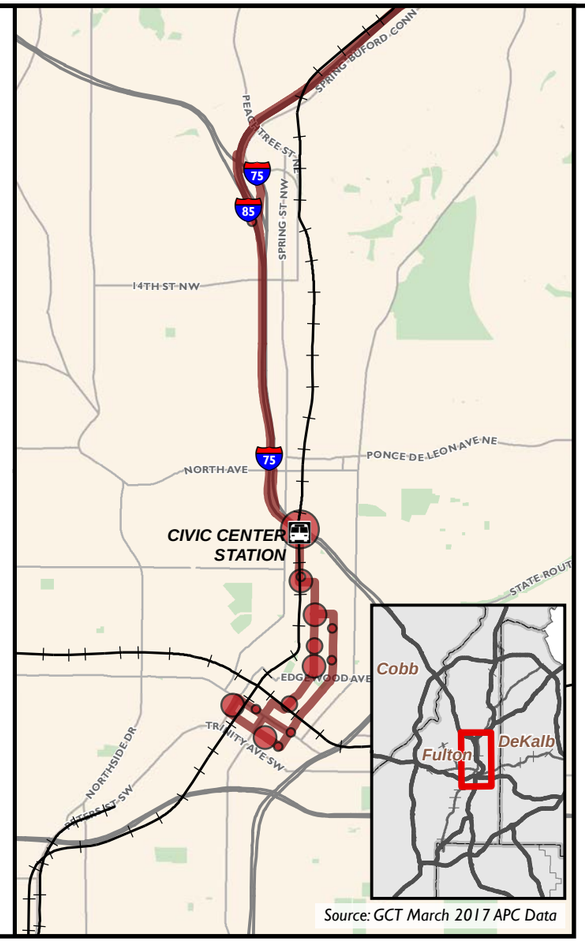




Source: GCT March 2017 APC Data

GWINNETT COUNTY TRANSIT





ROUTE 101

Route Metrics - GCT 101	
Service Characteristics	
Weekday Peak Headway (mins)	15
Weekday Span of Service	5:30 AM-9:12 AM; 3:03 PM-7:12 PM[1]
Route Length - Inbound (mi)	36.8
Route Length - Outbound (mi)	36
Peak Hour Actual Running Time – Inbound/Outbound (mins)	78/75
Average Actual Running Time – Inbound/Outbound (mins)	74/68
Route Performance	
Average Weekday Boardings	363
Passenger/Revenue Mile	0.6
Passenger/Revenue Hour	18.0
Average Maximum Load - Inbound	19.9
Average Maximum Load - Outbound	21.4
Riders Transferring (%)	22%
On-Time Performance (%)	77%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	18%
Minority Riders (%)	39%

1. Two daily daily "sweeper" buses pick up all 101/102/103 passengers in Atlanta and stop at all 3 park & ride lots. These two trips have service spans of 2:15 PM-3:12 PM and 6:45 PM-7:44 PM.

Gwinnett County Transit

Park and Ride Locations

GCT Route 101

Daily Boardings by Stop

< 5

5 - 10

10 - 20

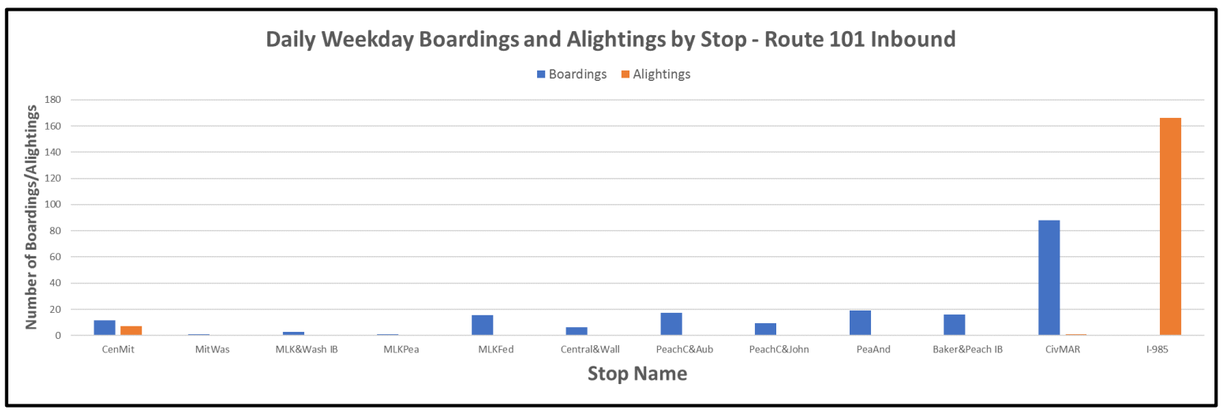
20 - 50

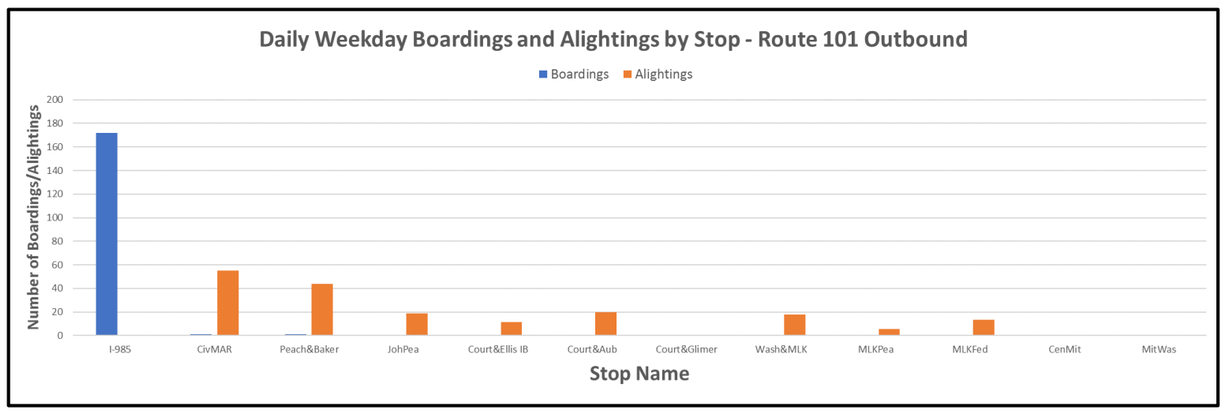
> 50

0 0.5 1 2 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

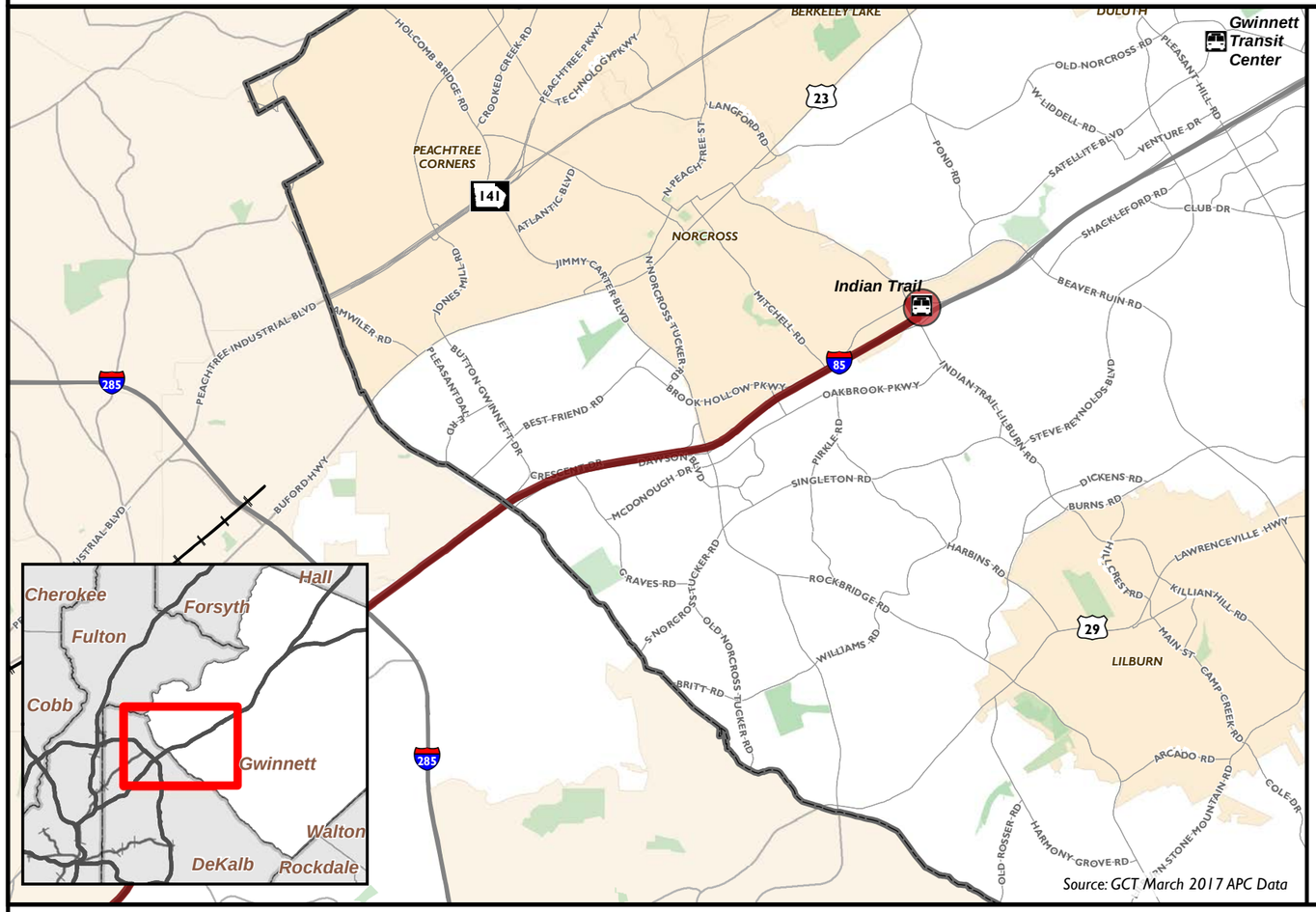




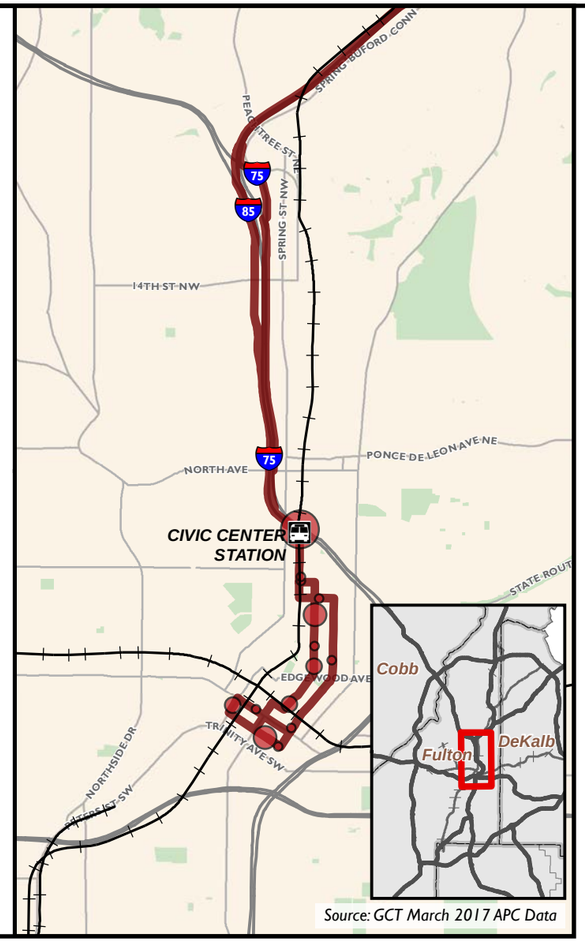
Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT



Source: GCT March 2017 APC Data



Source: GCT March 2017 APC Data

ROUTE 102

Route Metrics - GCT 102	
Service Characteristics	
Weekday Peak Headway (mins)	30
Weekday Span of Service	6:10 AM-8:55 AM; 3:08 PM-6:28 PM[1]
Route Length - Inbound (mi)	21
Route Length - Outbound (mi)	21.3
Peak Hour Actual Running Time – Inbound/Outbound (mins)	53/48
Average Actual Running Time – Inbound/Outbound (mins)	51/46
Route Perfomance	
Average Weekday Boardings	223
Passenger/Revenue Mile	1.1
Passenger/Revenue Hour	27.6
Average Maximum Load - Inbound	20
Average Maximum Load - Outbound	21.5
Riders Transferring (%)	28%
On-Time Performance (%)	80%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	20%
Minority Riders (%)	58%

1. Two daily daily "sweeper" buses pick up all 101/102/103 passengers in Atlanta and stop at all 3 park & ride lots. These two trips have service spans of 2:15 PM-3:12 PM and 6:45 PM-7:44 PM.

Gwinnett County Transit

Park and Ride Locations

GCT Route 102

Daily Boardings by Stop

< 5

5 - 10

10 - 20

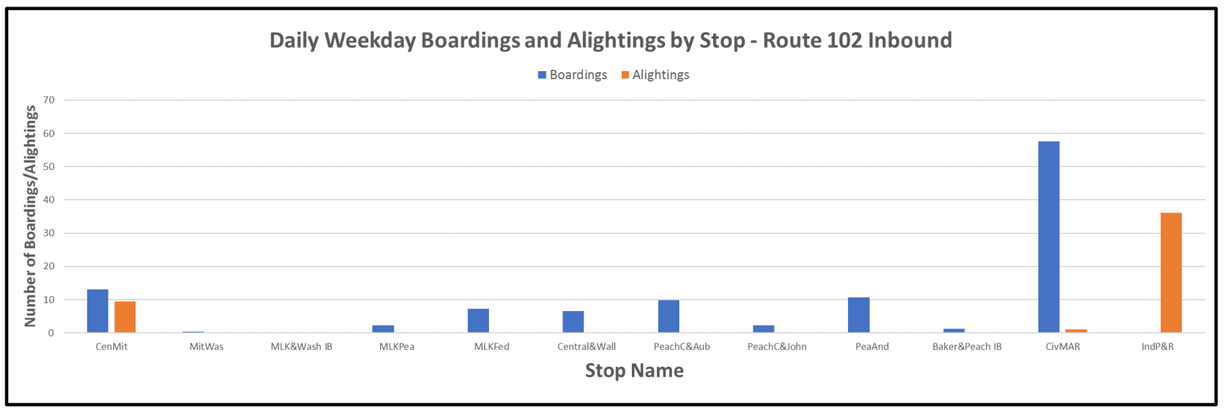
20 - 50

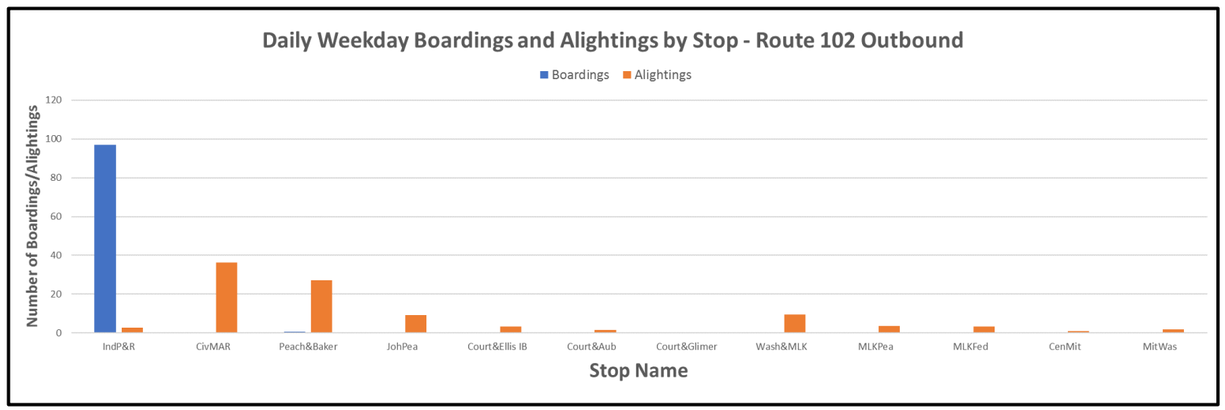
> 50

0 0.5 1 2 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

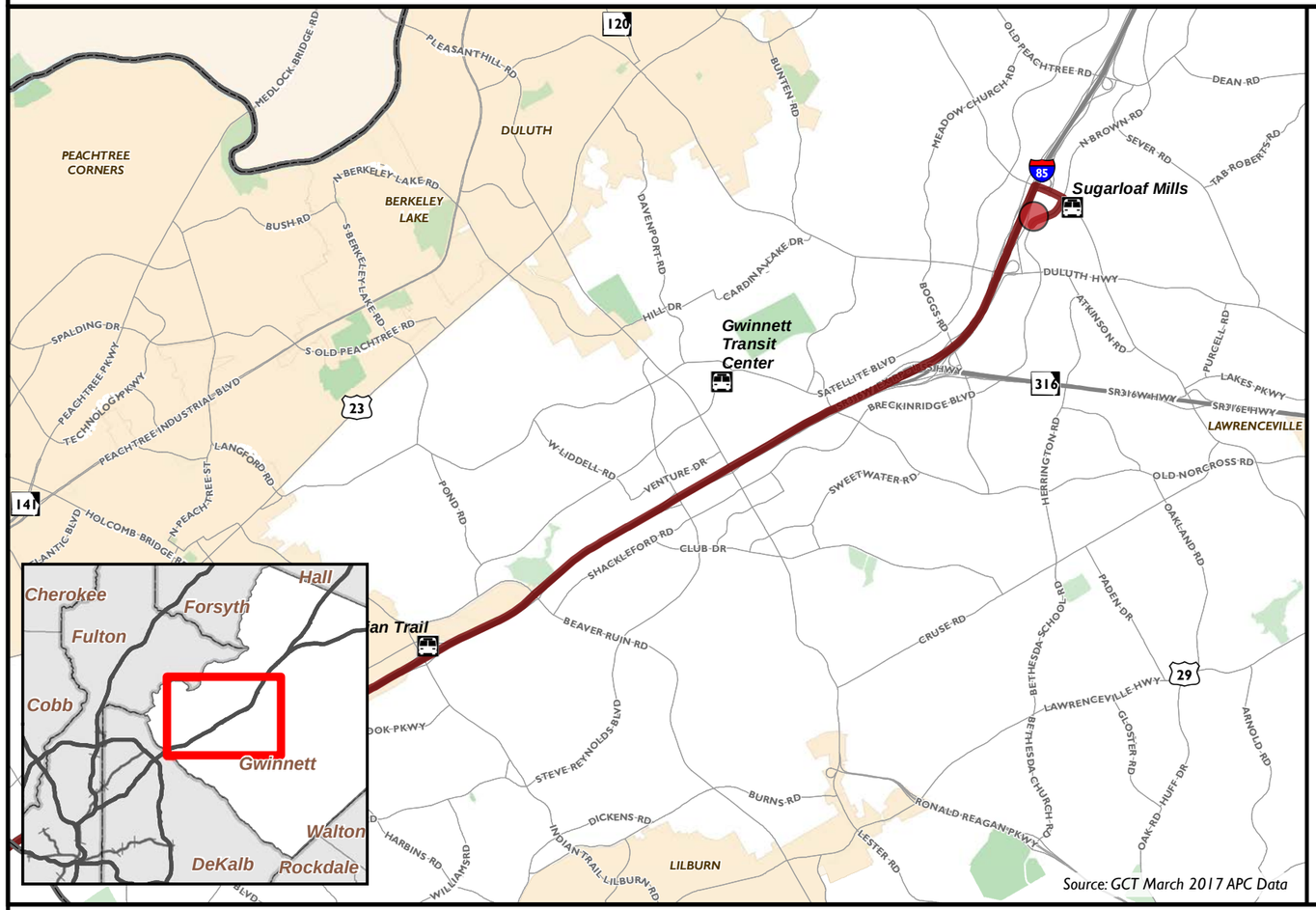




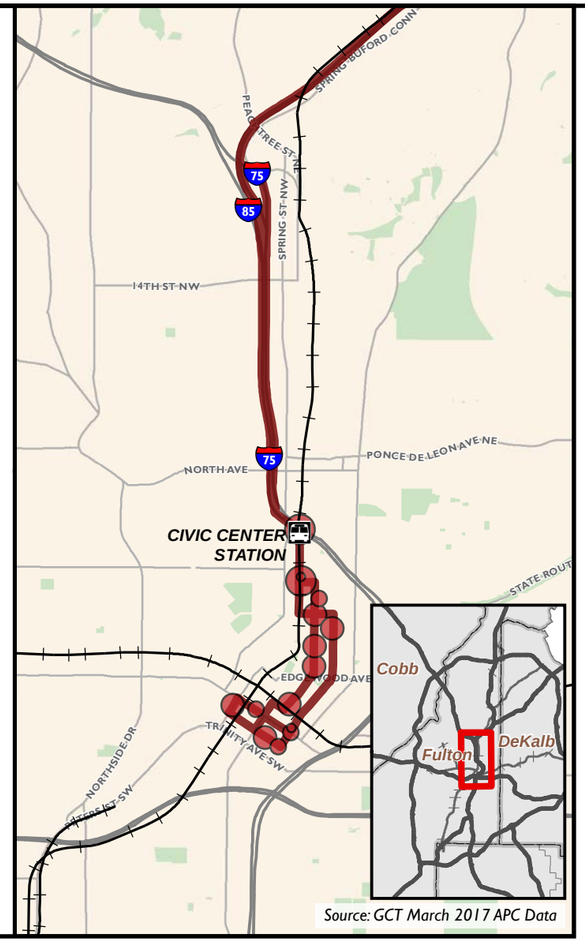
Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT



Source: GCT March 2017 APC Data



Source: GCT March 2017 APC Data

ROUTE 103

Route Metrics - GCT 103	
Service Characteristics	
Weekday Peak Headway (mins)	10
Weekday Span of Service	5:40 AM-9:55 AM; 3:05 PM-7:04 PM[1]
Route Length - Inbound (mi)	28.1
Route Length - Outbound (mi)	28
Peak Hour Actual Running Time – Inbound/Outbound (mins)	62/78
Average Actual Running Time – Inbound/Outbound (mins)	58/67
Route Performance	
Average Weekday Boardings	991
Passenger/Revenue Mile	1.0
Passenger/Revenue Hour	26.4
Average Maximum Load - Inbound	22.8
Average Maximum Load - Outbound	26.8
Riders Transferring (%)	21%
On-Time Performance (%)	69%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	19%
Minority Riders (%)	70%

1. Two daily daily "sweeper" buses pick up all 101/102/103 passengers in Atlanta and stop at all 3 park & ride lots. These two trips have service spans of 2:15 PM-3:12 PM and 6:45 PM-7:44 PM.

Gwinnett County Transit

Park and Ride Locations

GCT Route 103

Daily Boardings by Stop

< 5

5 - 20

20 - 50

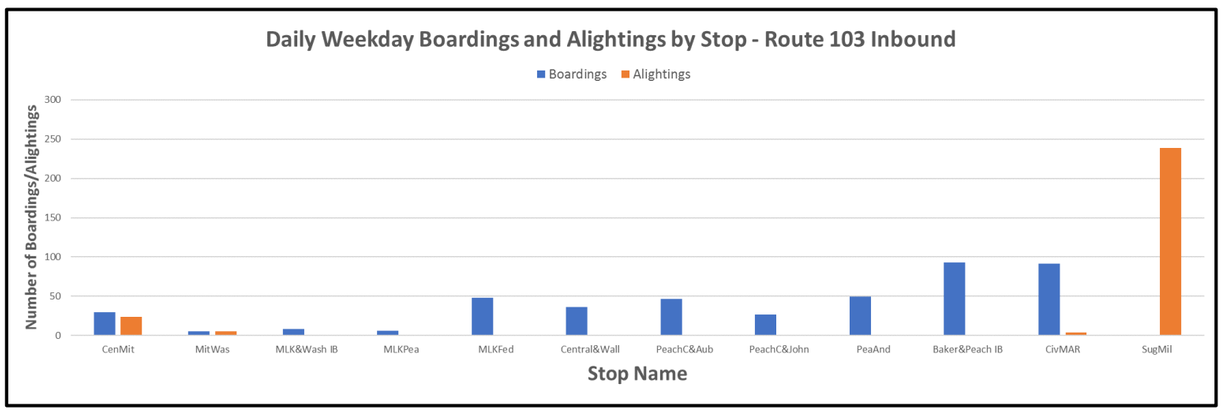
50 - 100

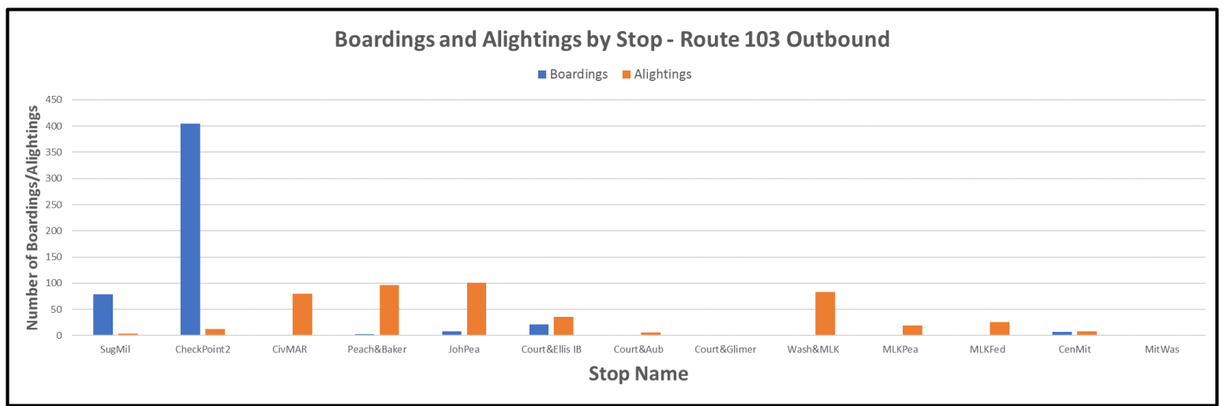
> 100

0 0.5 1 2 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

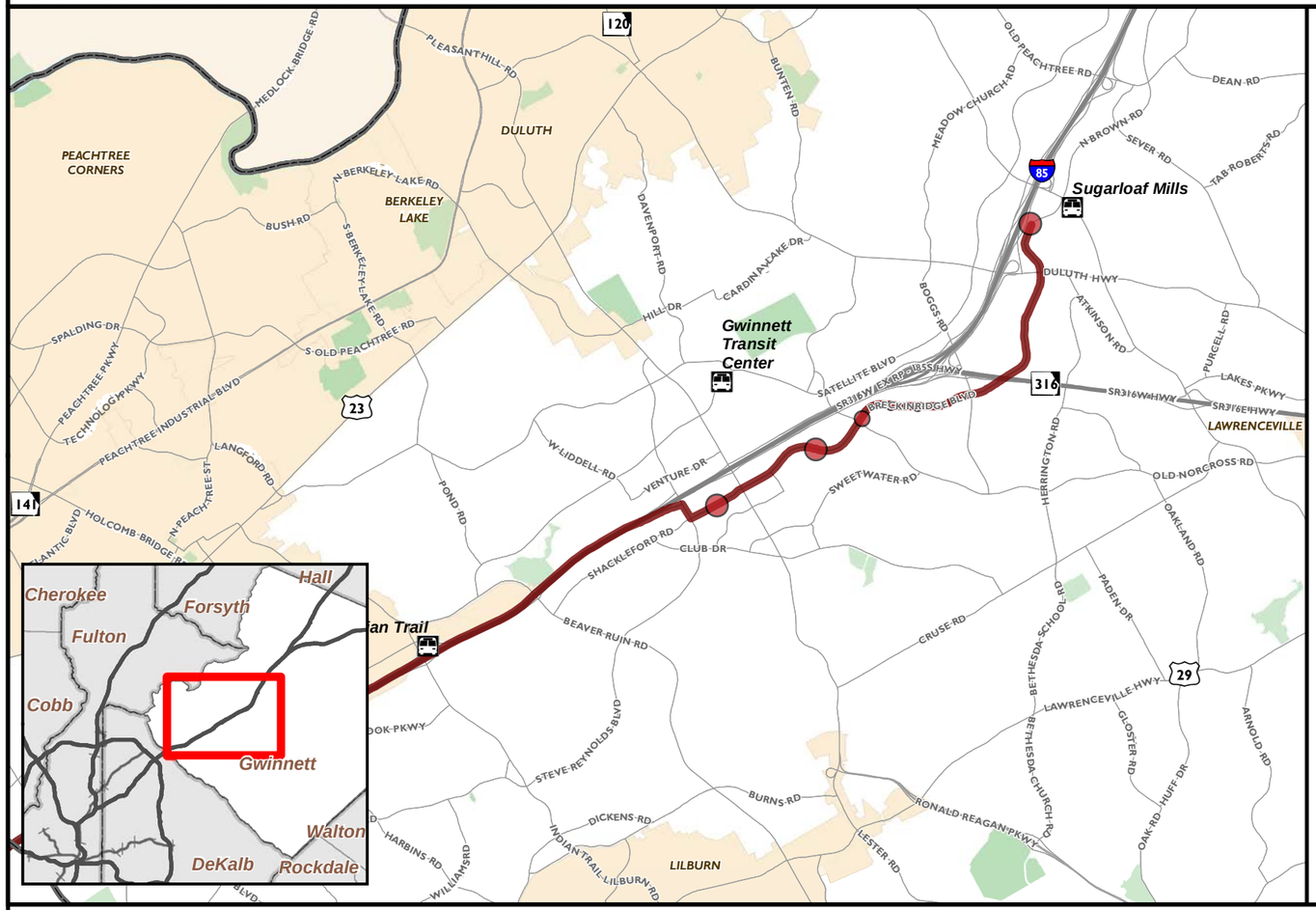


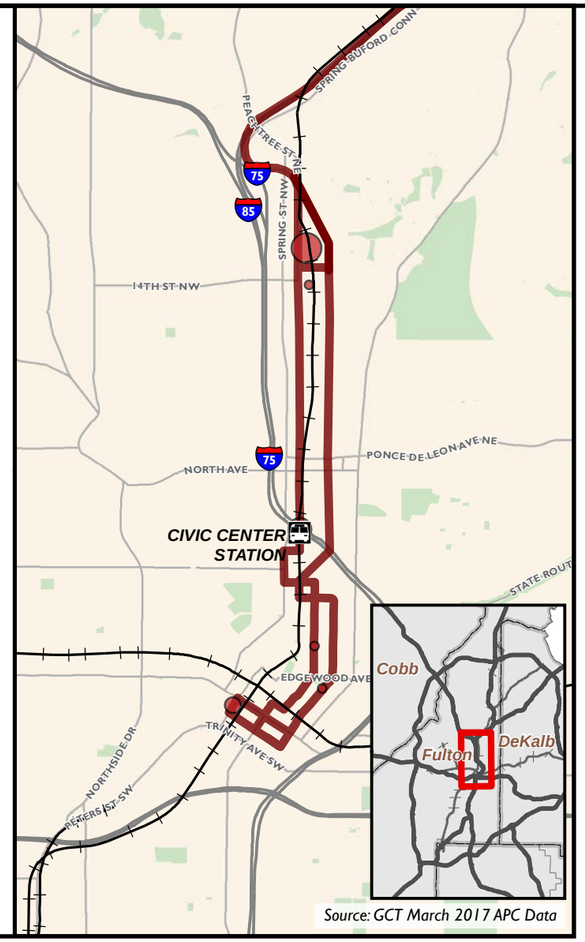


Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT





Source: GCT March 2017 APC Data

ROUTE 103A

Route Metrics - GCT 103A	
Service Characteristics	
Weekday Peak Headway (mins)	60
Weekday Span of Service	7:00 AM-9:15 AM; 3:10 PM-6:30 PM
Route Length - Inbound (mi)	27.9
Route Length - Outbound (mi)	32.5
Peak Hour Actual Running Time – Inbound/Outbound (mins)	59/74
Average Actual Running Time – Inbound/Outbound (mins)	59/73
Route Performance	
Average Weekday Boardings	43
Passenger/Revenue Mile	0.4
Passenger/Revenue Hour	9.8
Average Maximum Load - Inbound	9.2
Average Maximum Load - Outbound	9.6
Riders Transferring (%)	100%
On-Time Performance (%)	73%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	0%
Minority Riders (%)	75%

Gwinnett County Transit

Park and Ride Locations

GCT Route 103A

Daily Boardings by Stop

< 5

2 - 5

5 - 10

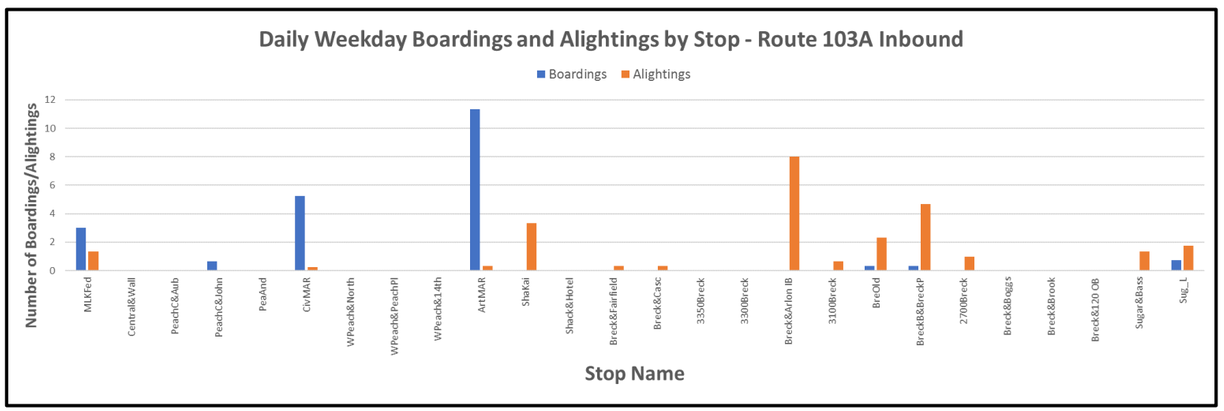
10 - 20

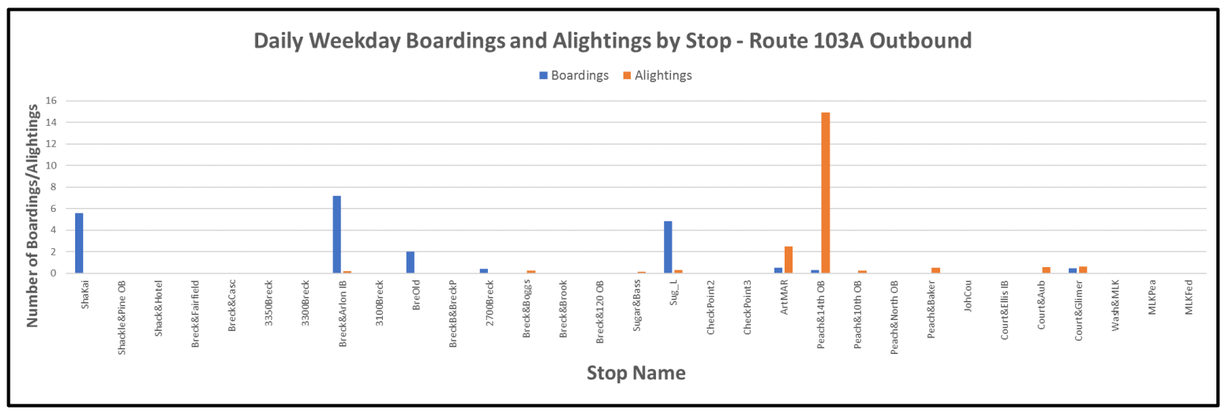
> 20

0 0.5 1 2 Miles

Kimley»Horn

CONNECT GWINNETT TRANSIT PLAN

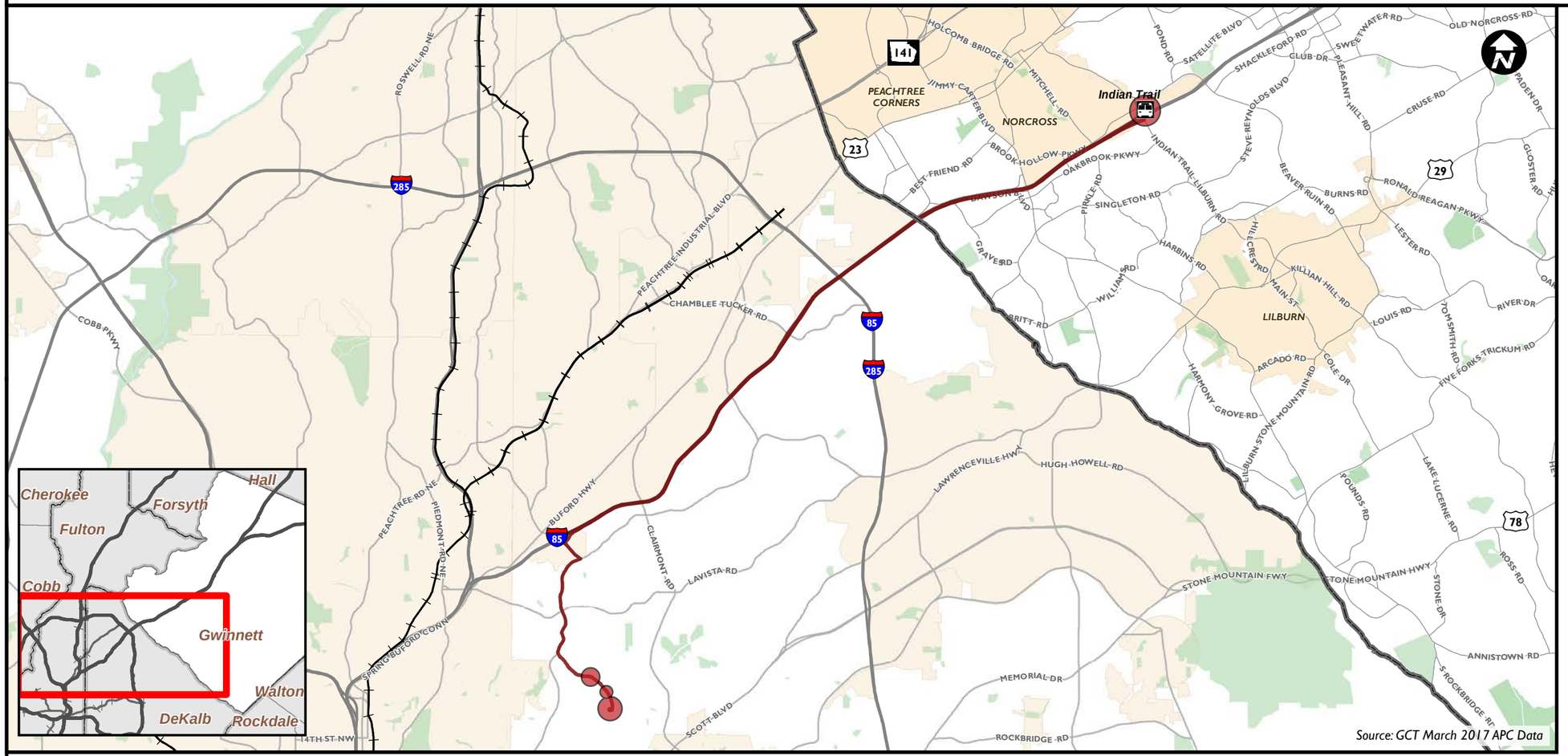




Source: GCT March 2017 APC Data

July 2017

GWINNETT COUNTY TRANSIT



ROUTE 110

Route Metrics - GCT 110	
Service Characteristics	
Weekday Peak Headway (mins)	30
Weekday Span of Service	5:30 AM-8:39 AM; 3:45 PM-7:20 PM
Route Length - Inbound (mi)	15.5 - 23.72[1]
Route Length - Outbound (mi)	15.4 - 22.32[1]
Peak Hour Actual Running Time – Inbound/Outbound (mins)	39/37[2]
Average Actual Running Time – Inbound/Outbound (mins)	38/36[2]
Route Performance	
Average Weekday Boardings	53
Passenger/Revenue Mile	0.4[2]
Passenger/Revenue Hour	7.8[2]
Average Maximum Load - Inbound	3.5
Average Maximum Load - Outbound	6.4
Riders Transferring (%)	11%
On-Time Performance (%)	73%
Demographics (from 2015 CTP On-Board Survey)	
Low Income Riders (%)	-
Minority Riders (%)	-

1. Route length varies because some Route 110 trips also stop at Sugarloaf Mills in addition to Indian Trail Park & Ride.

2. Based on March 2017 AVL data. The Sugarloaf Mills stop was added in April 2017, and thus these metrics reflect conditions before this stop was added.

Gwinnett County Transit

Park and Ride Locations

GCT Route 110

Daily Boardings by Stop

< 2

2 - 5

5 - 10

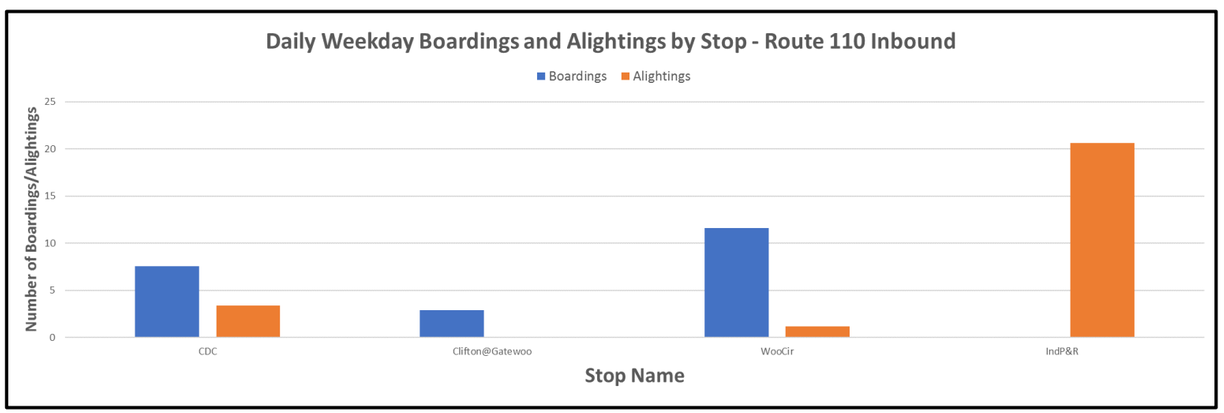
10 - 20

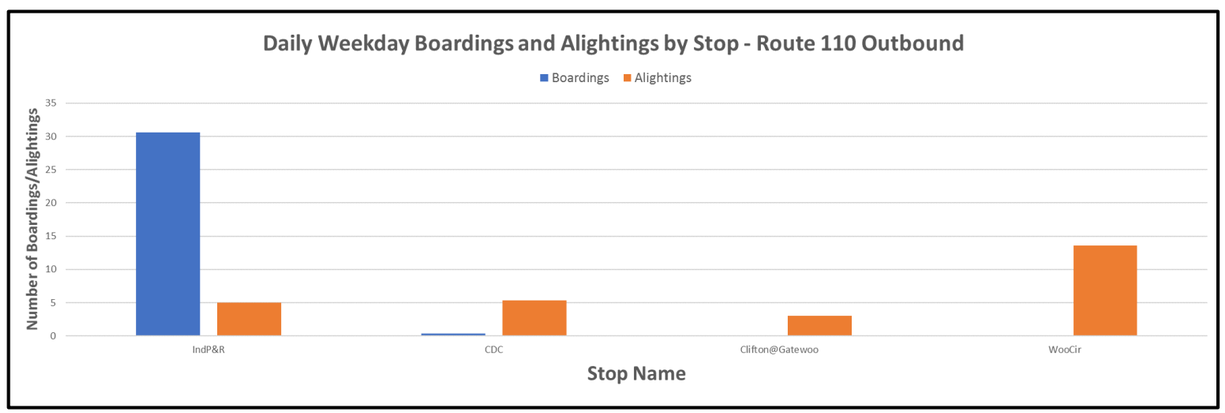
> 20

0 0.75 1.5 3 Miles

Kimley»Horn

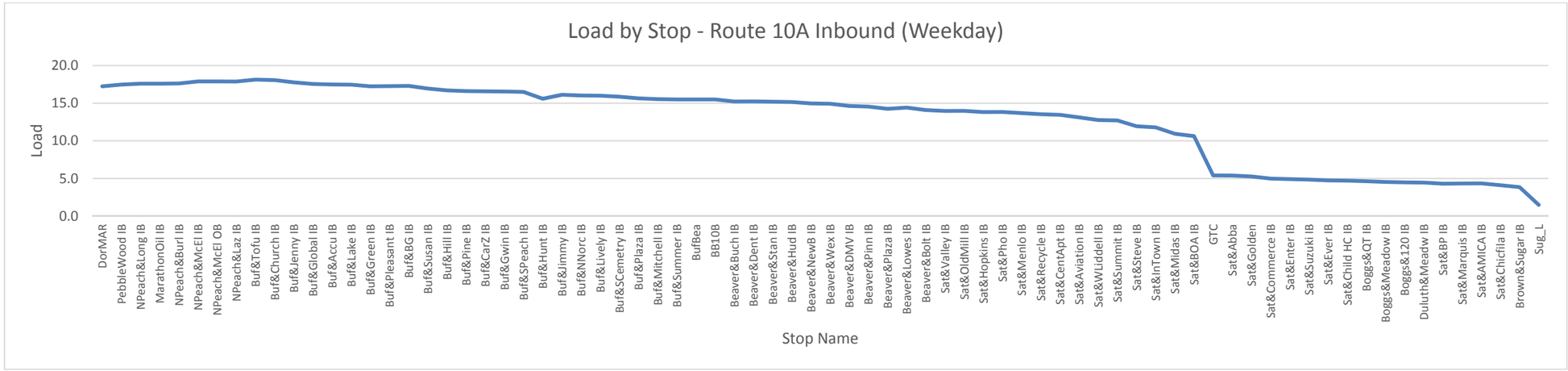
CONNECT GWINNETT TRANSIT PLAN

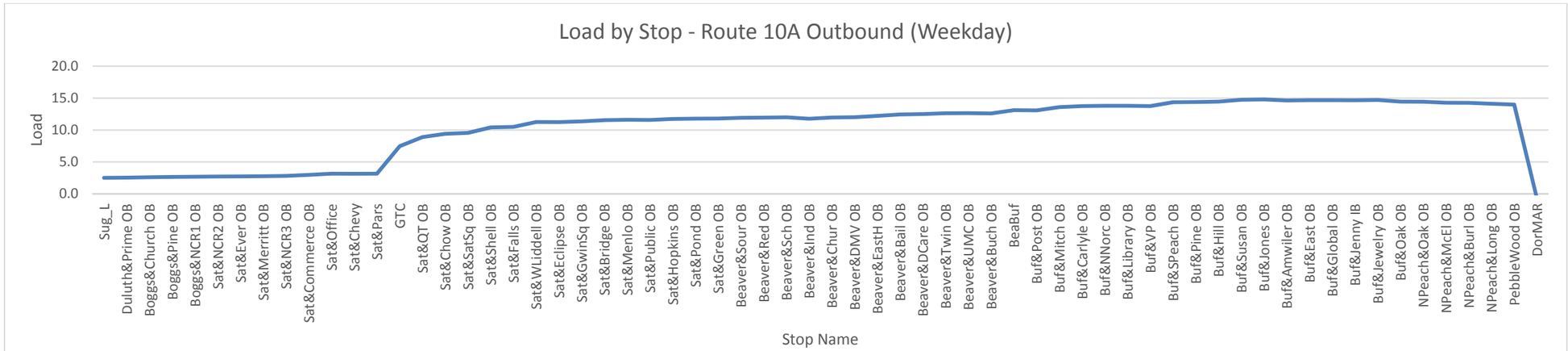


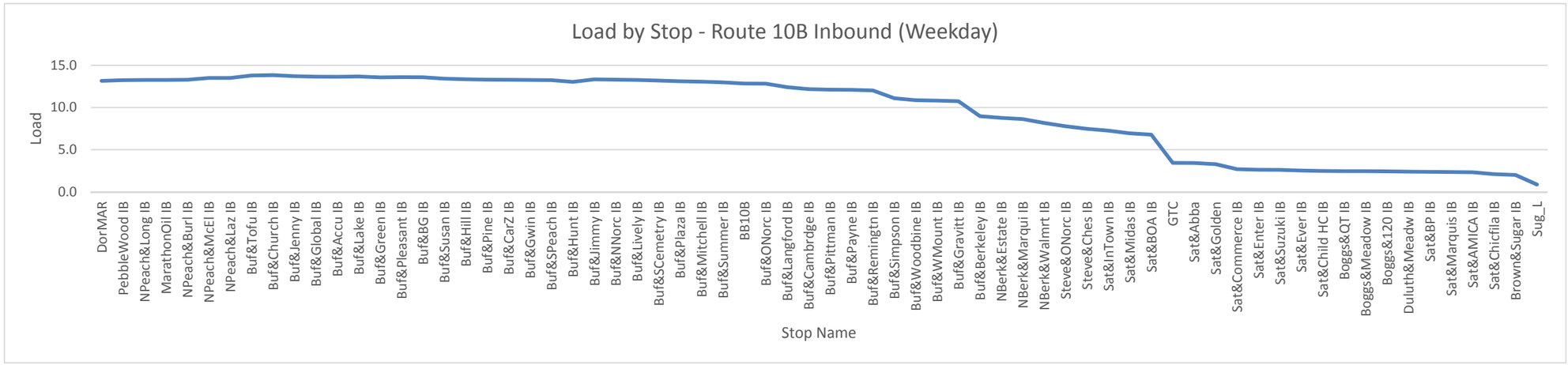


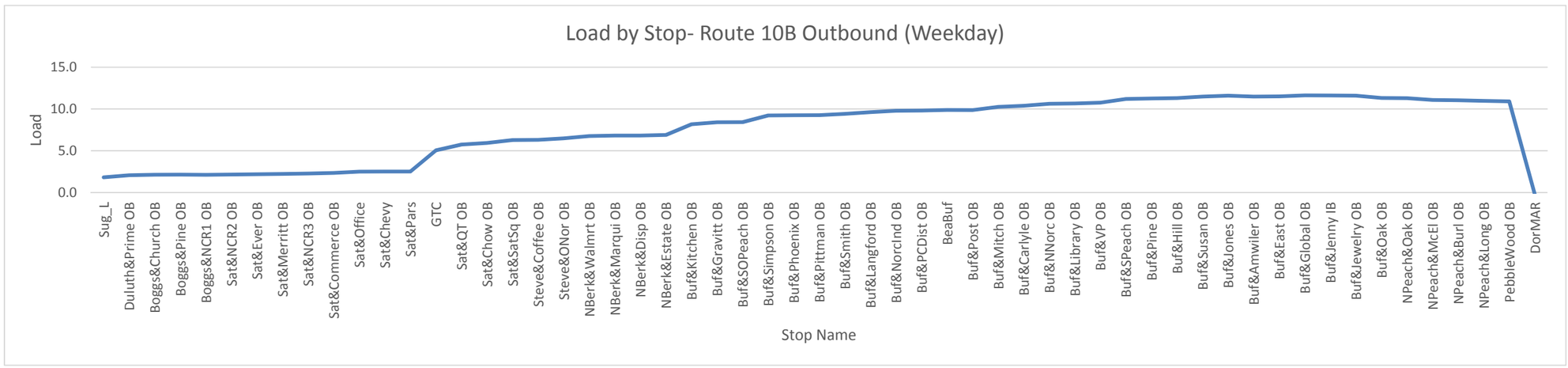
Source: GCT March 2017 APC Data

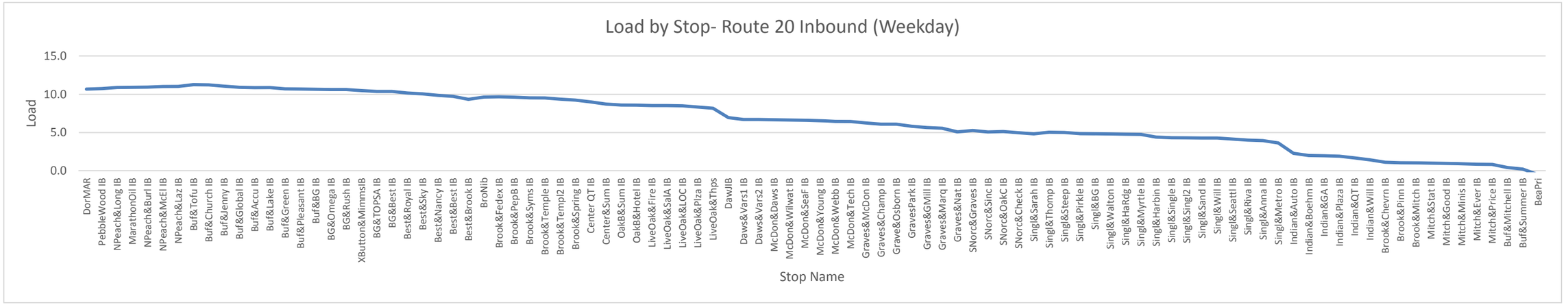
July 2017

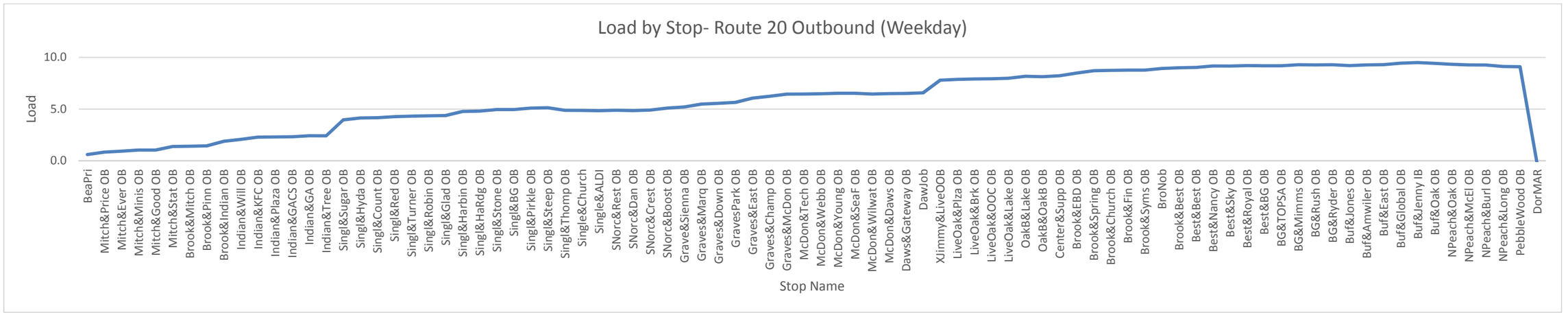

Load by Stop - Route 10A Inbound (Weekday)
Load
20.0
15.0
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&McEl OB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
Buf&Susan IB
Buf&Hill IB
Buf&Pine IB
Buf&CarZ IB
Buf&Gwin IB
Buf&SPeach IB
Buf&Hunt IB
Buf&Jimmy IB
Buf&NNorc IB
Buf&Lively IB
Buf&SCemetry IB
Buf&Plaza IB
Buf&Mitchell IB
Buf&Summer IB
BufBea
BB10B
Beaver&Buch IB
Beaver&Dent IB
Beaver&Stan IB
Beaver&Hud IB
Beaver&NewB IB
Beaver&Wex IB
Beaver&DMV IB
Beaver&Pinn IB
Beaver&Plaza IB
Beaver&Lowes IB
Beaver&Bolt IB
Sat&Valley IB
Sat&OldMill IB
Sat&Hopkins IB
Sat&Pho IB
Sat&Menlo IB
Sat&Recycle IB
Sat&CentApt IB
Sat&Aviation IB
Sat&WLiddell IB
Sat&Summit IB
Sat&Steve IB
Sat&InTown IB
Sat&Midas IB
Sat&BOA IB
GTC
Sat&Abba
Sat&Golden
Sat&Commerce IB
Sat&Enter IB
Sat&Suzuki IB
Sat&Ever IB
Sat&Child HC IB
Boggs&QT IB
Boggs&Meadow IB
Boggs&120 IB
Duluth&Meadw IB
Sat&BP IB
Sat&Marquis IB
Sat&AMICA IB
Sat&Chicfila IB
Brown&Sugar IB
Sug_L
Stop Name

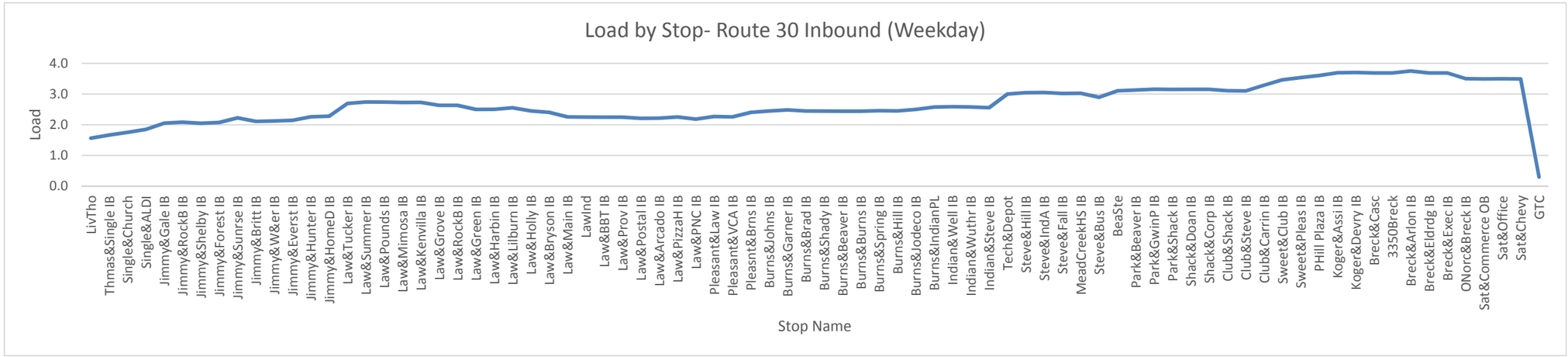

Load by Stop - Route 10A Outbound (Weekday)
Load
20.0
15.0
10.0
5.0
0.0
Sug_L
Duluth&Prime OB
Boggs&Church OB
Boggs&Pine OB
Boggs&NCR1 OB
Sat&NCR2 OB
Sat&Ever OB
Sat&Merritt OB
Sat&NCR3 OB
Sat&Commerce OB
Sat&Office
Sat&Chevy
Sat&Pars
GTC
Sat&QT OB
Sat&Chow OB
Sat&SatSq OB
Sat&Shell OB
Sat&Falls OB
Sat&WLiddell OB
Sat&Eclipse OB
Sat&GwinSq OB
Sat&Bridge OB
Sat&MenIo OB
Sat&Public OB
Sat&Hopkins OB
Sat&Pond OB
Sat&Green OB
Beaver&Sour OB
Beaver&Red OB
Beaver&Sch OB
Beaver&Ind OB
Beaver&Chur OB
Beaver&DMV OB
Beaver&EastH OB
Beaver&Bail OB
Beaver&DCare OB
Beaver&Twin OB
Beaver&UMC OB
Beaver&Buch OB
BeaBuf
Buf&Post OB
Buf&Mitch OB
Buf&Carlyle OB
Buf&NNorc OB
Buf&Library OB
Buf&VP OB
Buf&SPeach OB
Buf&Pine OB
Buf&Hill OB
Buf&Susan OB
Buf&Jones OB
Buf&Amwiler OB
Buf&East OB
Buf&Global OB
Buf&Jenny IB
Buf&Jewelry OB
Buf&Oak OB
NPeach&Oak OB
NPeach&McEl OB
NPeach&Burl OB
NPeach&Long OB
PebbleWood OB
DorMAR
Stop Name

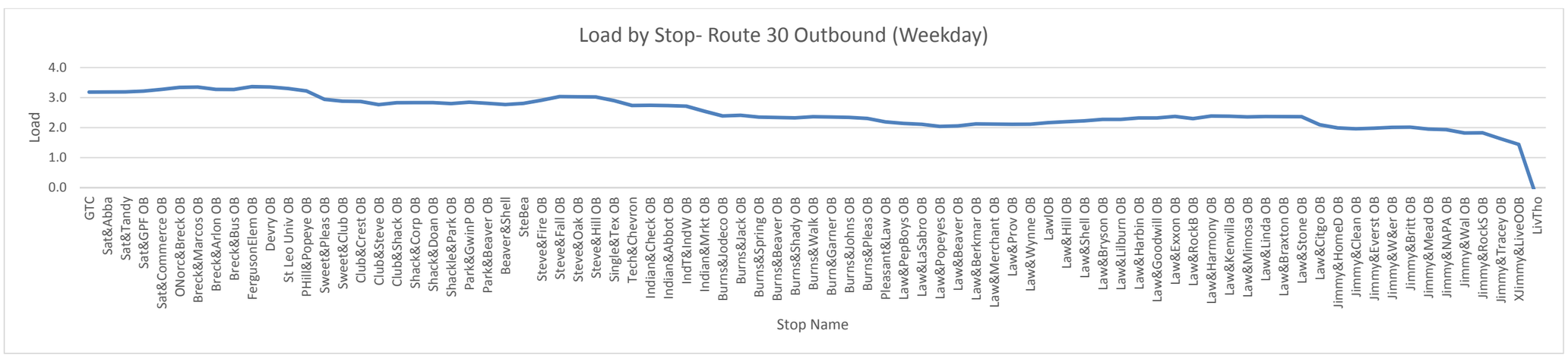

Load by Stop - Route 10B Inbound (Weekday)
Load
15.0
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
Buf&Susan IB
Buf&Hill IB
Buf&Pine IB
Buf&CarZ IB
Buf&Gwin IB
Buf&SPeach IB
Buf&Hunt IB
Buf&Jimmy IB
Buf&NNorc IB
Buf&Lively IB
Buf&SCemetry IB
Buf&Plaza IB
Buf&Mitchell IB
Buf&Summer IB
BB10B
Buf&ONorc IB
Buf&Langford IB
Buf&Cambrdge IB
Buf&Pittman IB
Buf&Payne IB
Buf&Remingtn IB
Buf&Simpson IB
Buf&Woodbine IB
Buf&WMount IB
Buf&Gravitt IB
Buf&Berkeley IB
NBerk&Estate IB
NBerk&Marqui IB
NBerk&Walmrt IB
Steve&ONorc IB
Steve&Ches IB
Sat&InTown IB
Sat&Midas IB
Sat&BOA IB
GTC
Sat&Abba
Sat&Golden
Sat&Commerce IB
Sat&Enter IB
Sat&Suzuki IB
Sat&Ever IB
Sat&Child HC IB
Boggs&QT IB
Boggs&Meadow IB
Boggs&120 IB
Duluth&Meadw IB
Sat&BP IB
Sat&Marquis IB
Sat&AMICA IB
Sat&Chicfila IB
Brown&Sugar IB
Sug_L
Stop Name

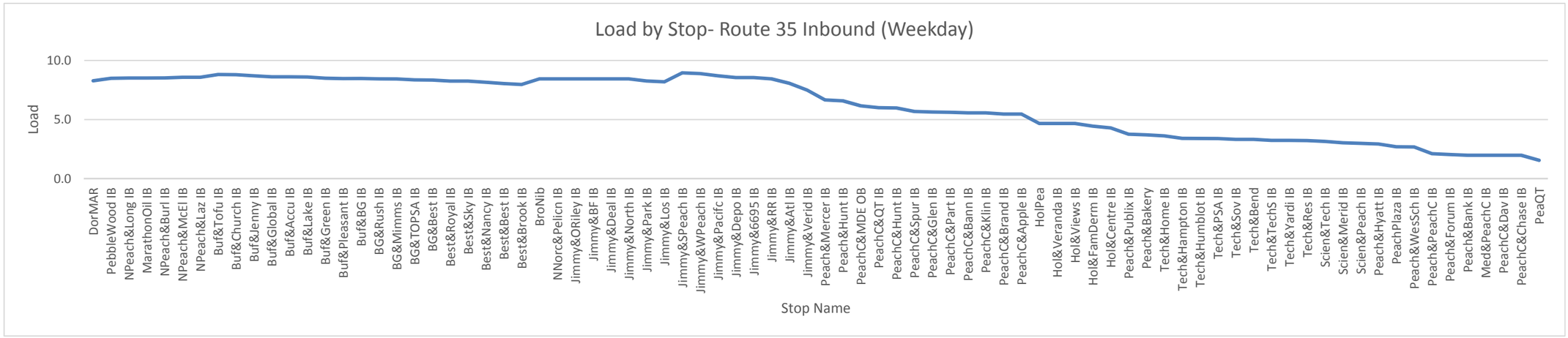

Load by Stop- Route 10B Outbound (Weekday)
Load
15.0
10.0
5.0
0.0
Sug_L
Duluth&Prime OB
Boggs&Church OB
Boggs&Pine OB
Boggs&NCR1 OB
Sat&NCR2 OB
Sat&Ever OB
Sat&Merritt OB
Sat&NCR3 OB
Sat&Commerce OB
Sat&Office
Sat&Chevy
Sat&Pars
GTC
Sat&QT OB
Sat&Chow OB
Sat&SatSq OB
Steve&Coffee OB
Steve&ONor OB
NBerk&Walmrt OB
NBerk&Marqui OB
NBerk&Disp OB
NBerk&Estate OB
Buf&Kitchen OB
Buf&Gravitt OB
Buf&SOPeach OB
Buf&Simpson OB
Buf&Phoenix OB
Buf&Pittman OB
Buf&Smith OB
Buf&Langford OB
Buf&NorcInd OB
Buf&PCDist OB
BeaBuf
Buf&Post OB
Buf&Mitch OB
Buf&Carlyle OB
Buf&NNorc OB
Buf&Library OB
Buf&VP OB
Buf&SPeach OB
Buf&Pine OB
Buf&Hill OB
Buf&Susan OB
Buf&Jones OB
Buf&Amwiler OB
Buf&East OB
Buf&Global OB
Buf&Jenny IB
Buf&Jewelry OB
Buf&Oak OB
NPeach&Oak OB
NPeach&McEl OB
NPeach&Burl OB
NPeach&Long OB
PebbleWood OB
DorMAR
Stop Name

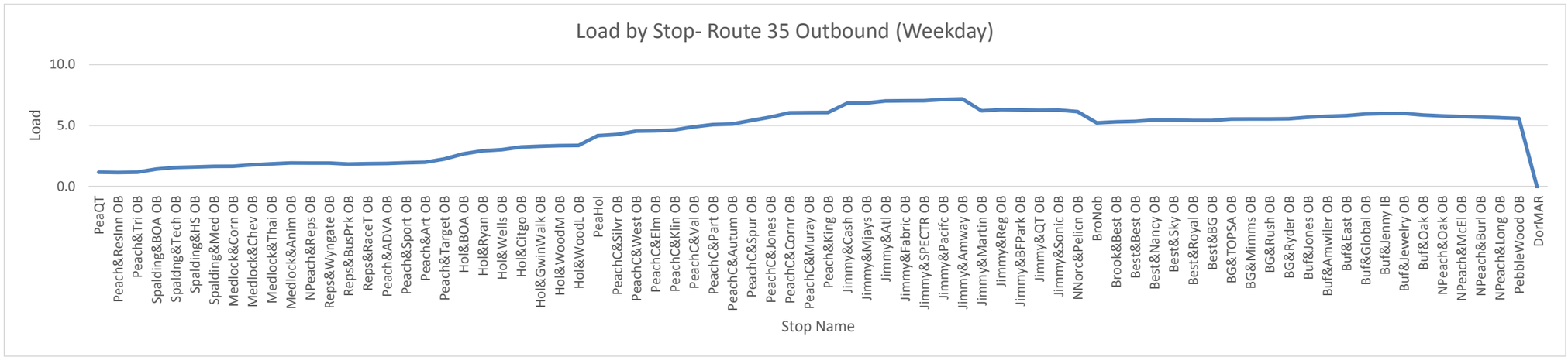

Load by Stop- Route 20 Inbound (Weekday)
Load
15.0
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
BG&Omega IB
BG&Rush IB
XButton&MimmsIB
BG&TOPSA IB
BG&Best IB
Best&Royal IB
Best&Sky IB
Best&Nancy IB
Best&Best IB
Best&Brook IB
BroNib
Brook&Fedex IB
Brook&PepB IB
Brook&Syms IB
Brook&Temple IB
Brook&Templ2 IB
Brook&Spring IB
Center QT IB
Center&Sum IB
OakB&Sum IB
OakB&Hotel IB
LiveOak&Fire IB
LiveOak&SalA IB
LiveOak&LOC IB
LiveOak&Plza IB
LiveOak&Thps
DawIB
Daws&Vars1 IB
Daws&Vars2 IB
McDon&Daws IB
McDon&Wilwat IB
McDon&SeaF IB
McDon&Young IB
McDon&Webb IB
McDon&Tech IB
Graves&McDon IB
Graves&Champ IB
Grave&Osborn IB
GravesPark IB
Graves&GMill IB
Graves&Marq IB
Graves&Nat IB
SNorc&Graves IB
SNorc&Sinc IB
SNorc&OakC IB
SNorc&Check IB
Singl&Sarah IB
Singl&Thomp IB
Singl&Steep IB
Singl&Pirkle IB
Singl&BG IB
Singl&Walton IB
Singl&HaRdg IB
Singl&Myrtle IB
Singl&Harbin IB
Singl&Single IB
Singl&Singl2 IB
Singl&Sand IB
Singl&Will IB
Singl&Seattl IB
Singl&Riva IB
Singl&Anna IB
Singl&Metro IB
Indian&Auto IB
Indian&Boehm IB
Indian&GA IB
Indian&Plaza IB
Indian&QT IB
Indian&Will IB
Brook&Chevrn IB
Brook&Pinn IB
Brook&Mitch IB
Mitch&Stat IB
Mitch&Good IB
Mitch&Minis IB
Mitch&Ever IB
Mitch&Price IB
Buf&Mitchell IB
Buf&Summer IB
BeaPri
Stop Name

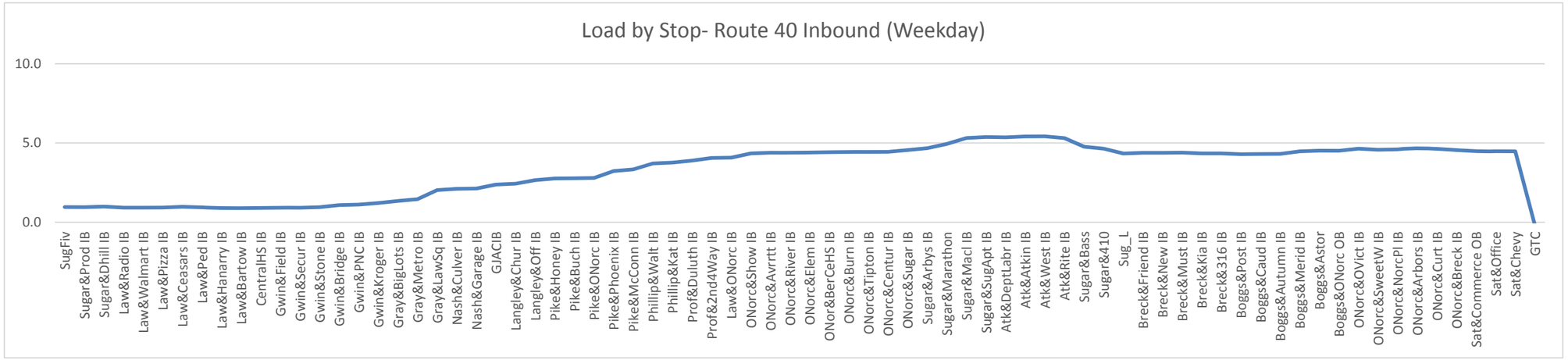

Load by Stop- Route 20 Outbound (Weekday)
Load
10.0
5.0
0.0
BeaPri
Mitch&Price OB
Mitch&Ever OB
Mitch&Minis OB
Mitch&Good OB
Mitch&Stat OB
Brook&Mitch OB
Brook&Pinn OB
Brook&Indian OB
Indian&Will OB
Indian&KFC OB
Indian&Plaza OB
Indian&GACS OB
Indian&GA OB
Indian&Tree OB
Singl&Sugar OB
Singl&Hyda OB
Singl&Count OB
Singl&Red OB
Singl&Turner OB
Singl&Robin OB
Singl&Glad OB
Singl&Harbin OB
Singl&HaRdg OB
Singl&Stone OB
Singl&BG OB
Singl&Pirkle OB
Singl&Steep OB
Singl&Thomp OB
Single&Church
Single&ALDI
SNorc&Rest OB
SNorc&Dan OB
SNorc&Crest OB
SNorc&Boost OB
Grave&Sienna OB
Graves&Marq OB
Graves&Down OB
GravesPark OB
Graves&East OB
Graves&Champ OB
Graves&McDon OB
McDon&Tech OB
McDon&Webb OB
McDon&Young OB
McDon&SeaF OB
McDon&Wilwat OB
McDon&Daws OB
Daws&Gateway OB
DawJob
XJimmy&LiveOOB
LiveOak&Plza OB
LiveOak&Brk OB
LiveOak&OOC OB
LiveOak&Lake OB
OakB&Lake OB
OakB&OakB OB
Center&Supp OB
Brook&EBD OB
Brook&Spring OB
Brook&Church OB
Brook&Fin OB
Brook&Syms OB
BroNob
Brook&Best OB
Best&Best OB
Best&Nancy OB
Best&Sky OB
Best&Royal OB
Best&BG OB
BG&TOPSA OB
BG&Mimms OB
BG&Rush OB
BG&Ryder OB
Buf&Jones OB
Buf&Amwiler OB
Buf&East OB
Buf&Global OB
Buf&Jenny IB
Buf&Oak OB
NPeach&Oak OB
NPeach&McEl OB
NPeach&Burl OB
NPeach&Long OB
PebbleWood OB
DorMAR
Stop Name

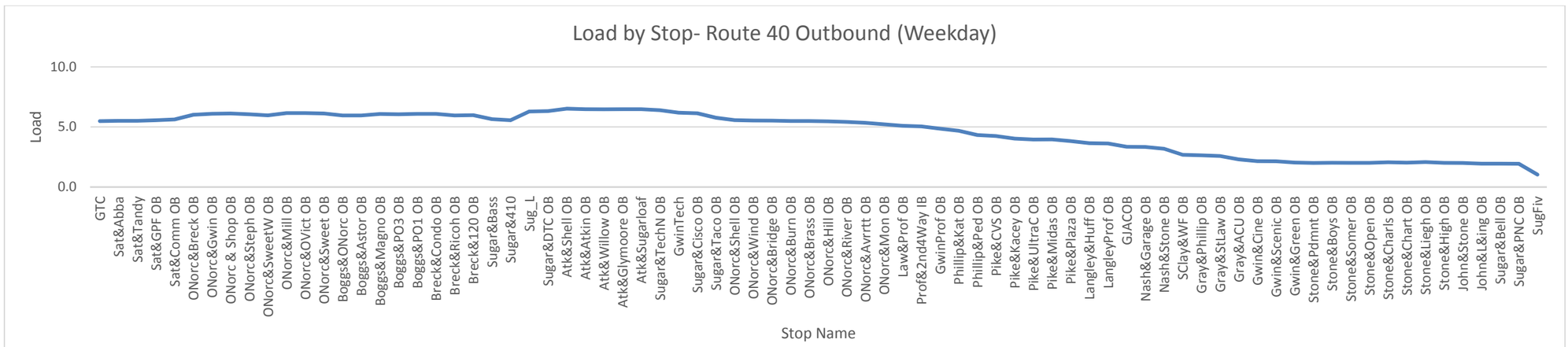

Load by Stop- Route 30 Inbound (Weekday)
Load
4.0
3.0
2.0
1.0
0.0
LivTho
Thmas&Single IB
Single&Church
Single&ALDI
Jimmy&Gale IB
Jimmy&RockB IB
Jimmy&Shelby IB
Jimmy&Forest IB
Jimmy&Sunrse IB
Jimmy&Britt IB
Jimmy&W&er IB
Jimmy&Everst IB
Jimmy&Hunter IB
Jimmy&HomeD IB
Law&Tucker IB
Law&Summer IB
Law&Pounds IB
Law&Mimosa IB
Law&Kenvilla IB
Law&Grove IB
Law&RockB IB
Law&Green IB
Law&Harbin IB
Law&Lilburn IB
Law&Holly IB
Law&Bryson IB
Law&Main IB
LawInd
Law&BBT IB
Law&Prov IB
Law&Postal IB
Law&Arcado IB
Law&PizzaH IB
Law&PNC IB
Pleasant&Law IB
Pleasant&VCA IB
Pleasnt&Brns IB
Burns&Johns IB
Burns&Garner IB
Burns&Brad IB
Burns&Shady IB
Burns&Beaver IB
Burns&Burns IB
Burns&Spring IB
Burns&Hill IB
Burns&Jodeco IB
Burns&IndianPL
Indian&Well IB
Indian&Wuthr IB
Indian&Steve IB
Tech&Depot
Steve&Hill IB
Steve&IndA IB
Steve&Fall IB
MeadCreekHS IB
Steve&Bus IB
BeaSte
Park&Beaver IB
Park&GwinP IB
Park&Shack IB
Shack&Doan IB
Shack&Corp IB
Club&Shack IB
Club&Steve IB
Club&Carrin IB
Sweet&Club IB
Sweet&Pleas IB
PHill Plaza IB
Koger&Assi IB
Koger&Devry IB
Breck&Casc
3350Breck
Breck&Arlon IB
Breck&Eldrdg IB
Breck&Exec IB
ONorc&Breck IB
Sat&Commerce OB
Sat&Office
Sat&Chevy
GTC
Stop Name

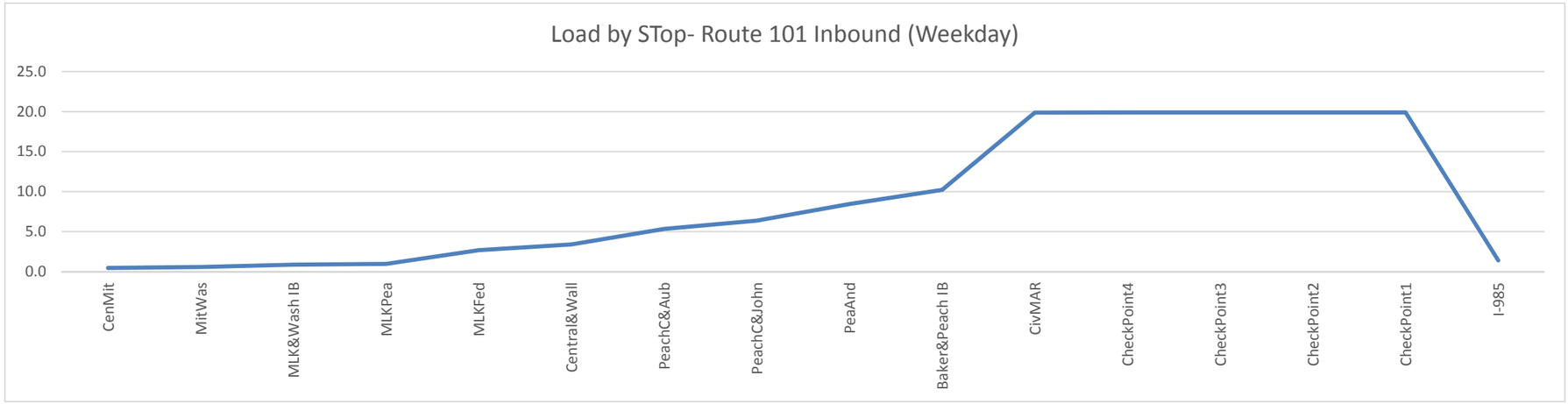

Load by Stop- Route 30 Outbound (Weekday)
Load
4.0
3.0
2.0
1.0
0.0
GTC
Sat&Abba
Sat&Tandy
Sat&GPF OB
Sat&Commerce OB
ONorc&Breck OB
Breck&Marcos OB
Breck&Arlon OB
Breck&Bus OB
FergusonElem OB
Devry OB
St Leo Univ OB
PHill&Popeye OB
Sweet&Pleas OB
Sweet&Club OB
Club&Crest OB
Club&Steve OB
Club&Shack OB
Shack&Corp OB
Shack&Doan OB
Shackle&Park OB
Park&GwinP OB
Park&Beaver OB
Beaver&Shell
SteBea
Steve&Fire OB
Steve&Fall OB
Steve&Oak OB
Steve&Hill OB
Single&Tex OB
Tech&Chevron
Indian&Check OB
Indian&Abbot OB
IndT&IndW OB
Indian&Mrkt OB
Burns&Jodeco OB
Burns&Jack OB
Burns&Spring OB
Burns&Beaver OB
Burns&Shady OB
Burns&Walk OB
Burn&Garner OB
Burns&Johns OB
Burns&Pleas OB
Pleasant&Law OB
Law&PepBoys OB
Law&LaSabro OB
Law&Popeyes OB
Law&Beaver OB
Law&Berkmar OB
Law&Merchant OB
Law&Prov OB
Law&Wynne OB
LawIOB
Law&Hill OB
Law&Shell OB
Law&Bryson OB
Law&Lilburn OB
Law&Harbin OB
Law&Goodwill OB
Law&Exxon OB
Law&RockB OB
Law&Harmony OB
Law&Kenvilla OB
Law&Mimosa OB
Law&Linda OB
Law&Braxton OB
Law&Stone OB
Law&Citgo OB
Jimmy&HomeD OB
Jimmy&Clean OB
Jimmy&Everst OB
Jimmy&W&er OB
Jimmy&Britt OB
Jimmy&Mead OB
Jimmy&NAPA OB
Jimmy&Wal OB
Jimmy&RockS OB
Jimmy&Tracey OB
XJimmy&LiveOOB
LivTho
Stop Name

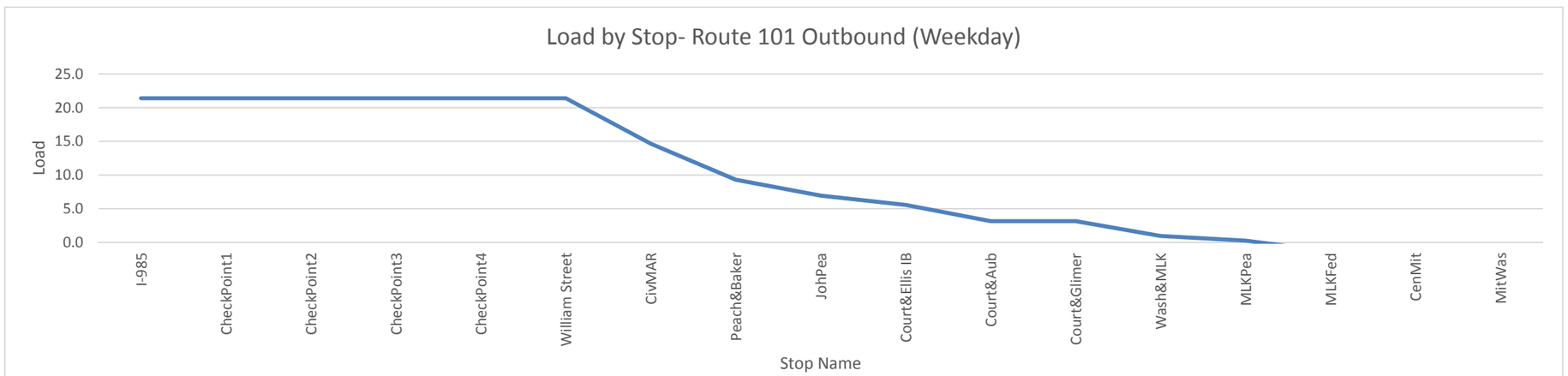

Load by Stop- Route 35 Inbound (Weekday)
Load
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
BG&Rush IB
BG&Mimms IB
BG&TOPSA IB
BG&Best IB
Best&Royal IB
Best&Sky IB
Best&Nancy IB
Best&Best IB
Best&Brook IB
BroNib
NNorc&Pelicn IB
Jimmy&ORiley IB
Jimmy&BF IB
Jimmy&Deal IB
Jimmy&North IB
Jimmy&Park IB
Jimmy&Los IB
Jimmy&SPeach IB
Jimmy&WPeach IB
Jimmy&Pacifc IB
Jimmy&Depo IB
Jimmy&6695 IB
Jimmy&RR IB
Jimmy&Atl IB
Jimmy&Verid IB
Peach&Mercer IB
Peach&Hunt IB
PeachC&MDE OB
PeachC&QT IB
PeachC&Hunt IB
PeachC&Spur IB
PeachC&Glen IB
PeachC&Part IB
PeachC&Bann IB
PeachC&Klin IB
PeachC&Brand IB
PeachC&Apple IB
HolPea
Hol&Veranda IB
Hol&Views IB
Hol&FamDerm IB
Hol&Centre IB
Peach&Publix IB
Peach&Bakery
Tech&Home IB
Tech&Hampton IB
Tech&Humblot IB
Tech&PSA IB
Tech&Sov IB
Tech&Bend
Tech&TechS IB
Tech&Yardi IB
Tech&Res IB
Scien&Tech IB
Scien&Merid IB
Scien&Peach IB
Peach&Hyatt IB
PeachPlaza IB
Peach&WesSch IB
Peach&PeachC IB
Peach&Forum IB
Peach&Bank IB
Med&PeachC IB
PeachC&Dav IB
PeachC&Chase IB
PeaQT
Stop Name

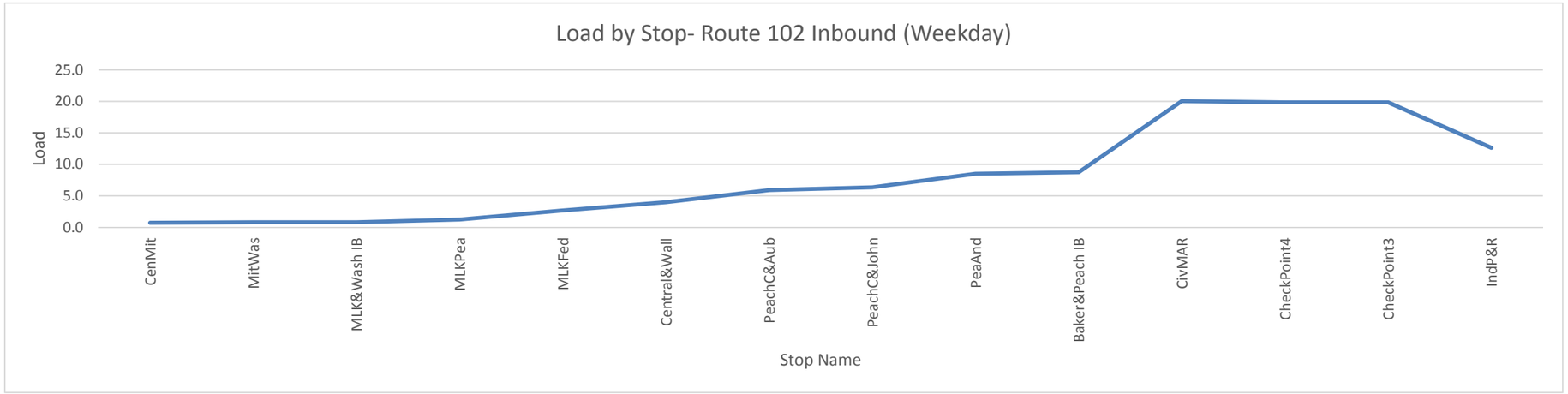

Load by Stop- Route 35 Outbound (Weekday)
Load
10.0
5.0
0.0
PeaQT
Peach&ResInn OB
Peach&Tri OB
Spalding&BOA OB
Spaldng&Tech OB
Spalding&HS OB
Spalding&Med OB
Medlock&Corn OB
Medlock&Chev OB
Medlock&Thai OB
Medlock&Anim OB
NPeach&Reps OB
Reps&Wyngate OB
Reps&BusPrk OB
Reps&RaceT OB
Peach&ADVA OB
Peach&Sport OB
Peach&Art OB
Peach&Target OB
Hol&BOA OB
Hol&Ryan OB
Hol&Wells OB
Hol&Citgo OB
Hol&GwinWalk OB
Hol&WoodM OB
Hol&WoodL OB
PeaHol
PeachC&Silvr OB
PeachC&West OB
PeachC&Elm OB
PeachC&Klin OB
PeachC&Val OB
PeachC&Part OB
PeachC&Autum OB
PeachC&Spur OB
PeachC&Jones OB
PeachC&Cornr OB
PeachC&Muray OB
Peach&King OB
Jimmy&Cash OB
Jimmy&Mjays OB
Jimmy&Atl OB
Jimmy&Fabric OB
Jimmy&SPECTR OB
Jimmy&Pacifc OB
Jimmy&Amway OB
Jimmy&Martin OB
Jimmy&Reg OB
Jimmy&BFPark OB
Jimmy&QT OB
Jimmy&Sonic OB
NNorc&Pelicn OB
BroNob
Brook&Best OB
Best&Best OB
Best&Nancy OB
Best&Sky OB
Best&Royal OB
Best&BG OB
BG&TOPSA OB
BG&Mimms OB
BG&Rush OB
BG&Ryder OB
Buf&Jones OB
Buf&Amwiler OB
Buf&East OB
Buf&Global OB
Buf&Jenny IB
Buf&Jewelry OB
Buf&Oak OB
NPeach&Oak OB
NPeach&McEl OB
NPeach&Burl OB
NPeach&Long OB
PebbleWood OB
DorMAR
Stop Name

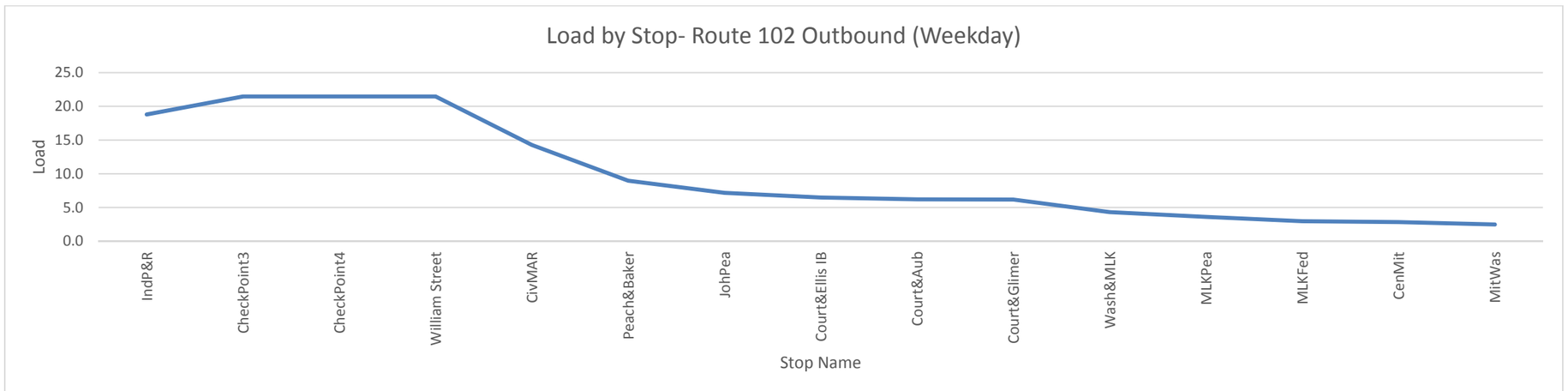

Load by Stop- Route 40 Inbound (Weekday)
10.0
5.0
0.0
SugFiv
Sugar&Prod IB
Sugar&Dhill IB
Law&Radio IB
Law&Walmart IB
Law&Pizza IB
Law&Ceasars IB
Law&Ped IB
Law&Hanarry IB
Law&Bartow IB
CentralHS IB
Gwin&Field IB
Gwin&Secur IB
Gwin&Stone IB
Gwin&Bridge IB
Gwin&PNC IB
Gwin&Kroger IB
Gray&BigLots IB
Gray&Metro IB
Gray&LawSq IB
Nash&Culver IB
Nash&Garage IB
GJACIB
Langley&Chur IB
Langley&Off IB
Pike&Honey IB
Pike&Buch IB
Pike&ONorc IB
Pike&Phoenix IB
Pike&McConn IB
Phillip&Walt IB
Phillip&Kat IB
Prof&Duluth IB
Prof&2nd4Way IB
Law&ONorc IB
ONorc&Show IB
ONorc&Avrrtt IB
ONorc&River IB
ONorc&Elem IB
ONor&BerCeHS IB
ONorc&Burn IB
ONorc&Tipton IB
ONorc&Centur IB
ONorc&Sugar IB
Sugar&Arbys IB
Sugar&Marathon
Sugar&Macl IB
Sugar&SugApt IB
Atk&DeptLabr IB
Atk&Atkin IB
Atk&West IB
Atk&Rite IB
Sugar&Bass
Sugar&410
Sug_L
Breck&Friend IB
Breck&New IB
Breck&Must IB
Breck&Kia IB
Breck&316 IB
Boggs&Post IB
Boggs&Caud IB
Boggs&Autumn IB
Boggs&Merid IB
Boggs&Astor
Boggs&ONorc OB
ONorc&OVict IB
ONorc&SweetW IB
ONorc&NorcPl IB
ONorc&Arbors IB
ONorc&Curt IB
ONorc&Breck IB
Sat&Commerce OB
Sat&Office
Sat&Chevy
GTC

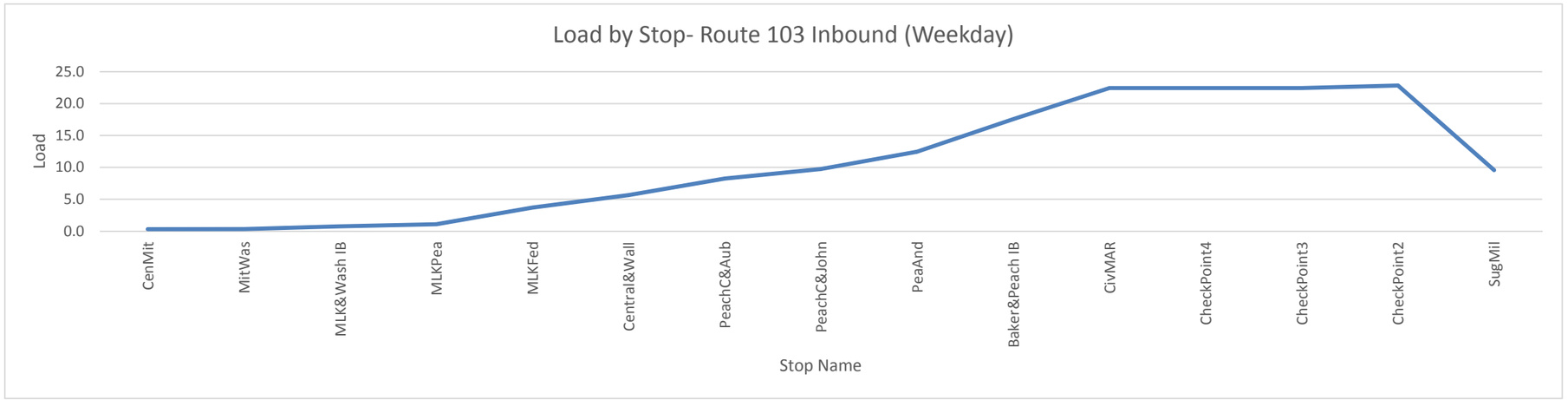

Load by Stop- Route 40 Outbound (Weekday)
10.0
5.0
0.0
GTC
Sat&Abba
Sat&Tandy
Sat&GPF OB
Sat&Comm OB
ONorc&Breck OB
ONorc&Gwin OB
ONorc & Shop OB
ONorc&Steph OB
ONorc&SweetW OB
ONorc&Mill OB
ONorc&OVict OB
ONorc&Sweet OB
Boggs&ONorc OB
Boggs&Astor OB
Boggs&Magno OB
Boggs&PO3 OB
Boggs&PO1 OB
Breck&Condo OB
Breck&Ricoh OB
Breck&120 OB
Sugar&Bass
Sugar&410
Sug_L
Sugar&DTC OB
Atk&Shell OB
Atk&Atkin OB
Atk&Willow OB
Atk&Glymoore OB
Atk&Sugarloaf
Sugar&TechN OB
GwinTech
Sugar&Cisco OB
Sugar&Taco OB
ONorc&Shell OB
ONorc&Wind OB
ONorc&Bridge OB
ONorc&Burn OB
ONorc&Brass OB
ONorc&Hill OB
ONorc&River OB
ONorc&Avrrtt OB
ONorc&Mon OB
Law&Prof OB
Prof&2nd4Way IB
GwinProf OB
Phillip&Kat OB
Phillip&Ped OB
Pike&CVS OB
Pike&Kacey OB
Pike&UltraC OB
Pike&Midas OB
Pike&Plaza OB
Langley&Huff OB
LangleyProf OB
GJACOB
Nash&Garage OB
Nash&Stone OB
SClay&WF OB
Gray&Phillip OB
Gray&StLaw OB
Gray&ACU OB
Gwin&Cine OB
Gwin&Scenic OB
Gwin&Green OB
Stone&Pdmnt OB
Stone&Boys OB
Stone&Somer OB
Stone&Open OB
Stone&Charls OB
Stone&Chart OB
Stone&Liegh OB
Stone&High OB
John&Stone OB
John&L&ing OB
Sugar&Bell OB
Sugar&PNC OB
SugFiv
Load
Stop Name

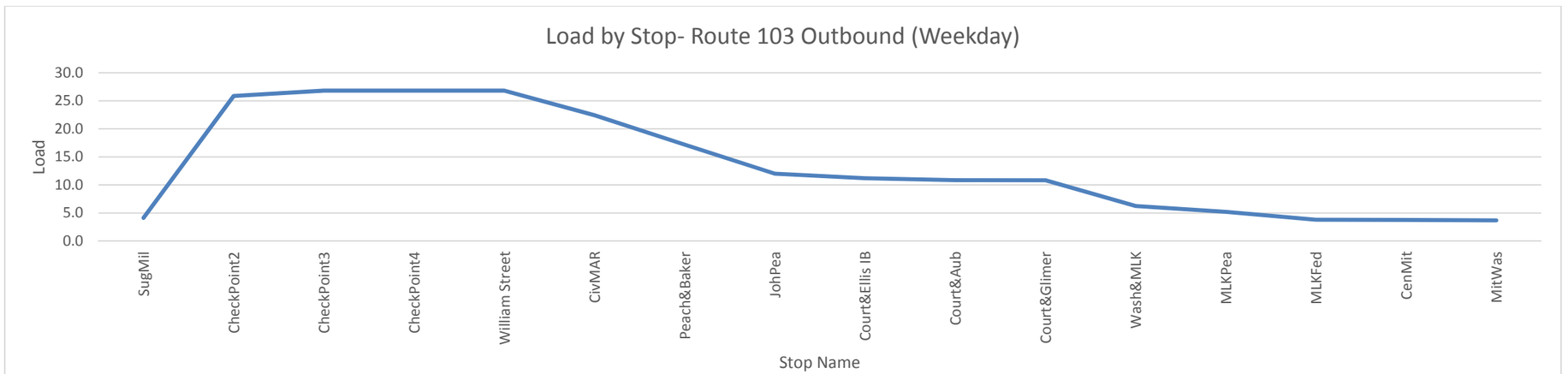

Load by STop- Route 101 Inbound (Weekday)
25.0
20.0
15.0
10.0
5.0
0.0
CenMit
MitWas
MLK&Wash IB
MLKPea
MLKFed
Central&Wall
PeachC&Aub
PeachC&John
PeaAnd
Baker&Peach IB
CivMAR
CheckPoint4
CheckPoint3
CheckPoint2
CheckPoint1
I-985

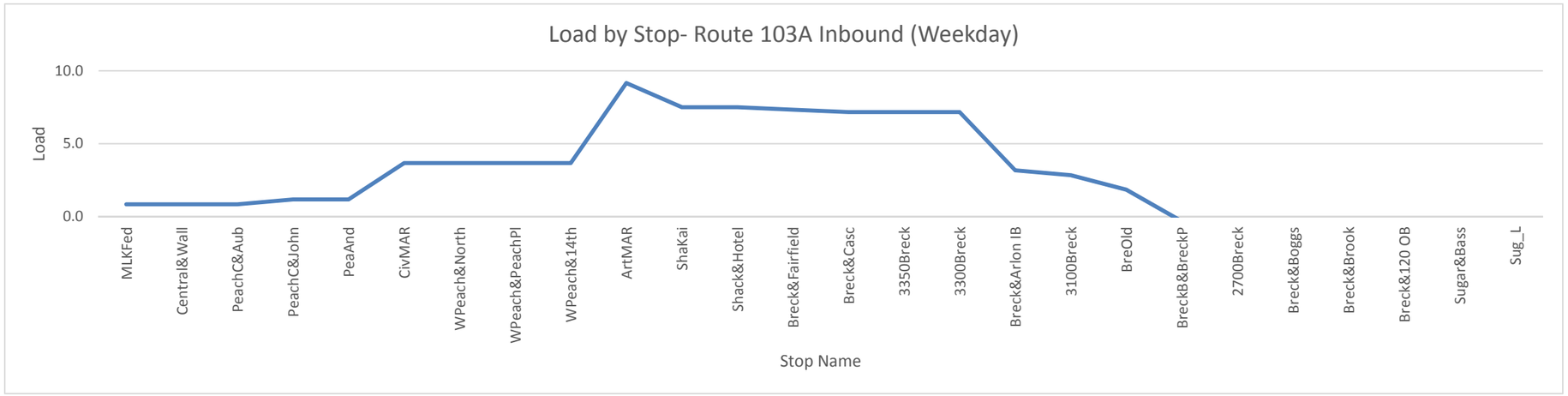

Load by Stop- Route 101 Outbound (Weekday)
Load
25.0
20.0
15.0
10.0
5.0
0.0
I-985
CheckPoint1
CheckPoint2
CheckPoint3
CheckPoint4
William Street
CivMAR
Peach&Baker
JohPea
Court&Ellis IB
Court&Aub
Court&Glimer
Wash&MLK
MLKPea
MLKFed
CenMit
MitWas
Stop Name

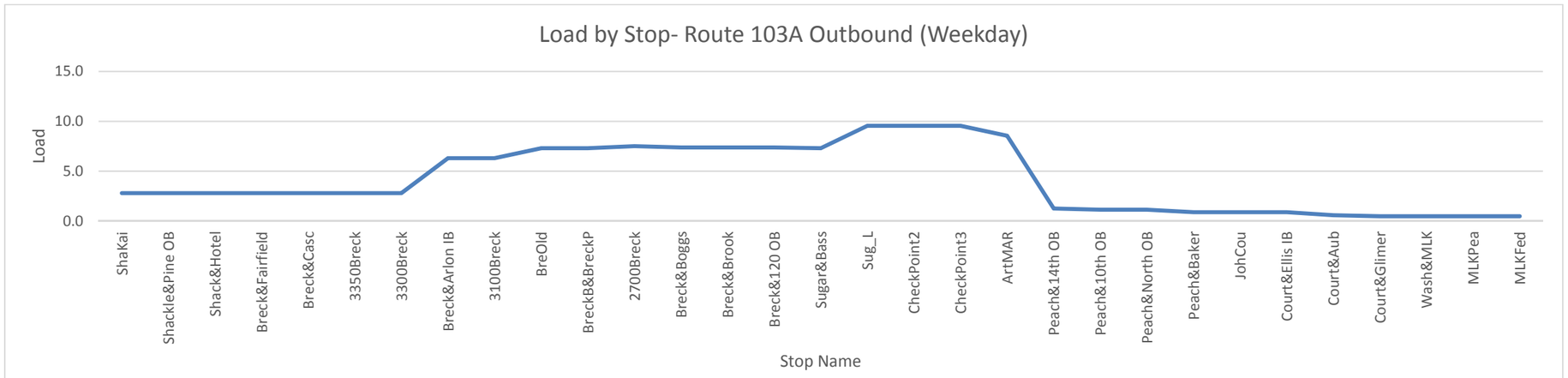

Load by Stop- Route 102 Inbound (Weekday)
25.0
20.0
15.0
10.0
5.0
0.0
Load
CenMit
MitWas
MLK&Wash IB
MLKPea
MLKFed
Central&Wall
PeachC&Aub
PeachC&John
PeaAnd
Baker&Peach IB
CivMAR
CheckPoint4
CheckPoint3
IndP&R
Stop Name

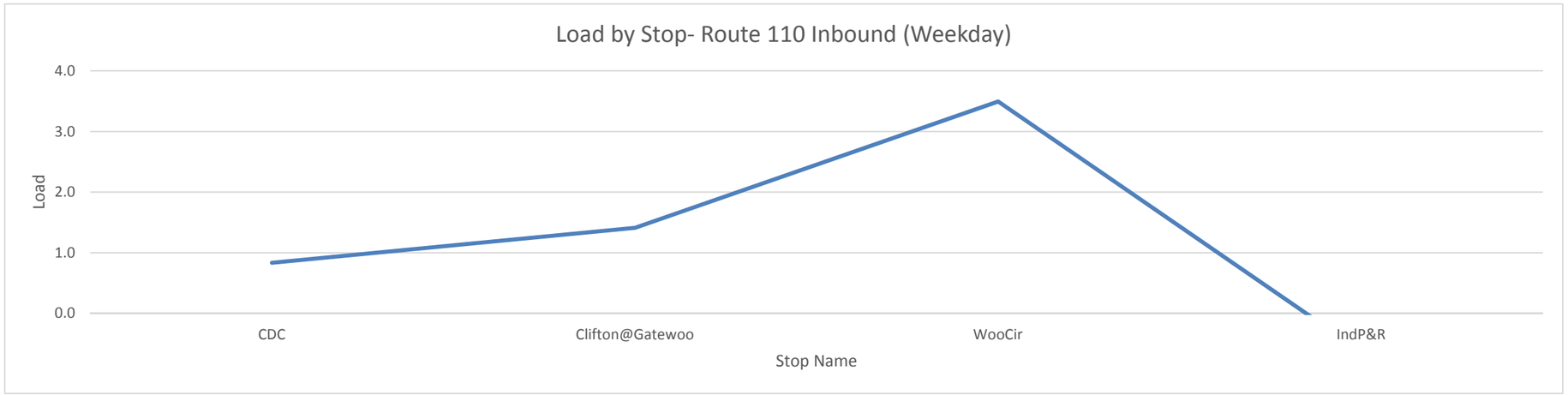

Load by Stop- Route 102 Outbound (Weekday)
25.0
20.0
15.0
10.0
5.0
0.0
Load
IndP&R
CheckPoint3
CheckPoint4
William Street
CivMAR
Peach&Baker
JohPea
Court&Ellis IB
Court&Aub
Court&Glimer
Wash&MLK
MLKPea
MLKFed
CenMit
MitWas
Stop Name

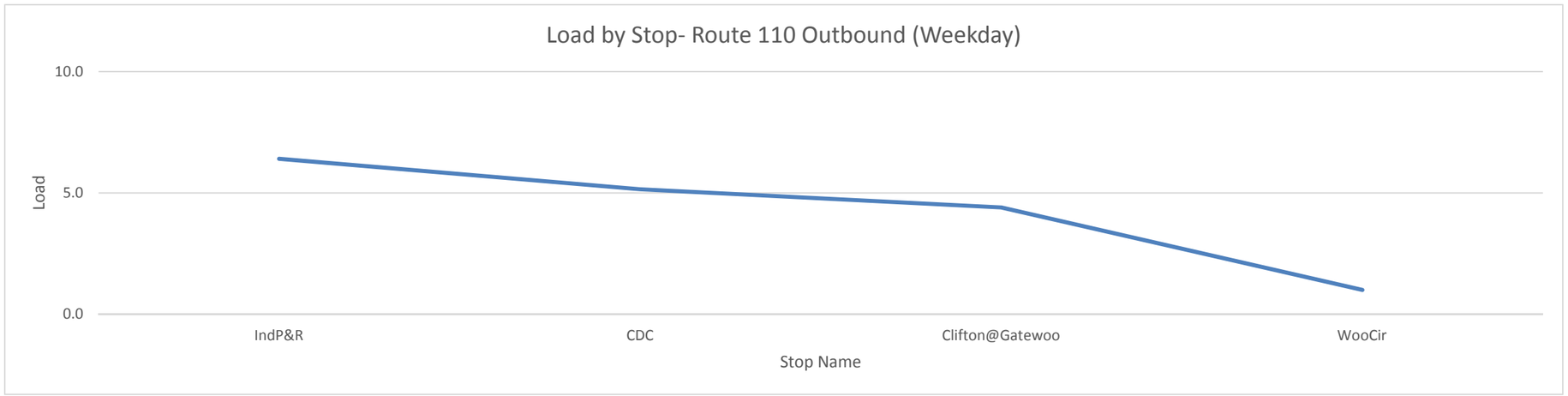

Load by Stop- Route 103 Inbound (Weekday)
25.0
20.0
15.0
10.0
5.0
0.0
Load
CenMit
MitWas
MLK&Wash IB
MLKPea
MLKFed
Central&Wall
PeachC&Aub
PeachC&John
PeaAnd
Baker&Peach IB
CivMAR
CheckPoint4
CheckPoint3
CheckPoint2
SugMil
Stop Name

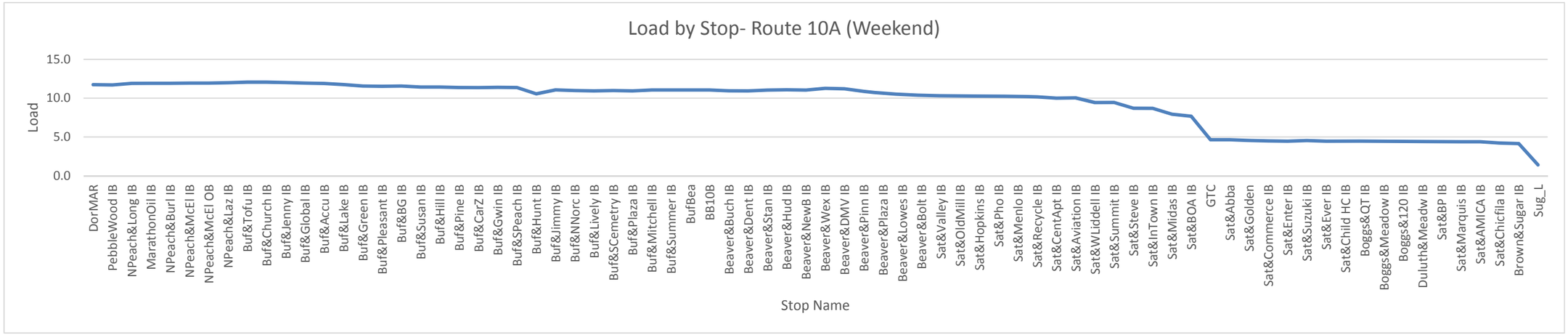

Load by Stop- Route 103 Outbound (Weekday)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Load
SugMil
CheckPoint2
CheckPoint3
CheckPoint4
William Street
CivMAR
Peach&Baker
JohPea
Court&Ellis IB
Court&Aub
Court&Glimer
Wash&MLK
MLKPea
MLKFed
CenMit
MitWas
Stop Name

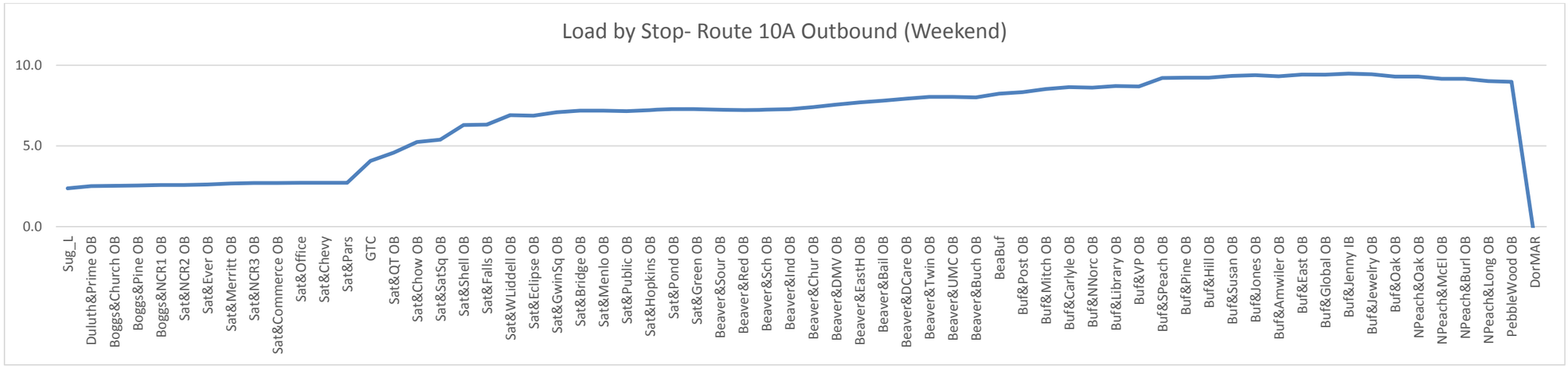

Load by Stop- Route 103A Inbound (Weekday)
Load
10.0
5.0
0.0
MLKFed
Central&Wall
PeachC&Aub
PeachC&John
PeaAnd
CivMAR
WPeach&North
WPeach&PeachPl
WPeach&14th
ArtMAR
ShaKai
Shack&Hotel
Breck&Fairfield
Breck&Casc
3350Breck
3300Breck
Breck&Arlon IB
3100Breck
BreOld
BreckB&BreckP
2700Breck
Breck&Boggs
Breck&Brook
Breck&120 OB
Sugar&Bass
Sug_L
Stop Name

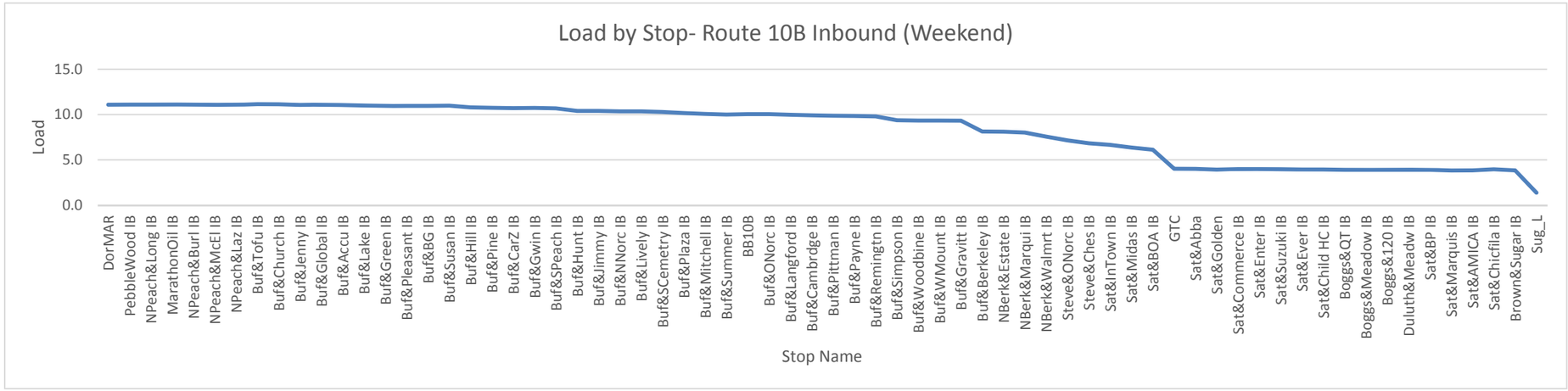

Load by Stop- Route 103A Outbound (Weekday)
Load
15.0
10.0
5.0
0.0
ShaKai
Shackle&Pine OB
Shack&Hotel
Breck&Fairfield
Breck&Casc
3350Breck
3300Breck
Breck&Arlon IB
3100Breck
BreOld
BreckB&BreckP
2700Breck
Breck&Boggs
Breck&Brook
Breck&120 OB
Sugar&Bass
Sug_L
CheckPoint2
CheckPoint3
ArtMAR
Peach&14th OB
Peach&10th OB
Peach&North OB
Peach&Baker
JohCou
Court&Ellis IB
Court&Aub
Court&Glimer
Wash&MLK
MLKPea
MLKFed
Stop Name

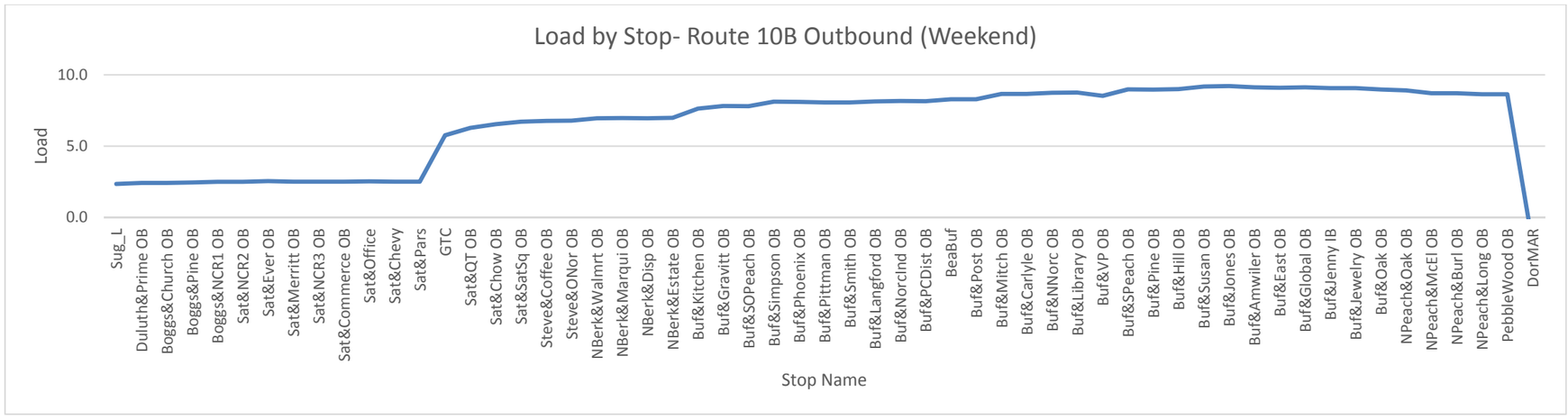

Load by Stop- Route 110 Inbound (Weekday)
4.0
3.0
2.0
1.0
0.0
Load
CDC
Clifton@Gatewoo
WooCir
IndP&R
Stop Name

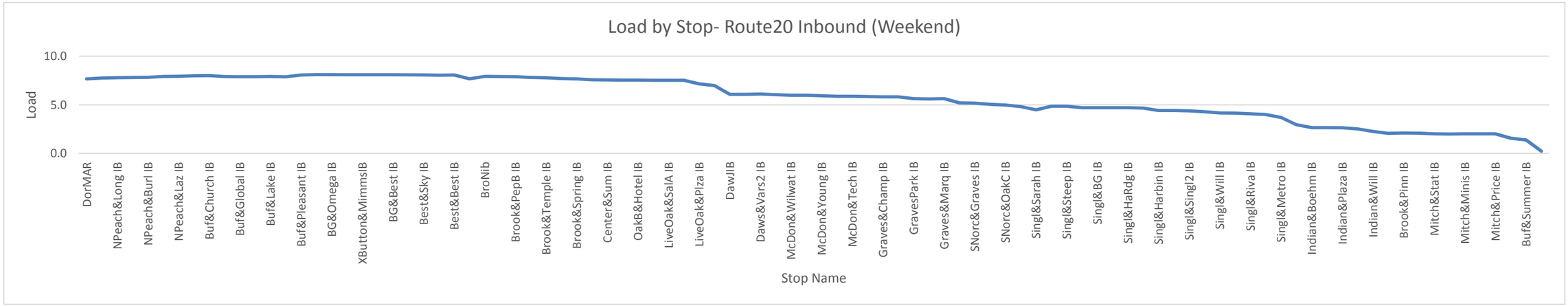

Load by Stop- Route 110 Outbound (Weekday)
10.0
5.0
0.0
Load
IndP&R
CDC
Clifton@Gatewoo
WooCir
Stop Name

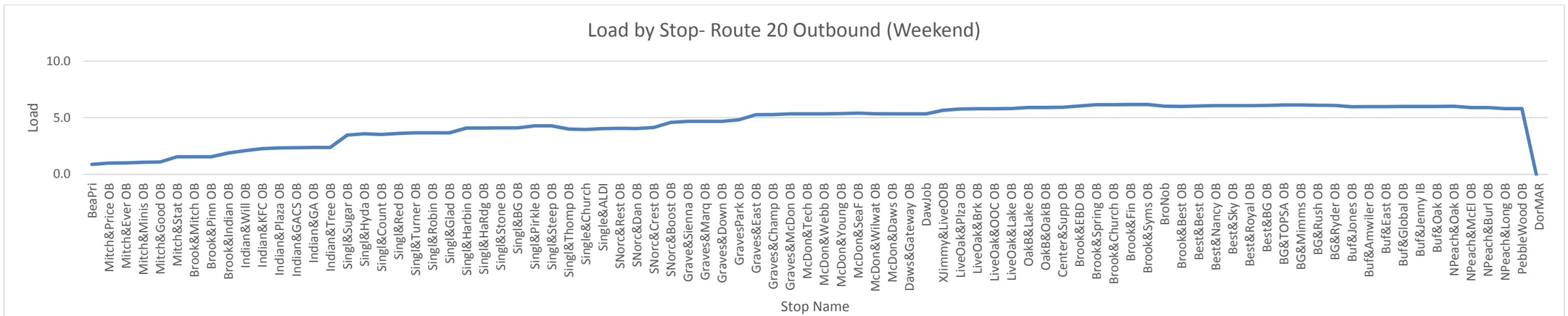

Load by Stop- Route 10A (Weekend)
Load
15.0
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&McEl OB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
Buf&Susan IB
Buf&Hill IB
Buf&Pine IB
Buf&CarZ IB
Buf&Gwin IB
Buf&SPeach IB
Buf&Hunt IB
Buf&Jimmy IB
Buf&NNorc IB
Buf&Lively IB
Buf&SCemetry IB
Buf&Plaza IB
Buf&Mitchell IB
Buf&Summer IB
BufBea
BB10B
Beaver&Buch IB
Beaver&Dent IB
Beaver&Stan IB
Beaver&Hud IB
Beaver&NewB IB
Beaver&Wex IB
Beaver&DMV IB
Beaver&Pinn IB
Beaver&Plaza IB
Beaver&Lowes IB
Beaver&Bolt IB
Sat&Valley IB
Sat&OldMill IB
Sat&Hopkins IB
Sat&Pho IB
Sat&Menlo IB
Sat&Recycle IB
Sat&CentApt IB
Sat&Aviation IB
Sat&WLiddell IB
Sat&Summit IB
Sat&Steve IB
Sat&InTown IB
Sat&Midas IB
Sat&BOA IB
GTC
Sat&Abba
Sat&Golden
Sat&Commerce IB
Sat&Enter IB
Sat&Suzuki IB
Sat&Ever IB
Sat&Child HC IB
Boggs&QT IB
Boggs&Meadow IB
Boggs&120 IB
Duluth&Meadw IB
Sat&BP IB
Sat&Marquis IB
Sat&AMICA IB
Sat&Chicfila IB
Brown&Sugar IB
Sug_L
Stop Name

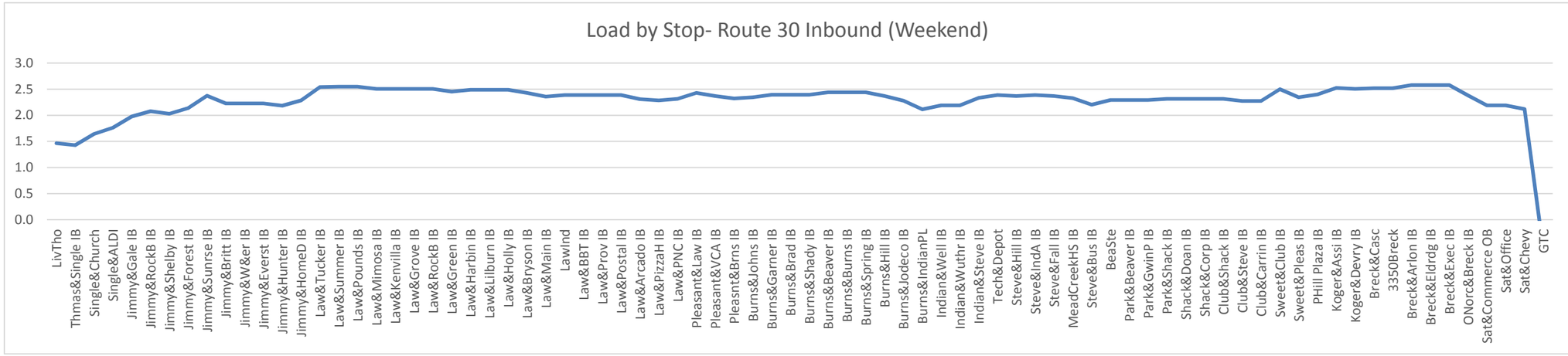

Load by Stop- Route 10A Outbound (Weekend)
10.0
5.0
0.0
Sug_L
Duluth&Prime OB
Boggs&Church OB
Boggs&Pine OB
Boggs&NCR1 OB
Sat&NCR2 OB
Sat&Ever OB
Sat&Merritt OB
Sat&NCR3 OB
Sat&Commerce OB
Sat&Office
Sat&Chevy
Sat&Pars
GTC
Sat&QT OB
Sat&Chow OB
Sat&SatSq OB
Sat&Shell OB
Sat&Falls OB
Sat&WLiddell OB
Sat&Eclipse OB
Sat&GwinSq OB
Sat&Bridge OB
Sat&Menlo OB
Sat&Public OB
Sat&Hopkins OB
Sat&Pond OB
Sat&Green OB
Beaver&Sour OB
Beaver&Red OB
Beaver&Sch OB
Beaver&Ind OB
Beaver&Chur OB
Beaver&DMV OB
Beaver&EastH OB
Beaver&Bail OB
Beaver&DCare OB
Beaver&Twin OB
Beaver&UMC OB
Beaver&Buch OB
BeaBuf
Buf&Post OB
Buf&Mitch OB
Buf&Carlyle OB
Buf&NNorc OB
Buf&Library OB
Buf&VP OB
Buf&SPeach OB
Buf&Pine OB
Buf&Hill OB
Buf&Susan OB
Buf&Jones OB
Buf&Amwiler OB
Buf&East OB
Buf&Global OB
Buf&Jenny IB
Buf&Jewelry OB
Buf&Oak OB
NPeach&Oak OB
NPeach&McEl OB
NPeach&Burl OB
NPeach&Long OB
PebbleWood OB
DorMAR

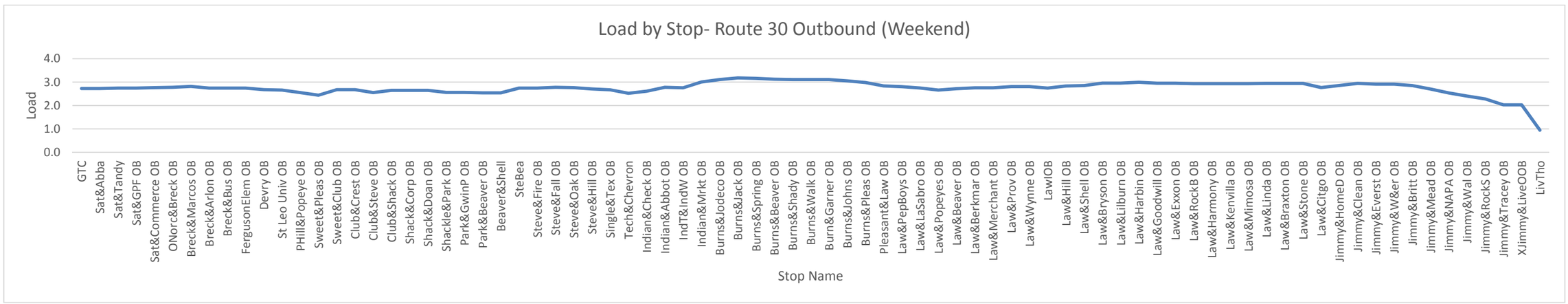

Load by Stop- Route 10B Inbound (Weekend)
Load
15.0
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
Buf&Susan IB
Buf&Hill IB
Buf&Pine IB
Buf&CarZ IB
Buf&Gwin IB
Buf&SPeach IB
Buf&Hunt IB
Buf&Jimmy IB
Buf&NNorc IB
Buf&Lively IB
Buf&SCemetry IB
Buf&Plaza IB
Buf&Mitchell IB
Buf&Summer IB
BB10B
Buf&ONorc IB
Buf&Langford IB
Buf&Cambrdge IB
Buf&Pittman IB
Buf&Payne IB
Buf&Remingtn IB
Buf&Simpson IB
Buf&Woodbine IB
Buf&WMount IB
Buf&Gravitt IB
Buf&Berkeley IB
NBerk&Estate IB
NBerk&Marqui IB
NBerk&Walmrt IB
Steve&ONorc IB
Steve&Ches IB
Sat&InTown IB
Sat&Midas IB
Sat&BOA IB
GTC
Sat&Abba
Sat&Golden
Sat&Commerce IB
Sat&Enter IB
Sat&Suzuki IB
Sat&Ever IB
Sat&Child HC IB
Boggs&QT IB
Boggs&Meadow IB
Boggs&120 IB
Duluth&Meadw IB
Sat&BP IB
Sat&Marquis IB
Sat&AMICA IB
Sat&Chicfila IB
Brown&Sugar IB
Sug_L
Stop Name

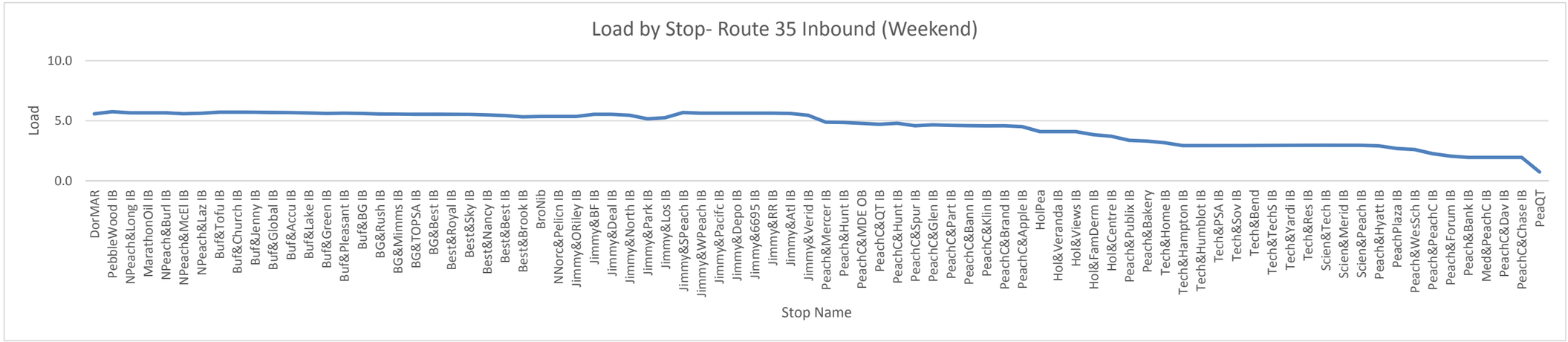

Load by Stop- Route 10B Outbound (Weekend)
Load
10.0
5.0
0.0
Sug_L
Duluth&Prime OB
Boggs&Church OB
Boggs&Pine OB
Boggs&NCR1 OB
Sat&NCR2 OB
Sat&Ever OB
Sat&Merritt OB
Sat&NCR3 OB
Sat&Commerce OB
Sat&Office
Sat&Chevy
Sat&Pars
GTC
Sat&QT OB
Sat&Chow OB
Sat&SatSq OB
Steve&Coffee OB
Steve&ONor OB
NBerk&Walmrt OB
NBerk&Marqui OB
NBerk&Disp OB
NBerk&Estate OB
Buf&Kitchen OB
Buf&Gravitt OB
Buf&SOPeach OB
Buf&Simpson OB
Buf&Phoenix OB
Buf&Pittman OB
Buf&Smith OB
Buf&Langford OB
Buf&NorcInd OB
Buf&PCDist OB
BeaBuf
Buf&Post OB
Buf&Mitch OB
Buf&Carlyle OB
Buf&NNorc OB
Buf&Library OB
Buf&VP OB
Buf&SPeach OB
Buf&Pine OB
Buf&Hill OB
Buf&Susan OB
Buf&Jones OB
Buf&Amwiler OB
Buf&East OB
Buf&Global OB
Buf&Jenny IB
Buf&Jewelry OB
Buf&Oak OB
NPeach&Oak OB
NPeach&McEl OB
NPeach&Burl OB
NPeach&Long OB
PebbleWood OB
DorMAR
Stop Name

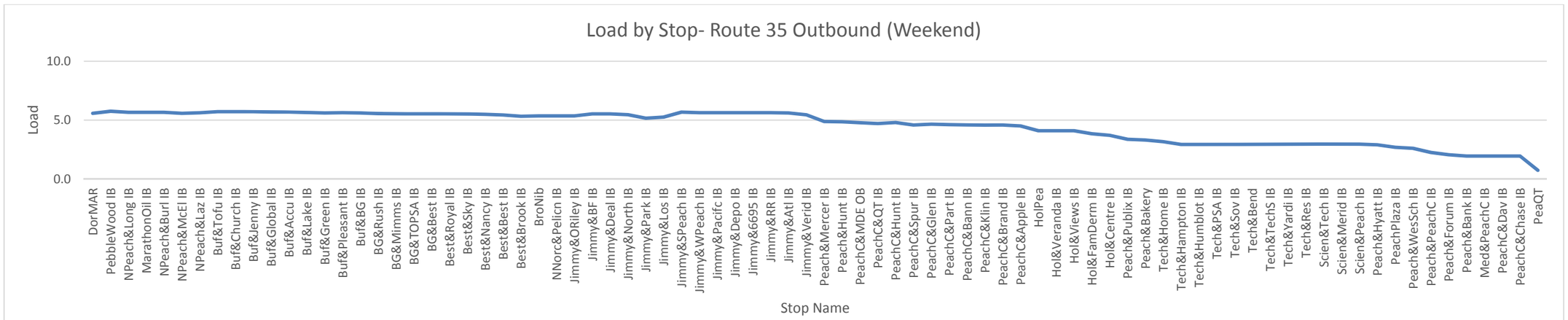

Load by Stop- Route20 Inbound (Weekend)
10.0
5.0
0.0
Load
DorMAR
NPeach&Long IB
NPeach&Burl IB
NPeach&Laz IB
Buf&Church IB
Buf&Global IB
Buf&Lake IB
Buf&Pleasant IB
BG&Omega IB
XButton&MimmsIB
BG&Best IB
Best&Sky IB
Best&Best IB
BroNib
Brook&PepB IB
Brook&Temple IB
Brook&Spring IB
Center&Sum IB
OakB&Hotel IB
LiveOak&SalA IB
LiveOak&Plza IB
DawIB
Daws&Vars2 IB
McDon&Wilwat IB
McDon&Young IB
McDon&Tech IB
Graves&Champ IB
GravesPark IB
Graves&Marq IB
SNorc&Graves IB
SNorc&OakC IB
Singl&Sarah IB
Singl&Steep IB
Singl&BG IB
Singl&HaRdg IB
Singl&Harbin IB
Singl&Singl2 IB
Singl&Will IB
Singl&Riva IB
Singl&Metro IB
Indian&Boehm IB
Indian&Plaza IB
Indian&Will IB
Brook&Pinn IB
Mitch&Stat IB
Mitch&Minis IB
Mitch&Price IB
Buf&Summer IB
Stop Name

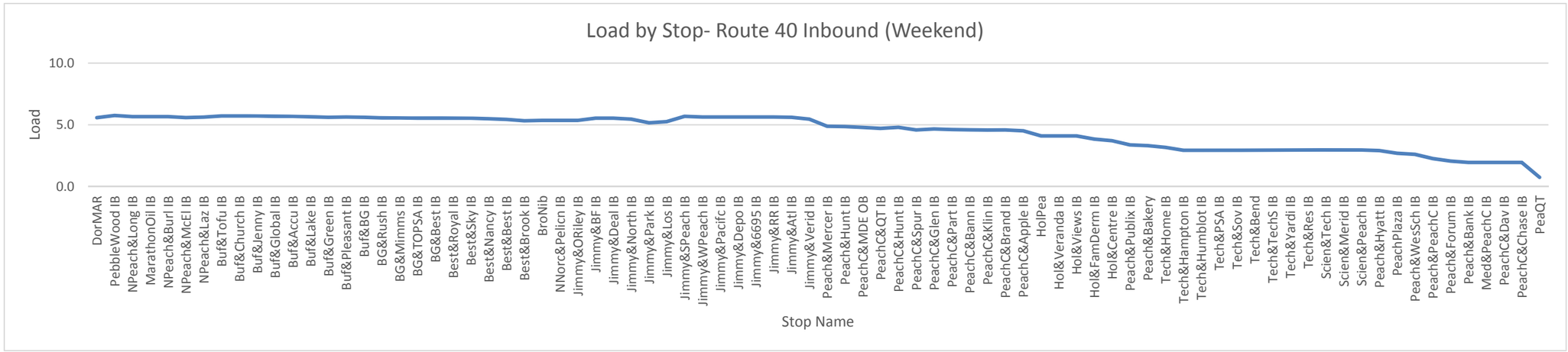

Load by Stop- Route 20 Outbound (Weekend)
10.0
5.0
0.0
Load
BeaPri
Mitch&Price OB
Mitch&Ever OB
Mitch&Minis OB
Mitch&Good OB
Mitch&Stat OB
Brook&Mitch OB
Brook&Pinn OB
Brook&Indian OB
Indian&Will OB
Indian&KFC OB
Indian&Plaza OB
Indian&GACS OB
Indian&GA OB
Indian&Tree OB
Singl&Sugar OB
Singl&Hyda OB
Singl&Count OB
Singl&Red OB
Singl&Turner OB
Singl&Robin OB
Singl&Glad OB
Singl&Harbin OB
Singl&HaRdg OB
Singl&Stone OB
Singl&BG OB
Singl&Pirkle OB
Singl&Steep OB
Singl&Thomp OB
Single&Church
Single&ALDI
SNorc&Rest OB
SNorc&Dan OB
SNorc&Crest OB
SNorc&Boost OB
Grave&Sienna OB
Graves&Marq OB
Graves&Down OB
GravesPark OB
Graves&East OB
Graves&Champ OB
Graves&McDon OB
McDon&Tech OB
McDon&Webb OB
McDon&Young OB
McDon&SeaF OB
McDon&Wilwat OB
McDon&Daws OB
Daws&Gateway OB
DawJob
Ximmy&LiveOOB
LiveOak&Plza OB
LiveOak&Brk OB
LiveOak&OOC OB
LiveOak&Lake OB
OakB&Lake OB
OakB&OakB OB
Center&Supp OB
Brook&EBD OB
Brook&Spring OB
Brook&Church OB
Brook&Fin OB
Brook&Syms OB
BroNob
Brook&Best OB
Best&Best OB
Best&Nancy OB
Best&Sky OB
Best&Royal OB
Best&BG OB
BG&TOPSA OB
BG&Mimms OB
BG&Rush OB
BG&Ryder OB
Buf&Jones OB
Buf&Amwiler OB
Buf&East OB
Buf&Global OB
Buf&Jenny IB
Buf&Oak OB
NPeach&Oak OB
NPeach&McEl OB
NPeach&Burl OB
NPeach&Long OB
PebbleWood OB
DorMAR
Stop Name

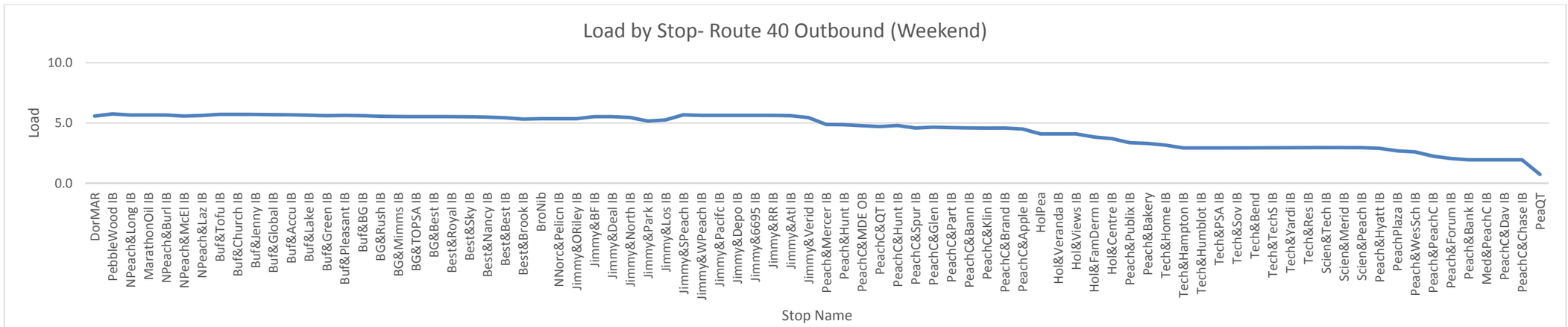

Load by Stop- Route 30 Inbound (Weekend)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
LivTho
Thmas&Single IB
Single&Church
Single&ALDI
Jimmy&Gale IB
Jimmy&RockB IB
Jimmy&Shelby IB
Jimmy&Forest IB
Jimmy&Sunrse IB
Jimmy&Britt IB
Jimmy&W&er IB
Jimmy&Everst IB
Jimmy&Hunter IB
Jimmy&HomeD IB
Law&Tucker IB
Law&Summer IB
Law&Pounds IB
Law&Mimosa IB
Law&Kenvilla IB
Law&Grove IB
Law&RockB IB
Law&Green IB
Law&Harbin IB
Law&Lilburn IB
Law&Holly IB
Law&Bryson IB
Law&Main IB
LawInd
Law&BBT IB
Law&Prov IB
Law&Postal IB
Law&Arcado IB
Law&PizzaH IB
Law&PNC IB
Pleasant&Law IB
Pleasant&VCA IB
Pleasnt&Brns IB
Burns&Johns IB
Burns&Garner IB
Burns&Brad IB
Burns&Shady IB
Burns&Beaver IB
Burns&Burns IB
Burns&Spring IB
Burns&Hill IB
Burns&Jodeco IB
Burns&IndianPL
Indian&Well IB
Indian&Wuthr IB
Indian&Steve IB
Tech&Depot
Steve&Hill IB
Steve&IndA IB
Steve&Fall IB
MeadCreekHS IB
Steve&Bus IB
BeaSte
Park&Beaver IB
Park&GwinP IB
Park&Shack IB
Shack&Doan IB
Shack&Corp IB
Club&Shack IB
Club&Steve IB
Club&Carrin IB
Sweet&Club IB
Sweet&Pleas IB
PHill Plaza IB
Koger&Assi IB
Koger&Devry IB
Breck&Casc
3350Breck
Breck&Arlon IB
Breck&ElDrdg IB
Breck&Exec IB
ONorc&Breck IB
Sat&Commerce OB
Sat&Office
Sat&Chevy
GTC

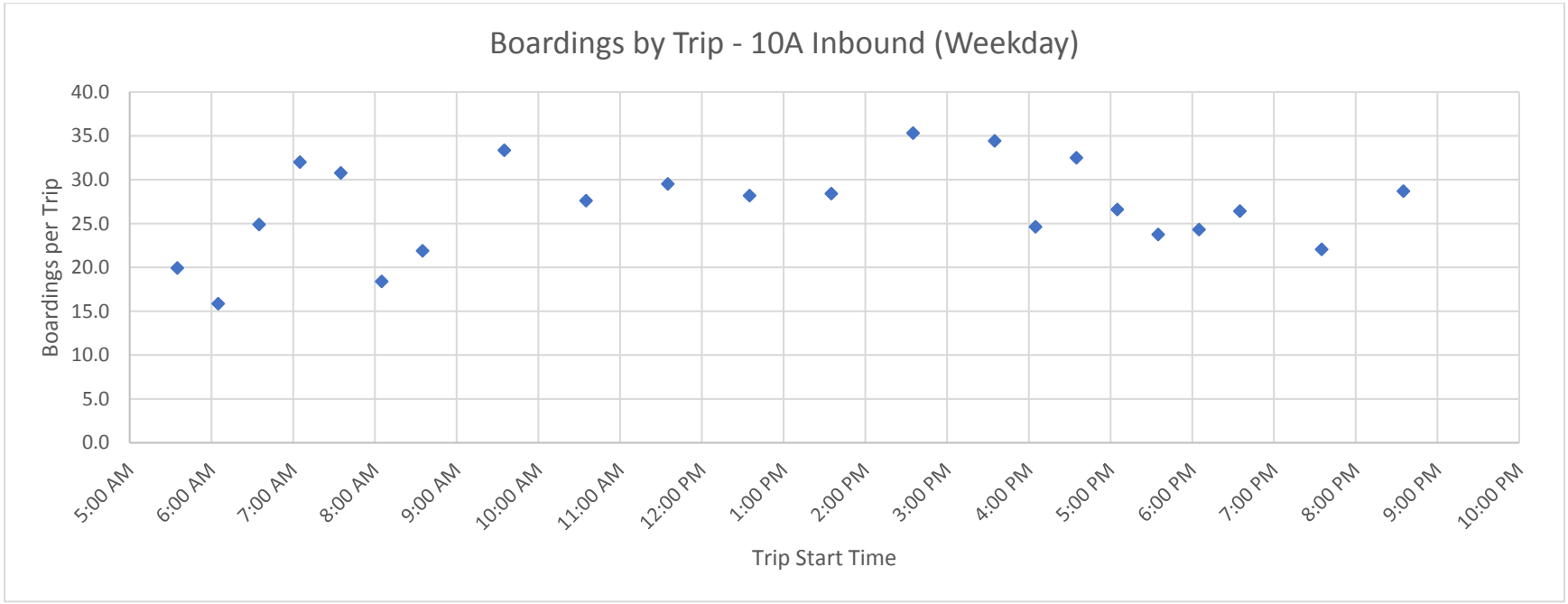

Load by Stop- Route 30 Outbound (Weekend)
Load
4.0
3.0
2.0
1.0
0.0
GTC
Sat&Abba
Sat&Tandy
Sat&GPF OB
Sat&Commerce OB
ONorc&Breck OB
Breck&Marcos OB
Breck&Arlon OB
Breck&Bus OB
FergusonElem OB
Devry OB
St Leo Univ OB
PHill&Popeye OB
Sweet&Pleas OB
Sweet&Club OB
Club&Crest OB
Club&Steve OB
Club&Shack OB
Shack&Corp OB
Shack&Doan OB
Shackle&Park OB
Park&GwinP OB
Park&Beaver OB
Beaver&Shell
SteBea
Steve&Fire OB
Steve&Fall OB
Steve&Oak OB
Steve&Hill OB
Single&Tex OB
Tech&Chevron
Indian&Check OB
Indian&Abbot OB
IndT&IndW OB
Indian&Mrkt OB
Burns&Jodeco OB
Burns&Jack OB
Burns&Spring OB
Burns&Beaver OB
Burns&Shady OB
Burns&Walk OB
Burn&Garner OB
Burns&Johns OB
Burns&Pleas OB
Pleasant&Law OB
Law&PepBoys OB
Law&LaSabro OB
Law&Popeyes OB
Law&Beaver OB
Law&Berkmar OB
Law&Merchant OB
Law&Prov OB
Law&Wynne OB
LawIOB
Law&Hill OB
Law&Shell OB
Law&Bryson OB
Law&Lilburn OB
Law&Harbin OB
Law&Goodwill OB
Law&Exxon OB
Law&RockB OB
Law&Harmony OB
Law&Kenvilla OB
Law&Mimosa OB
Law&Linda OB
Law&Braxton OB
Law&Stone OB
Law&Citgo OB
Jimmy&HomeD OB
Jimmy&Clean OB
Jimmy&Everst OB
Jimmy&W&er OB
Jimmy&Britt OB
Jimmy&Mead OB
Jimmy&NAPA OB
Jimmy&Wal OB
Jimmy&RockS OB
Jimmy&Tracey OB
XJimmy&LiveOOB
LivTho
Stop Name

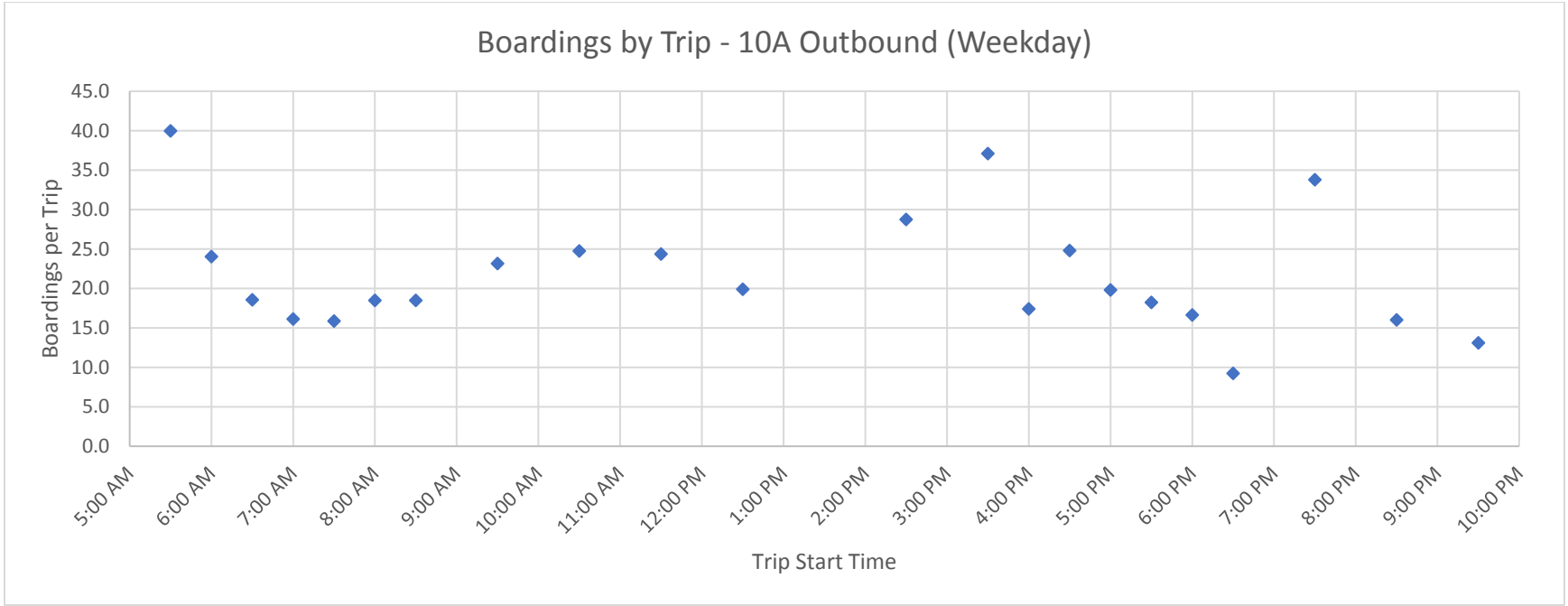

Load by Stop- Route 35 Inbound (Weekend)
Load
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
BG&Rush IB
BG&Mimms IB
BG&TOPSA IB
BG&Best IB
Best&Royal IB
Best&Sky IB
Best&Nancy IB
Best&Best IB
Best&Brook IB
BroNib
NNorc&Pelicn IB
Jimmy&ORiley IB
Jimmy&BF IB
Jimmy&Deal IB
Jimmy&North IB
Jimmy&Park IB
Jimmy&Los IB
Jimmy&SPeach IB
Jimmy&WPeach IB
Jimmy&Pacifc IB
Jimmy&Depo IB
Jimmy&6695 IB
Jimmy&RR IB
Jimmy&Atl IB
Jimmy&Verid IB
Peach&Mercer IB
Peach&Hunt IB
PeachC&MDE OB
PeachC&QT IB
PeachC&Hunt IB
PeachC&Spur IB
PeachC&Glen IB
PeachC&Part IB
PeachC&Bann IB
PeachC&Klin IB
PeachC&Brand IB
PeachC&Apple IB
HolPea
Hol&Veranda IB
Hol&Views IB
Hol&FamDerm IB
Hol&Centre IB
Peach&Publix IB
Peach&Bakery
Tech&Home IB
Tech&Hampton IB
Tech&Humblot IB
Tech&PSA IB
Tech&Sov IB
Tech&Bend
Tech&TechS IB
Tech&Yardi IB
Tech&Res IB
Scien&Tech IB
Scien&Merid IB
Scien&Peach IB
Peach&Hyatt IB
PeachPlaza IB
Peach&WesSch IB
Peach&PeachC IB
Peach&Forum IB
Peach&Bank IB
Med&PeachC IB
PeachC&Dav IB
PeachC&Chase IB
PeaQT
Stop Name

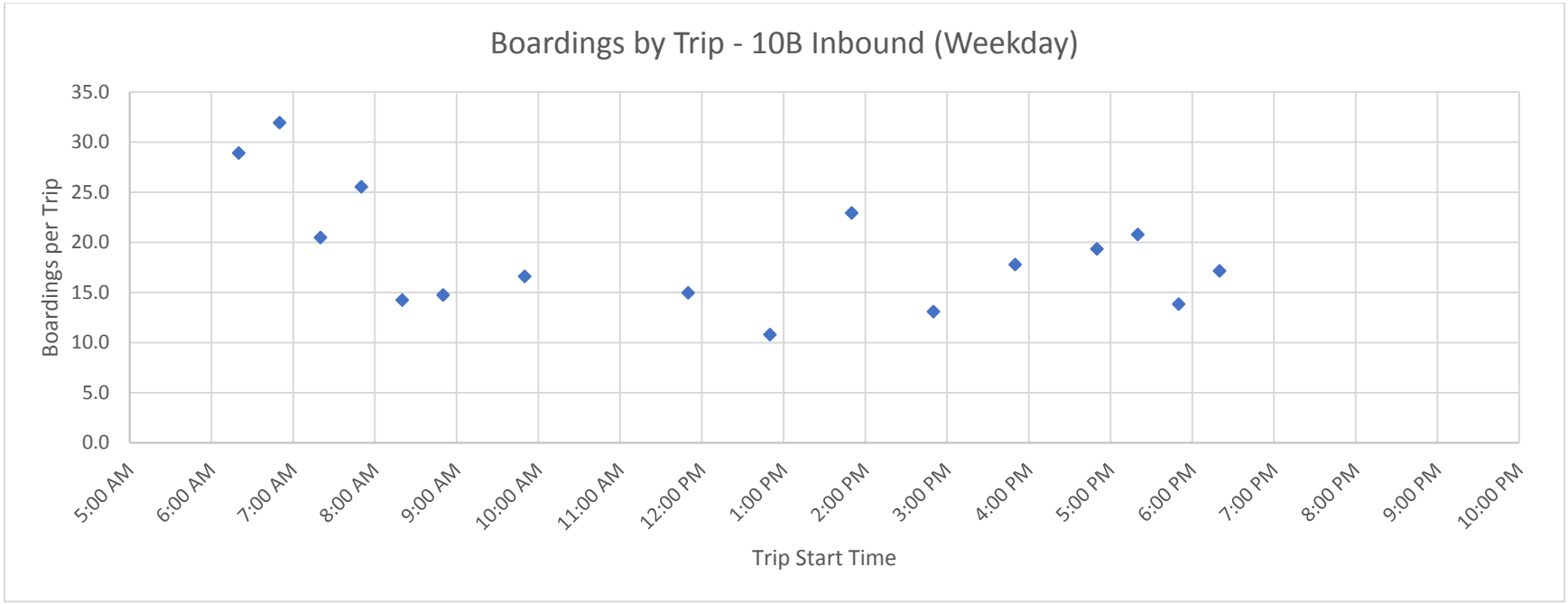

Load by Stop- Route 35 Outbound (Weekend)
Load
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
BG&Rush IB
BG&Mimms IB
BG&TOPSA IB
BG&Best IB
Best&Royal IB
Best&Sky IB
Best&Nancy IB
Best&Best IB
Best&Brook IB
BroNib
NNorc&Pelicn IB
Jimmy&ORiley IB
Jimmy&BF IB
Jimmy&Deal IB
Jimmy&North IB
Jimmy&Park IB
Jimmy&Los IB
Jimmy&SPeach IB
Jimmy&WPeach IB
Jimmy&Pacifc IB
Jimmy&Depo IB
Jimmy&6695 IB
Jimmy&RR IB
Jimmy&Atl IB
Jimmy&Verid IB
Peach&Mercer IB
Peach&Hunt IB
PeachC&MDE OB
PeachC&QT IB
PeachC&Hunt IB
PeachC&Spur IB
PeachC&Glen IB
PeachC&Part IB
PeachC&Bann IB
PeachC&Klin IB
PeachC&Brand IB
PeachC&Apple IB
HolPea
Hol&Veranda IB
Hol&Views IB
Hol&FamDerm IB
Hol&Centre IB
Peach&Publix IB
Peach&Bakery
Tech&Home IB
Tech&Hampton IB
Tech&Humblot IB
Tech&PSA IB
Tech&Sov IB
Tech&Bend
Tech&TechS IB
Tech&Yardi IB
Tech&Res IB
Scien&Tech IB
Scien&Merid IB
Scien&Peach IB
Peach&Hyatt IB
PeachPlaza IB
Peach&WesSch IB
Peach&PeachC IB
Peach&Forum IB
Peach&Bank IB
Med&PeachC IB
PeachC&Dav IB
PeachC&Chase IB
PeaQT
Stop Name

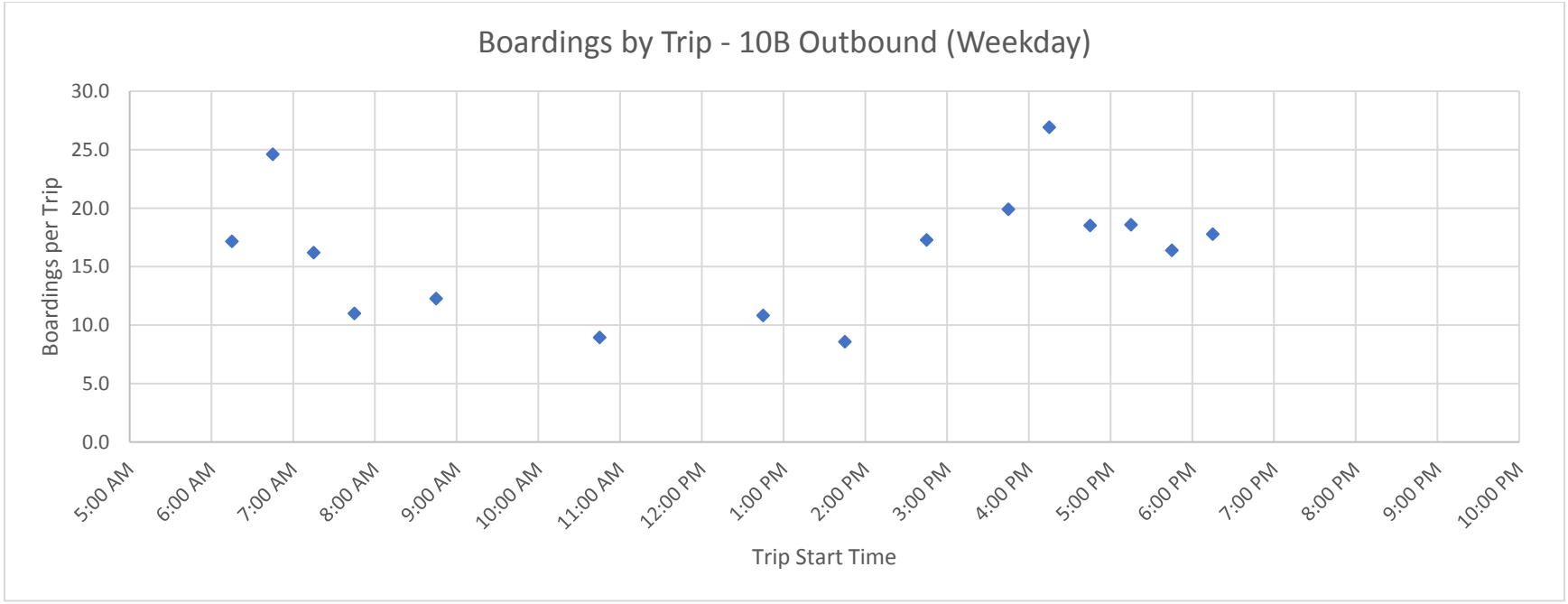

Load by Stop- Route 40 Inbound (Weekend)
Load
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
BG&Rush IB
BG&Mimms IB
BG&TOPSA IB
BG&Best IB
Best&Royal IB
Best&Sky IB
Best&Nancy IB
Best&Best IB
Best&Brook IB
BroNib
NNorc&Pelicn IB
Jimmy&ORiley IB
Jimmy&BF IB
Jimmy&Deal IB
Jimmy&North IB
Jimmy&Park IB
Jimmy&Los IB
Jimmy&SPeach IB
Jimmy&WPeach IB
Jimmy&Pacifc IB
Jimmy&Depo IB
Jimmy&6695 IB
Jimmy&RR IB
Jimmy&Atl IB
Jimmy&Verid IB
Peach&Mercer IB
Peach&Hunt IB
PeachC&MDE OB
PeachC&QT IB
PeachC&Hunt IB
PeachC&Spur IB
PeachC&Glen IB
PeachC&Part IB
PeachC&Bann IB
PeachC&Klin IB
PeachC&Brand IB
PeachC&Apple IB
HolPea
Hol&Veranda IB
Hol&Views IB
Hol&FamDerm IB
Hol&Centre IB
Peach&Publix IB
Peach&Bakery
Tech&Home IB
Tech&Hampton IB
Tech&Humblot IB
Tech&PSA IB
Tech&Sov IB
Tech&Bend
Tech&TechS IB
Tech&Yardi IB
Tech&Res IB
Scien&Tech IB
Scien&Merid IB
Scien&Peach IB
Peach&Hyatt IB
PeachPlaza IB
Peach&WesSch IB
Peach&PeachC IB
Peach&Forum IB
Peach&Bank IB
Med&PeachC IB
PeachC&Dav IB
PeachC&Chase IB
PeaQT
Stop Name

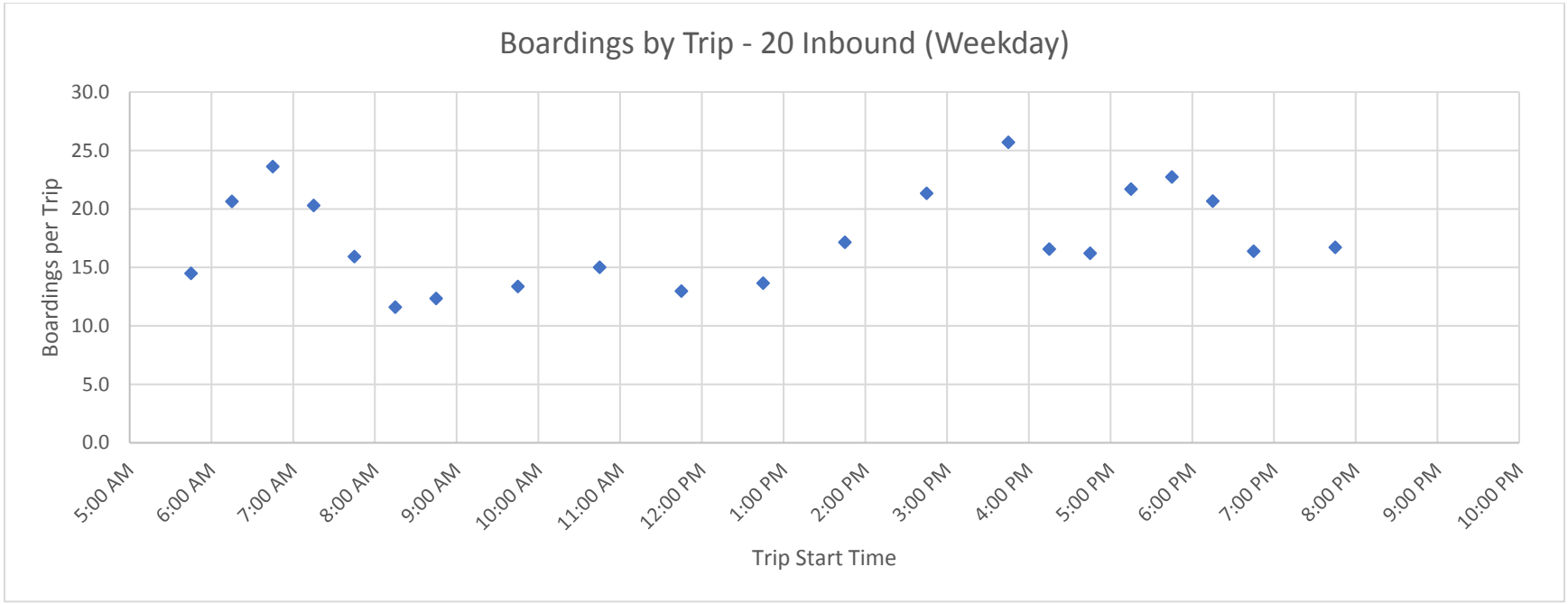

Load by Stop- Route 40 Outbound (Weekend)
Load
10.0
5.0
0.0
DorMAR
PebbleWood IB
NPeach&Long IB
MarathonOil IB
NPeach&Burl IB
NPeach&McEl IB
NPeach&Laz IB
Buf&Tofu IB
Buf&Church IB
Buf&Jenny IB
Buf&Global IB
Buf&Accu IB
Buf&Lake IB
Buf&Green IB
Buf&Pleasant IB
Buf&BG IB
BG&Rush IB
BG&Mimms IB
BG&TOPSA IB
BG&Best IB
Best&Royal IB
Best&Sky IB
Best&Nancy IB
Best&Best IB
Best&Brook IB
BroNib
NNorc&Pelicn IB
Jimmy&ORiley IB
Jimmy&BF IB
Jimmy&Deal IB
Jimmy&North IB
Jimmy&Park IB
Jimmy&Los IB
Jimmy&SPeach IB
Jimmy&WPeach IB
Jimmy&Pacifc IB
Jimmy&Depo IB
Jimmy&6695 IB
Jimmy&RR IB
Jimmy&Atl IB
Jimmy&Verid IB
Peach&Mercer IB
Peach&Hunt IB
PeachC&MDE OB
PeachC&QT IB
PeachC&Hunt IB
PeachC&Spur IB
PeachC&Glen IB
PeachC&Part IB
PeachC&Bann IB
PeachC&Klin IB
PeachC&Brand IB
PeachC&Apple IB
HolPea
Hol&Veranda IB
Hol&Views IB
Hol&FamDerm IB
Hol&Centre IB
Peach&Publix IB
Peach&Bakery
Tech&Home IB
Tech&Hampton IB
Tech&Humblot IB
Tech&PSA IB
Tech&Sov IB
Tech&Bend
Tech&TechS IB
Tech&Yardi IB
Tech&Res IB
Scien&Tech IB
Scien&Merid IB
Scien&Peach IB
Peach&Hyatt IB
PeachPlaza IB
Peach&WesSch IB
Peach&PeachC IB
Peach&Forum IB
Peach&Bank IB
Med&PeachC IB
PeachC&Dav IB
PeachC&Chase IB
PeaQT
Stop Name

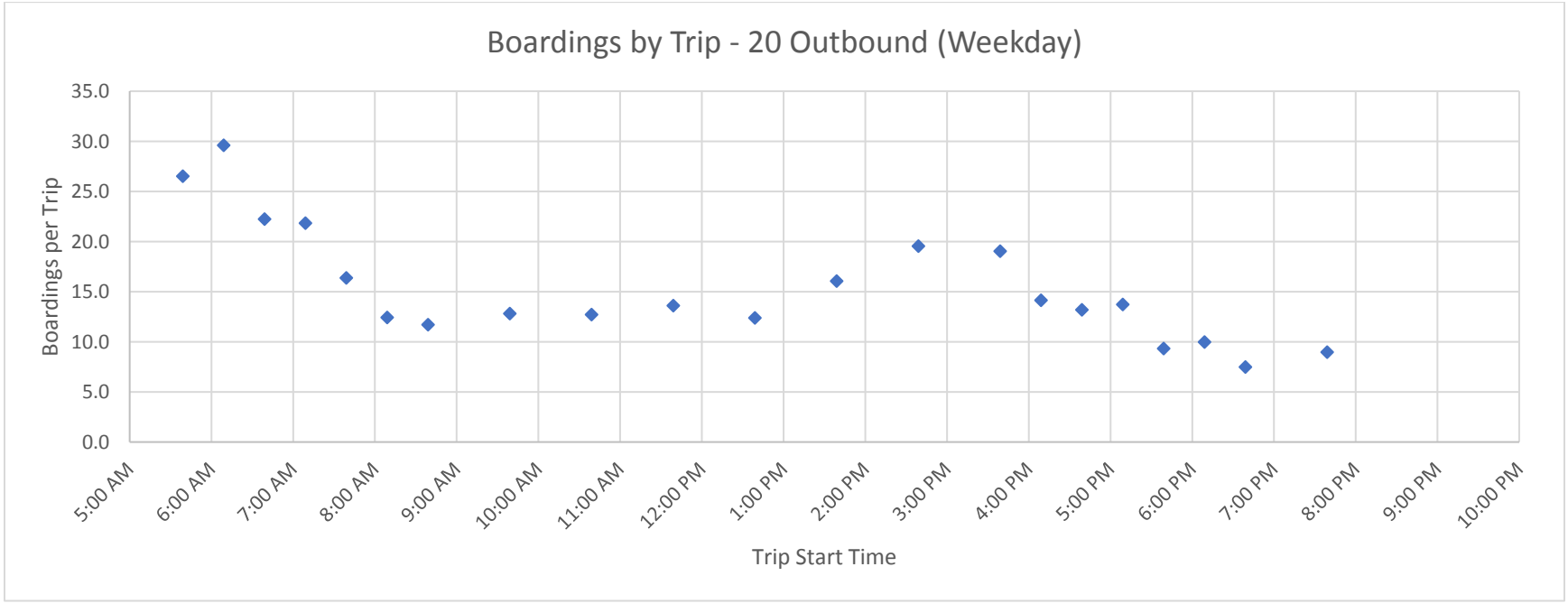

Boardings by Trip - 10A Inbound (Weekday)
Boardings per Trip
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time

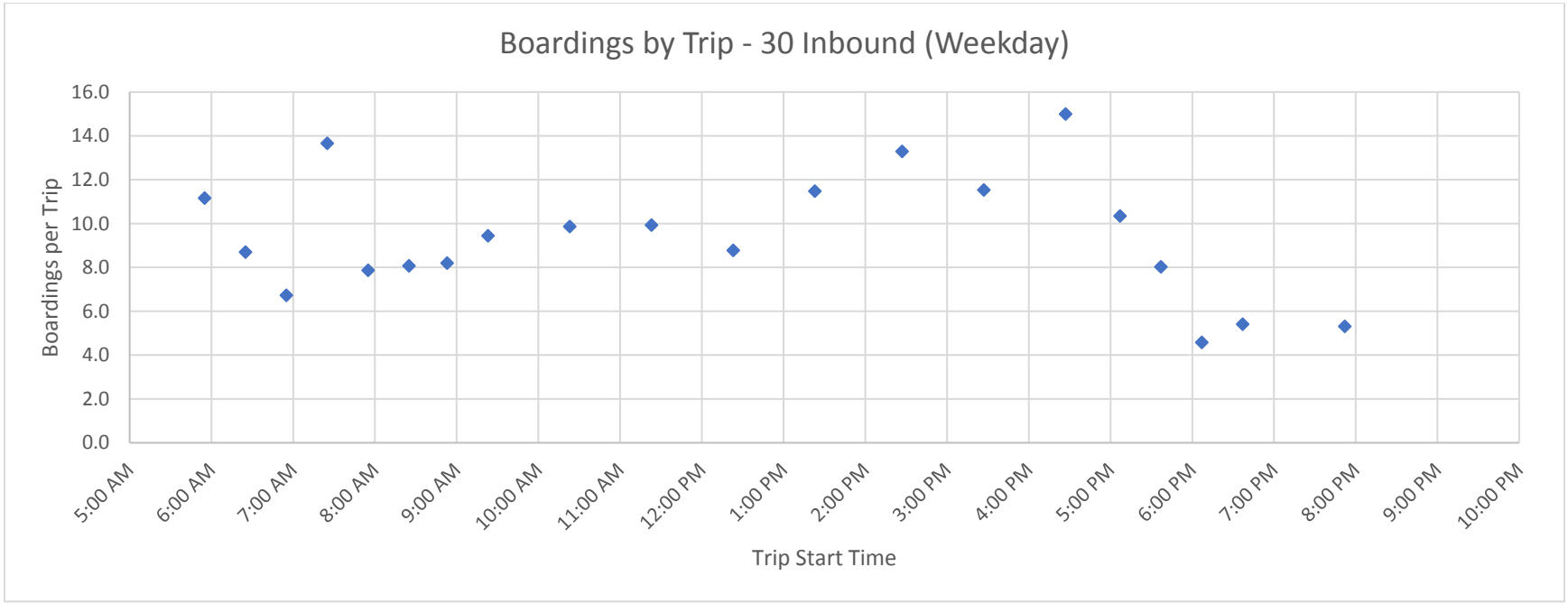

Boardings by Trip - 10A Outbound (Weekday)
Boardings per Trip
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 10B Inbound (Weekday)
Boardings per Trip
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 10B Outbound (Weekday)
Boardings per Trip
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 20 Inbound (Weekday)
Boardings per Trip
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 20 Outbound (Weekday)
Boardings per Trip
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 30 Inbound (Weekday)
Boardings per Trip
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
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6:00 PM
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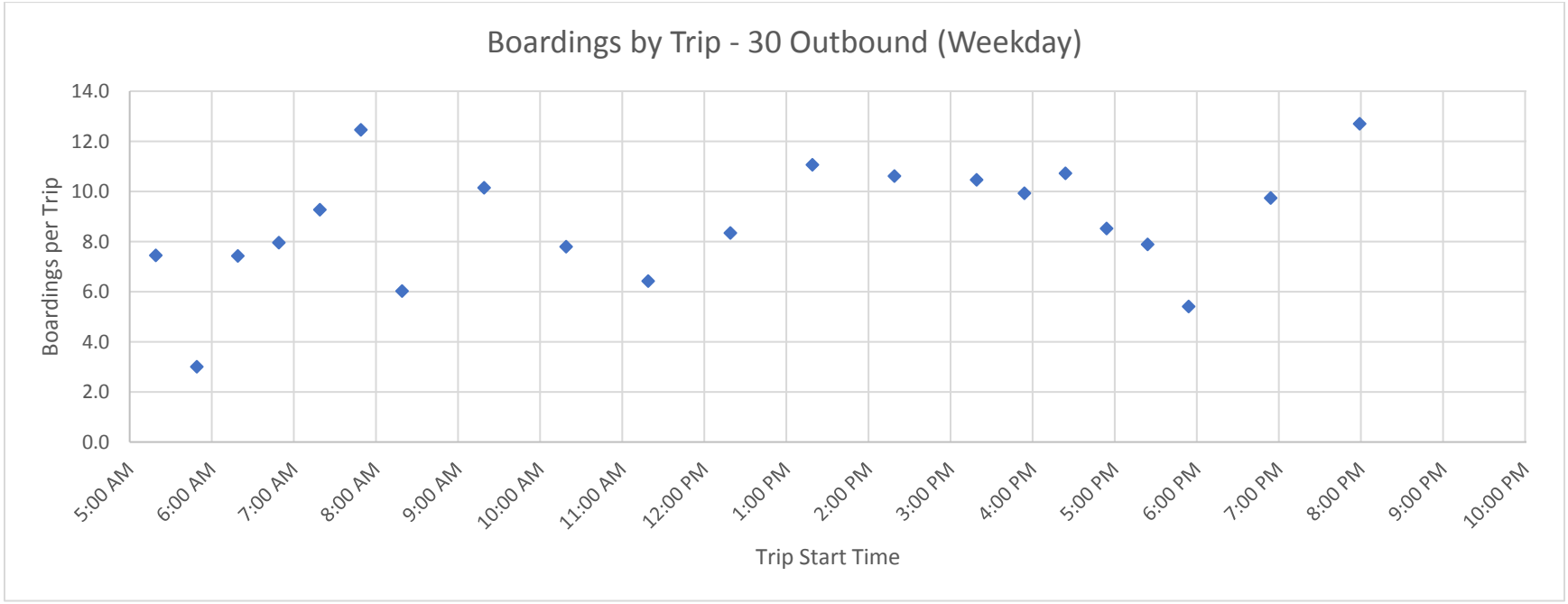
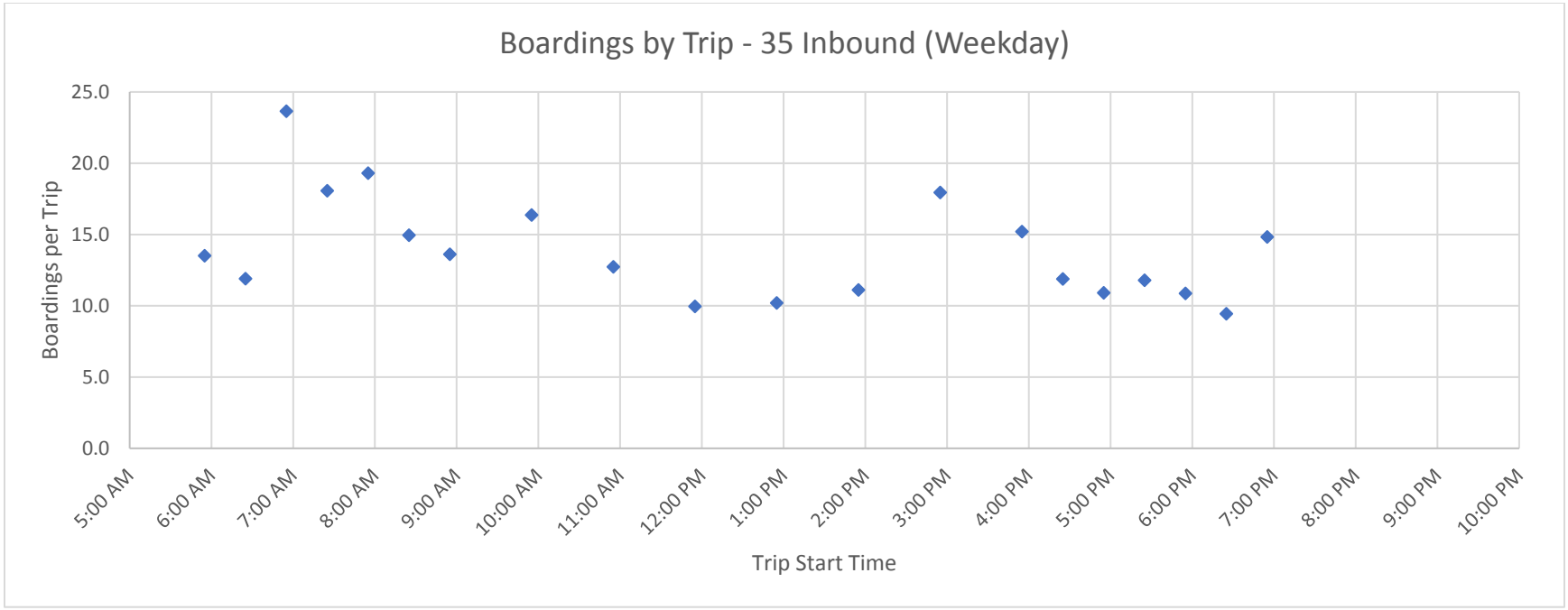
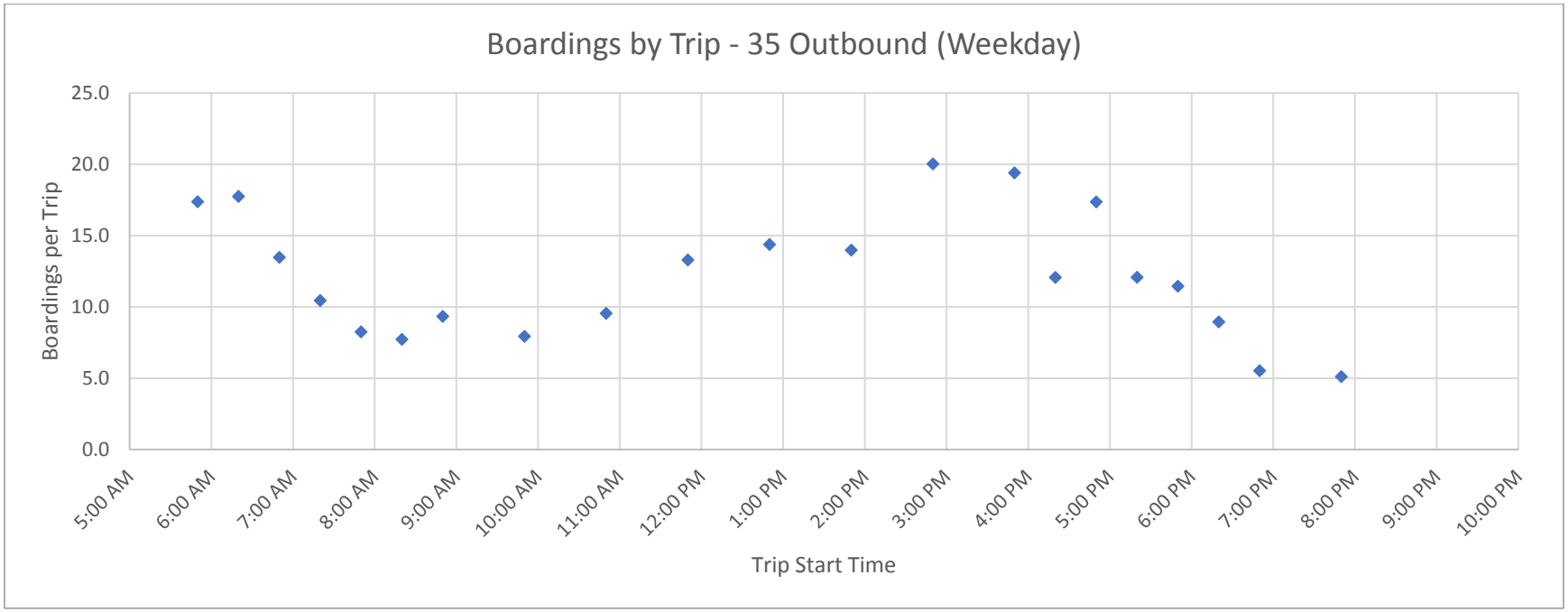
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 30 Outbound (Weekday)
Boardings per Trip
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 35 Inbound (Weekday)
Boardings per Trip
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 35 Outbound (Weekday)
Boardings per Trip
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
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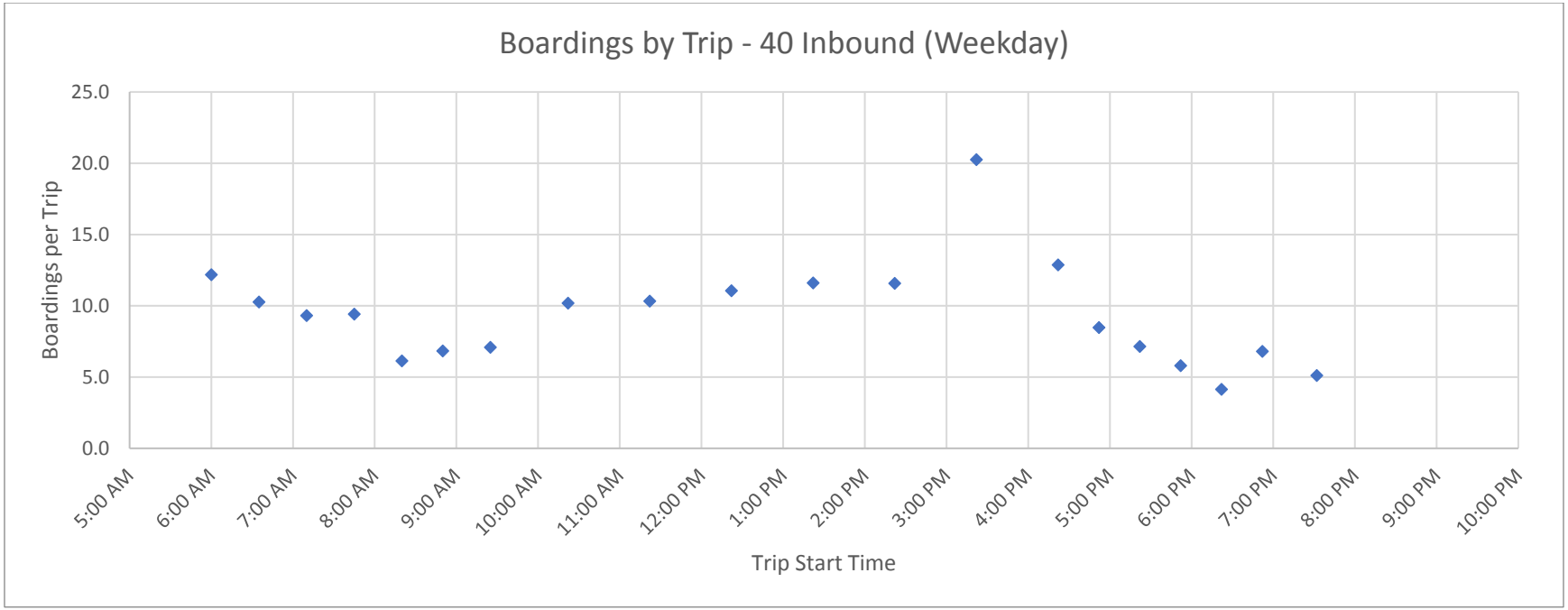
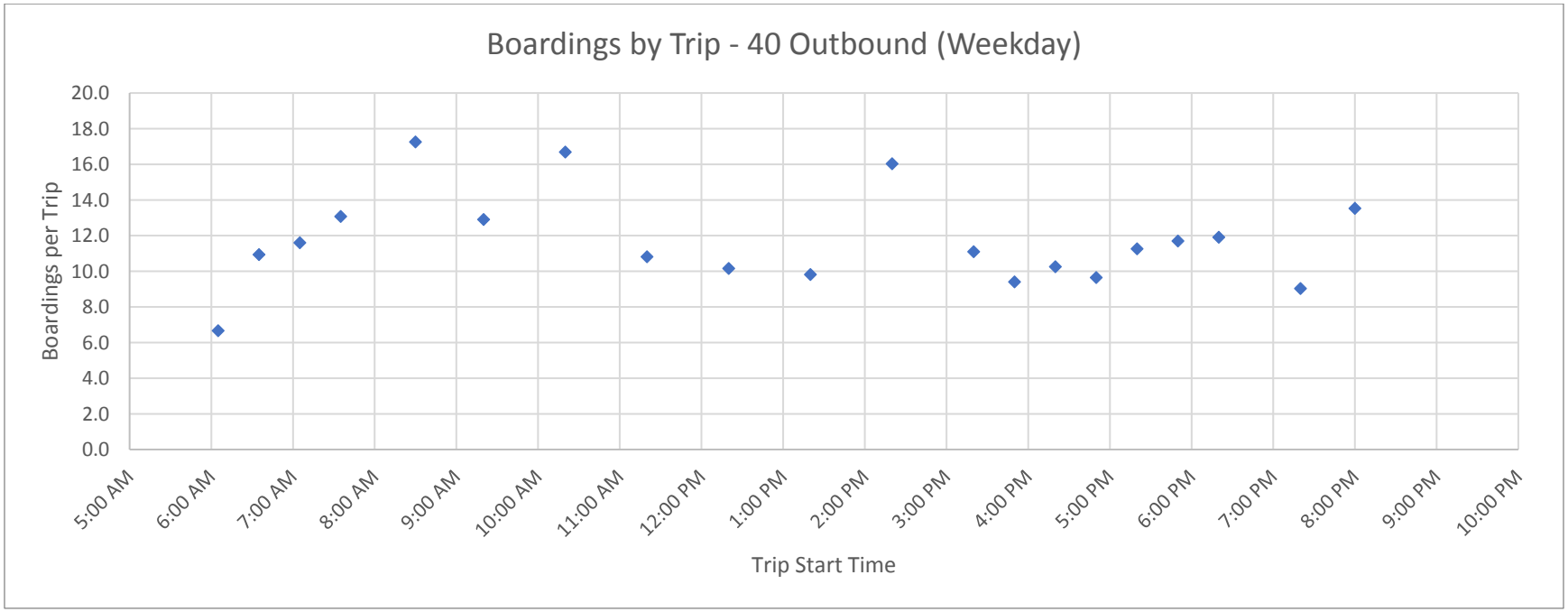
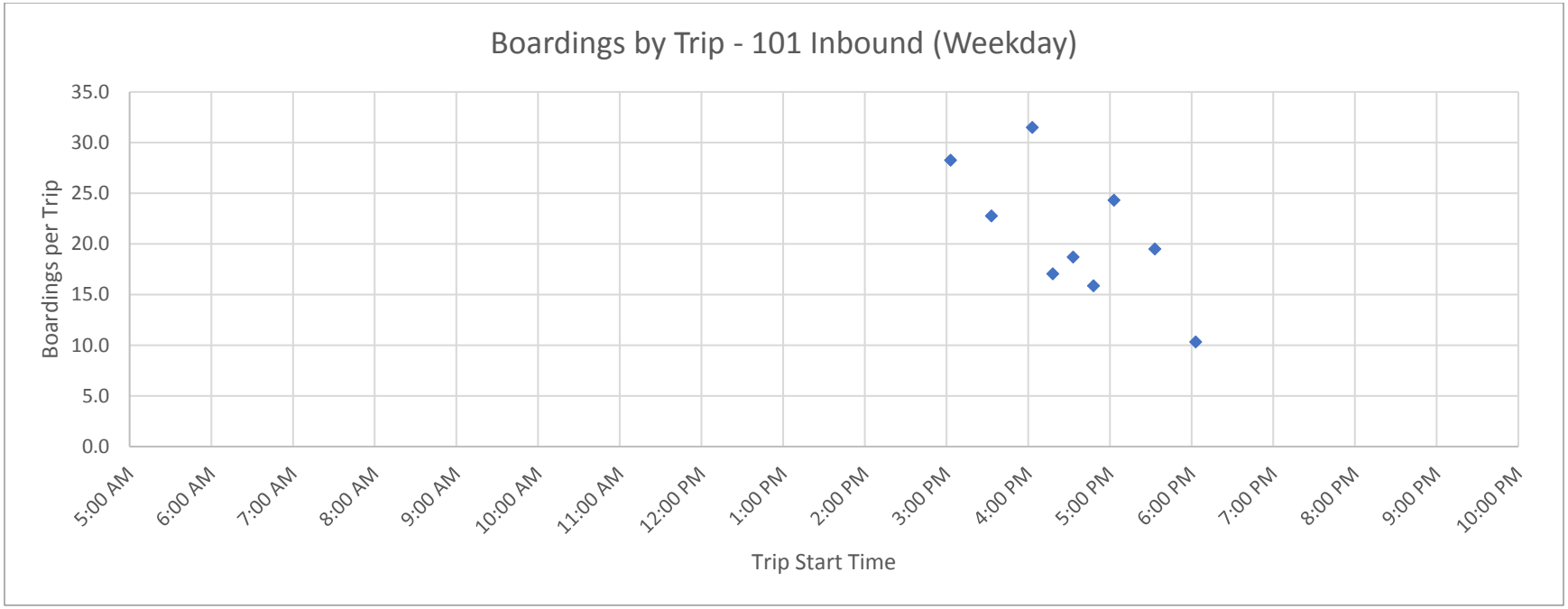
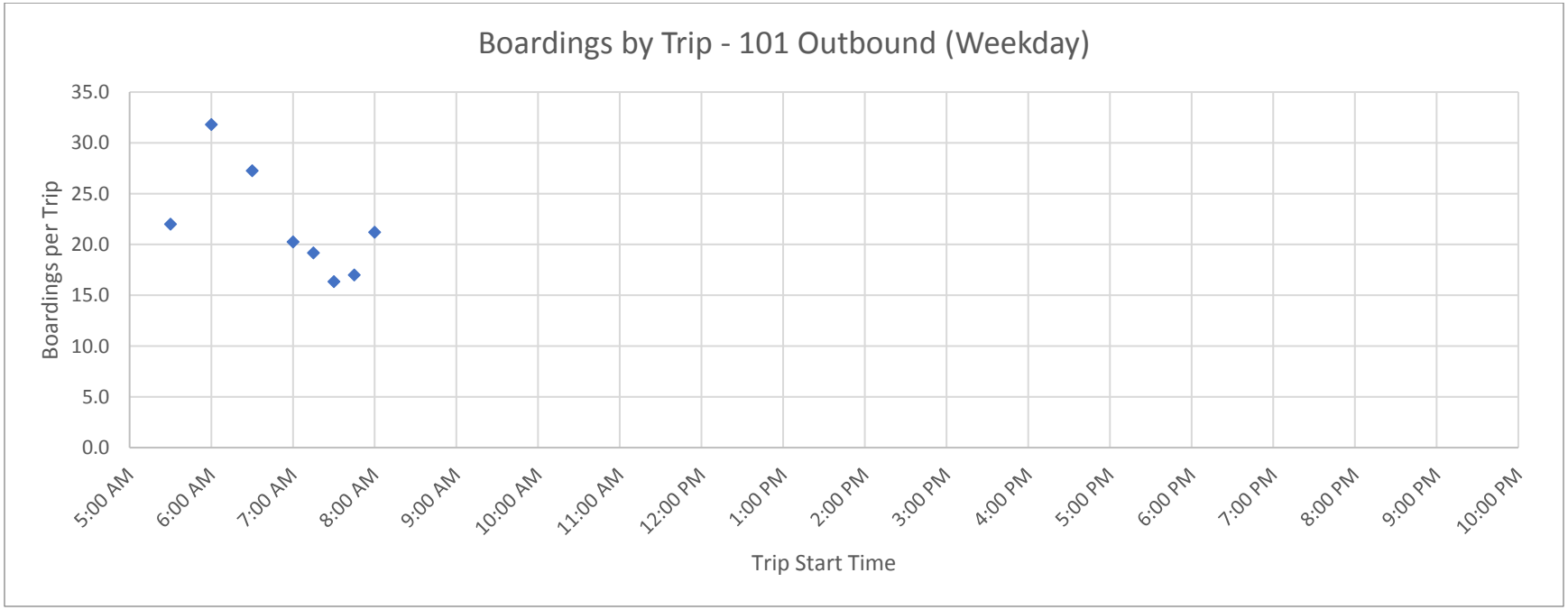
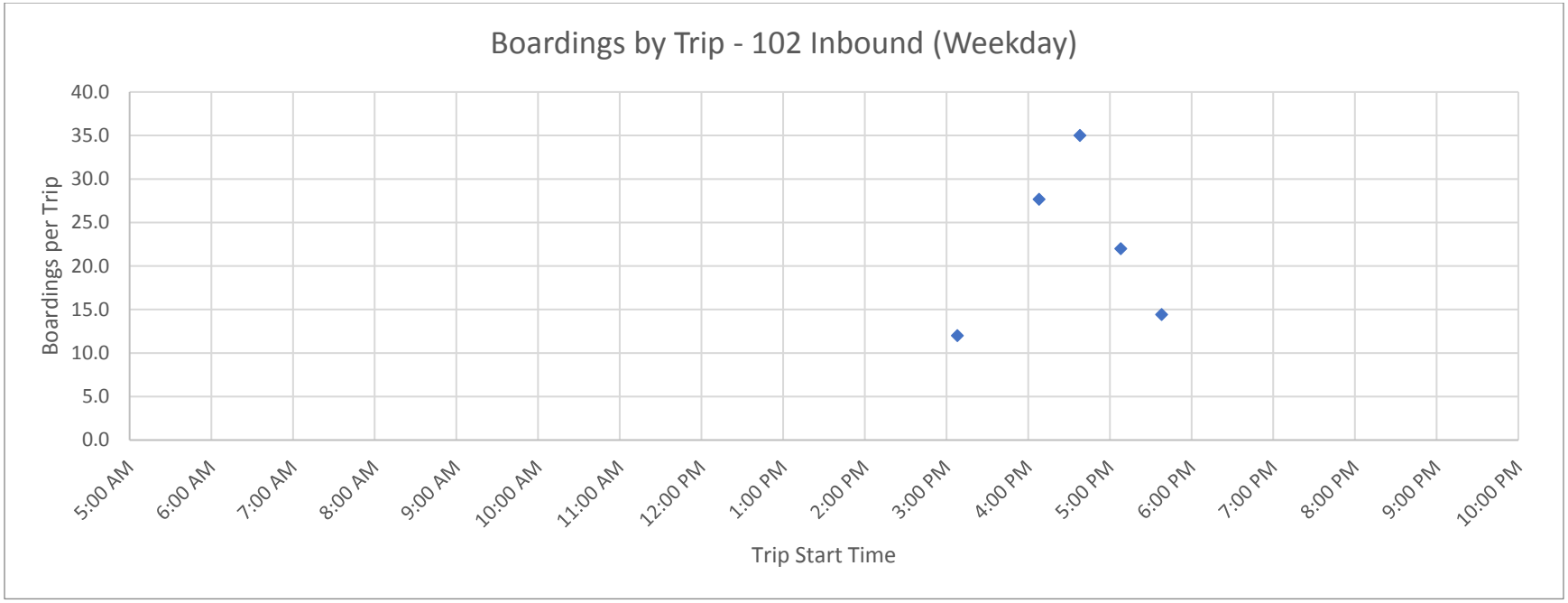
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time

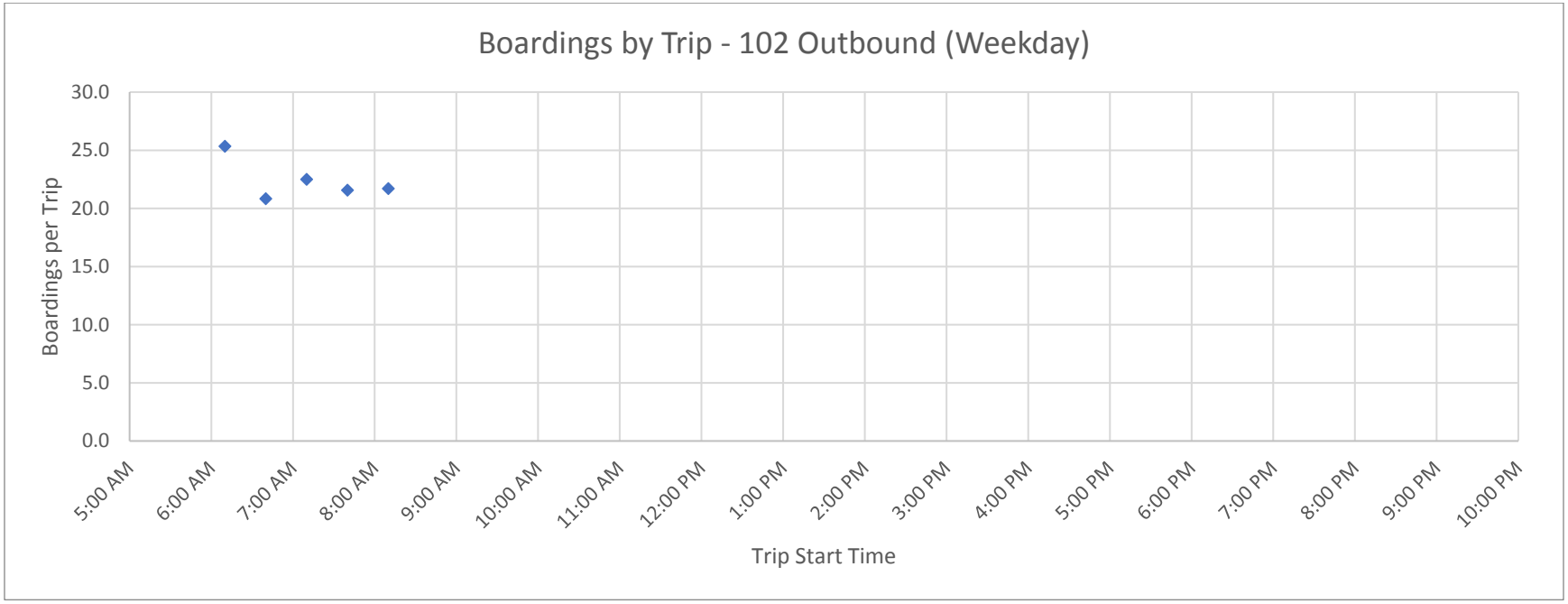

Boardings by Trip - 40 Inbound (Weekday)
Boardings per Trip
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time

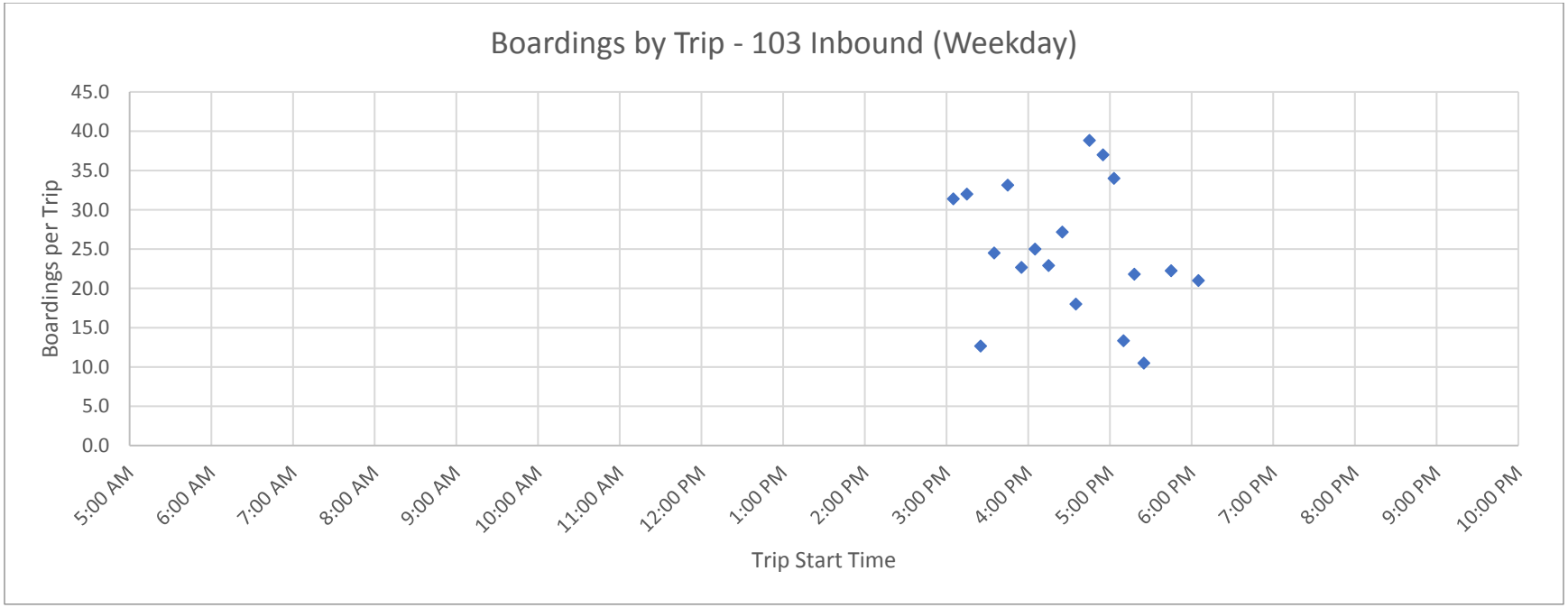

Boardings by Trip - 40 Outbound (Weekday)
Boardings per Trip
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 101 Inbound (Weekday)
Boardings per Trip
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 101 Outbound (Weekday)
Boardings per Trip
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 102 Inbound (Weekday)
Boardings per Trip
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 102 Outbound (Weekday)
Boardings per Trip
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
Trip Start Time


Boardings by Trip - 103 Inbound (Weekday)
Boardings per Trip
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5:00 AM
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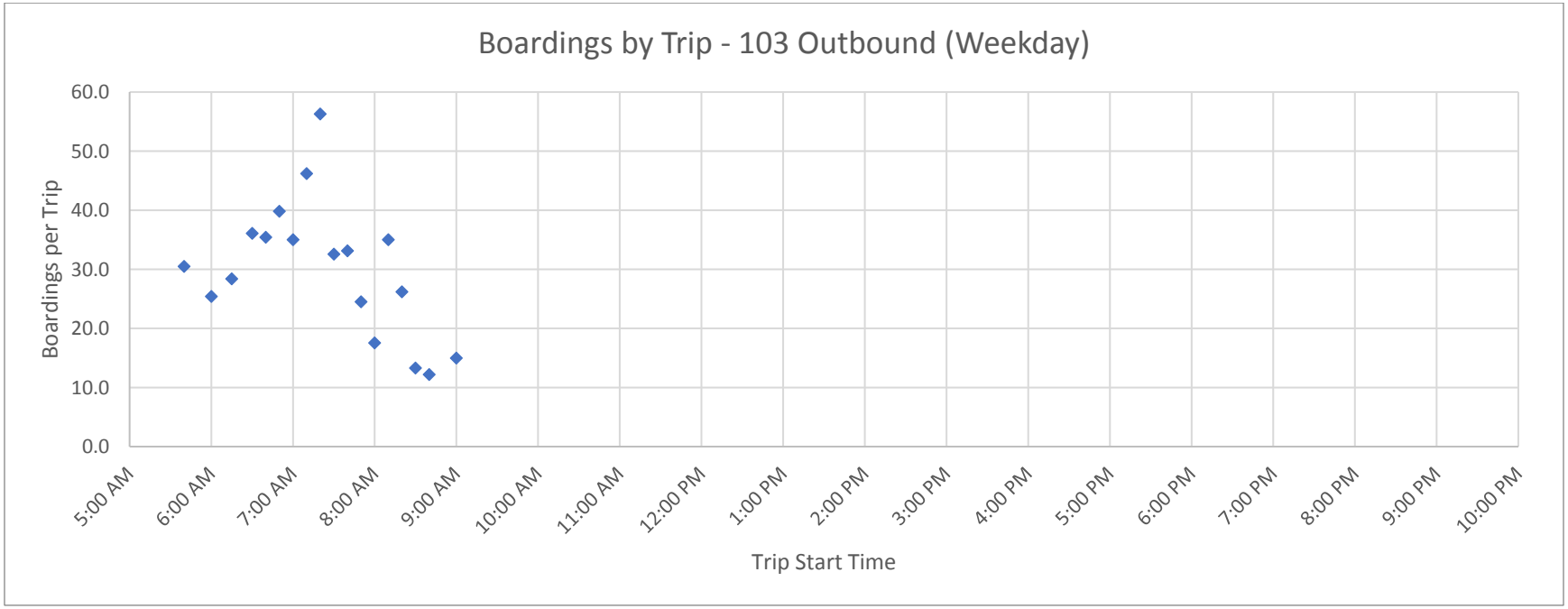
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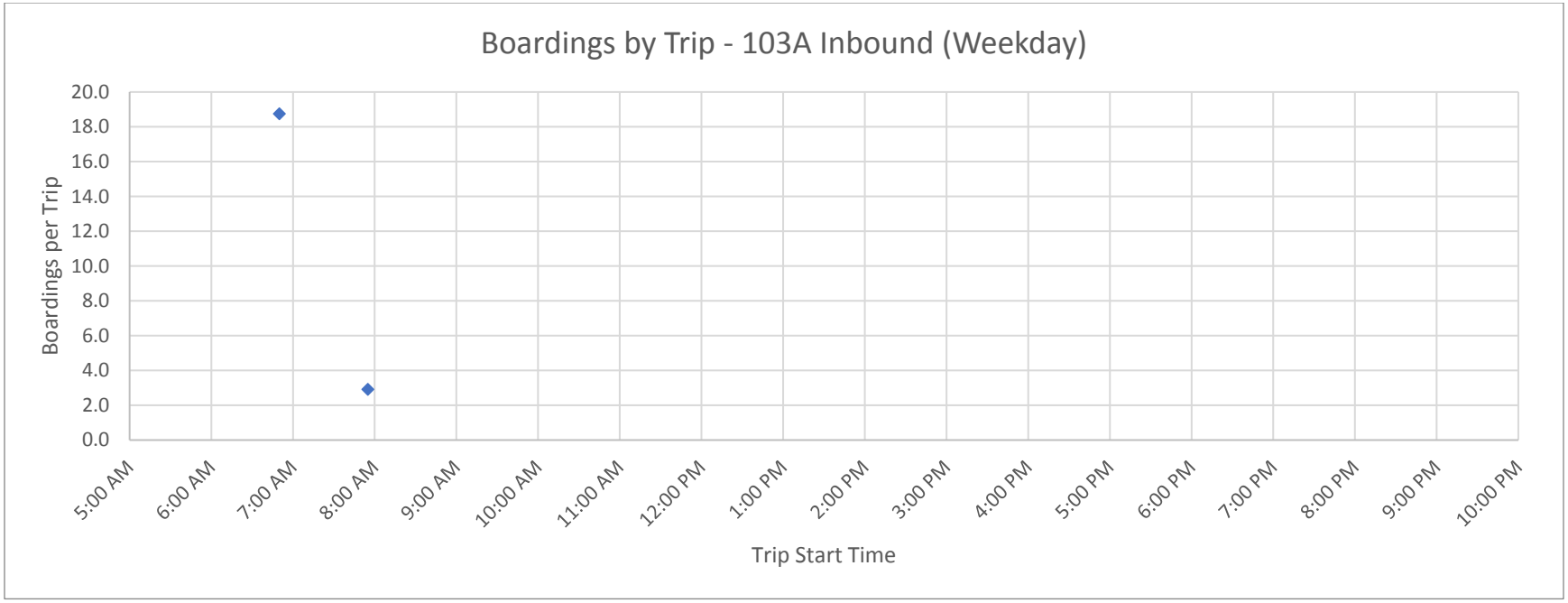
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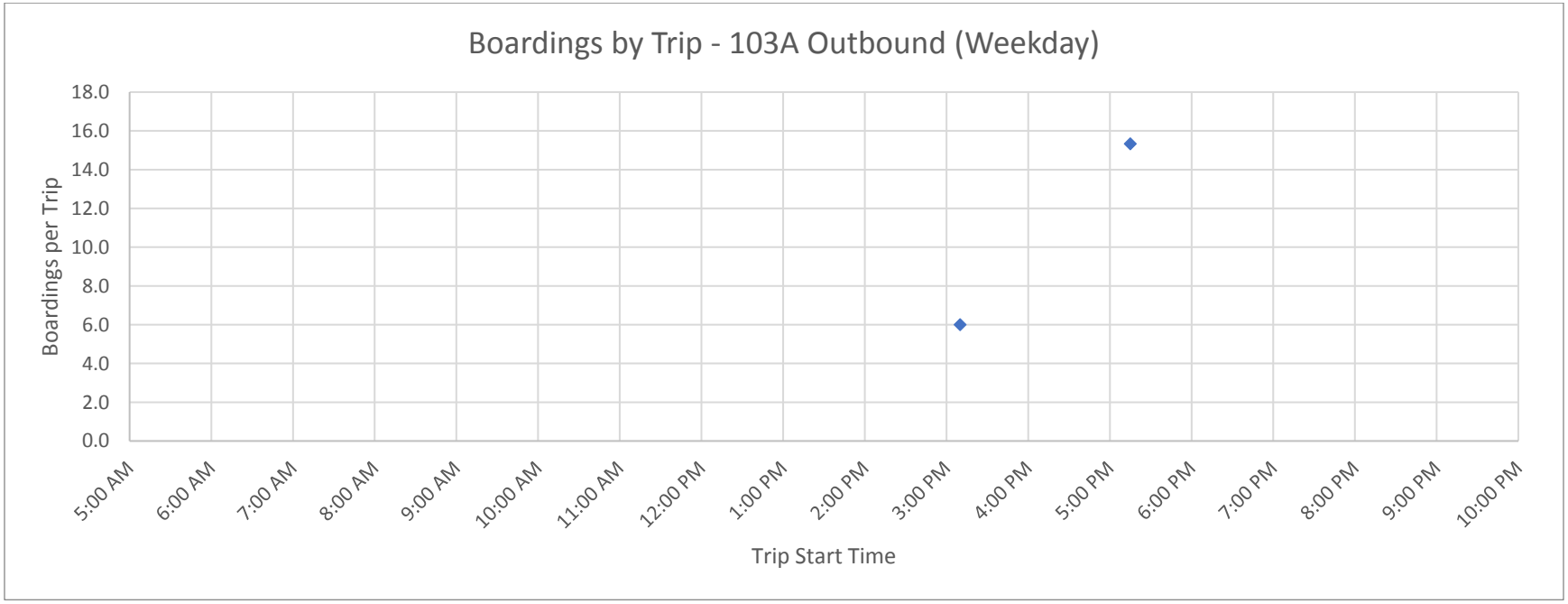
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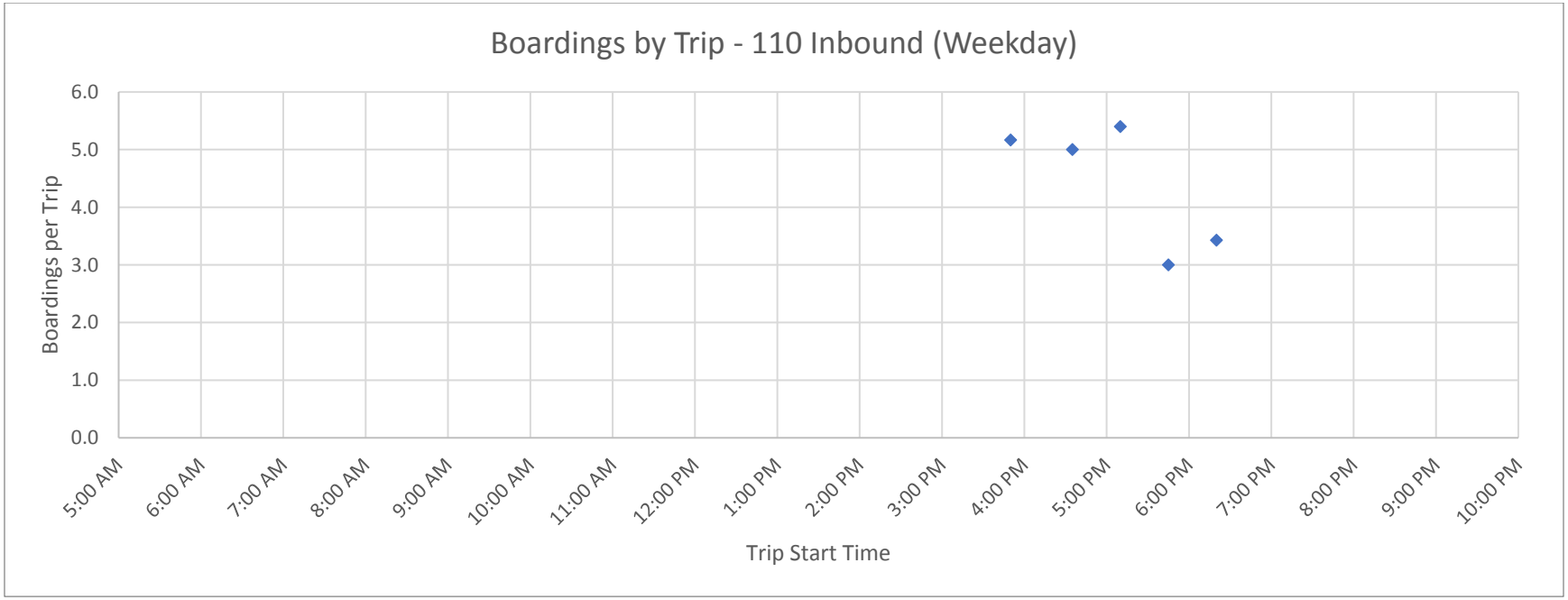
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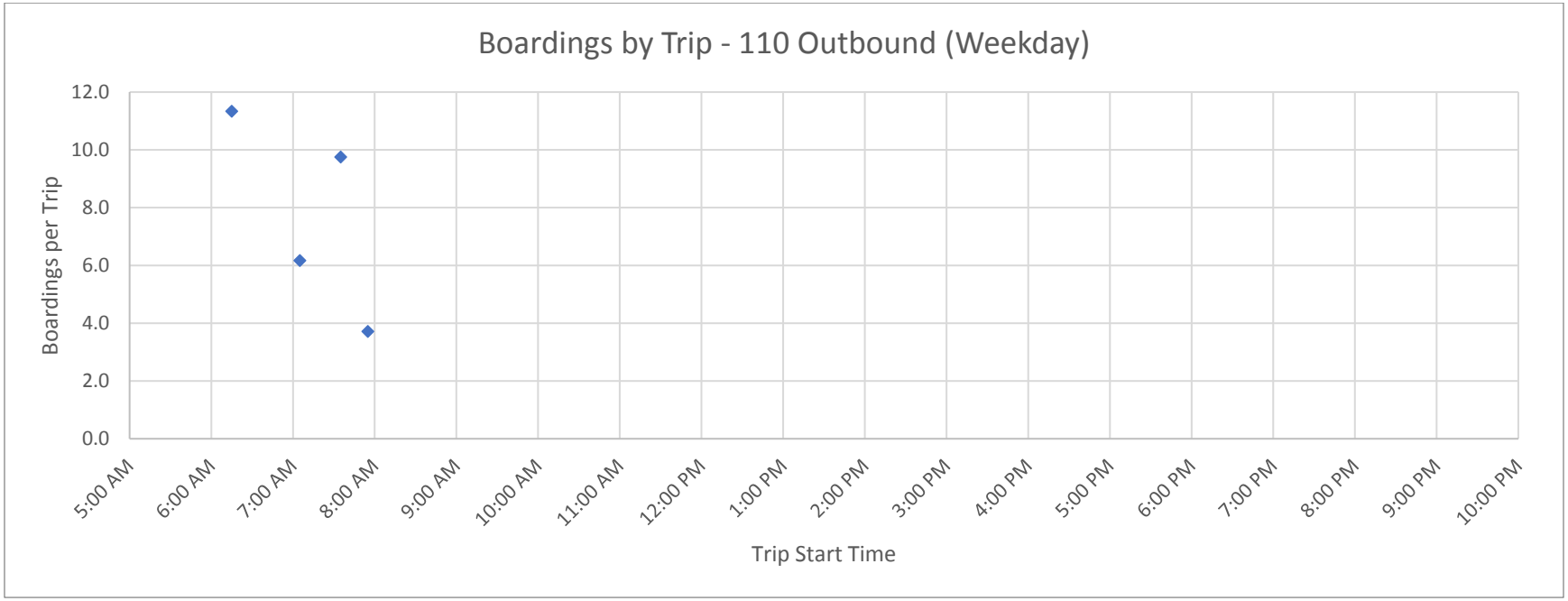
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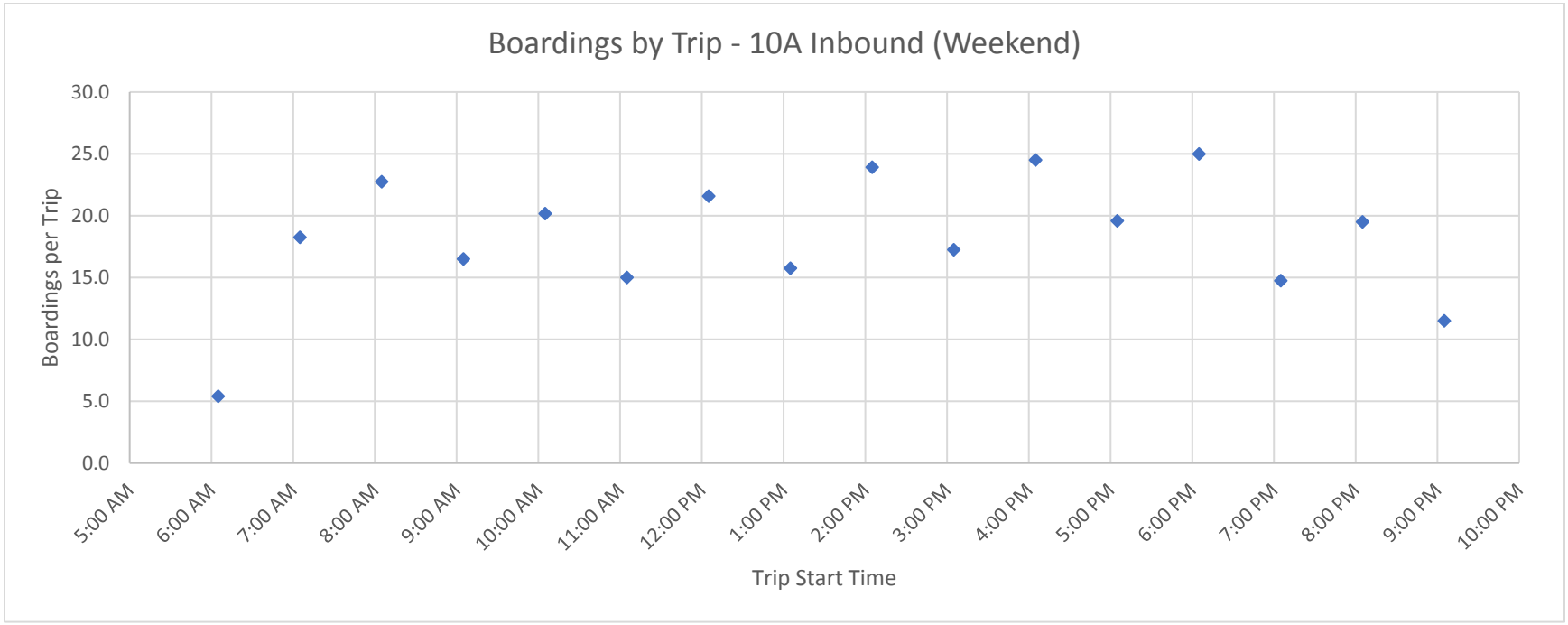
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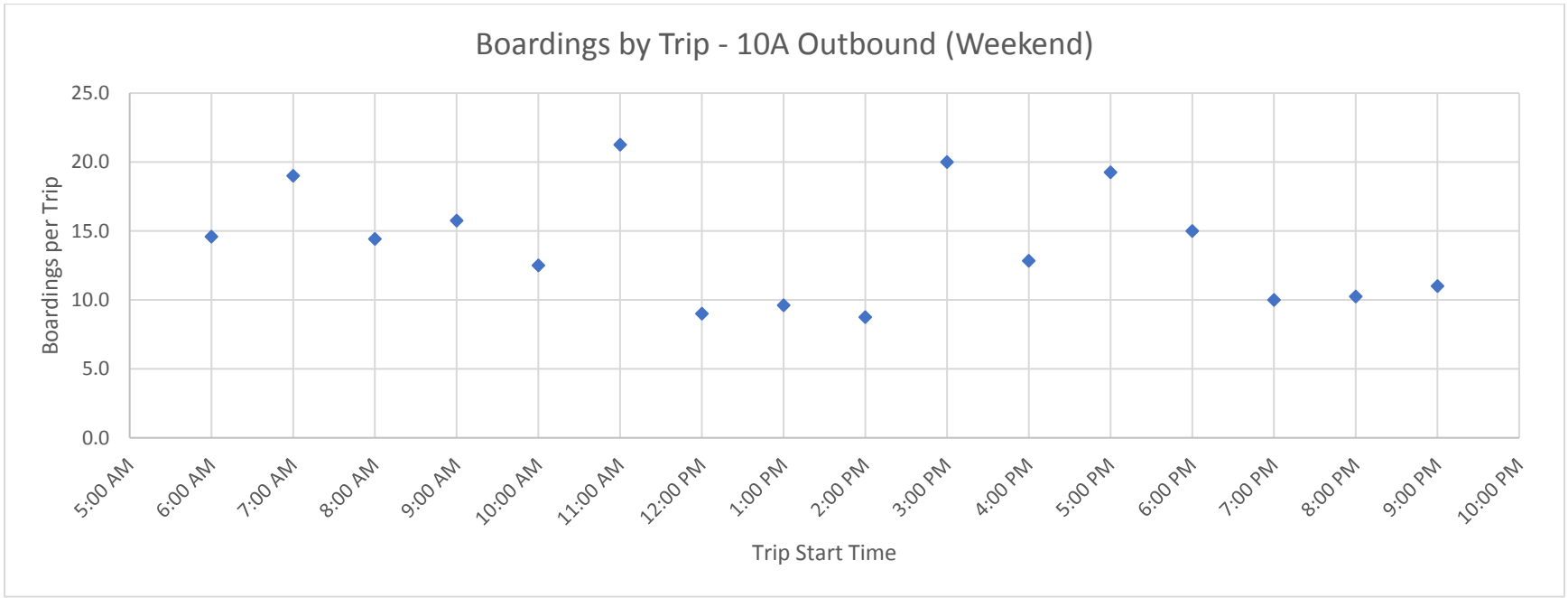
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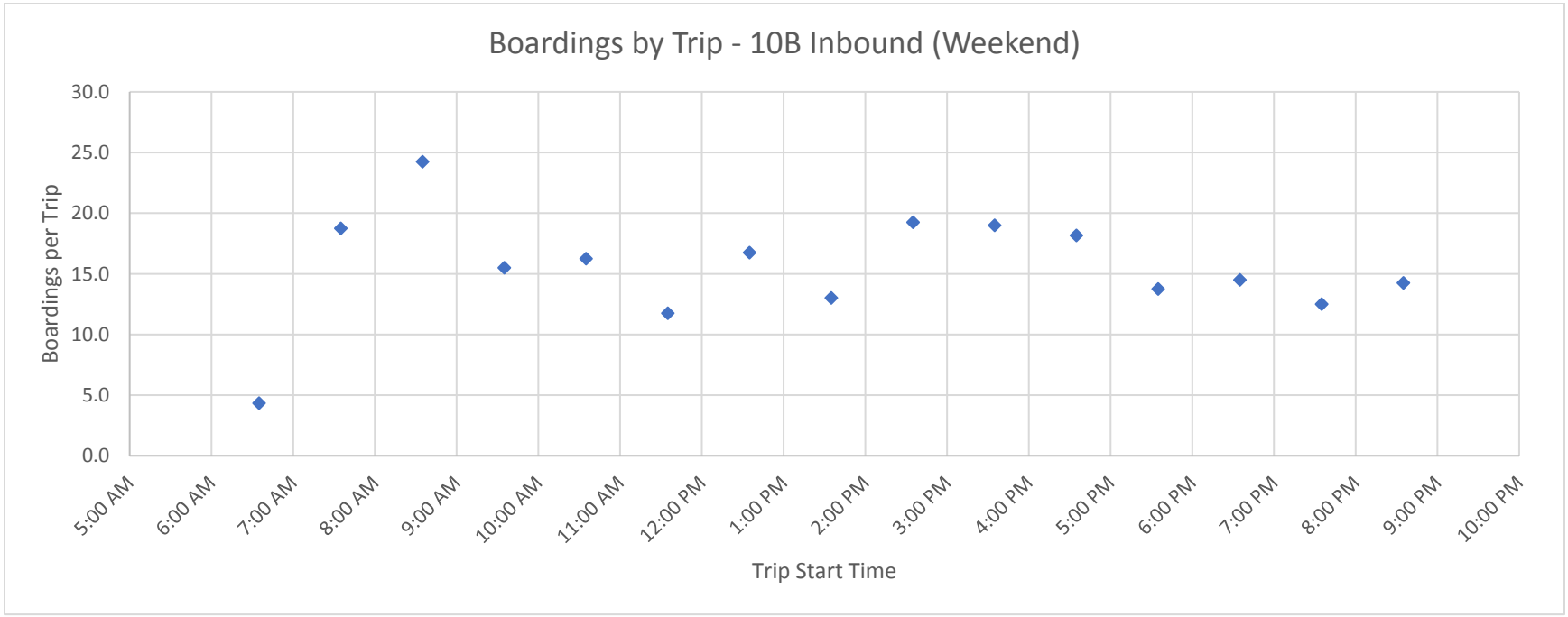
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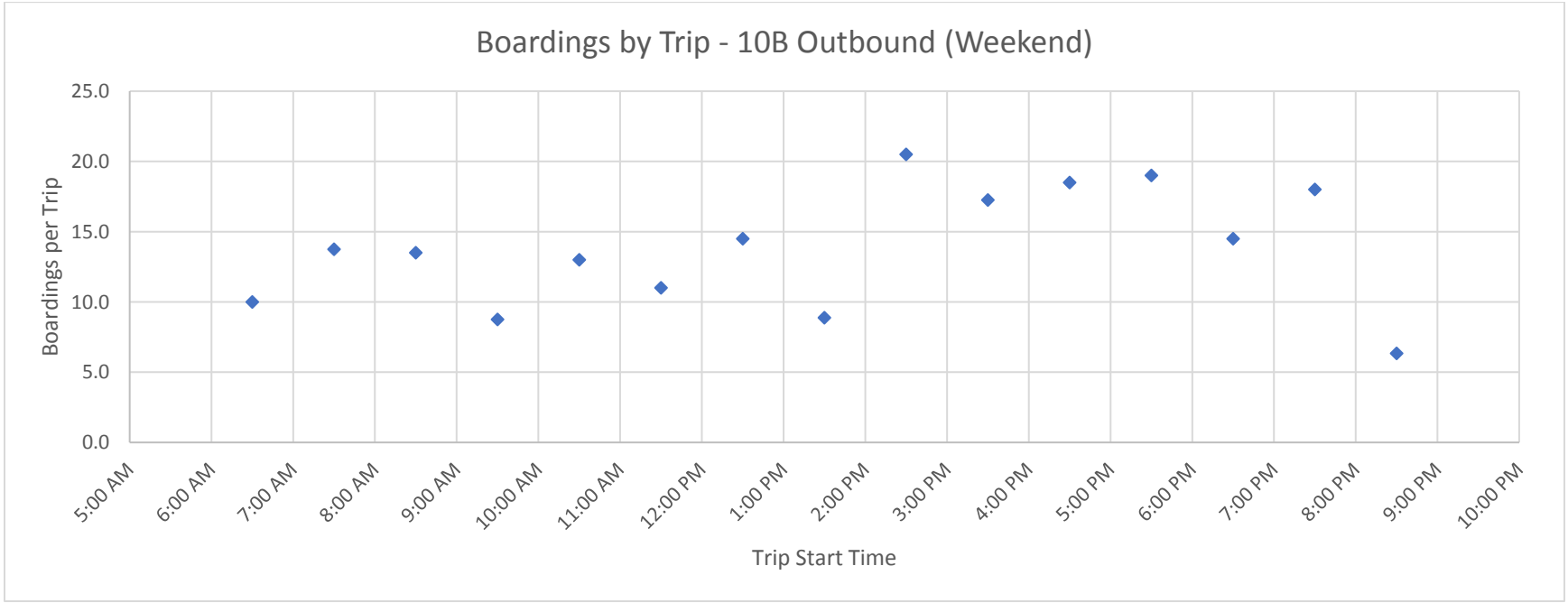
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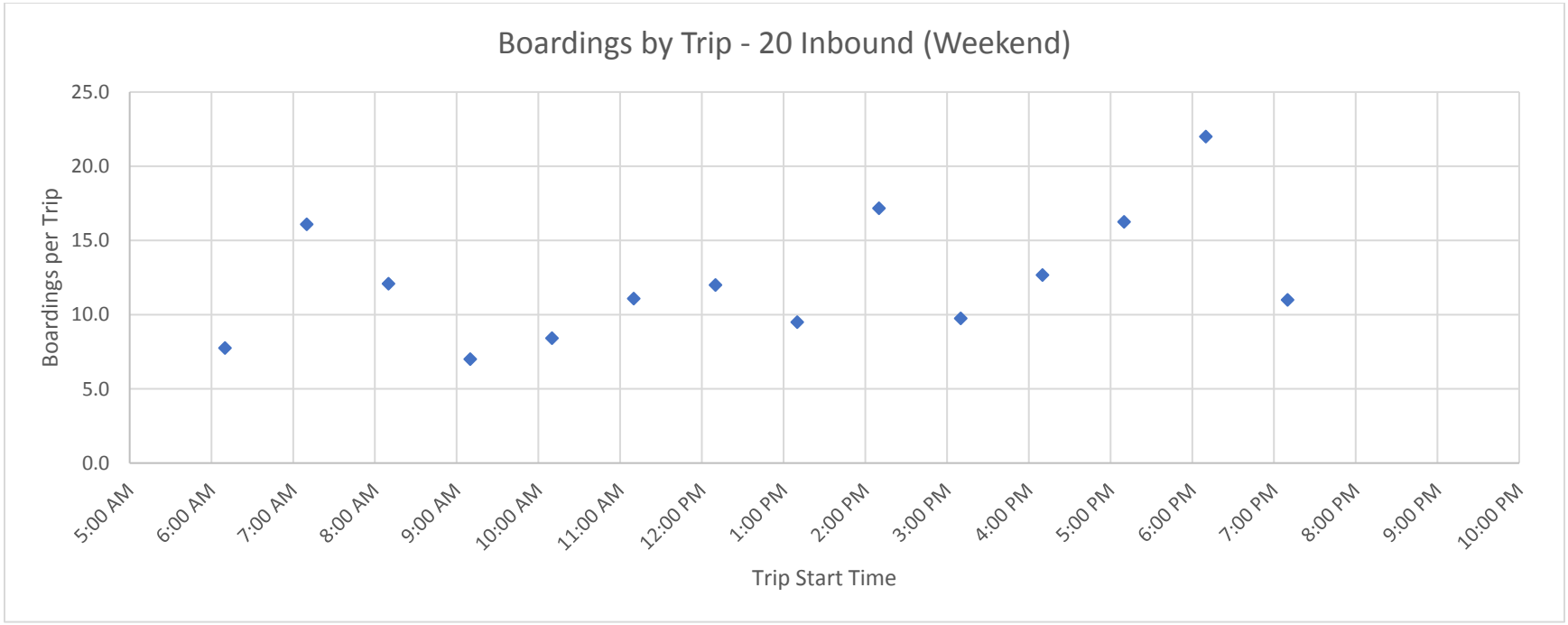
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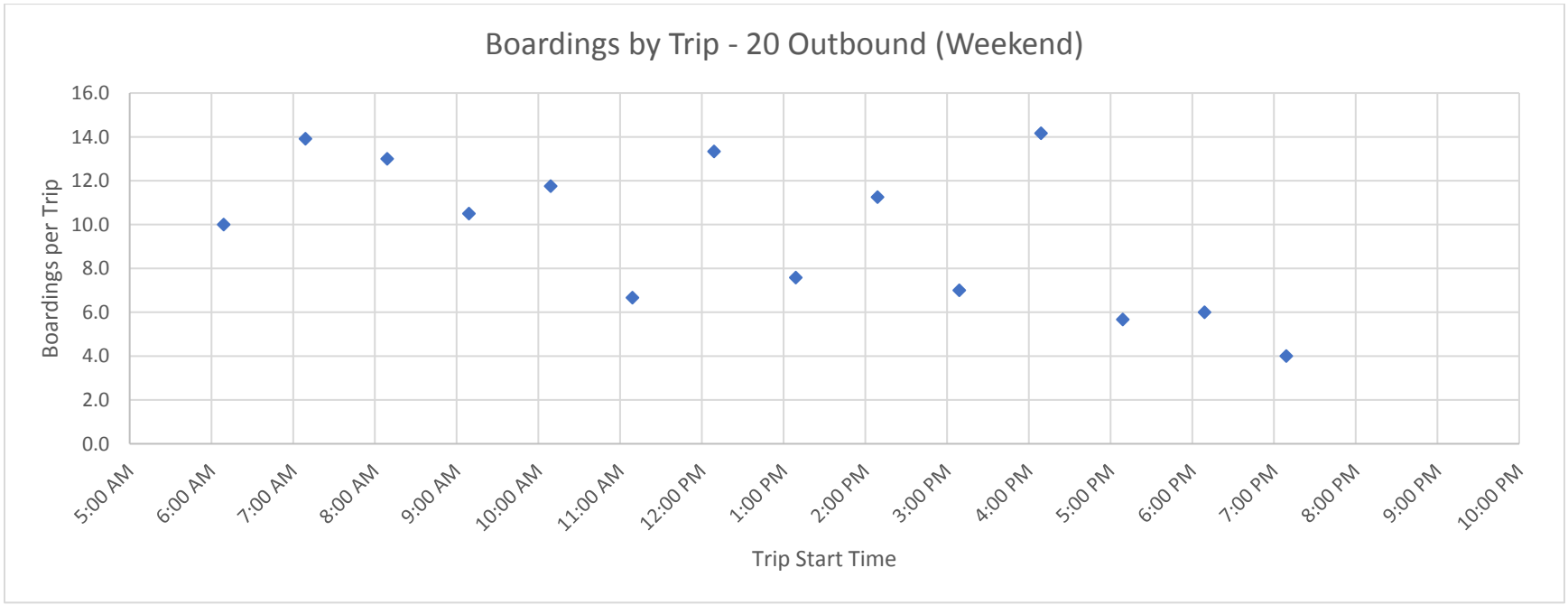
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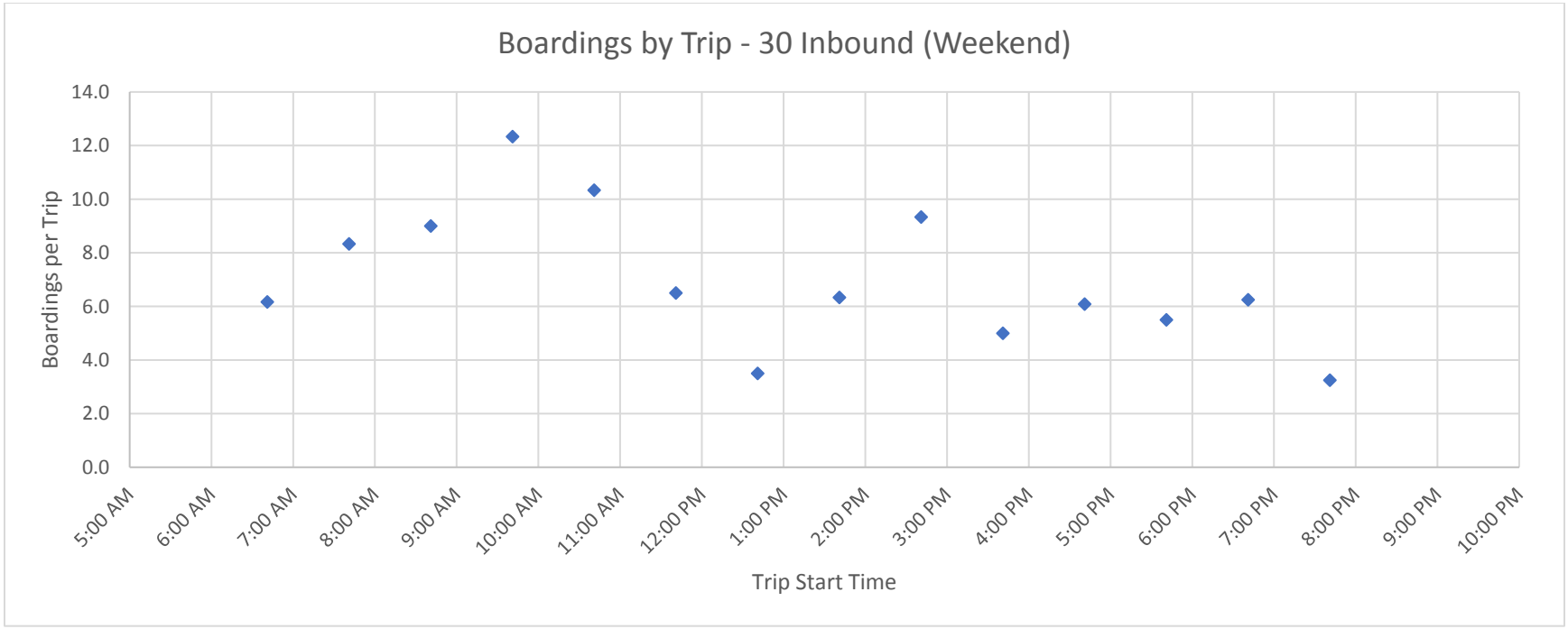
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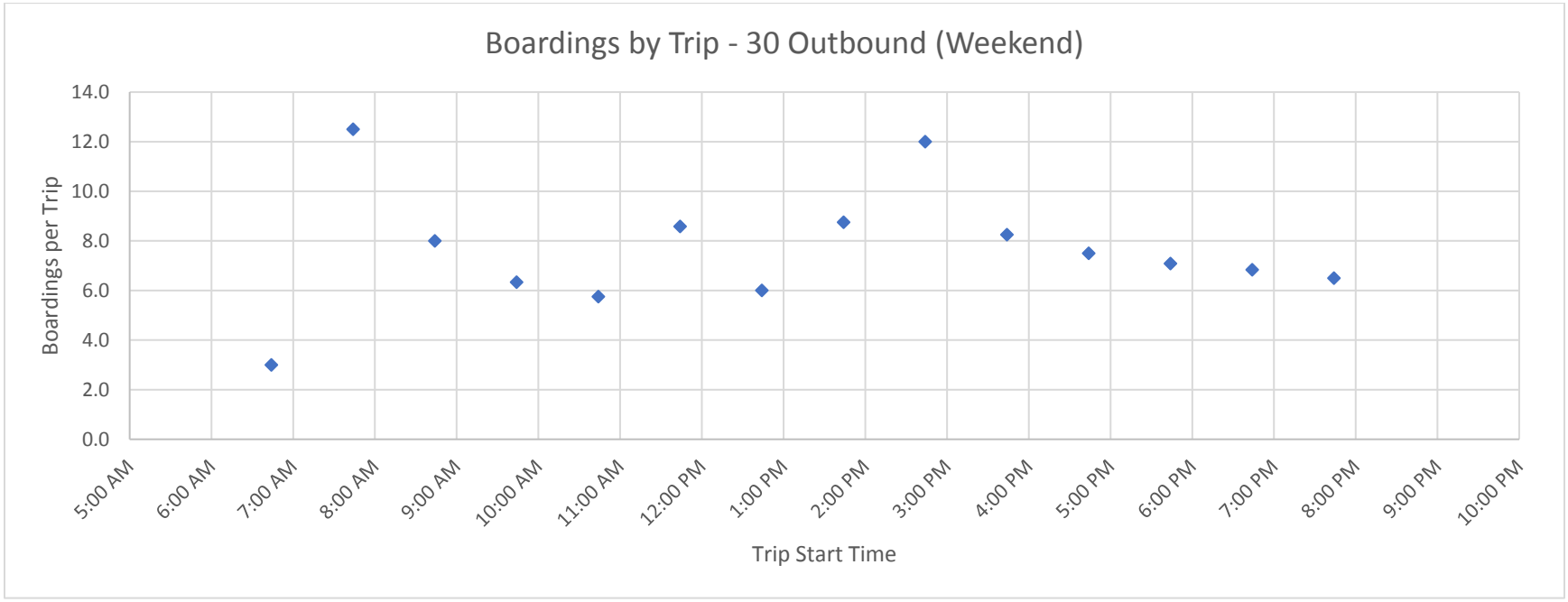
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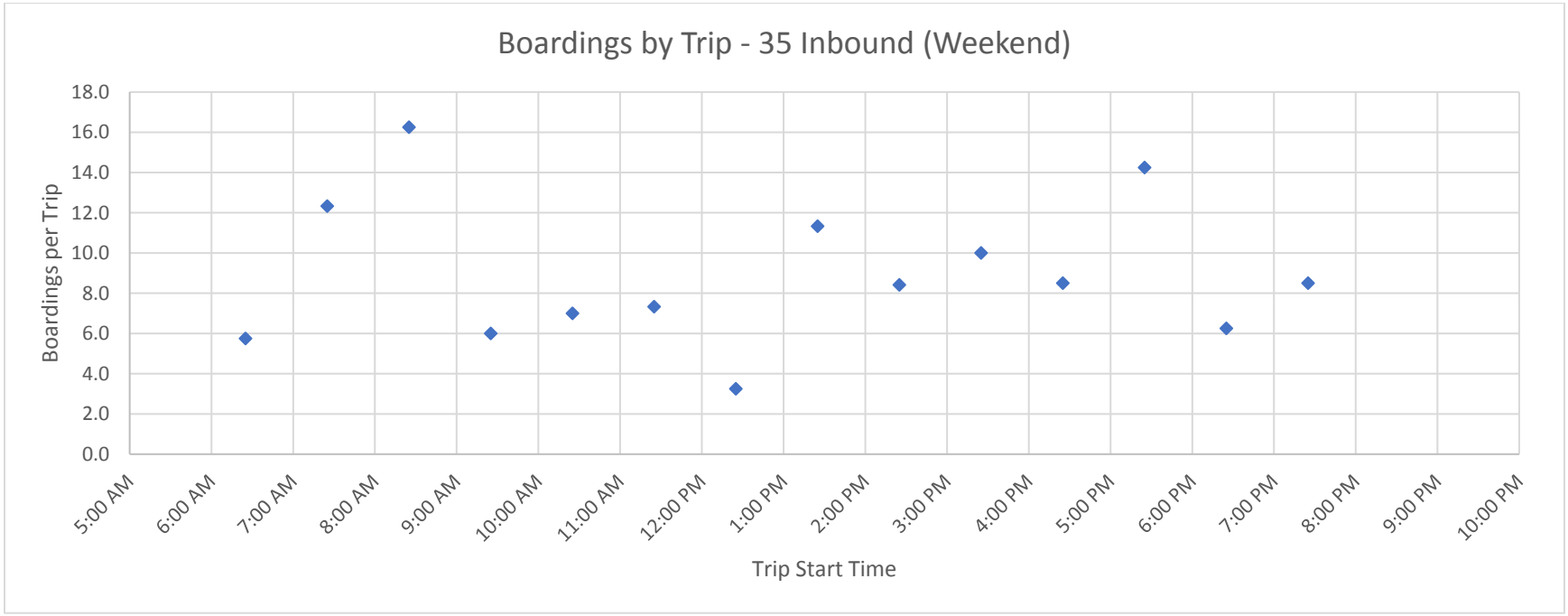
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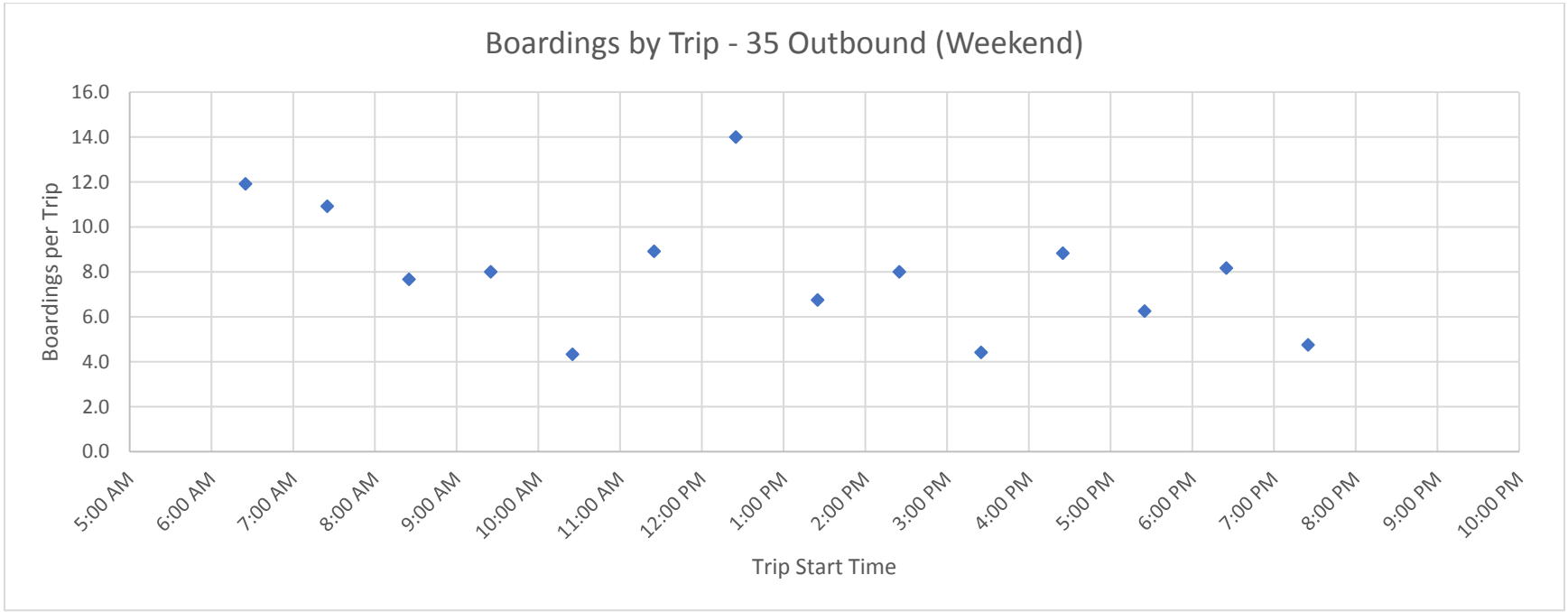
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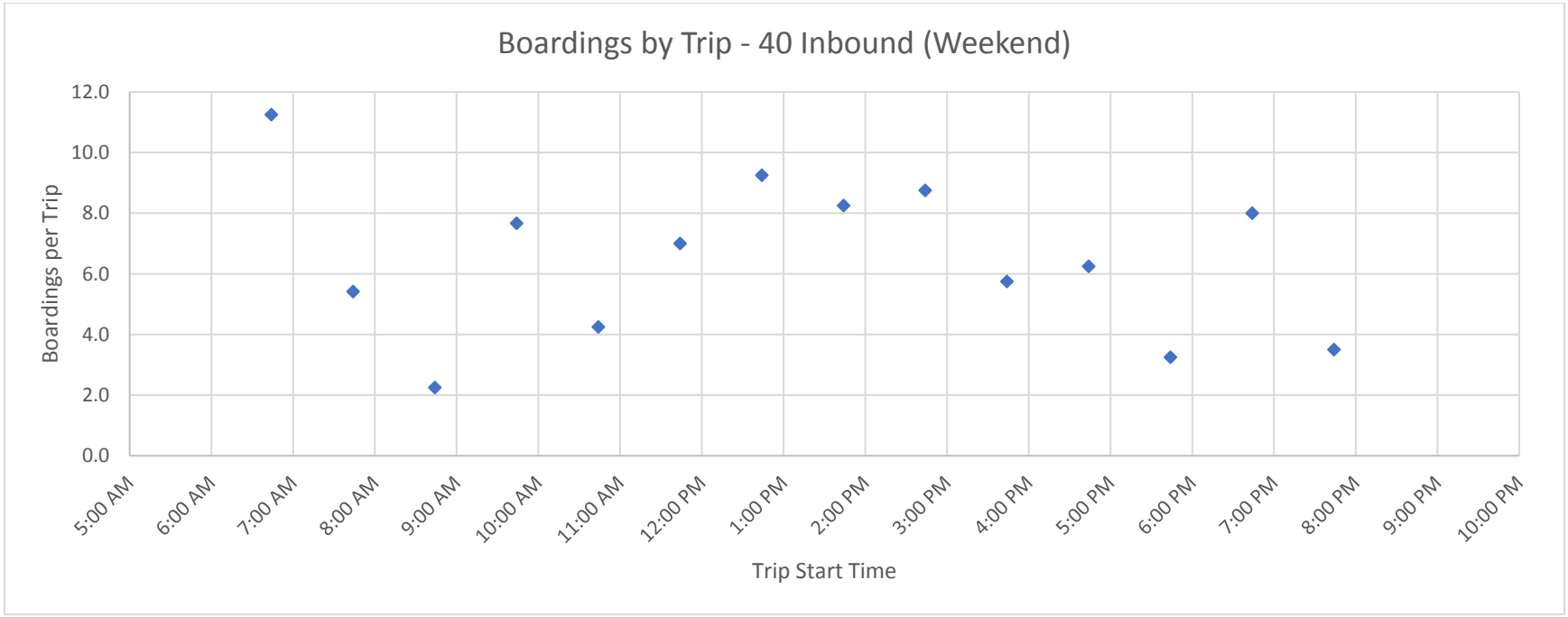
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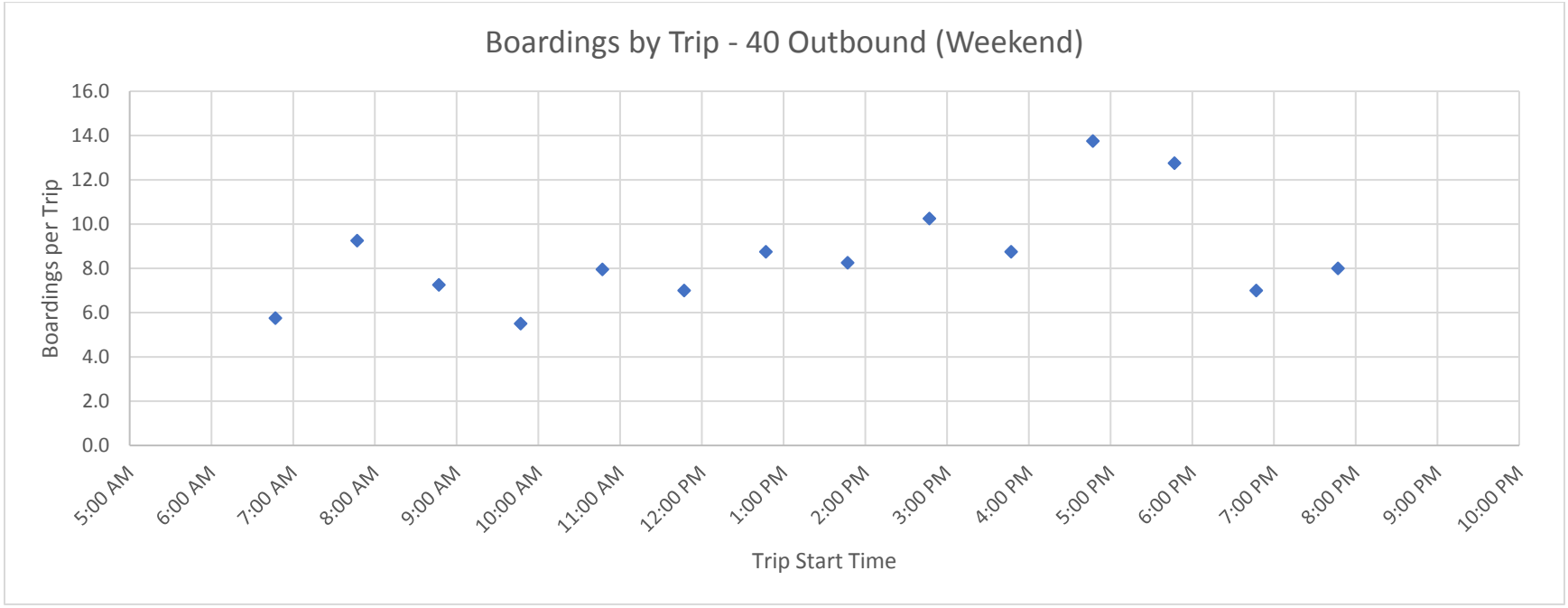
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APPENDIX B: TRANSIT PEER ASSESSMENT

Transit Peer Assessment

Technical Memorandum

October 2017

TABLE OF CONTENTS

INTRODUCTION

Gwinnett County has initiated a Comprehensive Transit Development Plan (CTDP) to determine the future development and growth for Gwinnett County Transit (GCT). The CTDP will identify short-, medium-, and long-term needs for transit services in Gwinnett County. Service plan concepts will be developed and evaluated for each of these time periods. These service plans will be developed based on both technical analysis and outreach efforts with the public, elected officials, and stakeholders. Final recommendations will be based on an extensive technical evaluation of the service plan alternatives, financial considerations, and additional outreach efforts.

The transit peer assessment compares GCT's system characteristics and performance measures with five other transit systems that have comparable size and operational characteristics. A transit peer assessment provides one way of evaluating various performance characteristics of a service provider to public transit systems with a similar operating environment. It can be informative for planning purposes for a transit agency to know how its service provision and financial characteristics compare with other agencies.

This assessment identifies five peer systems that have similar operational size, service area, and demographics to GCT, selected using a two-step screening process. While the peer analysis does not capture all the unique characteristics found in Gwinnett County, it does provide a basis for comparison to evaluate the performance of the system.

The peer system characteristics section provides an overview of each peer system, and presents general service and financial characteristics of each with comparisons to GCT to provide context for the service performance comparisons.

At the heart of the peer assessment is the comparison of GCT's local bus and commuter bus services to the five peer systems for specific service performance measures. The analysis is presented separately for local bus and commuter bus. Performance comparisons are grouped into four general categories of evaluation measures:

- Service Utilization and Productivity
- Resource Utilization
- Cost Effectiveness and Efficiency
- Service Coverage

The financial analysis section highlights the revenue sources used by GCT and its peers to fund their operations and capital requirements. This portion of the assessment is for all modes of service provided.

This technical memorandum concludes with a summary of findings drawn from this analysis.

GCT PEER SELECTION PROCESS

This assessment identifies peer systems that have similar operational size, service area, and demographics to GCT. While the peer analysis does not capture all the unique characteristics found in Gwinnett County, it does provide a basis for comparison to evaluate the performance of the system. A two-step screening process was used to select GCT's peers.

Initial Screening Methodology and Results

For the initial screening, all urban transit agencies in the 2015 NTD were filtered based on the following criteria:

- Agency operates Commuter Bus (CB) and Motor Bus (MB) modes
- Agency reports CB and MB modes separately
- Agency operates between 10 and 100 peak buses for either CB or MB

This initial screening yielded 13 candidate peers in addition to GCT, as shown in **Table 1**.

Table 1: Initial Screening Results

Full Agency Name per NTD	Nickname	City	State
Antelope Valley Transit Authority	AVTA	Lancaster	CA
City of Elk Grove	e-tran	Elk Grove	CA
City of Waukesha Transit Commission	Waukesha Metro	Waukesha	WI
Clark County Public Transportation Benefit Area Authority	C-TRAN	Vancouver	WA
Cobb County Department of Transportation Authority	CobbLinc	Marietta	GA
Johnson County Kansas, aka: Johnson County Transit	TheJO	Olathe	KS
Laketran	Laketran	Grand River	OH
Loudoun County Commuter Bus Service	LCT	Leesburg	VA
Potomac and Rappahannock Transportation Commission	PRTC	Woodbridge	VA
San Joaquin Regional Transit District	San Joaquin RTD	Stockton	CA
Santa Clarita Transit	SCV Transit	Santa Clarita	CA
Solano County Transit	SolTrans	Vallejo	CA
Yuba-Sutter Transit Authority	Yuba-Sutter Transit	Marysville	CA

The peer systems also provide demand responsive service meeting the requirements of the Americans with Disabilities Act of 1990 (ADA), either in the form of a separate complementary paratransit system or in the form of flexible local route service that meets ADA requirements. This peer assessment, however, focuses primarily on each system's local and commuter bus service offerings.

Secondary Screening Methodology and Results

For the secondary screening, the peer candidates were narrowed down to five based on the following:

- Suburban transit operator within a major metro region with rail transit
- Urbanized area (UZA) population
- Distance range from park and ride lots to UZA central city
- Service area characteristics (population, size in square miles, population density)
- Number of local and express routes

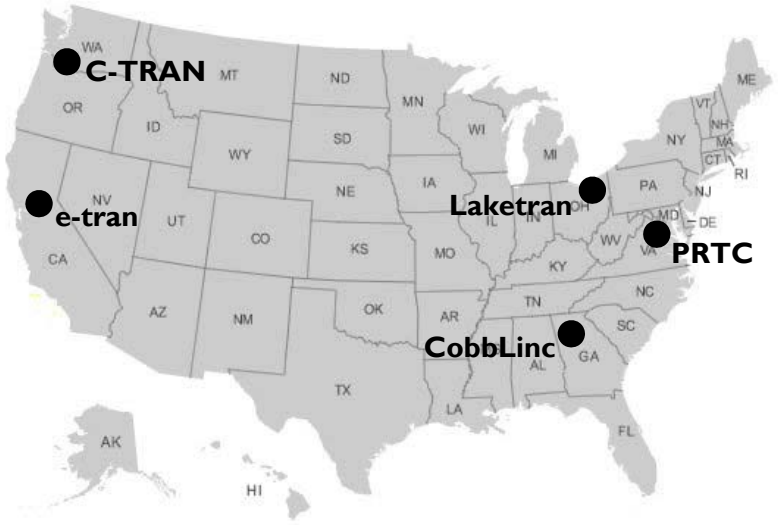
- Agency "Likeness Score"[1]
- GCT staff input

The transit systems selected by GCT staff as peers are:

- Clark County Public Transportation Benefit Area (C-TRAN), Clark County, WA
- Cobb County Department of Transportation (CobbLinc), Cobb County, GA
- City of Elk Grove Transit (e-tran), Elk Grove, CA
- Laketran, Lake County, OH
- Potomac and Rappahannock Transportation Commission (PRTC), Prince William County, VA

Figure 1 shows the peers' locations, and **Table 2** shows the peer systems with their characteristics from the secondary screening process, peer averages and comparisons with GCT.

Figure 1: Peer System Locations



Each of these peers serves a suburban county, apart from e-tran. E-tran serves the City of Elk Grove, with its local service extending slightly beyond its municipal boundary to provide a connection to Sacramento's LRT system.

The peer systems also provide demand responsive service meeting the requirements of the Americans with Disabilities Act of 1990 (ADA), either in the form of a separate complementary paratransit system or in the form of flexible local route service that meets ADA requirements. This peer assessment, however, focuses primarily on each system's local and commuter bus service offerings.

[1] From the peer selection module of the Urban iNTD application in FDOT's Florida Transit Information System (FTIS). The closer to zero the likeness score, the more similar the system is to GCT.

Table 2: Secondary Screening Results

Nickname	UZA Served	Miles to Central City	UZA Population	Service Area Population	Service Area Size	Service Area Density	Local Routes	Express Routes	Agency Likeness Score
C-TRAN	Portland, OR	10-17	1,849,898	427,743	478	895	22	7	1.32
CobbLinc	Atlanta, GA	17-30	4,515,419	487,370	208	2,343	11	6	0.50
e-tran	Sacramento, CA	13-18	1,723,634	287,113	167	1,719	10	12	0.69
Laketran	Cleveland, OH	14-51	1,780,673	219,688	189	1,162	6	4	0.83
PRTC	Washington, DC	23-32	4,586,770	382,812	273	1,402	7	16	0.62
Peer Average		**15-30**	**2,891,279**	**360,945**	**263**	**1,504**	**11**	**9**	**0.79**
GCT	**Atlanta, GA**	**19-35**	**4,515,419**	**395,774**	**132**	**2,998**	**6**	**5**	**0.00**

Note: Service area population and size calculated by CTG based on ¾ mile buffer areas around local routes, consistent with NTD policy.

PEER SYSTEM CHARACTERISTICS

This section gives an overview of each peer system, and characteristics of each based on 2015 NTD data with comparisons to GCT. It is important to note that some recent service offerings by the peer systems discussed in the peer system overview may not be reflected in the 2015 NTD data (and therefore not in the general characteristics section).

Peer System Overview

The following section provides overviews of the selected peer transit systems as operated today. Most of this information was gathered from the agencies' websites.

Clark County Public Transportation Benefit Area (C-TRAN)

Since 1981, C-TRAN has provided transit service in Clark County, WA. Today, C-TRAN's service boundary in Clark County includes the City of Vancouver and its urban growth area and the current city limits of Battle Ground, Camas, La Center, Ridgefield, Washougal, and the Town of Yacolt. C-TRAN provides service to Portland, OR and connecting service to TriMet's downtown Portland transit mall and to the MAX light rail system at two locations. All of C-TRAN's service offerings are directly operated, which means that the agency operates the service with its own employees.

C-TRAN offers several types of fixed-route transit services, including:

- **Urban Local Bus Service:** 17 urban local routes, most of which operate seven days a week and on holidays.
- **Limited Bus Service:** Four limited routes, providing limited stop service and/or a limited span of service. Only one of these operates on weekends and holidays.
- **The Vine:** In January 2017, C-TRAN implemented its first Bus Rapid Transit (BRT) route, called The Vine. The Vine features articulated buses, off-board fare collection, level boarding platforms, transit signal priority (TSP), and stops limited to 34 stations to reduce travel time, improve reliability, and control costs. This frequent service in the Fourth Plain corridor connects downtown Vancouver with the Vancouver Mall to the east, and replaced C-TRAN's Route 4.
- **Premium Express Bus Service:** Seven weekday only routes between Clark County park and ride facilities, downtown Vancouver and several locations in Portland, including downtown Portland, East Portland, the Lloyd District and Marquam Hill.

A separate paratransit service is also provided in accordance with the Americans with Disabilities Act (ADA). Additionally, C-TRAN operates three general purpose, equally accessible, dial-a-ride/point deviation routes, called Connectors. Connectors serve within the city limits of Camas, Ridgefield, and La Center. Finally, C-TRAN offers Vanpool service to commuters, working with major employers in the region and ridesharing initiatives.

C-TRAN passenger facilities include:

- Three strategically located transit centers. Two of the transit centers have park and ride facilities, and two house customer service offices.
- Six park and ride facilities primarily serving express and local routes. Two of these facilities are co-located at C-TRAN transit centers. Some of these facilities are operated by C-TRAN under a site-use lease agreement.

Cobb County Department of Transportation (CobbLinc)

CobbLinc, formerly known as Cobb Community Transit (CCT), began operations in July 1989 and provides transit services in the densest areas of the county and service to Atlanta with connections to several MARTA rail stations. Like GCT, all of CobbLinc's service offerings are purchased from a private transportation provider based on a written contract. Its current transportation provider is also Veolia.

As of late March 2017, CobbLinc offers the following fixed-route transit services:

- **Local Bus Service:** Seven local routes operate Monday through Saturday. These routes operate primarily within Cobb County, three of which provides connections to the MARTA rail system at the Hamilton E. Holmes and Arts Center stations.
- **Express Bus Service:** Six weekday, peak period only routes between Cobb County and midtown and/or downtown Atlanta. Three operate in the peak direction between Cobb County park and ride lots along the I-75 corridor and Atlanta. Each express route has a reverse peak counterpart route operating between the MARTA Arts Center Station and employment areas in Cobb County.
- **Cumberland Circulator Service:** CobbLinc's most recent service addition is Cumberland Circulator service, providing high-frequency service along convenient, accessible routes in the Cumberland area. Service consists of two routes (one in each direction) looping around the Cumberland-Galleria area Monday through Saturday. A third route provides supplemental weekday service to employment locations along Cumberland Parkway between the Cumberland Transit Center and the Home Depot Store Support Center.

A separate paratransit service complementing the local and circulator fixed-route service is also provided in accordance with the ADA. Additionally, CobbLinc began operating three FLEX zones in the Powder Springs, Powder Springs Road, and Austell area of the County in March 2015. FLEX service provides on-demand, curbside bus service, open to all passengers, with the convenience of door-to-door service by reservation and the flexibility of walk-up service from a collection point.

CobbLinc passenger facilities include:

- Two transfer centers: the Marietta Transfer Center (MTC) and the Cumberland Transfer Center (CTC). One of CobbLinc's park and ride lots is co-located at MTC. CobbLinc's offices are located adjacent to the MTC.
- CobbLinc operates five park and ride lots which are served by both local and express routes, including one at the MTC. Three are in the I-75 corridor and two are in the southern area of the County along Floyd Road.

CobbLinc also operates weekday, peak period only Xpress routes under contract to SRTA/GRTA. Three Xpress routes operate between park and ride lots in Cobb County and midtown and/or downtown Atlanta. Two operate via I-75 and the third operates via I-20. SRTA/GRTA operates two park and ride lots in Cobb County in the Town Center and Powder Springs areas.

City of Elk Grove Transit (e-tran)

Elk Grove's e-tran system started operating in early 2005, replacing Sacramento RT service to the City. With the Phase 2 extension of Sacramento's Regional Transit (RT) Blue Line from Meadowview to Cosumnes River College (CRC) which opened in September 2015, many of e-tran's routes now connect to the regional LRT network within a mile of the northwest corner of the City. All of e-tran's service offerings are purchased from a private transportation provider. Its current transportation provider is MV Public Transportation.

E-tran currently provides the following local and commuter bus services:

- **Local Bus Service:** Six routes, including four local routes and two neighborhood routes operating Monday through Friday. Route deviation requests for seniors and persons with disabilities are permitted on the two neighborhood routes. All six of these routes serve the Transfer Center at the CRC LRT station.
- **Limited Local Bus Service:** Four routes, including one weekend shuttle route operating on Saturday and Sunday and three operating on school days only timed around morning and afternoon school bell times. These routes serve the Transfer Center at Laguna Town Hall.
- **Commuter Bus Service:** Ten weekday, peak direction commuter routes, eight of which serve downtown Sacramento and two serving Rancho Cordova, as well as two reverse commuter routes. E-tran has a network of park and ride lots supporting these routes.

A separate paratransit service, called e-van, is also provided in accordance with the ADA.

Laketran

Founded in 1974 as a Dial-a-Ride system, Laketran is the public transit agency that serves Lake County, Ohio. Today, Laketran offers a family of services consisting of fixed route, commuter express, and Dial-a-Ride (demand response) services throughout this suburban county. Its commuter express service to Cleveland began in 1979. All of C-TRAN's service offerings are directly operated.

Laketran currently provides the following local and commuter bus services:

- **Local Bus Service:** Six routes operating Monday through Saturday, connecting to most of the large towns throughout the county and serving the county's major thoroughfares. Weekday service is hourly; Saturday service is every two hours. The transit system has multiple transfer locations.
- **Commuter Express Bus Service (Park-n-Ride):** Laketran operates four peak-period only routes in its commuter express service, providing robust weekday service between six Park-n-Ride lots in the County and downtown Cleveland. In late 2015, Laketran implemented a The Bus on Shoulder program, allowing commuter buses to use the I-90/SR-2 shoulders when traffic is congested, resulting in much faster travel times for commuters.

Laketran and the Greater Cleveland RTA (GCRTA) have a reciprocal transfer agreement in place. To facilitate travel between Lake and Cuyahoga Counties, riders may transfer from one system to the other at three county-line points. Commuters going to Cleveland destinations may transfer once from any Laketran commuter bus to GCRTA's HealthLine BRT or Rapid heavy rail transit lines at Tower City.

Laketran's flagship Dial-a-Ride service goes "above and beyond" the ADA requirements in several ways, providing a door-*through*-door service to seniors and people with disabilities throughout Lake County, Medicaid non-emergency transportation, and service to major medical facilities in Cuyahoga County (Cleveland). Laketran also provides a Guaranteed Ride Home project to assist commuter express riders who need to get home during the day or work late.

Laketran passenger facilities include:

- The Great Lakes Mall and Lakeland Community College operate as the local fixed routes' central hubs, where passengers can coordinate transfers at certain times, or "pulse" points. However, Laketran manages very little infrastructure associated with its local fixed route network, aside from bus stops, schedule displays, and a limited number of bus shelters.

- Laketran operates six Park-n-Ride lots that are strategically placed throughout the county near highway interchanges for easy access by both buses and private vehicles. One of these is co-located with Laketran's headquarters.

Potomac and Rappahannock Transportation Commission (PRTC)

With its proximity to Washington, D.C., PRTC has been providing commuter bus service (OmniRide) along the busy I-95 and I-66 corridors connecting to WMATA Metrorail and points north, and local bus services (OmniLink) in Prince William County and the cities of Manassas and Manassas Park since 1986. All of PRTC's service offerings are purchased from a private transportation provider. Its current transportation provider is First Transit.

PRTC currently provides the following local and commuter bus services:

- **Local Bus Service (OmniLink):** OmniLink is PRTC's local, demand response/flex route bus service that operates in the more heavily populated areas of Prince William County, Manassas, and Manassas Park. Six routes currently operate on weekdays, of which the four in the eastern part of the county also operate on Saturdays. While all six OmniLink routes have standard fixed routes with established bus stops, users can also call PRTC's customer service center to schedule off-route trips. The availability of the off-route service is limited to destinations no more than ¾ of a mile off the standard fixed route, and it is available to anyone in the community. Under the current service model, OmniLink qualifies as a demand responsive service based on the requirements set by the Americans with Disabilities Act (ADA). As such, PRTC does not need to provide additional ADA-mandated, complementary paratransit service for people with disabilities who cannot use the fixed route system.
- **Commuter Bus Service (OmniRide):** OmniRide is PRTC's commuter bus service operating from eastern Prince William County and the Manassas area in the western part of the County to destinations such as the Pentagon, Crystal City, the Rosslyn-Ballston corridor, downtown Washington D.C., Capitol Hill, the Washington Navy Yard, the Mark Center, and Tysons Corner. Buses operate only on weekdays on both the I-95 and I-66 corridors with service northbound in the mornings and southbound in the evenings. Most OmniRide routes also have midday service. There are currently six route groups operating in the I-95 corridor and two in the I-66 corridor. OmniRide buses serve designated park and ride lots near major thoroughfares. Within OmniRide services, PRTC also operates Metro Direct routes which link destinations in Prince William County with the Tysons Corner and Franconia-Springfield Metrorail stations. In addition, the Cross-County Connector provides all-day service from Monday through Friday, connecting the PRTC Transit Center and the western part of Prince William County.

PRTC also provides ridesharing services. OmniMatch is a free, personalized ridematching service for carpoolers and vanpoolers. Finally, PRTC partners with the Northern Virginia Transportation Commission (NVTC) to oversee operation of the Virginia Railway Express (VRE) commuter rail service along the Manassas and Fredericksburg lines, connecting to transit providers at stations in Virginia and Washington, D.C.

PRTC passenger facilities include:

- The PRTC Transit Center in the eastern part of the County houses the administrative offices and a transit center. The Transit Center facility serves as the main transfer point for PRTC's customers and includes a public Customer Service desk, customer facilities, and dedicated route berthing locations. The transit center has park and ride lots on site.

- There are currently over 9,800 parking spaces in approximately 40 park and ride lots in Prince William County, Manassas and Manassas Park, many of which are served by OmniRide or OmniLink routes. Most of the lots are owned and maintained by the Virginia Department of Transportation (VDOT). These lots provide convenient, well maintained and free parking lots in local neighborhoods throughout PRTC's service area. As a public service, many churches and retail outlets also designate sections of their parking lots for commuter parking. These lots also serve as meeting areas for vanpools and carpools.

Peer System General Characteristics

This section presents a summary of service area, operating and financial characteristics of each peer system's local and commuter bus services based on 2015 NTD data with comparisons to GCT. While not direct indicators of performance, a comparison of GCT characteristics against its peers provides important context for the peer assessment. An analysis of agency-wide financial characteristics and funding sources can be found in the Financial Analysis section.

It should be noted that both GCT's and CobbLinc's commuter bus NTD reports include the Xpress services for GRTA/SRTA each were providing in 2015.[2] At the direction of GCT staff, data for its Xpress routes has been removed from the commuter bus analysis. Likewise, data for Xpress routes operated by CobbLinc has been removed to provide for an equal comparison.

Local Bus

This section focuses on the local bus services operated by GCT and its peers, based on 2015 NTD data for Bus (MB) mode operations. As defined by the NTD, the MB mode includes fixed-route, as well as route deviation (such as the service PRTC provides) or point deviation services.

Service Area Characteristics

Service area is a measure of transit service in terms of population served and area covered (square miles). The NTD instructs urban transit agencies determine MB service area boundaries and population using ADA definitions and requirements (i.e., three-fourths of a mile on each side of a fixed route). However, it appeared that not all peers measured this correctly. For consistency, CTG calculated service area population and size based on ¾ mile buffer areas around local routes. **Table 3** presents the resulting local bus service area characteristics.

Table 3: Local Bus Service Area Characteristics

Peer	Service Area Population	Service Area Size (Sq. Miles)	Service Area Density
C-TRAN	427,743	478	895
CobbLinc	487,370	208	2,343
e-tran	287,113	167	1,719
Laketran	219,688	189	1,162
PRTC	382,812	273	1,402
Peer Average	**360,945**	**263**	**1,504**
GCT	**395,774**	**132**	**2,998**

[2] As of July 2017, GCT no longer provides express services for SRTA/GRTA.

Looking at **Table 3**, while GCT's service area population is 10 percent higher than the peer average, its service area is half the size of the peer average in square miles, resulting in a service area population density that is twice the peer average and higher than of all its peers.

Service Supplied and Consumed

Table 4 presents key operating characteristics (service supplied) and ridership (service consumed) for the peers' local bus services.

By way of definition, peak vehicles are the number of local buses each agency operates to meet its maximum service requirement when service is most frequent, typically during weekday morning and afternoon rush hour periods. Vehicle revenue hours and revenue miles are figures that take into account the hours and miles each vehicle travels when it is available to the general public and there is an expectation of carrying passengers.

Unlinked passenger trips is a technical term for ridership. Transit agencies must count passengers each time they board vehicles, no matter how many vehicles they use to travel from their origin to their destination.

Table 4: Local Bus Service Supplied and Consumed

Peer	Peak Vehicles	Revenue Hours	Revenue Miles	Passenger Trips
C-TRAN	54	219,812	3,069,796	5,114,515
CobbLinc	56	141,413	2,257,569	2,817,783
e-tran	18	37,339	525,339	505,836
Laketran	10	36,058	532,979	327,708
PRTC	36	92,580	1,448,905	1,417,246
Peer Average	**35**	**105,440**	**1,566,918**	**2,036,618**
GCT	**22**	**66,119**	**1,212,929**	**975,454**

From this table, it becomes evident that GCT provides less local service than most of its peers. Only e-tran and Laketran operate fewer peak vehicles, hours and miles of service. On the high end, C-TRAN tends to be an outlier, skewing the peer averages. The same holds true for GCT's local bus ridership. Of the peers, GCT is most similar to PRTC with respect to these characteristics. Each of these characteristics is discussed in more detail below.

Peak Vehicles: Peer systems operated between 10 (Laketran) and 56 (CobbLinc) local bus vehicles during peak periods. With a peak vehicle requirement of 22, GCT operates 37 percent less peak vehicles than the peer average of 35. CobbLinc's peak vehicle number, however, is suspect, as the prior year they reported only 36 peak vehicles.

Annual Revenue Hours: The peer systems operated between 36,058 (Laketran) and 219,812 (C-TRAN) annual revenue hours in RY 2015. At 66,119, GCT operated 37 percent less than the peer average of 105,440.

Annual Revenue Miles: The peer systems operated between 525,339 (e-tran) and 3,069,796 (C-TRAN) annual revenue miles in RY 2015. At 1,212,929, GCT operated 23 percent less than the peer average of 1,566,918.

Annual Passenger Trips: Riders boarded the peer systems' buses between 327,708 (Laketran) and 5,114,515 (C-TRAN) times during RY 2015. With 975,454 passenger trips, GCT carried 52 percent less riders than the peer average of 2,036,618.

Key Financial Characteristics

Table 5 presents total operating expenses and passenger fare revenues for the peers' local bus services. From this table, it is evident that commiserate with its service levels, GCT spends less to operate and collects less in passenger fares for its local bus service. Both characteristics are discussed in more detail below.

Total operating expense is an agency's full cost associated with providing transit service, including direct and indirect expenses. GCT and each of its peers are required to accurately report direct costs and allocate indirect/shared costs to each mode and type of service. Cost categories include vehicle operations, vehicle maintenance, non-vehicle maintenance, and general administration.

Passenger fare revenue is the amount an agency earns from carrying passengers. It also includes special programs such as discounted passes or ticket prices for students, the elderly, or individuals with disabilities. Usually, the rider pays for the fare, but there are also special transit fares, which are paid by an organization rather than by the rider (e.g., universities). Transit agencies must report fares by mode and type of service.

Table 5: Local Bus Key Financial Characteristics

Peer	Operating Expense	Passenger Fare Revenue
C-TRAN	$28,916,097	$4,273,160
CobbLinc	$11,661,580	$4,372,768
e-tran	$4,503,458	$602,499
Laketran	$3,140,100	$281,173
PRTC	$15,205,086	$1,769,241
Peer Average	**$12,685,264**	**$2,259,768**
GCT	**$5,730,111**	**$845,299**

Annual Operating Expense: Peer systems spent between $3,140,100 (Laketran) and $28,916,097 (C-TRAN) to operate their local service in RY 2015. With a cost of $5,730,111, GCT spends 49 percent less than the peer average of $12,685,264.

Annual Passenger Fare Revenue: The peer systems collected between $281,173 (Laketran) and $4,372,768 (CobbLinc) in annual passenger fare revenue in RY 2015. At $845,299, GCT collected 63 percent less than the peer average of $2,259,768. CobbLinc's fare revenue number, however, is suspect, compared to other characteristics.

Commuter Bus

This section focuses on the commuter bus, often referred to as express bus, services operated by GCT and its peers, based on 2015 NTD data for Commuter Bus (CB) mode operations. As defined by the NTD, the CB mode is distinct from the MB mode in that it is fixed-route bus service that primarily

connects outlying areas with a central city. Service typically uses over-the-road buses with service predominantly in one direction during peak periods, limited stops, and routes of extended length.

Service Area Characteristics

Service area is a measure of transit service in terms of population served and area covered (square miles). For commuter bus, CTG relied upon the figures the systems provided to the NTD, rather than the figures calculated for local bus. **Table 6** presents the reported commuter bus service area characteristics. In general, it appears most of the systems may have reported their jurisdiction populations and areas.

Table 6: Commuter Bus Service Area Characteristics

Peer	Service Area Population	Service Area Size	Service Area Density
C-TRAN	383,770	142	2,703
CobbLinc	688,078	210	3,277
e-tran	162,889	42	3,878
Laketran	229,230	227	1,010
PRTC	454,096	361	1,258
Peer Average	**383,613**	**196**	**2,425**
GCT	**895,823**	**437**	**2,050**

Looking at **Table 6**, it is evident that both GCT's service area population and service area size are much larger than its peers. GCT's population is 134 percent larger and its service area is 123 percent larger than the peer averages, resulting in a service area population density that is slightly (15 percent) lower.

Service Supplied and Consumed

Table 7 presents key operating characteristics (service supplied) and ridership (service consumed) for the peers' commuter bus services. The table shows that while GCT provides slightly less commuter service than the peer averages, it ranks third compared to its peers. Only PRTC and C-TRAN operate more peak vehicles, hours and miles of service. PRTC is a clear outlier, skewing the peer averages down. GCT's express bus ridership is lower than the peer average and lower than most of its peers, ranking fourth behind PRTC, C-TRAN and e-tran. Of the peers, GCT is most similar to e-tran with respect to these characteristics. Each of these characteristics is discussed in more detail below.

Table 7: Commuter Bus Service Supplied and Consumed

Peer	Peak Vehicles	Revenue Hours	Revenue Miles	Passenger Trips
C-TRAN	40	33,487	794,457	742,323
CobbLinc	17	10,104	275,234	244,389
e-tran	26	19,700	364,021	498,673
Laketran	13	10,728	271,305	147,612
PRTC	86	76,939	1,890,230	1,659,163
Peer Average	**36**	**30,192**	**719,049**	**658,432**
GCT	**29**	**23,806**	**608,374**	**372,977**

Peak Vehicles: Peer systems operated between 13 (Laketran) and 86 (PRTC) commuter bus vehicles during peak periods. With a peak vehicle requirement of 29, GCT operates 20 percent less peak vehicles than the peer average of 36.

Annual Revenue Hours: The peer systems operated between 10,104 (CobbLinc) and 76,939 (PRTC) annual revenue hours in RY 2015. At 23,806, GCT operated 21 percent less than the peer average of 30,192.

Annual Revenue Miles: The peer systems operated between 271,305 (Laketran) and 1,890,230 (PRTC) annual revenue miles in RY 2015. At 608,374, GCT operated 15 percent less than the peer average of 719,049.

Annual Passenger Trips: Riders boarded the peer systems' commuter buses between 147,612 (Laketran) and 1,659,163 (PRTC) times during RY 2015. With 372,977 passenger trips, GCT carried 43 percent less riders than the peer average of 658,432.

Key Financial Characteristics

Table 8 presents total operating expenses and passenger fare revenues for the peers' commuter bus services. Commiserate with its service levels, GCT spends slightly less to operate and collects somewhat less in passenger fares for its commuter bus service compared to peer averages, but ranks third for both measures behind only PRTC and C-TRAN. Both characteristics are discussed in more detail below.

Table 8: Commuter Bus Key Financial Characteristics

Peer	Operating Expense	Passenger Fare Revenue
C-TRAN	$6,184,503	$2,938,339
CobbLinc	$1,979,355	$305,521
e-tran	$2,976,035	$897,678
Laketran	$1,538,447	$516,301
PRTC	$15,710,321	$8,932,255
Peer Average	**$5,677,732**	**$2,718,019**
GCT	**$5,166,657**	**$2,174,991**

Annual Operating Expense: Peer systems spent between $1,538,447 (Laketran) and $15,710,321 (PRTC) to operate their local service. With a cost of $5,166,657, GCT spends 9 percent less than the peer average of $5,677,732.

Annual Passenger Fare Revenue: The peer systems collected between $305,521 (CobbLinc) and $8,932,255 (PRTC) in annual passenger fare revenue in RY 2015. At $2,174,991, GCT collected 20 percent less than the peer average of $2,718,019. CobbLinc's fare revenue number, however, is suspect, compared to other characteristics.

SERVICE PERFORMANCE COMPARISONS

This section presents a detailed comparison GCT's local bus and commuter bus services to the five peer systems for specific service performance measures. Performance comparisons are grouped into the following four general categories of evaluation measures:

Service Utilization and Productivity. Service utilization measures how passengers use the service, while service productivity measures how many passengers are served per unit of service provided (e.g., hours, miles, or vehicles).

Resource Utilization. Measures how well the agency deploys its resources.

Cost Effectiveness and Efficiency. Cost effectiveness measures how much an agency spends per passenger trip, while cost efficiency measures the cost required to provide a unit of service (e.g., vehicle hours or miles).

Service Coverage. Measures the degree to which service is provided within the coverage area.

Local Bus Performance

This section focuses on the performance of local bus services operated by GCT and its peers, based on 2015 NTD data for Bus (MB) mode operations.

Service Utilization and Productivity

Service utilization and productivity measures provide a way to evaluate how well a transit agency can attract passengers relative to service area population and the level of service operated. **Table 9** presents four key performance measures of service utilization and productivity for local bus services.

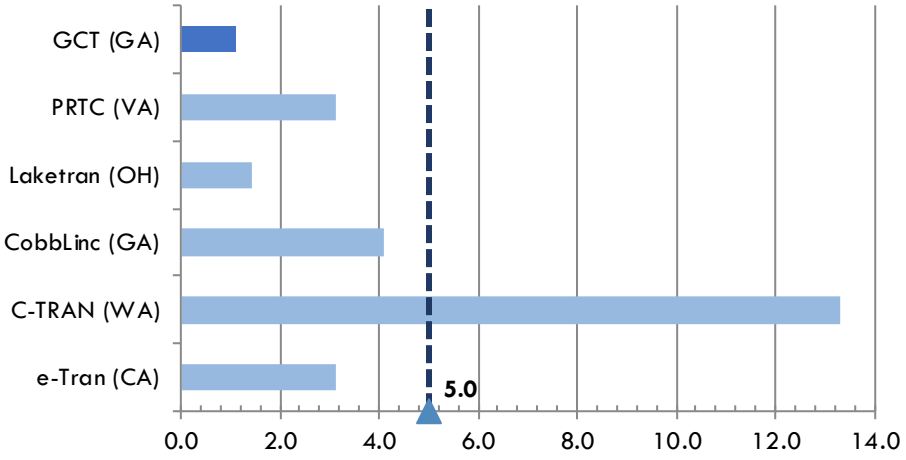
The table shows that GCT's local bus service utilization measure in terms of passenger trips per capita is significantly below the peer average, with Gwinnett ranking last in passenger trips per capita. GCT's local bus service productivity measures fare better, but are also below the peer averages. GCT carries slightly fewer passengers per revenue hour and per peak vehicle than average, but is significantly below average in terms of passenger trips per revenue mile. Each of these performance measures is shown graphically and discussed in more detail below.

Table 9: Local Bus Service Utilization and Productivity

Peer	Passenger Trips per Capita	Passenger Trips per Revenue Hour	Passenger Trips per Revenue Mile	Passenger Trips per Peak Vehicle
C-TRAN	13.33	23.3	1.7	94,713
CobbLinc	4.10	19.9	1.3	50,318
e-tran	3.11	13.6	1.0	28,102
Laketran	1.43	9.1	0.6	32,771
PRTC	3.12	15.3	1.0	39,368
Peer Average	**5.02**	**16.2**	**1.1**	**49,054**
GCT	**1.09**	**14.8**	**0.8**	**44,339**

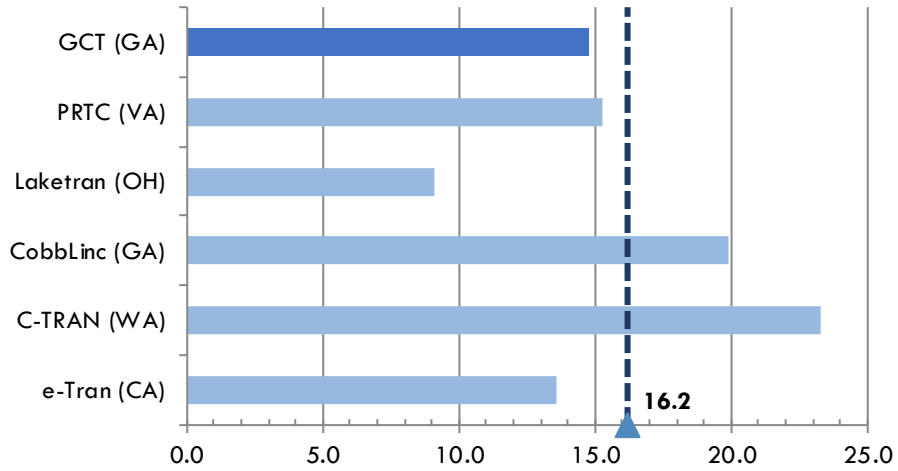
Annual Passenger Trips per Capita: The number of local bus passenger trips per person in the local bus service area is shown **Figure 2**. Peer systems attracted between 1.43 (Laketran) and 13.33 (C-TRAN) passenger trips per capita in RY 2015. At 1.09 trips per capita, GCT attracted 78 percent less than the peer average of 5.02 and ranked last among its peers. C-TRAN is an outlier for this measure, skewing the peer average.

Figure 2: Local Bus Passenger Trips per Capita



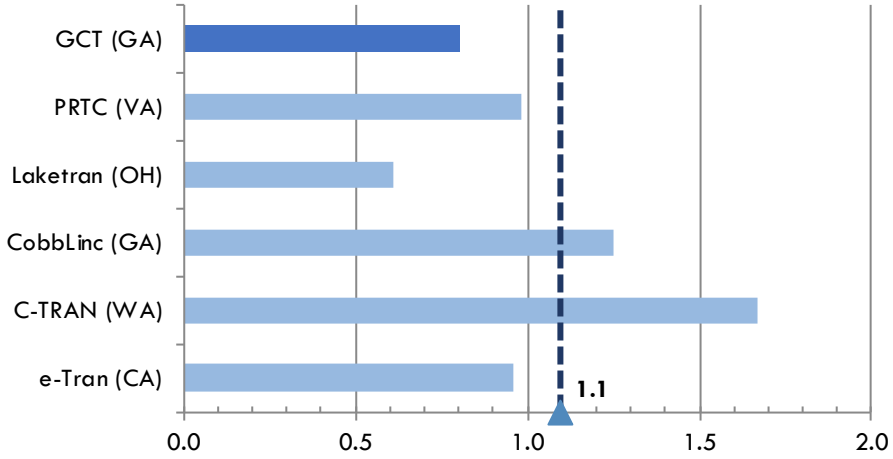
Annual Passenger Trips per Revenue Hour: Figure 3 shows that the peer systems attracted between 9.1 (Laketran) and 23.3 (C-TRAN) passenger trips per revenue hour in RY 2015. At 14.8 trips per hour, GCT attracted 9 percent less than the peer average of 16.2.

Figure 3: Local Bus Passenger Trips per Revenue Hour



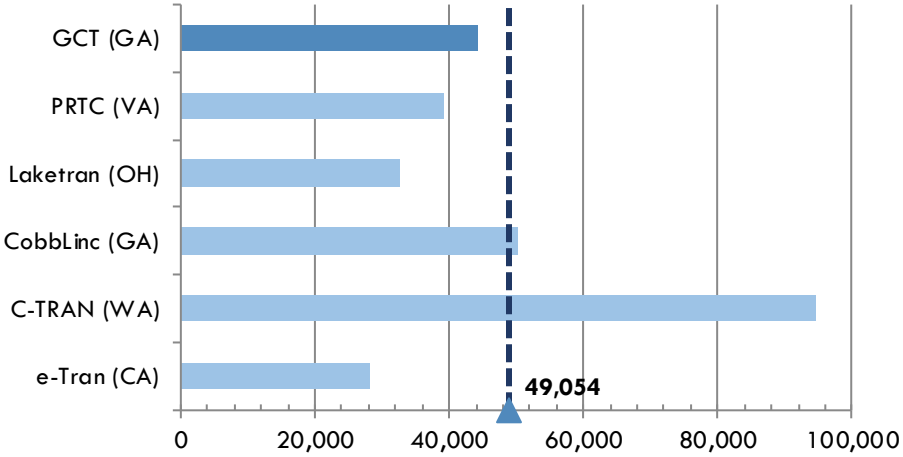
Annual Passenger Trips per Revenue Mile: As shown in **Figure 4**, the peer systems attracted between 0.6 (Laketran) and 1.7 (C-TRAN) passenger trips per revenue mile in RY 2015. At 0.8, GCT attracted 27 percent less than the peer average of 1.1.

Figure 4: Local Bus Passenger Trips per Revenue Mile



Annual Passenger Trips per Peak Vehicle: The passenger trips per peak vehicle is shown **Figure 5**. Riders boarded each peak bus between 28,102 (e-tran) and 94,713 (C-TRAN) times during RY 2015. With 44,339 trips per peak vehicle, GCT carried 10 percent less riders than the peer average of 49,054. C-TRAN is an outlier for this measure, skewing the peer average.

Figure 5: Local Bus Passenger Trips per Peak Vehicle



Resource Utilization

Table 10 presents three key measures for utilization of local bus resources. Each of these performance measures is shown graphically and discussed in more detail below.

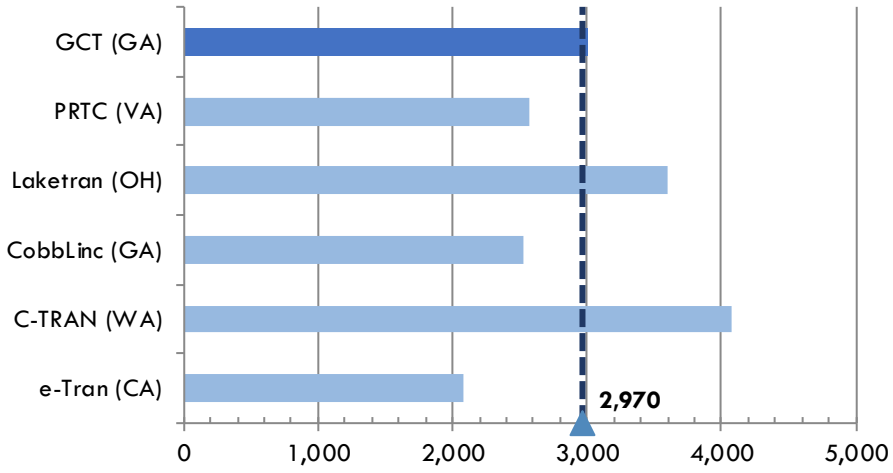
GCT generally utilizes its local bus fleet efficiently. In RY 2015, GCT put more revenue miles on each of its peak vehicles, and was on par with the peer average for revenue hours per peak vehicle and revenue miles per vehicle mile.

Table 10: Local Bus Resource Utilization

Peer	Revenue Hours per Peak Vehicle	Revenue Miles per Peak Vehicle	Revenue Miles per Vehicle Mile
C-TRAN	4,071	56,848	0.92
CobbLinc	2,525	40,314	0.96
e-tran	2,074	29,186	0.82
Laketran	3,606	53,298	0.89
PRTC	2,572	40,247	0.87
Peer Average	**2,970**	**43,949**	**0.89**
GCT	**3,005**	**55,133**	**0.89**

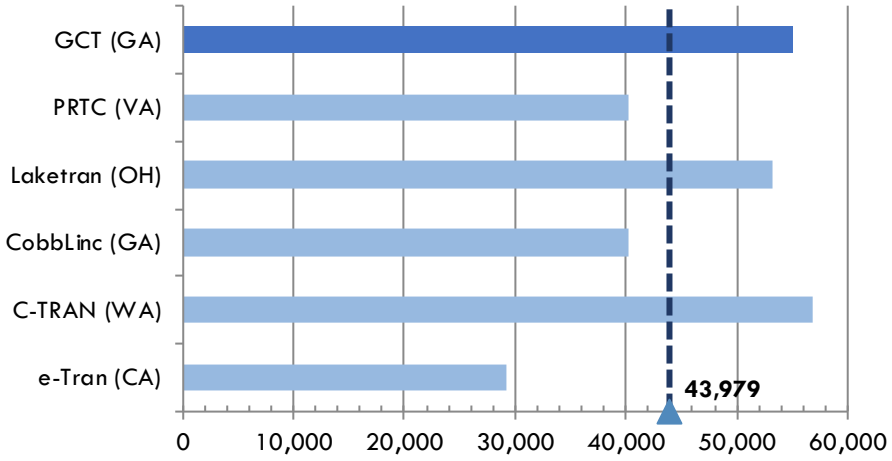
Annual Revenue Hours per Peak Vehicle: The revenue hours per peak vehicle is shown **Figure 6**. The systems operated between 2,074 (e-tran) and 4,071 (C-TRAN) revenue hours per peak vehicle during RY 2015. With 3,005 revenue hours per peak vehicle, GCT operated 1 percent more than the peer average of 2,970, ranking third among the systems.

Figure 6: Local Bus Revenue Hours per Peak Vehicle



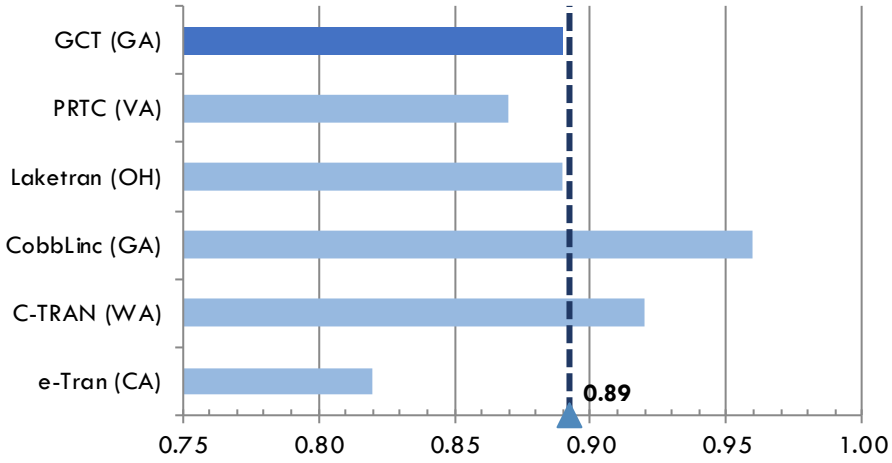
Annual Revenue Miles per Peak Vehicle: As shown in **Figure 7**, the peer systems operated between 29,186 (Laketran) and 56,848 (C-TRAN) revenue miles per peak vehicle in RY 2015. At 55,133, GCT operated 25 percent more than the peer average of 43,949, ranking second to C-TRAN among the systems.

Figure 7: Local Bus Revenue Miles per Peak Vehicle



Annual Revenue Miles per Vehicle Mile: The ratio of revenue miles per vehicle mile for local bus service is shown **Figure 8**. This ratio ranged between 0.82 (e-tran) and 0.96 (CobbLinc) in RY 2015. Nearly 90 percent of GCT's total vehicle miles are incurred during revenue service, on par with the peer average. This means that only about 10 percent of the total distance GCT's local buses travel is deadhead, meaning they are operating closed-door and not carrying passengers.

Figure 8: Local Bus Revenue Miles per Vehicle Mile



Cost Effectiveness and Efficiency

Transit systems must balance the level of service they provide with the budget required to do so. **Table 11** presents four key cost effectiveness and efficiency performance measures for local bus services.

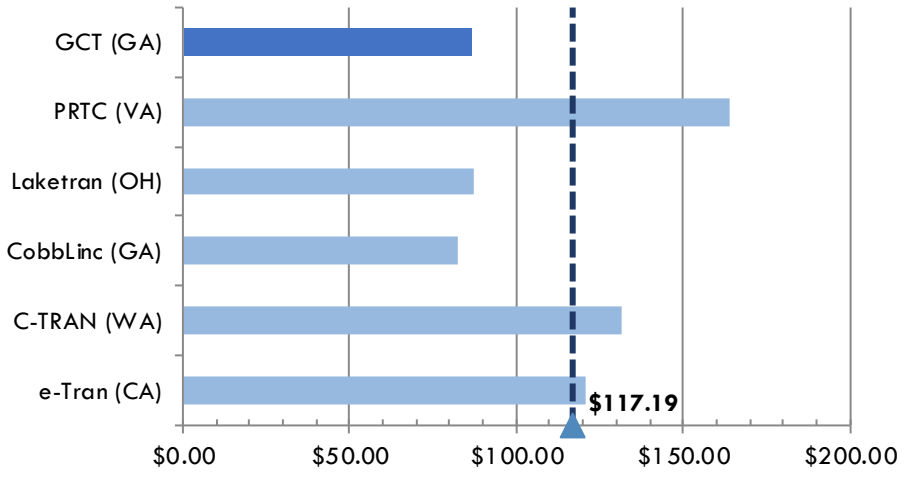
The table shows that GCT's local bus service is among the most cost efficient and effective of the peer group, performing better than the peer group averages for nearly all measures. GCT has the second-lowest total operating expense per revenue hour and the lowest total operating expense per revenue mile of its peers. GCT ranks third among its peers for total operating expense per passenger trip and total operating expense per peak vehicle. GCT's farebox recovery ratio is generally on par or slightly better than its peers, but is slightly below the peer average due to CobbLinc's unusually high farebox recovery ratio. Each of these performance measures is shown graphically and discussed in more detail below.

Table 11: Local Bus Cost Effectiveness and Efficiency

Peer	Operating Expense per Revenue Hour	Operating Expense per Revenue Mile	Operating Expense per Passenger Trip	Farebox Recovery Ratio
C-TRAN	$131.55	$9.42	$5.65	14.8%
CobbLinc	$82.46	$5.17	$4.14	37.5%
e-tran	$120.61	$8.57	$8.90	13.4%
Laketran	$87.08	$5.89	$9.58	9.0%
PRTC	$164.24	$10.49	$10.73	11.6%
Peer Average	**$117.19**	**$7.91**	**$7.80**	**17.3%**
GCT	**$86.66**	**$4.72**	**$5.87**	**14.8%**

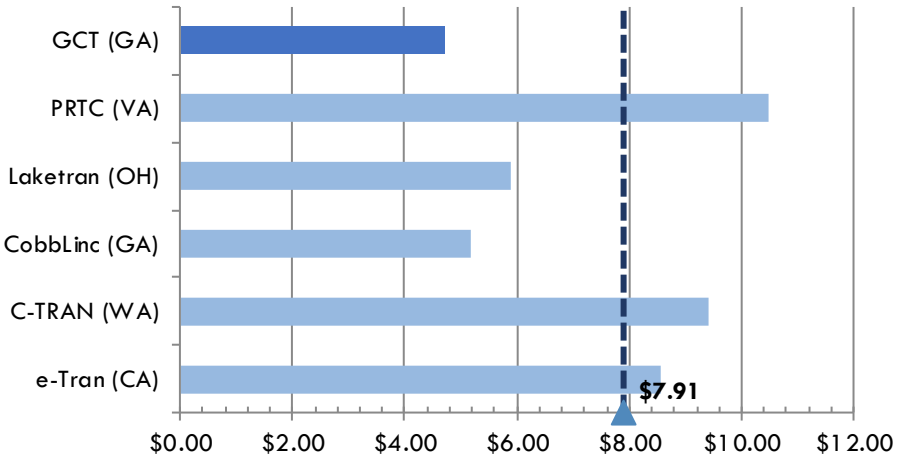
Annual Operating Expense per Revenue Hour: Figure 9 shows that the peer system costs per revenue hour ranged between $82.46 (CobbLinc) and $164.24 (PRTC) in RY 2015. At $86.66 per hour, GCT's cost was 26 percent less than the peer average of $117.19. Only CobbLinc was less expensive than GCT for this measure.

Figure 9: Local Bus Operating Expense per Revenue Hour



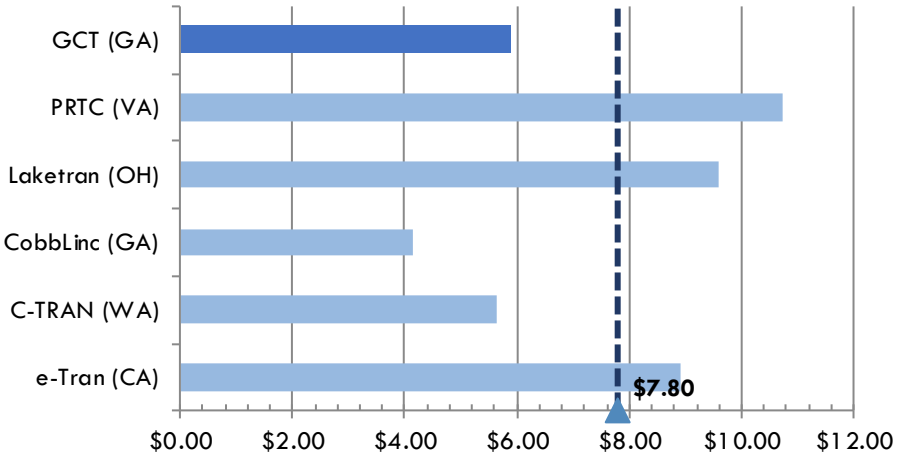
Annual Operating Cost per Revenue Mile: As shown in **Figure 10**, the peer system costs per revenue mile ranged between $5.17 (CobbLinc) and $10.49 (PRTC) in RY 2015. At $4.72 per mile, GCT was less expensive than any of its peers for this measure and 40 percent less than the peer average of $7.91.

Figure 10: Local Bus Operating Expense per Revenue Mile



Annual Operating Cost per Passenger Trip: The operating expense per passenger trip is shown in **Figure 11**. The peer system costs for this measure ranged between $4.14 (CobbLinc) and $10.73 (PRTC) in RY 2015. At $5.87 per hour, GCT's cost was 25 percent less than the peer average of $7.80.

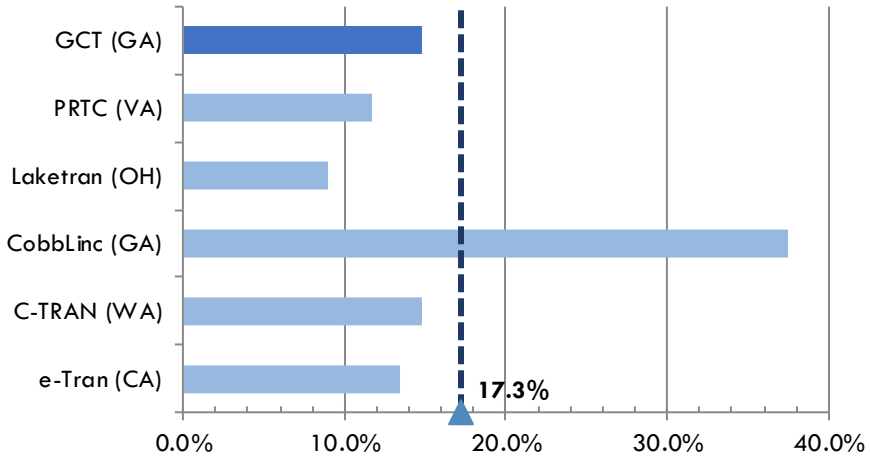
Figure 11: Local Bus Operating Expense per Passenger Trip



Farebox Recovery Ratio: The extent to which passenger fares cover operating costs is referred to as the farebox recovery rate. **Figure 12** shows that the peer systems recovered between 9.0 percent (Laketran) and 37.5 percent (CobbLinc) of its operating costs with passenger fares in RY 2015. At 14.8 percent, GCT's farebox recovery was 14 percent less than the peer average of 17.3 percent.

CobbLinc's high farebox recovery ratio, however, is highly suspect. If CobbLinc's ratio were removed, the average would be 12.2 percent and GCT's ratio would be 21 percent better.

Figure 12: Local Bus Farebox Recovery Ratio



Service Coverage

Service coverage measures compare the amount of service supplied to the service area population and service area size. **Table 12** presents four service coverage measures for the systems' local bus services. Each of these performance measures is shown graphically and discussed in more detail below.

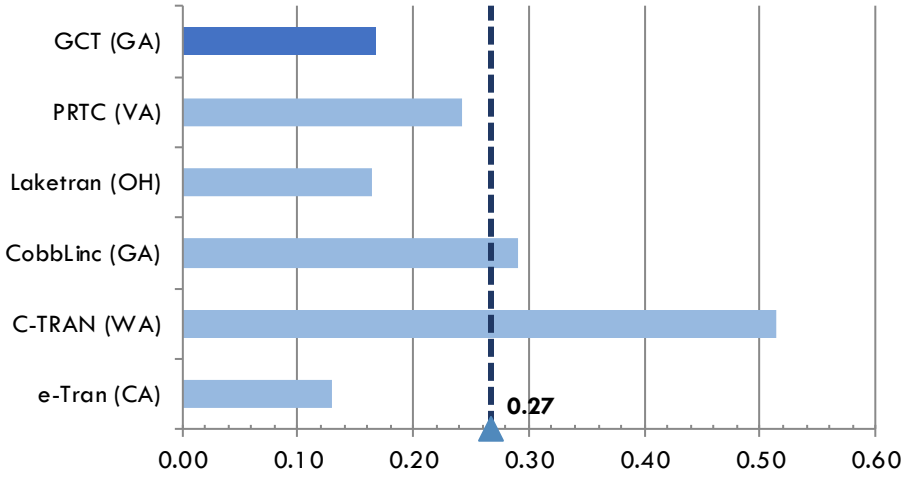
Within its local bus service area, GCT falls below its peers in service provided per capita. However, it provides more local service (revenue mile and hours) per square mile than its peers. This is because its service area population is 10 percent higher than the peer average, but its service area is half the size of the peer average in square miles.

Table 12: Local Bus Service Coverage

Peer	Revenue Hours per Capita	Revenue Miles per Capita	Revenue Hours per Square Mile	Revenue Miles per Square Mile
C-TRAN	0.51	7.18	460	6,422
CobbLinc	0.29	4.63	680	10,854
e-tran	0.13	1.83	224	3,146
Laketran	0.16	2.43	191	2,820
PRTC	0.24	3.78	339	5,307
Peer Average	**0.27**	**3.97**	**379**	**5,710**
GCT	**0.17**	**3.06**	**501**	**9,189**

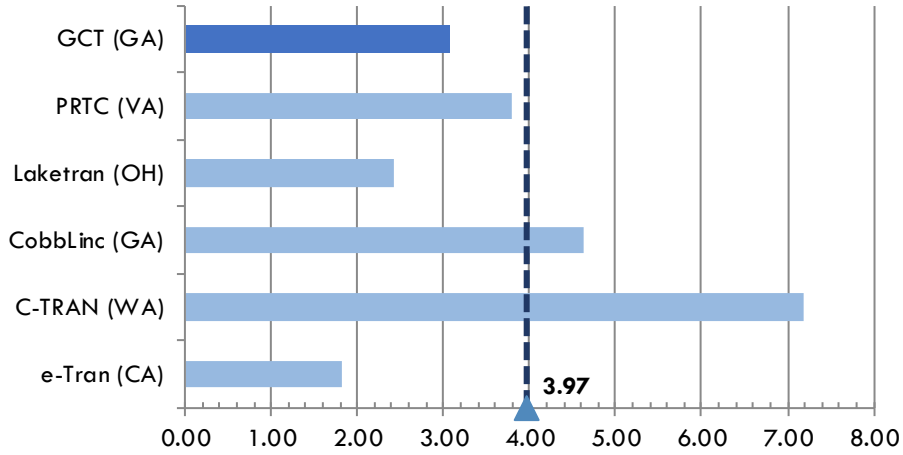
Annual Revenue Hours per Capita: The number of revenue hours per person in the local bus service area is shown **Figure 13**. Peer systems ranged between 0.13 (e-tran) and 0.51 (C-TRAN) revenue hours per capita in RY 2015. At 0.17 revenue hours per capita, GCT operated 38 percent less hours than the peer average of 0.27. C-TRAN is an outlier for this measure, skewing the peer average.

Figure 13: Local Bus Revenue Hours per Capita



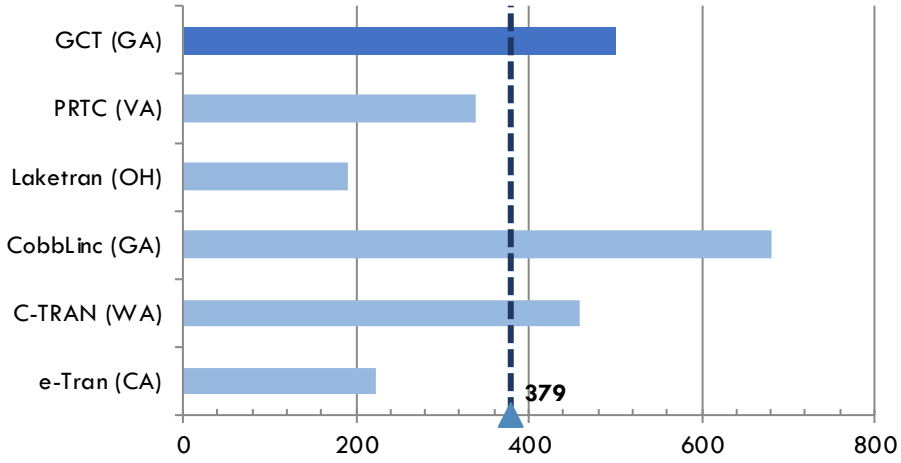
Annual Revenue Miles per Capita: As shown in **Figure 14**, the peer system revenue miles per capita ranged between 1.83 (e-tran) and 7.18 (C-TRAN) in RY 2015. At 3.06 revenue miles per capita, GCT operated 23 percent less miles than the peer average of 3.97.

Figure 14: Local Bus Revenue Miles per Capita



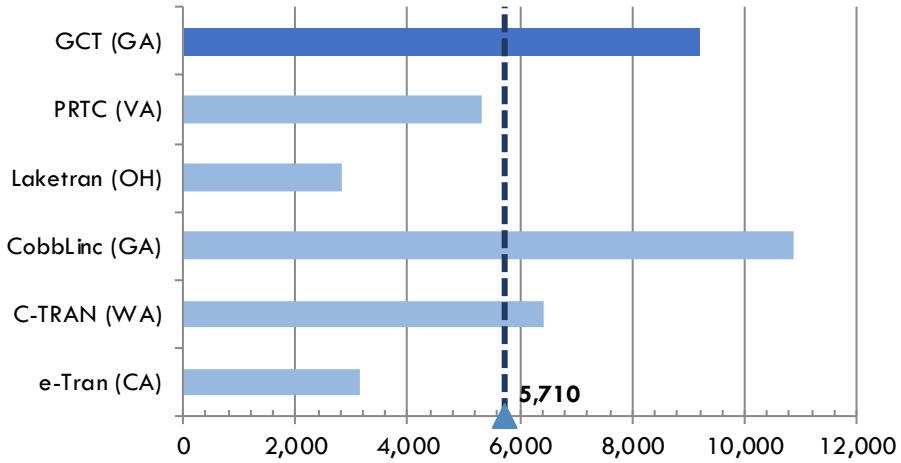
Annual Revenue Hours per Square Mile: Figure 15 shows the peer systems ranged between 191 (Laketran) and 680 (CobbLinc) revenue hours per square mile in RY 2015. At 501 revenue hours per square mile, GCT operated 32 percent more hours than the peer average of 379, second only to CobbLinc.

Figure 15: Local Bus Revenue Hours per Square Mile



Annual Revenue Miles per Square Mile: The revenue hours per square mile in RY 2015 for the peer systems ranged between 2,820 (Laketran) and 10,854 (CobbLinc), as shown in **Figure 16**. At 9,189 revenue miles per square mile, GCT operated 61 percent more miles than the peer average of 5,710, second only to CobbLinc.

Figure 16: Local Bus Revenue Miles per Square Mile



Commuter Bus Performance

This section focuses on the performance of commuter bus services operated by GCT and its peers, based on 2015 NTD data for Commuter Bus (CB) mode operations. As noted earlier, data for GRTA/SRTA express routes operated in 2015 by both GCT and CobbLinc were removed from the commuter bus analysis.

Service Utilization and Productivity

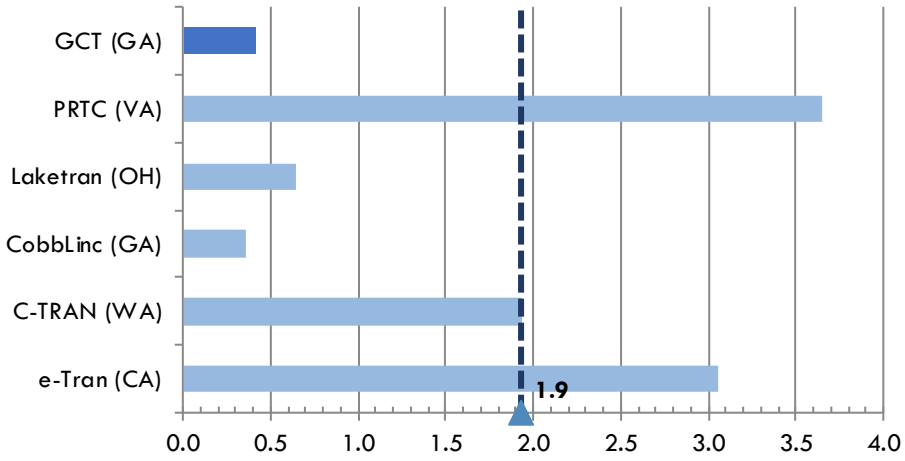
Table 13 presents four key performance measures of service utilization and productivity for commuter bus services. The table shows that GCT's local bus service utilization measure in terms of passenger trips per capita is significantly below the peer average, and ranks second to last ahead of CobbLinc. GCT's commuter bus service is also less productive than the peers in terms of trips per revenue hour, per revenue mile, and per peak vehicle, and ranks second to last in all three categories ahead of Laketran. Each of these performance measures is shown graphically and discussed in more detail below.

Table 13: Commuter Bus Service Utilization and Productivity

Peer	Passenger Trips per Capita	Passenger Trips per Revenue Hour	Passenger Trips per Revenue Mile	Passenger Trips per Peak Vehicle
C-TRAN	1.93	22.2	0.93	18,558
CobbLinc	0.36	24.2	0.89	14,376
e-tran	3.06	25.3	1.37	19,180
Laketran	0.64	13.8	0.54	11.355
PRTC	3.65	21.6	0.88	19,293
Peer Average	**1.93**	**21.4**	**0.92**	**16,552**
GCT	**0.42**	**15.7**	**0.61**	**12,861**

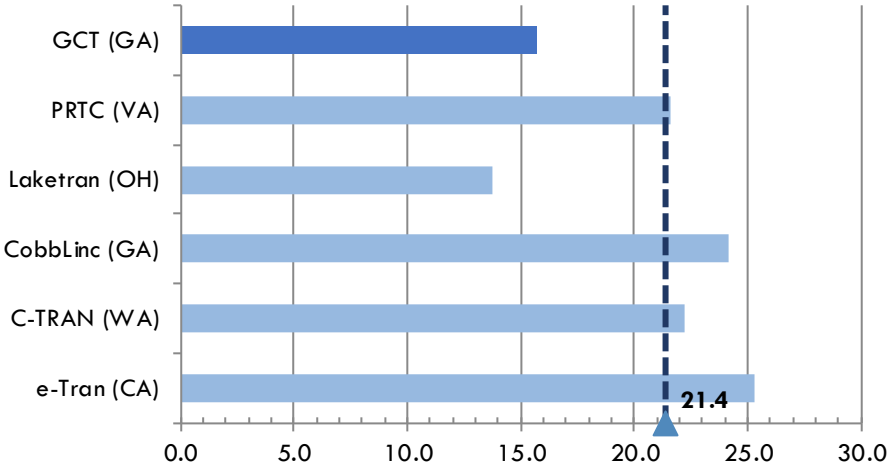
Annual Passenger Trips per Capita: The number of commuter bus passenger trips per person in the commuter bus service area is shown **Figure 17**. Peer systems attracted between 0.36 (CobbLinc) and 3.65 (PRTC) passenger trips per capita in RY 2015. At 0.42 trips per capita, GCT attracted 78 percent less than the peer average of 1.93 and ranked last second to last ahead of CobbLinc.

Figure 17: Commuter Bus Passenger Trips per Capita



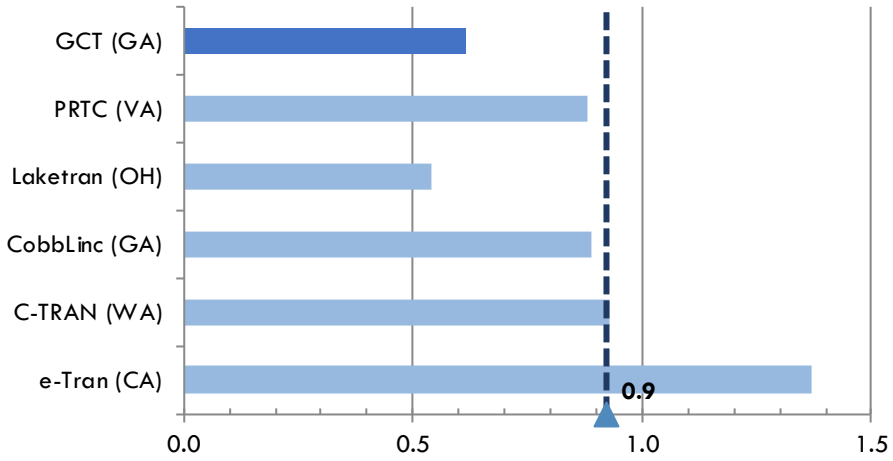
Annual Passenger Trips per Revenue Hour: Figure 18 shows that the peer systems attracted between 13.8 (Laketran) and 25.3 (e-tran) commuter bus passenger trips per revenue hour in RY 2015. At 15.7 trips per hour, GCT attracted 27 percent less than the peer average of 21.4, and ranked second to last ahead of Laketran.

Figure 18: Commuter Bus Passenger Trips per Revenue Hour



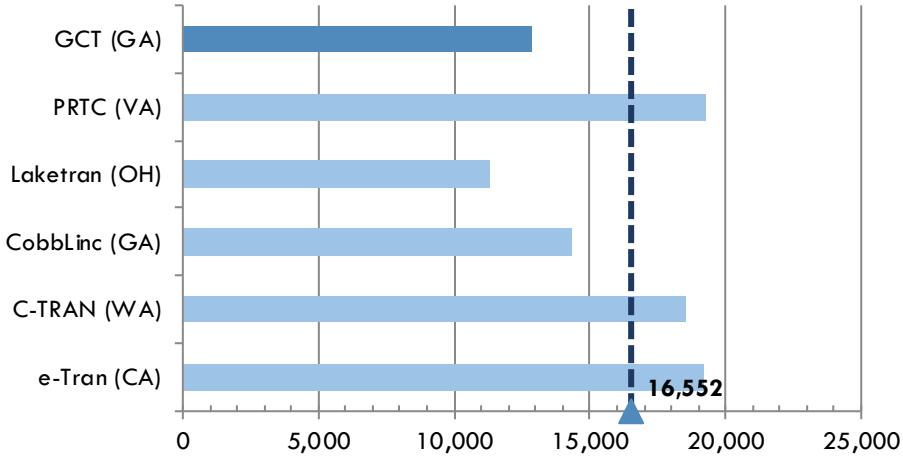
Annual Passenger Trips per Revenue Mile: As shown in **Figure 19**, the peer systems attracted between 0.54 (Laketran) and 1.37 (e-tran) commuter bus passenger trips per revenue mile in RY 2015. At 0.61, GCT attracted 33 percent less than the peer average of 0.92, and ranked second to last ahead of Laketran.

Figure 19: Commuter Bus Passenger Trips per Revenue Mile



Annual Passenger Trips per Peak Vehicle: The passenger trips per peak vehicle is shown **Figure 20**. Commuter bus riders boarded each peak bus between 11,355 (Laketran) and 19,293 (PRTC) times during RY 2015. With 12,861 trips per peak vehicle, GCT carried 22 percent less riders than the peer average of 16,552, and ranked second to last ahead of Laketran.

Figure 20: Commuter Bus Passenger Trips per Peak Vehicle



Resource Utilization

Table 14 presents three key measures for utilization of commuter bus resources. Each of these performance measures is shown graphically and discussed in more detail below.

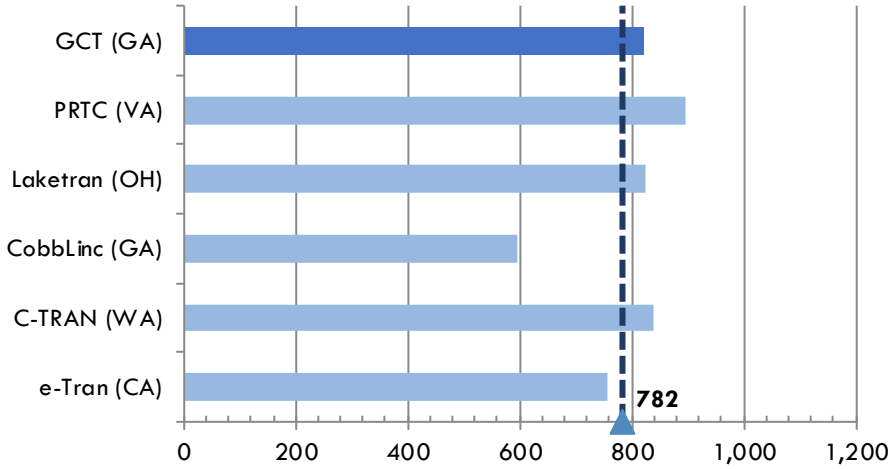
Similar to its local bus operation, GCT utilizes its fleet efficiently for the most part. Revenue hours and miles per peak vehicle are above the peer averages. Revenue miles per vehicle mile is on par with the peer average.

Table 14: Commuter Bus Resource Utilization

Peer	Revenue Hours per Peak Vehicle	Revenue Miles per Peak Vehicle	Revenue Miles per Vehicle Mile
C-TRAN	837	19,861	0.62
CobbLinc	594	16,160	0.66
e-tran	758	14,001	0.55
Laketran	825	20,870	0.51
PRTC	895	21,979	0.59
Peer Average	**782**	**18,580**	**0.59**
GCT	**821**	**20,978**	**0.60**

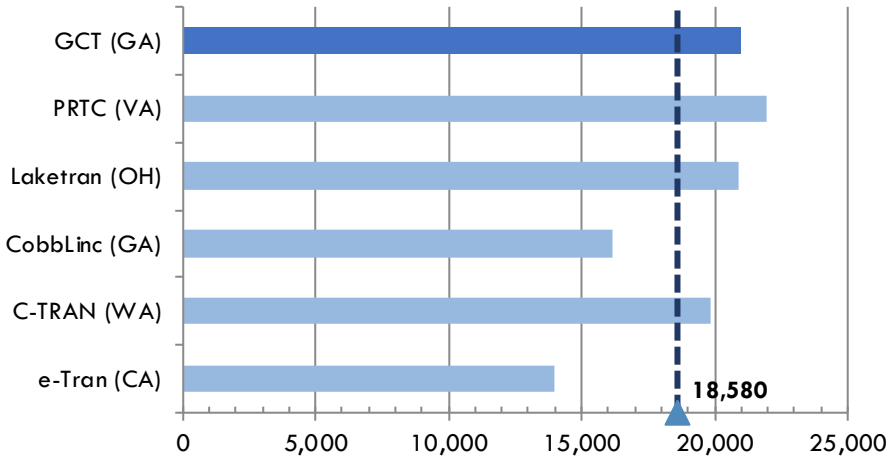
Annual Revenue Hours per Peak Vehicle: The revenue hours per peak vehicle is shown **Figure 21**. The systems operated between 768 (e-tran) and 895 (PRTC) revenue hours per peak vehicle during RY 2015. With 821 revenue hours per peak vehicle, GCT operated 5 percent more than the peer average of 0.59, ranking fourth among the systems.

Figure 21: Commuter Bus Revenue Hours per Peak Vehicle



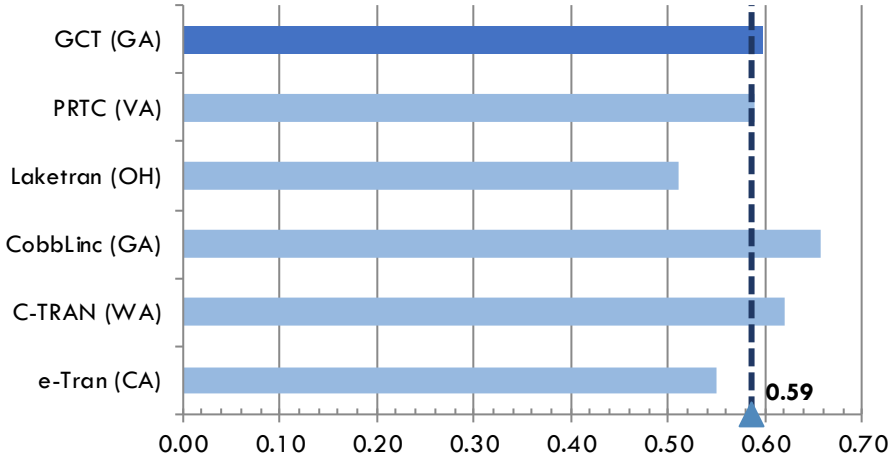
Annual Revenue Miles per Peak Vehicle: As shown in **Figure 22**, the peer systems operated between 14,001 (e-tran) and 21,979 (PRTC) revenue miles per peak vehicle in RY 2015. At 20,978, GCT operated 13 percent more than the peer average of 18,850, ranking second to PRTC among the systems.

Figure 22: Commuter Bus Revenue Miles per Peak Vehicle



Annual Revenue Miles per Vehicle Mile: The ratio of revenue miles per vehicle mile for commuter bus service is shown **Figure 23**. This ratio ranged between 0.51 (Laketran) and 0.66 (CobbLinc) in RY 2015. Sixty percent of GCT's total vehicle miles are incurred during revenue service, on par with the peer average. This means that 40 percent of the total distance GCT's commuter buses travel is deadhead, meaning they are operating closed-door and not carrying passengers.

Figure 23: Commuter Bus Revenue Miles per Vehicle Mile



Cost Effectiveness and Efficiency

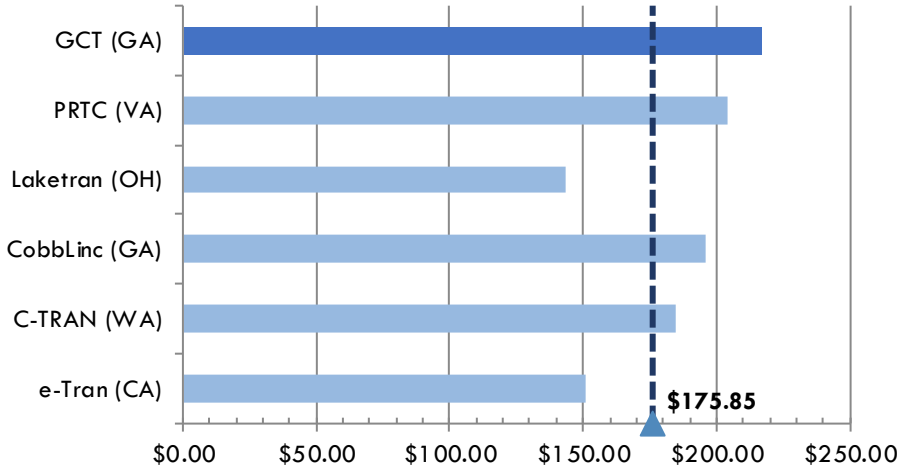
Table 15 presents four key cost effectiveness and efficiency performance measures for commuter bus services. GCT's commuter bus service is generally less cost efficient and effective than its local bus service. The table shows that GCT ranks last among its peers for total operating expense per passenger trip, per revenue mile, and per revenue hour. It ranks second to last for total operating expense per peak vehicle. GCT's commuter farebox recovery ratio, however, is better than the peer average, due to CobbLinc's unusually low farebox recovery ratio. Each of these performance measures is shown graphically and discussed in more detail below.

Table 15: Commuter Bus Cost Effectiveness and Efficiency

Peer	Operating Expense per Revenue Hour	Operating Expense per Revenue Mile	Operating Expense per Passenger Trip	Farebox Recovery Ratio
C-TRAN	$184.68	$7.78	$8.33	47.5%
CobbLinc	$195.90	$7.19	$8.10	15.4%
e-tran	$151.07	$8.18	$5.97	30.2%
Laketran	$143.40	$10.42	$10.42	33.6%
PRTC	$204.19	$9.47	$9.47	56.9%
Peer Average	**$175.85**	**$8.46**	**$8.46**	**36.7%**
GCT	**$217.03**	**$13.85**	**$13.85**	**42.1%**

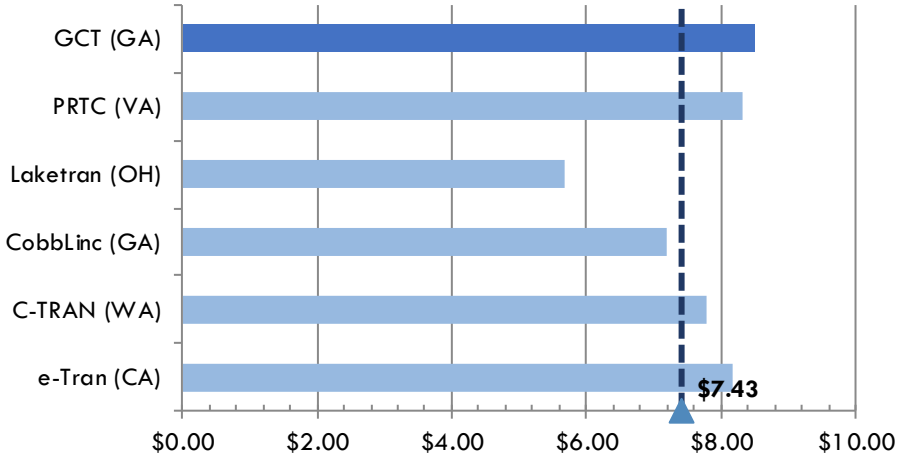
Annual Operating Expense per Revenue Hour: Figure 24 shows that the peer system costs per revenue hour ranged between $143.40 (Laketran) and $204.19 (PRTC) in RY 2015. At $217.03 per hour, GCT was the most expensive of all the peers for this measure, and was 23 percent greater than the peer average of $175.85.

Figure 24: Commuter Bus Operating Expense per Revenue Hour



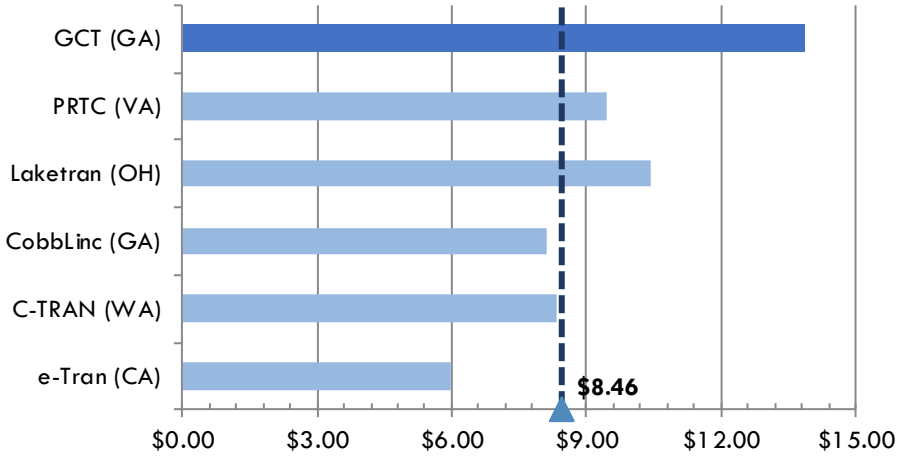
Annual Operating Cost per Revenue Mile: As shown in **Figure 25**, the peer system costs per revenue mile ranged between $7.19 (CobbLinc) and $10.42 (Laketran) in RY 2015. At $13.85 per mile, GCT was more expensive than any of its peers for this measure and 14 percent higher than the peer average of $8.46

Figure 25: Commuter Bus Operating Expense per Revenue Mile



Annual Operating Cost per Passenger Trip: The operating expense per passenger trip is shown in **Figure 26**. The peer system costs for this measure ranged between $5.97 (e-tran) and $10.42 (Laketran) in RY 2015. At $13.85 per hour, GCT's cost was 64 percent higher than the peer average of $8.46.

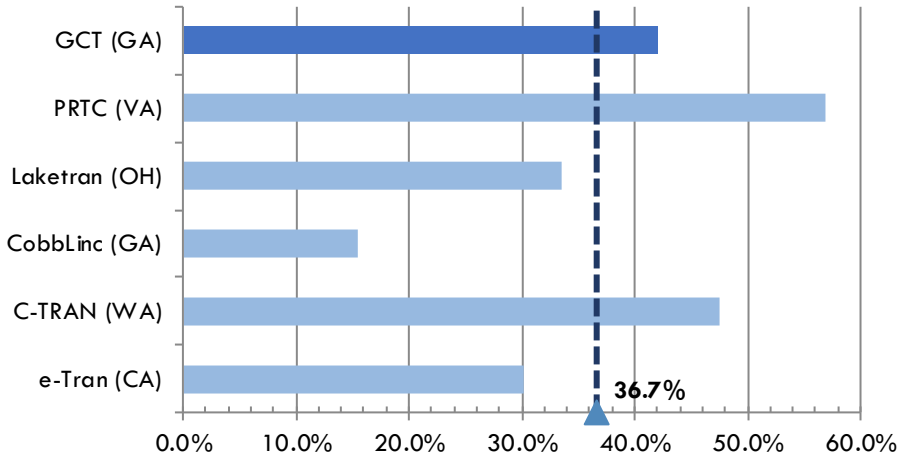
Figure 26: Commuter Bus Operating Expense per Passenger Trip



Farebox Recovery Ratio: Figure 27 shows that the peer systems recovered between 15.4 percent (CobbLinc) and 56.9 percent (PRTC) of its commuter bus operating costs with passenger fares in RY 2015. At 42.1 percent, GCT's farebox recovery was 15 percent higher than the peer average of 36.7 percent.

CobbLinc's low farebox recovery ratio, however, is highly suspect. If CobbLinc's ratio were removed, the average would be 42.0 percent and GCT's ratio would be on par with the average.

Figure 27: Commuter Bus Farebox Recovery Ratio



Service Coverage

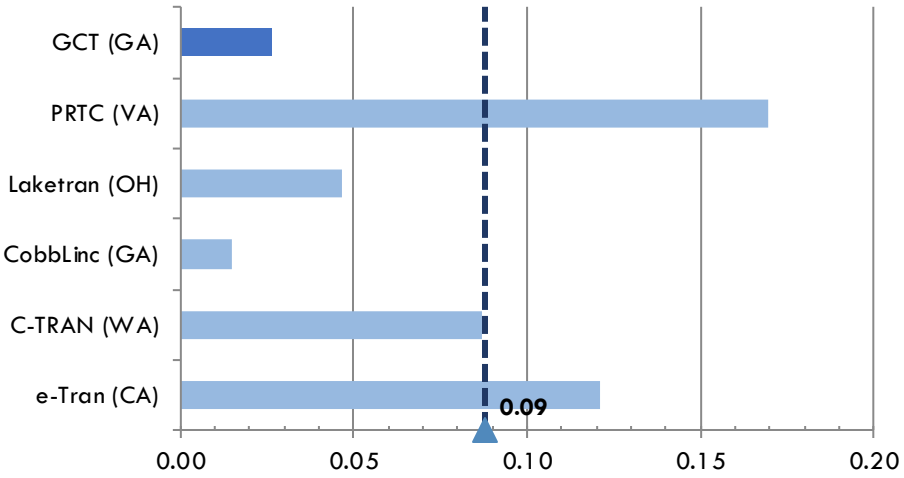
Table 16 presents four service coverage measures for the systems' commuter bus services. Within its commuter bus service area, GCT provides substantially less commuter bus service per service area capita and per square mile than the peer averages. Each of these performance measures is shown graphically and discussed in more detail below.

Table 16: Commuter Bus Service Coverage

Peer	Revenue Hours per Capita	Revenue Miles per Capita	Revenue Hours per Square Mile	Revenue Miles per Square Mile
C-TRAN	0.09	2.07	236	5,595
CobbLinc	0.01	0.40	48	1,311
e-tran	0.12	2.23	469	8,667
Laketran	0.05	1.18	47	1,195
PRTC	0.17	4.16	213	5,236
Peer Average	**0.09**	**2.01**	**203**	**4,401**
GCT	**0.03**	**0.68**	**54**	**1,392**

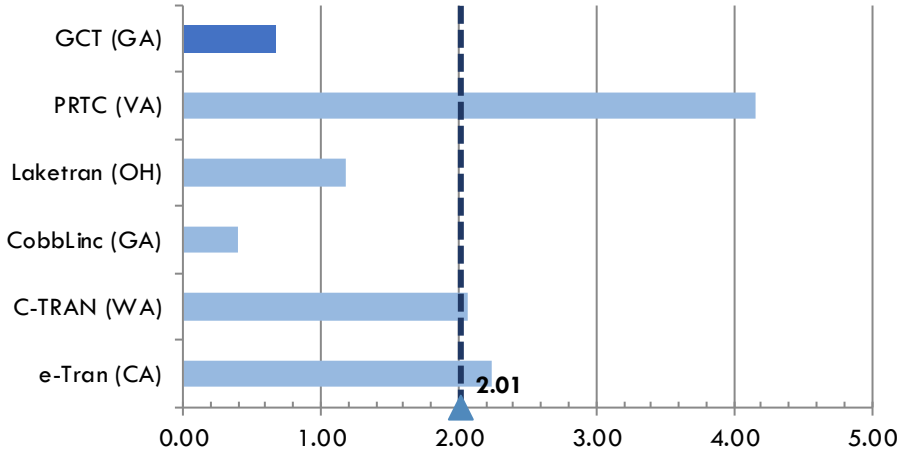
Annual Revenue Hours per Capita: The number of revenue hours per person in the commuter bus service area is shown **Figure 28**. Peer systems ranged between 0.01 (CobbLinc) and 0.17 (PRTC) revenue hours per capita in RY 2015. At 0.03 revenue hours per capita, GCT operated 70 percent less hours than the peer average of 0.09, second to last ahead of CobbLinc. PRTC is an outlier for this measure, skewing the peer average.

Figure 28: Commuter Bus Revenue Hours per Capita



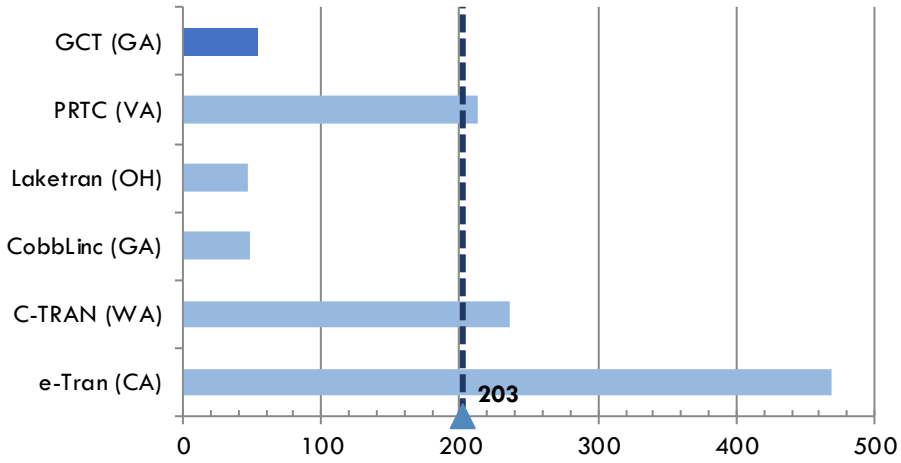
Annual Revenue Miles per Capita: As shown in **Figure 29**, the peer system revenue miles per capita ranged between 0.40 (CobbLinc) and 4.16 (PRTC) in RY 2015. At 0.68 revenue miles per capita, GCT operated 66 percent less miles than the peer average of 2.01. PRTC is an outlier for this measure, skewing the peer average.

Figure 29: Commuter Bus Revenue Miles per Capita



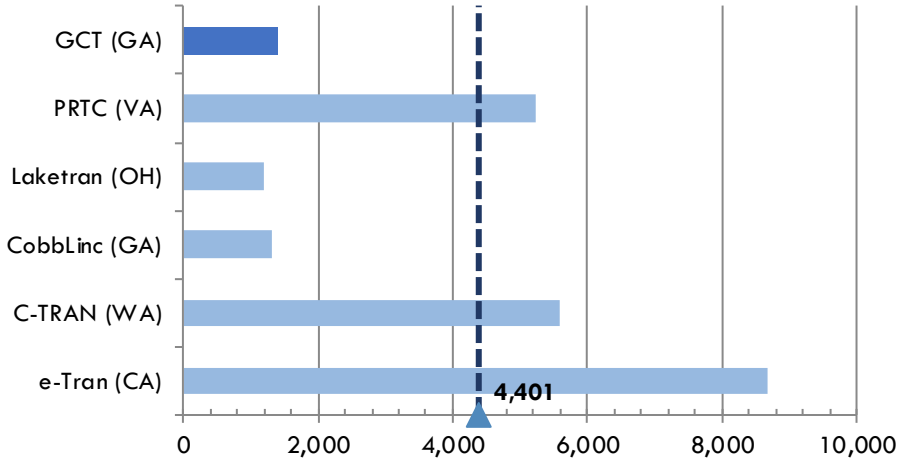
Annual Revenue Hours per Square Mile: Figure 30 shows the peer systems ranged between 47 (Laketran) and 469 (e-tran) revenue hours per square mile in RY 2015. At 54 revenue hours per square mile, GCT operated 73 percent less hours than the peer average of 203, ranking fourth ahead of Laketran and CobbLinc. E-tran is an outlier for this measure, skewing the peer average.

Figure 30: Commuter Bus Revenue Hours per Square Mile



Annual Revenue Miles per Square Mile: The revenue hours per square mile in RY 2015 for the peer systems ranged between 1,195 (Laketran) and 8,667 (e-tran), as shown in **Figure 31**. At 1,392 revenue miles per square mile, GCT operated 68 percent less miles than the peer average of 4,401, ranking fourth ahead of Laketran and CobbLinc. E-tran is an outlier for this measure, skewing the peer average.

Figure 31: Commuter Bus Revenue Miles per Square Mile



FINANCIAL ANALYSIS

This section highlights the revenue sources used by GCT and its peers to fund their operations and capital requirements. The data utilized for the following analyses indicate the range of funding sources reported for the 2015 NTD report year.

Note that all figures in this section combine costs for operating all types of service provided by the agencies, including demand response and vanpool service. This is the only format in which the online NTD provides funding sources.

Funding Sources Used for Operating Expenses

The NTD categorizes sources of operating funds as passenger fares (fare revenue); local, state and federal funds; and other funds. **Figure 32** illustrates GCT's key revenue sources for operating in RY 2015. GCT relied most heavily on federal (32.4 percent), local (28.2 percent), and fare revenues (25.6 percent). Other sources made up 13.8 percent of the operating budget.

Figure 32: GCT Operating Funding Sources

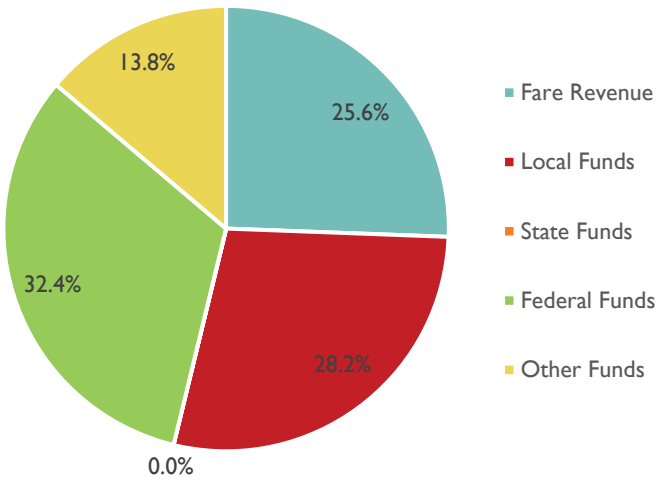


Table 17 and the next two figures present the operating funds for GCT and the peer systems compare sources of funds. **Figure 33** provides an overview of the total dollar level of operating funding used by GCT and its peer systems. **Figure 34** uses percentages to show the relative reliance on each funding source for GCT and the peers.

Table 17: Comparison of Operating Budgets

	C-TRAN	CobbLinc	e-tran	Laketran	PRTC	Peer Average	GCT
Total Operating Expense	**$46,816,301**	**$18,451,596**	**$8,850,490**	**$13,066,464**	**$40,247,582**	**$25,486,487**	**$15,157,704**
Fare Revenue	$7,820,987	$5,456,860	$1,618,572	$1,344,296	$18,426,838	$6,933,511	$3,880,049
Local Assistance	$32,416,138	$9,263,310	$5,948,984	$6,995,188	$11,074,352	$13,139,594	$4,273,512
State Assistance	$1,177,302	$99,808	$350,911	$1,015,728	$6,440,329	$1,816,816	$0
Federal Assistance	$4,871,381	$2,514,368	$924,828	$3,506,429	$2,456,799	$2,854,761	$4,908,402
Other Funds	$530,493	$1,117,250	$7,195	$204,823	$1,849,264	$741,805	$2,095,741

Figure 33: Funding Sources for Operating Expenses (in 2015 Dollars)

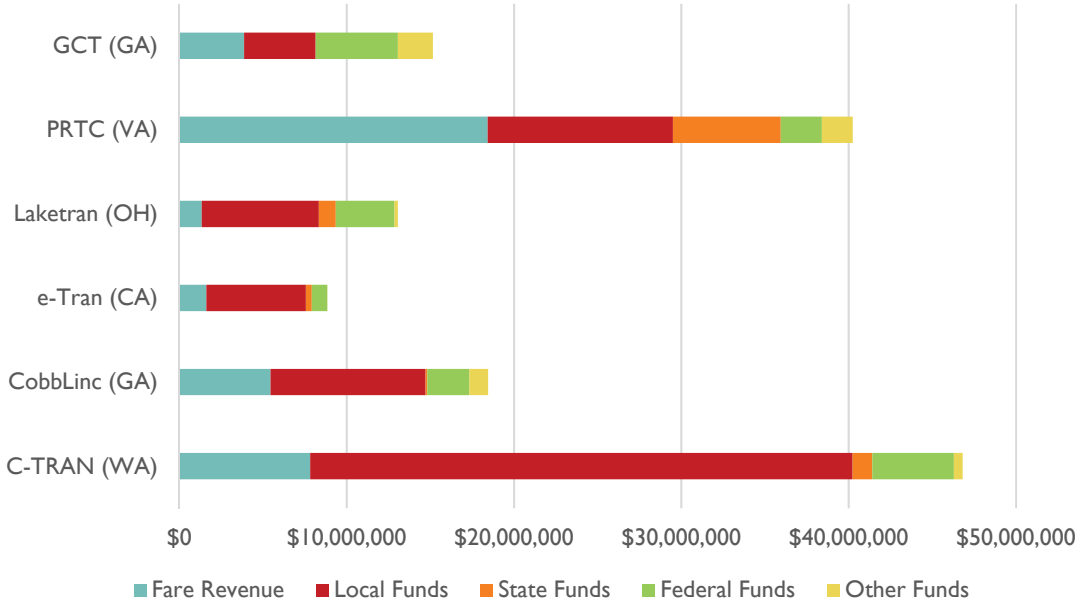
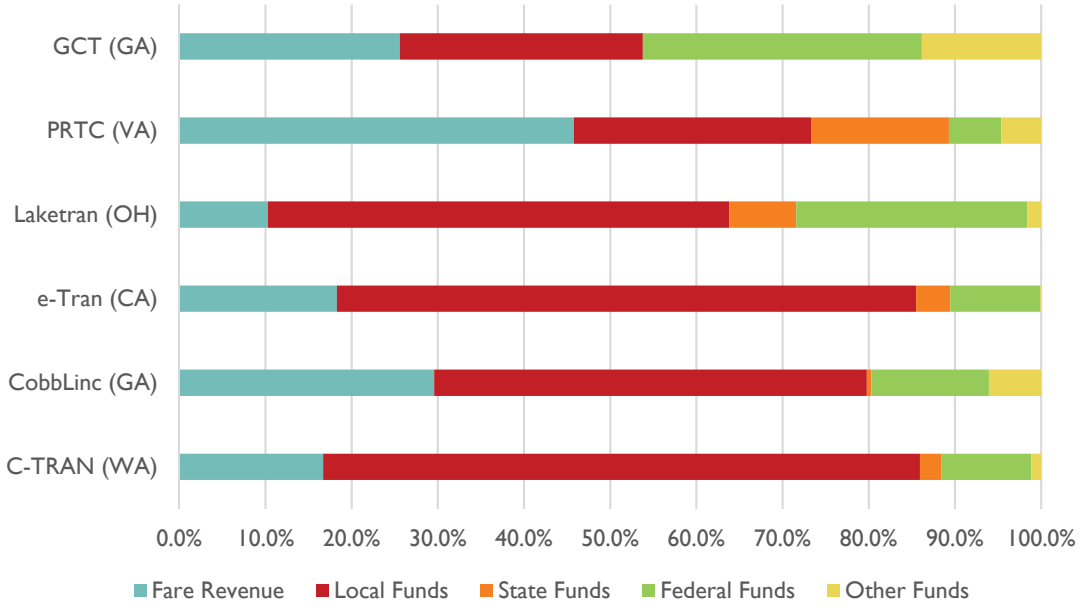


Figure 34: Funding Sources for Operating Expenses (in Percentages)



Key observations are as follows:

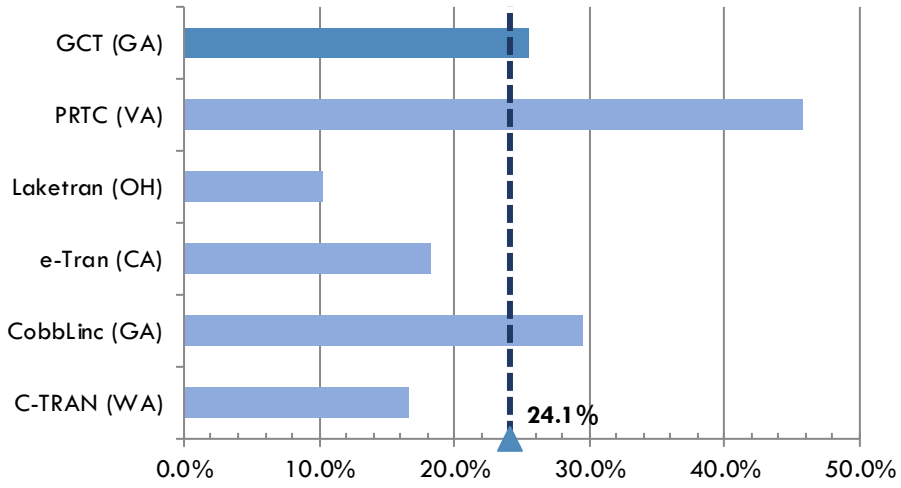
- GCT's RY 2015 operating budget of $15,157,704 was 41 percent less than the peer average ($25,486,487). E-tran had the smallest operating budget of $8,850,490 and PRTC had the largest at $46,816,301.
- GCT derived over 85 percent of its operating revenue from a combination of federal funds, local funds and fare revenues.
- Federal operating assistance for GCT (32.4 percent of the total operating budget) was nearly two and a half time greater than the peer average (13.5 percent).

The subsections that follow detail reliance on fare revenues and local, state, and federal funds.

Fare Revenues for Operating

As discussed in the previous section, transit agencies collect fares for the services they provide, and the extent to which fare revenues cover operating costs is referred to as the farebox recovery rate. As shown in **Figure 35**, the farebox recovery rate of GCT's peers across all modes ranged from 10.3 percent (Laketran) to 45.8 percent (PRTC), with an average reliance on fares of 24.2 percent. With its 25.6 percent reliance on fares, GCT was slightly (6 percent) higher than the peer average.

Figure 35: Percent of Operating Funding from Fare Revenues

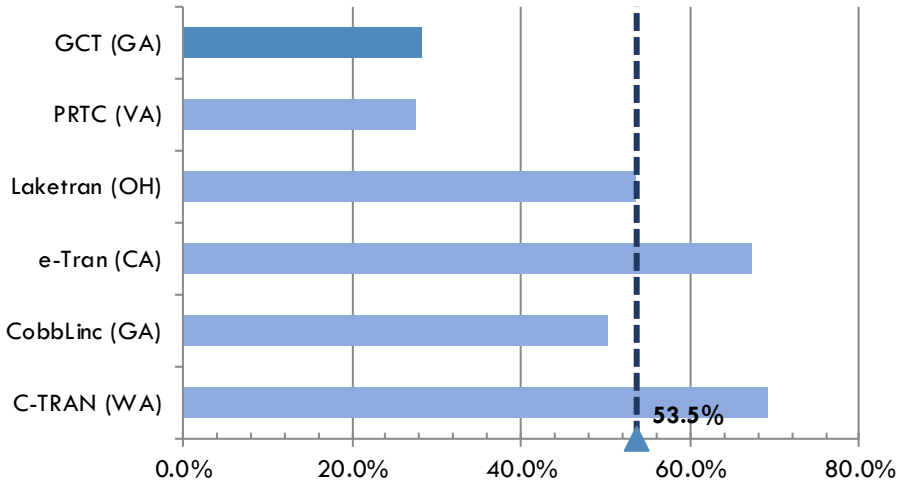


Local Sources for Operating

Local agencies that receive transit service generally provide local funding to pay a portion of the transit operating costs not paid through fares and from federal and state grants. These funds may be in the form of local funding and/or in the form of local funding that is dedicated at its source for transit use. In the first case, local funding from various sources is provided to the transit agency by the local jurisdiction. In the second case, local funding specifically designated for transit use is either received directly by the transit agency or received by the local jurisdictions and contributed to the transit agency in payment for service. In the former, local funding is generally derived from local sales, property, and/or gas taxes.

As shown in **Figure 36**, there was a wide variation among GCT and its peers with respect to reliance on local operating sources. Reliance on local sources ranged from 27.5 percent (PRTC) to 69.2 percent (C-TRAN), with an average reliance on local sources of 53.5 percent. With its 28.2 percent reliance on local funding, GCT was well (47 percent) below the peer average.

Figure 36: Percent of Operating Funding from Local Sources

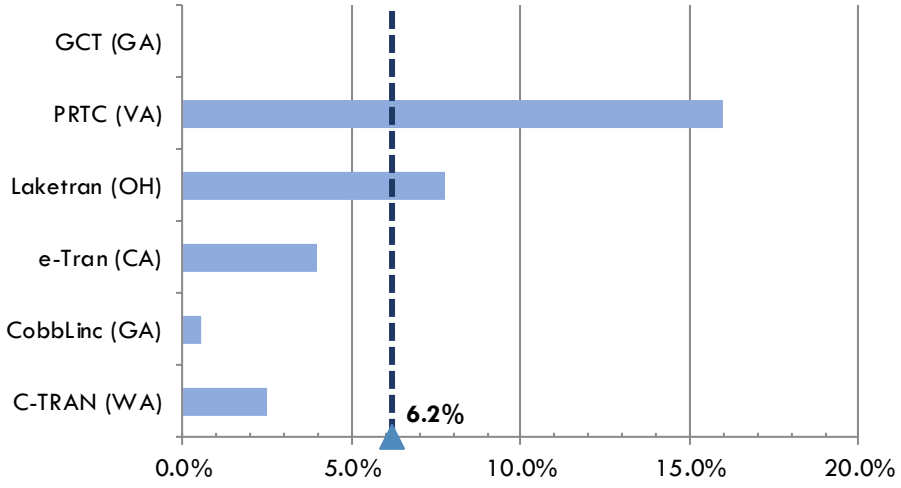


State Sources for Operating

The different states vary with respect to the existence of special grant programs for transit. Some states provide funding for transit from general revenue, gas tax, special gas tax, and/or from imposition of a sales tax on gasoline. In other states, transit is precluded from receipt of gas tax funding, with such funding constitutionally restricted to roads and highways.

As shown in **Figure 37**, the reliance on state operating funding sources demonstrated by GCT and its peers ranged from 0.5 (CobbLinc) percent to 16.0 percent (PRTC), with an average reliance on local sources of 6.2 percent. Transit is precluded from the receipt of gas tax funding by the State of Georgia, and GCT's reliance on state sources was 0 percent.

Figure 37: Percent of Operating Funding from State Sources

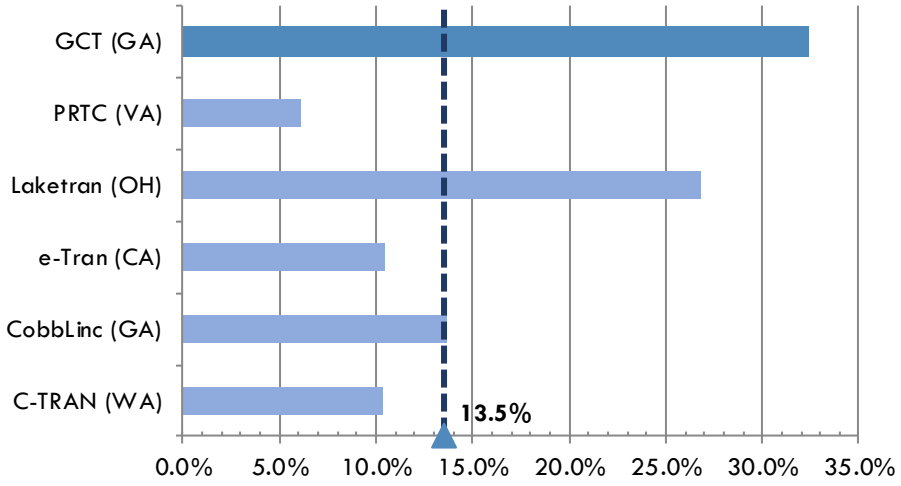


Federal Sources for Operating

Transit agencies receive grant funds from various federal programs, notably the FTA's formula grant programs. Under federal transportation authorizing legislation, the formula grant program which provides funding that may be used for operating consists chiefly of the Urbanized Area Formula Program. In addition to this program, there are various smaller formula grant programs.

As shown in **Figure 38**, there was a wide variation among GCT and its peers with respect to reliance on federal operating sources. Reliance on federal sources ranged from 6.1 percent (PRTC) to 26.8 percent (Laketran), with an average reliance on local sources of 13.5 percent. With its 32.4 percent reliance on federal funding, GCT ranked first at 140 percent above the peer average, indicating that it was extremely successful in leveraging federal funds for operating expenses. GCT does so by making extensive use of the Capital Cost of Contracting to leverage its local funding.

Figure 38: Percent of Operating Funding from Federal Sources



Funding Sources Used for Capital Expenses

While funding levels and sources used for operating remain relatively consistent from year to year, capital expenditure levels and sources can vary significantly from year to year, depending on the particular projects underway and the grants available. Thus, the information on capital funding levels and sources described below reflects a snapshot for RY 2015, the most recent year for which data is available from the NTD.

Figure 39 illustrates GCT's key revenue sources for RY 2015. GCT relied most heavily on federal (68.9 percent). Local funds made up the rest of the capital budget at 31.1 percent.

Figure 39: GCT Capital Funding Sources

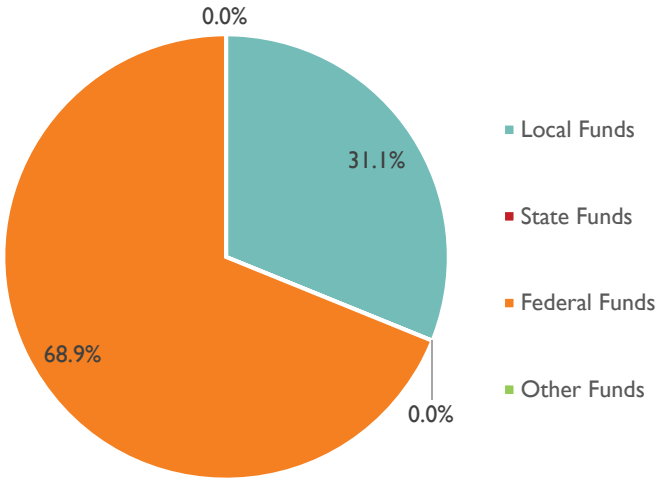


Table 18 and the next two figures present the capital funds for GCT and the peer systems and compare their sources of funds. **Figure 40** provides an overview of the total dollar level of capital funding used by GCT and its peer systems. **Figure 41** uses percentages to show the relative reliance on each funding source for GCT and the peers. It should be noted that GCT did not pursue major capital projects in RY 2015 due to a transition in leadership during that timeframe.

Key observations are as follows:

- GCT's capital budget in RY 2015 ($175,779) was much smaller than any of its peers and 95 percent lower than the peer average ($3,815,294).
- C-TRAN's large capital budget of $10,434,259 skews the peer average.
- Except for C-TRAN, the peer systems relied most heavily on federal funds for capital. Federal capital assistance for GCT (68.9 percent of the total capital budget) was on par with the peer average of 66.6 percent.
- Like two of its peers, CobbLinc and Laketran, GCT did not rely on any state funding for capital in RY 2015.

The subsections that follow detail the major categories of capital funds for GCT and its peers.

Table 18: Comparison of Capital Budgets

	C-TRAN	CobbLinc	e-tran	Laketran	PRTC	Peer Average	GCT
Total Capital Expense	**$10,434,259**	**$1,874,639**	**$952,438**	**$2,365,575**	**$3,449,561**	**$3,815,294**	**$175,779**
Fare Revenue	$0	$0	$0	$0	$0	$0	$0
Local Assistance	$4,051,888	$383,816	$0	$473,115	$315,928	$1,044,949	$54,736
State Assistance	$2,701,313	$0	$273,262	$0	$835,482	$762,011	$0
Federal Assistance	$3,681,058	$1,490,823	$679,176	$1,892,460	$2,298,151	$2,008,334	$121,043
Other Funds	$0	$0	$0	$0	$0	$0	$0

Figure 40: Funding Sources for Capital Expenses (in 2015 Dollars)

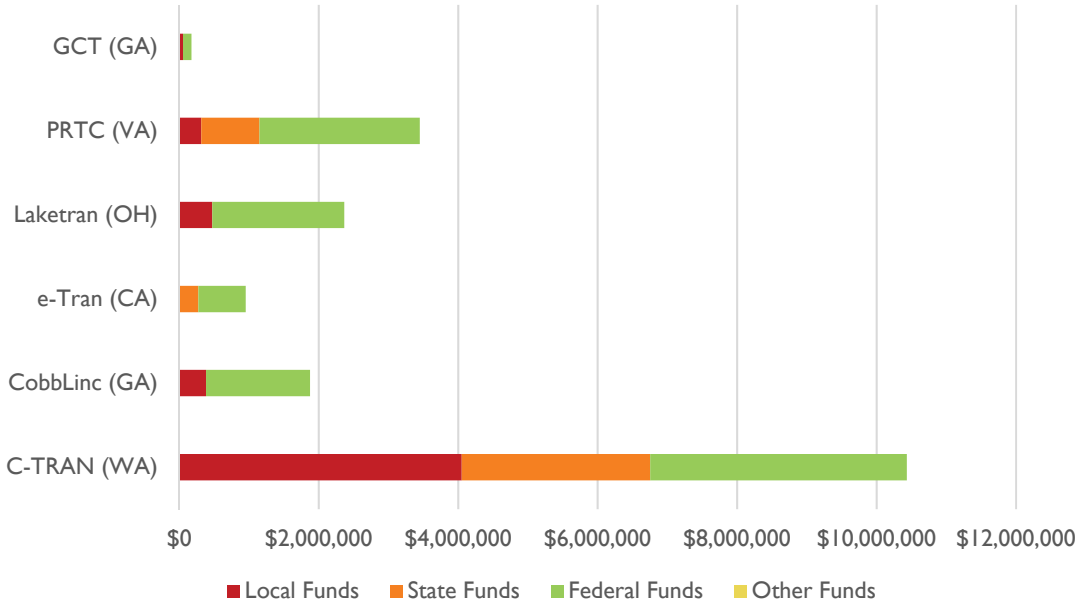
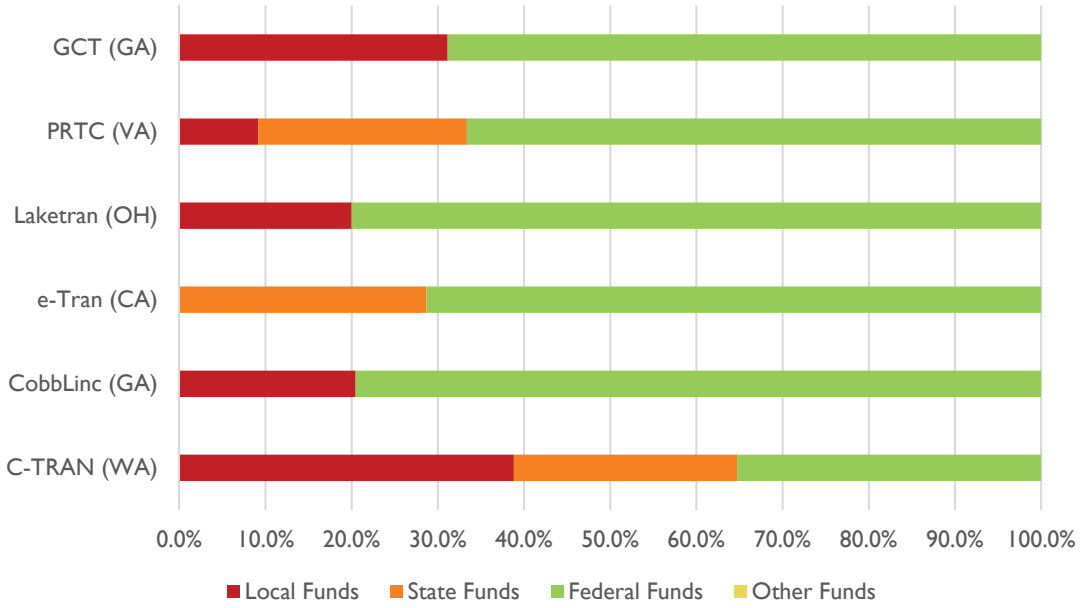


Figure 41: Funding Sources for Capital Expenses (in Percentages)

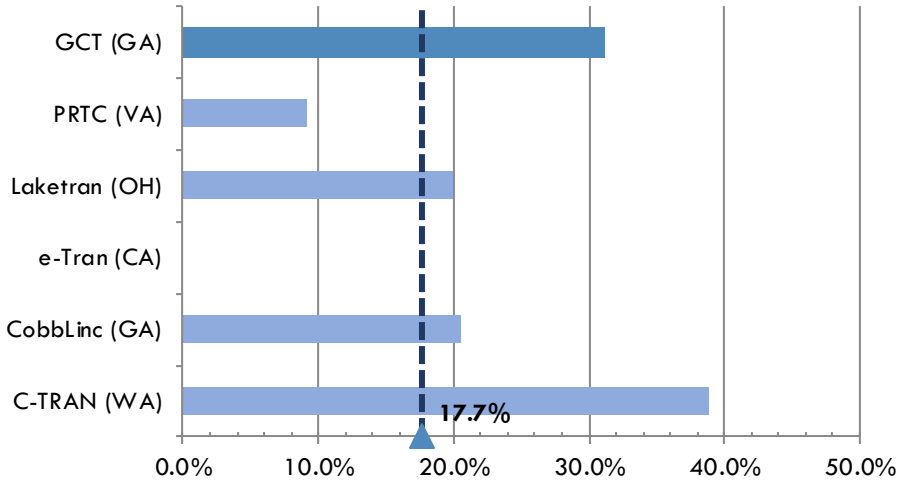


Local Sources for Capital

As with operating expenses, local agencies that receive transit service may provide local funding to pay a portion of the transit capital costs not paid through federal and state grants and from dedicated funding.

As shown in **Figure 42**, reliance on local sources ranged from 0 percent (e-tran) to 38.8 percent (C-TRAN), with an average reliance on local sources of 17.7 percent. With its 31.1 percent reliance on local funding, GCT was 76 percent above the peer average.

Figure 42: Percent of Capital Funding from Local Sources

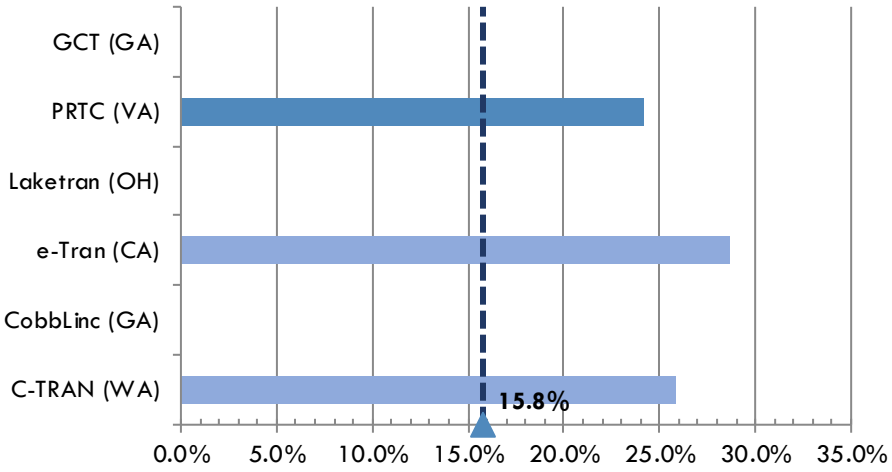


State Sources for Capital

The different states vary with respect to the existence of special state grant programs for transit. As with operating, some states provide capital funding for transit from dedicated taxes, tolls (which are used to provide soft match credit for federal grants), general revenues, and may also make available state infrastructure bank loans for transit capital projects.

As shown in **Figure 43**, only three peers relied on state capital sources in RY 2015. The percentage ranged from 0 percent (CobbLinc and Laketran) to 28.7 percent (e-tran), with an average reliance on state sources of 15.8 percent. GCT received no capital funding from state sources.

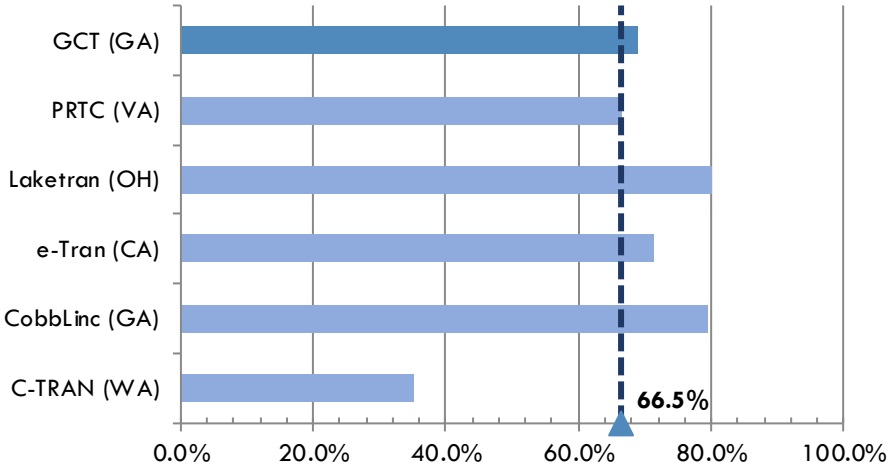
Figure 43: Percent of Capital Funding from State Sources



Federal Sources for Capital

Transit agencies receive grant funds from various federal programs, notably the Federal Transit Administration's (FTA) formula and discretionary grant programs. As shown in **Figure 44**, the reliance on federal capital sources demonstrated by GCT's peers ranged from 35.3 percent (C-TRAN) to 80.0 percent (Laketran), with a peer average of 66.5 percent. With its 68.9 percent reliance on federal sources, GCT was slightly (3 percent) higher than the peer average.

Figure 44: Percent of Capital Funding from Federal Sources



CONCLUSIONS

This assessment has compared the GCT bus system to five peer transit systems with respect to operational and financial characteristics and performance. The NTD was the primary source of data for these systems, with the most recently available data (2015) used in the analysis. Apart from the system-wide financial analysis, the assessment focused only on the local bus and commuter bus modes.

After a two-step screening process and much deliberation, the following transit systems were selected as peers to GCT:

- Clark County Public Transportation Benefit Area (C-TRAN), Clark County, WA
- Cobb County Department of Transportation (CobbLinc), Cobb County, GA
- City of Elk Grove Transit (e-tran), Elk Grove, CA
- Laketran, Lake County, OH
- Potomac and Rappahannock Transportation Commission (PRTC), Prince William County, VA

The peer system characteristics section provides an overview of each peer system, and presents general service and financial characteristics of each with comparisons to GCT to provide context for the service performance comparisons. Conclusions from this analysis were as follows:

- While GCT's local bus service area population is 10 percent higher than the peer average, its square mileage is half that of the peer average, resulting in a service area population density that is twice the peer average and higher than of all its peers.
- On average, GCT operates significantly fewer local and commuter routes than its peers, though the local and commuter route average numbers are skewed upward by C-TRAN and PRTC, respectively. Thus, while GCT operates less routes over a smaller area, it has done a good job of concentrating service in the densest areas of the county.
- Turning to bus service level and cost characteristics, it becomes even more evident that GCT provides less service than most of its peers. Only e-tran and Laketran operate fewer hours and miles of service. Also noteworthy is how much lower GCT's ridership is compared to the peer average.

At the heart of the peer assessment is the comparison of GCT's local bus and commuter bus services to the five peer systems for specific service performance measures. Performance comparisons are grouped into four general categories of evaluation measures. Conclusions from this analysis are presented separately for local bus and commuter bus below.

Local Bus Performance

Key findings are as follows:

Service Utilization and Productivity

- GCT's local bus service utilization measures in terms of total trips and passenger trips per capita are significantly below the peer averages, with Gwinnett ranking last in passenger trips per capita.
- GCT's local bus service productivity measures fare better, but are also below the peer averages. GCT carries slightly fewer passengers per revenue hour and per peak vehicle than average, but is significantly below average in terms of passenger trips per revenue mile.

Resource Utilization

- GCT generally utilizes its local bus fleet efficiently.
- GCT put more revenue miles on each of its peak vehicles, and is on par with the peer average for revenue hours per peak vehicle.
- 90 percent of GCT's total vehicle miles are incurred during revenue service, on par with the peer average.

Cost Efficiency and Effectiveness

- GCT's local bus service is among the most cost efficient and effective of the peer group, performing better than the peer group averages for nearly all measures.
- GCT has the lowest total operating expense per revenue hour and second-lowest total operating expense per revenue mile of its peers.
- GCT ranks third among its peers for total operating expense per passenger trip and total operating expense per peak vehicle.
- GCT's farebox recovery ratio is generally on par or slightly better than its peers, but is slightly below the peer average due to CobbLinc's unusually high farebox recovery ratio.

Service Coverage

- Within its service area, GCT provides more local service (revenue mile and hours) per square mile than its peers.
- However, it falls below its peers in service provided per capita.

Commuter Bus Performance

Key findings are as follows:

Service Utilization and Productivity

- GCT's service consumption as measured by passenger trips is well below the peer average. Only Laketran and CobbLinc have less commuter bus ridership.
- GCT's passenger trips per capita is significantly below the peer average, and ranks second to last ahead of CobbLinc.
- GCT's commuter bus service is also less productive than the peers in terms of trips per revenue mile and per revenue hour, and ranks second to last in both categories ahead of Laketran.

Resource Utilization

- Similar to its local bus operation, GCT utilizes its fleet efficiently for the most part.
- Revenue hours and miles per peak vehicle are above the peer averages.
- Revenue miles per vehicle mile is on par with the peer average.

Cost Efficiency and Effectiveness

- GCT's commuter bus service is generally less cost efficient and effective than its local bus service.
- GCT ranks last among its peers for total operating expense per passenger trip, per revenue mile, and per revenue hour.
- GCT ranks second to last for total operating expense per peak vehicle.
- However, GCT's commuter bus farebox recovery is 15 percent better than the peer average. It appears that the average is being skewed by CobbLinc's unusually low farebox recovery ratio.

Service Coverage

- GCT's commuter bus provides substantially less service per service area capita and per service area size than the peer averages.

The financial analysis section highlights the revenue sources used by GCT and its peers to fund their operations and capital requirements. This portion of the assessment is for all modes of service provided. Key observations are as follows:

- GCT's RY 2015 operating budget of $15,157,704 was 41 percent less than the peer average ($25,486,487). E-tran had the smallest operating budget of $8,850,490 and PRTC had the largest at $46,816,301.
- GCT derived over 85 percent of its operating revenue from a combination of federal funds, local funds and fare revenues.
- Federal operating assistance for GCT (32.4 percent of the total operating budget) was nearly two and a half time greater than the peer average (13.5 percent).
- GCT has been extremely successful in leveraging federal funds for operating expenses by making extensive use of FTA's Capital Cost of Contracting provisions.
- GCT's capital budget in RY 2015 ($175,779) was much smaller than any of its peers and 95 percent lower than the peer average ($3,815,294).
  - GCT did not have any major capital projects in RY 2015, due to a transition in leadership.
  - C-TRAN's large capital budget of $10,434,259 skews the peer average.
- Except for C-TRAN, the peer systems relied most heavily on federal funds for capital. Federal capital assistance for GCT (68.9 percent of the total capital budget) was on par with the peer average of 66.6 percent.
- Like two of its peers, CobbLinc and Laketran, GCT did not rely on any state funding for capital in RY 2015.

The following overarching conclusions on the characteristics and performance of the GCT system can be drawn from the peer assessment:

- Gwinnett County is underfunding its transit system. On average, its peers are operating much more service relative to their jurisdiction and service area, and are spending more per capita to do it.
- This underfunding means the system isn't very useful. As a result, GCT is much less productive in attracting riders.
- While GCT operates less service over a smaller area, it has done a good job of concentrating local service in the densest areas of the county.
- GCT does better on resource utilization, on both the local and commuter bus sides. The agency gets a lot of service out of its vehicles.
- Results are mixed for cost efficiency and effectiveness, with local bus service performing better than its peers and commuter bus service generally performing worse.

APPENDIX C: TRANSIT MARKET ASSESSMENT

CONNECT GWINNETT TRANSIT PLAN

Identification of Transit Markets

Technical Memorandum

October 2017

TABLE OF CONTENTS

INTRODUCTION

Gwinnett County has initiated a Comprehensive Transit Development Plan (CTDP) to determine the future development and growth for Gwinnett County Transit (GCT). The CTDP will identify short-, medium-, and long-term needs for transit services in Gwinnett County. Service plan concepts will be developed and evaluated for each of these time periods. These service plans will be developed on the basis of both technical analysis and outreach efforts with the public, elected officials, and stakeholders. Final recommendations will be based on an extensive technical evaluation of the service plan alternatives, financial considerations, and additional outreach efforts.

The transit market assessment identifies potential existing and future transit markets within Gwinnett County. The market assessment has used 2015 data for purposes of assessing existing transit markets and 2030 and 2040 data for purposes of existing medium- and long-term future transit markets. The following activities were completed as part of this analysis:

Existing Service to County Major Trip Destinations. Locations of major trip destinations (colleges, hospitals, major shopping centers, etc.) were mapped. Existing service to these major trip destinations were identified. Major destinations with no existing transit service were noted.

Existing and Future Local Transit Market Assessment. Data from Atlanta Regional Commission's (ARC's) activity-based travel demand model (demographic data and trip tables by traffic analysis zone) were used to determine areas that may be suitable for new or increased transit services for 2015, 2030, and 2040. Existing transit routes were included on maps to determine the extent to which GCT's existing local route network is serving this market. Characteristics that were reviewed in this analysis were combined to arrive at an overall transit propensity score for each traffic analysis zone (TAZ).

Existing and Future Express Transit Market Assessment. Home-based work (HBW) trip data from ARC's activity-based travel demand model were used to determine travel markets to major employment activity centers in the Atlanta region to determine transit market potential for new or expanded express bus services.

Transit-Dependent Populations Market Assessment. As service plans are developed and evaluated, it will be important to take into consideration potential impacts to Title VI population groups (minorities and low income populations). Data from the 2011 – 2015 American Community Survey (ACS) were used to complete this analysis. Existing transit routes were included on maps to determine the extent to which GCT's existing local route network is serving this market.

This technical memorandum concludes with a summary of findings drawn from this analysis.

EXISTING SERVICE TO MAJOR TRIP DESTINATIONS

There are many businesses, agencies, and institutions located within Gwinnett County that are likely destinations for transit riders. Those identified for purposes of this analysis include:

- Major shopping centers
- Major retail stores
- Major private employers
- Government and social service agencies
- Major hospitals
- Colleges and universities
- Special event facilities

Figure 1 illustrates locations shopping centers, major retail stores, and major private employers in relation to existing transit service. **Figure 2** illustrates locations of government and social service agencies, major hospitals, colleges and universities, and special event facilities in relation to existing transit service. **Table 1** provides a listing of addresses and existing transit route connections for each identified major trip attraction. Key findings of locations with little to no service are as follows:

- The Mall of Georgia is only served by existing GRTA-operated express services that operate peak period, peak direction service to and from major employment centers outside of Gwinnett County.
- There are several Walmarts and Targets with no nearby local transit service. Most are located in Buford, Suwanee, and Snellville where there currently is no local service.
- One community health center (The Buford Health Center) has no nearby local service.
- Eastside Medical Center in Snellville and Gwinnett Medical Center – Duluth campus has no nearby local service. There are approximately 1,200 employees at this hospital complex.
- Georgia Gwinnett College has no nearby local service. This college has an enrollment of 11,500 students. The University of Georgia Gwinnett campus also has no nearby transit service.

In addition to the existing major attractions shown in Figures 1 and 2 and listed in Table 1, it is worth noting that several major developments are planned in the near-term in Gwinnett County. Some of the larger planned developments are:

- Town Center in Peachtree Corners – a 250,000 square foot mixed-use development across from the Forum on Peachtree Parkway
- Arriston – a large mixed-use development near the Mall of Georgia
- The Village in Duluth – located at Buford Highway and Duluth Highway
- OFS Site – redevelopment plans have been discussed at this site in recent years
- Infinite Energy Center – mixed-use development planned for the property surrounding the center

It is also important to note that Gwinnett Place and Gwinnett Village Community Improvement Districts (CIDs) have plans in place to guide redevelopment.

Figure 1: Gwinnett County Major Retail Destinations

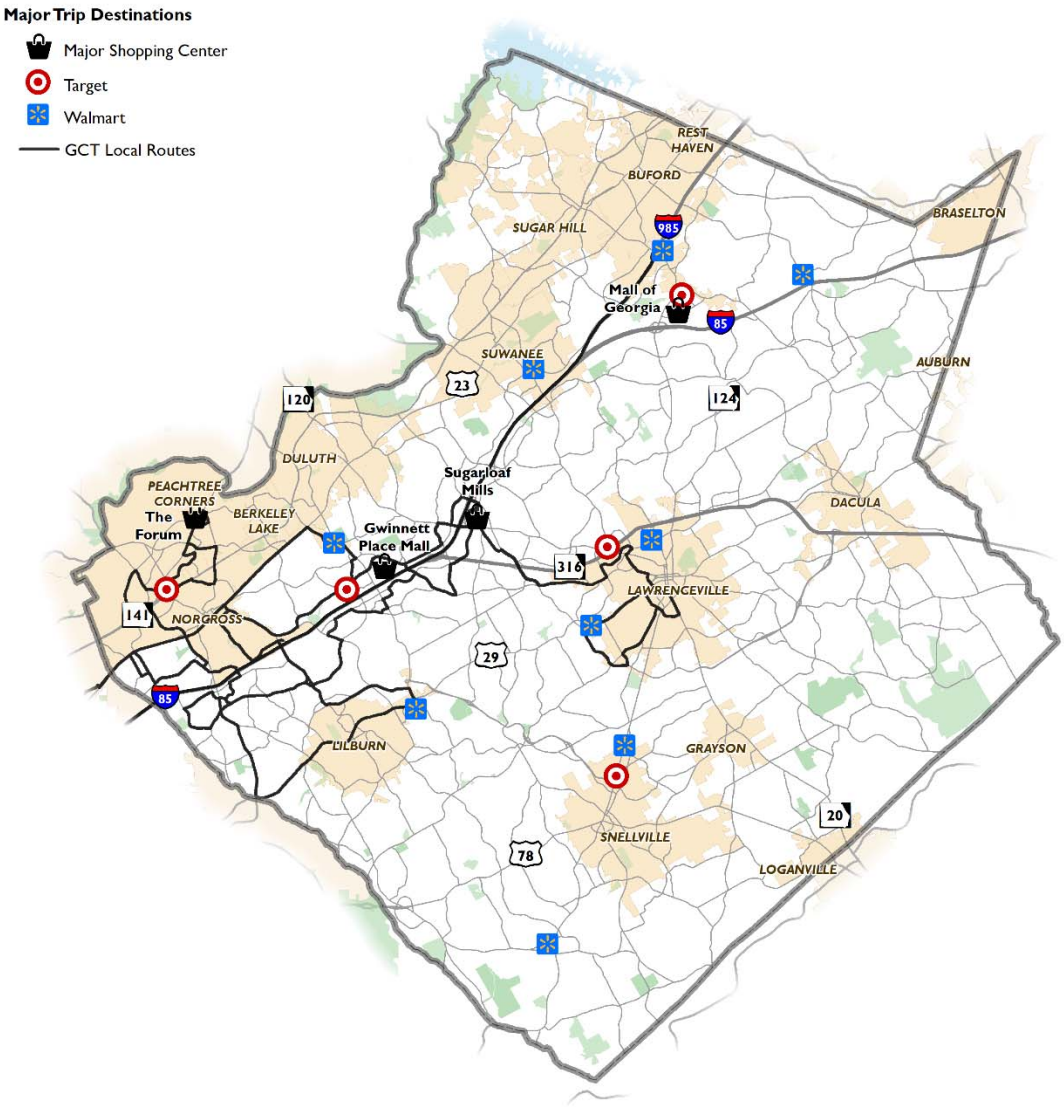


Figure 2: Gwinnett County Major Non-Retail Destinations

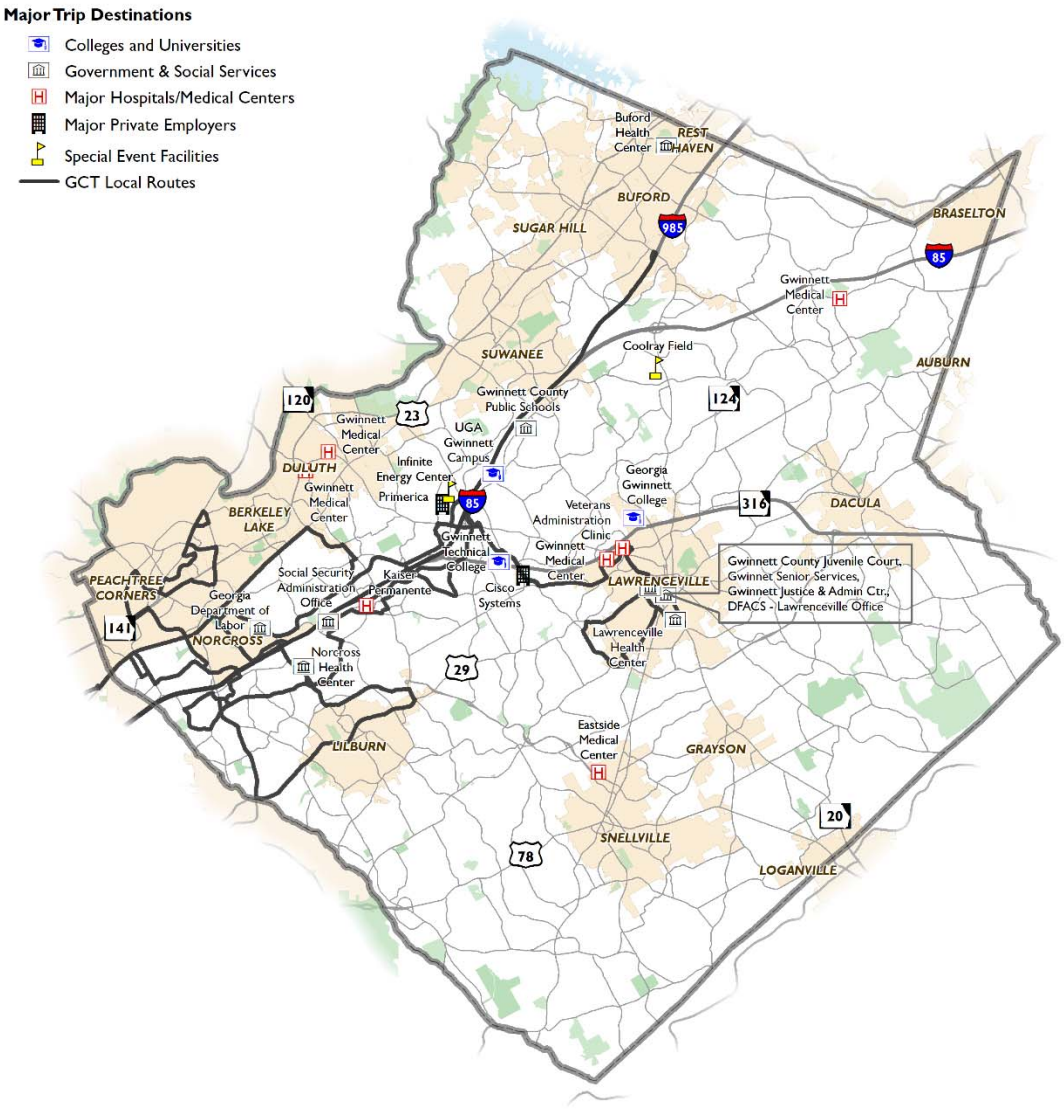


Table 1: Gwinnett County Major Trip Destinations

Business/Agency	Address	Current Route Service		
		GCT Local	GCT Express	GRTA Xpress
Major Shopping Centers				
Mall of Georgia	3333 Buford Dr NE, Buford, GA			411,413,414
Sugarloaf Mills	5900 Sugarloaf Pkwy, Lawrenceville, GA	10A, 10B, 40	103, 103A, 110	410,412,414
Gwinnett Place Mall	2100 Pleasant Hill Rd, Duluth, GA	10A/B, 30, 40		
The Forum	5155 Peachtree Pkwy, Peachtree Corners	35		408
Major Retail Stores				
Walmart	3795 Buford Drive, Buford, GA			
Walmart	3250 Sardis Church Road, Buford, GA			
Walmart	2635 Pleasant Hill Road, Duluth, GA	10B		
Walmart	630 Collins Hill Road, Lawrenceville, GA			
Walmart	1400 Lawrenceville Hwy, Larenceville, GA	40		
Walmart	4004 Lawrenceville Hwy, Lilburn, GA	30		
Walmart	1550 Scenic Hwy N., Snellville, GA			
Walmart	3435 Centerville Hwy, Snellville, GA			
Walmart	3425 Lawrenceville-Suwanee Rd, Suwanee, GA			
Target	3205 Woodward Crossing Blvd., Buford, GA			
Target	3935 Venture Drive, Duluth, GA	10A		
Target	5950 State Bridge Rd., Duluth, GA			408
Target	875 Lawrenceville-Suwanee Rd, Lawrenceville, GA			
Target	1905 Scenic Hwy N., Snellville, GA			
Target	2625 Peachtree Pkwy, Suwanee, GA			
Government & Social Services				
Gwinnett Justice & Administration Ctr.	75 Langley Dr, Lawrenceville, GA	40		
Social Security Administration Office	4365 Shackleford Rd, Norcross, GA	30?		
Gwinnett County Senior Services	75 Langley Dr, Lawrenceville, GA	40		
Gwinnett County Juvenile Court	115 Stone Mountain St, Lawrenceville, GA	40		
Lawrenceville Health Center	455 Grayson Hwy, Lawrenceville, GA	40		
Norcross Health Center	5030 Georgia Belle Ct, Norcross, GA	20		
Buford Health Center	2755 Sawnee Avenue, Buford, GA			
DFACS - Lawrenceville Office	446 W. Crogan Street, Lawrenceville, GA	40		
DFACS - Norcross Office	2211 Beaver Ruin Road, Norcross, GA	10A		
Georgia Department of Labor	2211 Beaver Ruin Rd, Norcross, GA	10A		
Gwinnett County Public Schools	437 Old Peachtree Rd NW, Suwanee, GA			
Major Hospitals				
Gwinnett Medical Center - Lawrenceville	1000 Medical Center Blvd, Lawrenceville, GA	40		
Gwinnett Medical Center - Duluth	3620 Howell Ferry Road, Duluth, GA			
Eastside Medical Center	1700 Medical Way, Snellville, GA			
Kaiser Permanente	3650 Steve Reynolds Blvd, Duluth, GA	30	103A	
Veterans Administration Clinic	455 Philip Blvd, Lawrenceville, GA	40		
Colleges and Universities				
Georgia Gwinnett College	1000 University Center Ln, Lawrenceville, GA			
Gwinnett Technical College	5150 Sugarloaf Pkwy, Lawrenceville, GA	40		
UGA Gwinnett Campus	2530 Sever Rd, Lawrenceville, GA			
Major Private Employers				
Cisco Systems	5030 Sugarloaf Pkwy, Lawrenceville, GA	40		
Primerica	1 Primerica Parkway, Duluth, GA	10A, 10B		
Special Event Facilities				
Infinite Energy Center	6400 Sugarloaf Pkwy, Duluth, GA	10A, 10B		
Coolray Field	2500 Buford Dr NE, Lawrenceville, GA			

EXISTING AND FUTURE LOCAL TRANSIT MARKET ASSESSMENT

Assessment Methodology

This assessment focused on identifying areas with characteristics that are conducive for local transit, using information available from the ARC activity-based travel demand model. The ARC model provides demographic and trip table information on a traffic analysis zone (TAZ) basis. The ARC model has 498 TAZs within Gwinnett County. Following are descriptions of methodology, results, and conclusions of this assessment.

ARC demographic and trip table data used in this analysis were as follows:

- Population
- Households
- Households with Incomes Under $25,000
- Employment
- Work-Related Trip Attractions
- Total Trip Activity

The trip-related analysis focused on trips beginning and ending within Gwinnett County. TAZ densities were calculated for each demographic and trip characteristic (e.g., population per acre, total trips per acre). This was completed for 2015 (to represent existing conditions), 2030 (to represent future mid-range conditions), and 2040 (to represent future long-range conditions).

The existing local transit network was added to these maps to determine if there were areas with concentrations of one or more attribute that is not served by transit. All six characteristics listed above were then combined to determine an average transit propensity "score" for each TAZ. Areas presently not served by transit with potential high transit propensity characteristics (existing and future) were identified.

Assessment Results

Resulting densities for each of the six characteristics are presented in **Figure 5 through 10** at the end of this section for 2015, 2030 and 2040, and numeric changes in each of the six characteristics from 2015 to 2030, and from 2030 to 2040. Key findings from this analysis for each of the six characteristics are as follows:

Population

Total countywide population and population estimates within 1/3-mile buffers of existing GCT local transit stops are shown below in **Table 2**. Gwinnett County's population is expected to grow by 57% from 2015 to 2040. As noted in this table, the portion of county population served by local transit remains fairly similar in the future, indicating that population growth rates within the existing local transit service area are similar to countywide population growth rates.

Table 2: Gwinnett County Population Estimates

Year	County Population	Population Near Local Transit	Percent Coverage
2015	853,721	142,358	17%
2030	1,137,822	187,587	16&
2040	1,340,951	223,070	17%

Source: Atlanta Regional Commission Travel Demand Model Demographic Inputs

Figure 5 at the end of this section presents population density maps for 2015, 2030, and 2040. Significant findings reflected in these figures are as follows:

- Presently, TAZs with the highest densities tend to be north of Lawrenceville Highway (US 29) and south of Peachtree Industrial Boulevard, with higher concentrations of population south of I-85. This is also the area where most of GCT's existing local transit service is concentrated.
- By 2040, the area between Lawrenceville Highway and Peachtree Industrial Boulevard is expected to experience increased densities. Other areas with increased densities are: along Buford Highway through Suwanee, Sugar Hill and Buford, in the Snellville area; and in the area south of I-85 and north of SR 316. The current local transit network does not serve these identified other areas.
- In 2015, there are only 5 TAZs with population densities of 15 persons or more per acre. Most of those are located along the I-85 corridor. By 2040, there are 25 TAZs with population densities of 15 or more per acre.
- Areas on the far east portion of the county (Dacula, Auburn) are expected to remain with low population densities through 2040.

Households

Households in Gwinnett County are projected to grow by 62% from 2015 to 2040, resulting in a smaller household size (from 2.81 persons per household to 2.72 persons per household). Total countywide households and household estimates within 1/3 mile-buffers of existing GCT local transit stops are shown in **Table 3**. As one would expect, household growth rates and the percentage of households with access to transit are similar to population growth rates and percentages.

Table 3: Gwinnett County Household Estimates

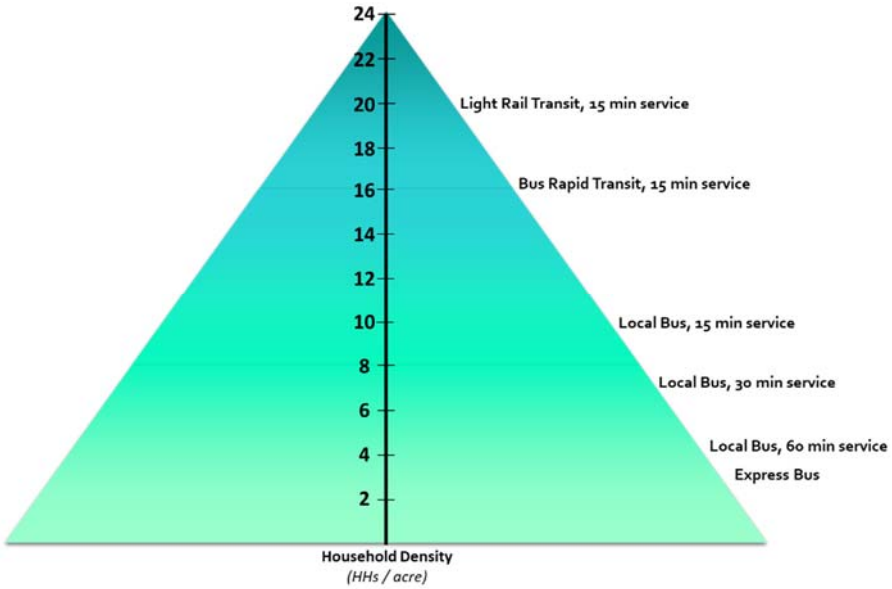
Year	County Households	Households Near Local Transit	Percent Coverage
2015	304,245	52,916	17%
2030	413,700	71,280	17%
2040	492,732	85,855	17%

Source: Atlanta Regional Commission Travel Demand Model Demographic Inputs

The Transit Research Board has identified typical household density requirements for various levels of transit service, as shown in Figure 3 (*TCRP 17: Making Effective Fixed Guideway Transit Investments*). As illustrated in **Figure 3**, high frequency transit service is best supported when household densities are 8 or more households per acre. There are only two TAZs with this density level in the 2015 data. This

increases to 14 TAZs by 2040. Of course, it is important to keep in mind this analysis reflects average densities over an entire TAZ and does not reflect higher densities that may occur within portions of a TAZ.

Figure 3: Transit Thresholds for Household Density



Source: TCRP 167 Making Effective Fixed Guideway Transit Investments

With regards to locations where there is high household density, as one would expect, these locations generally mirror those noted for population densities.

Households with Incomes Under $25,000

The ARC travel demand model stratifies households by income, with the first stratification being households with incomes under $25,000. This was used as a measure to determine existing and future low income households.

Total countywide low income households and low income household estimates within 1/3 mile buffers of existing GCT local transit stops are shown in **Table 4**. Low income households are estimated to be 9.1% of all Gwinnett County Households in 2015, growing to 9.7% by 2040. As noted in this table, the portion of county households served by local transit remains consistent in the future.

Table 4: Gwinnett County Household with Incomes Less than $25,000 Estimates

Year	County Households <$25,000	Households <$25,000 Near Local Transit	Percent Coverage
2015	27,659	7,572	27%
2030	39,247	10,518	27%
2040	47,714	13,030	27%

Source: Atlanta Regional Commission Travel Demand Model Demographic Inputs

As noted earlier, Figure 7 at the end of this section presents low income household density maps for 2015, 2030, 2040. Significant findings reflected in these figures are as follows:

- Areas with existing high concentrations of low income households are similar to locations where there are high concentrations of population and households. TAZs close to the DeKalb County border, between Peachtree Industrial Blvd., and Lawrenceville Highway tend to have the highest concentrations of low income households, in addition to pockets just south of the I-85/SR 316 interchange and near Lawrenceville. Most TAZs with higher concentrations of low income households are presently served by GCT local transit service.
- These areas are expected to see most of the growth in low income households, in addition to areas in the Sugar Hill/Buford area, and along US 78 west of Snellville where there presently is no local transit service.

Employment

Total countywide employment and employment estimates within 1/3-mile buffers of existing GCT local transit stops are shown in **Table 5**. County employment is anticipated to grow by almost 40% between 2015 and 2040. It was previously noted that population is expected to grow by 57% over this same time period. The ratio of employment to population in Gwinnett County changes from 46 percent in 2015 to 41 percent in 2040. As noted in this table, the percentage of county employment served by existing local transit is slightly less in the future.

Table 5: Gwinnett County Employment Estimates

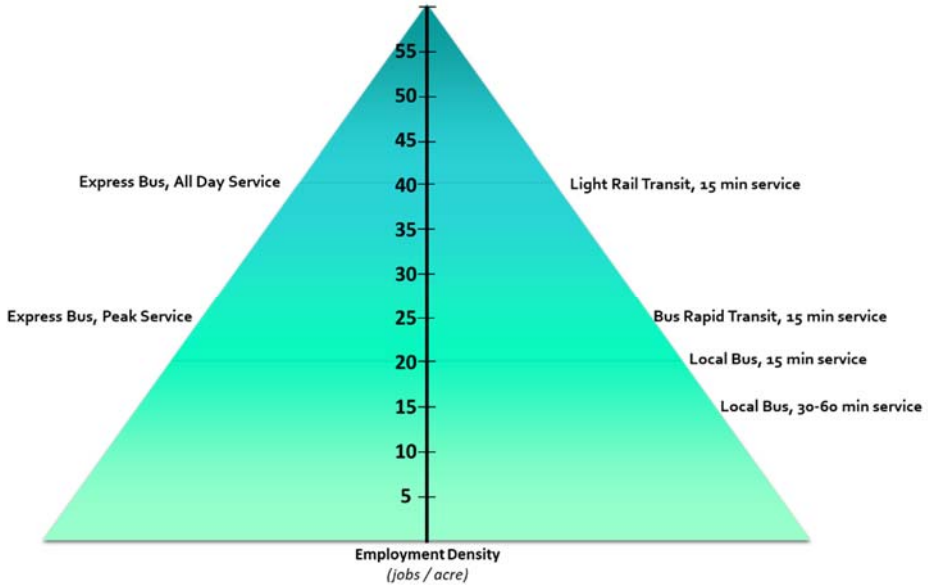
Year	County Employment	Employment Near Local Transit	Percent Coverage
2015	392,159	152,346	39%
2030	496,172	188,781	38%
2040	547,856	206,944	38%

Source: Atlanta Regional Commission Travel Demand Model Demographic Inputs

The Transit Research Board has identified typical employment density requirements for various levels of transit service, as shown in **Figure 4** (*TCRP 17: Making Effective Fixed Guideway Transit Investments*). As

illustrated in Figure 4, high frequency transit service is best supported with employment densities of 20 or more employees per acre. There are eight TAZs with this density level in the 2015 data. This increases to 15 TAZs by 2040. Of course, it is important to keep in mind this analysis reflects average densities over an entire TAZ and does not reflect higher densities that may occur within portions of a TAZ.

Figure 4: Transit Thresholds for Employment Density



Source: TCRP 167 Making Effective Fixed Guideway Transit Investments

With regards to locations where there is high employment density, TAZs located just south of the I-85/SR 316 interchange (along Satellite Blvd. and Breckenridge Blvd.) and areas in the Peachtree Corners area have the highest concentrations of employment, along with select areas in Lawrenceville and the Mall of Georgia. There presently is no local transit service to the Mall of Georgia, but other areas with high employment densities are generally served by GCT local transit service. By 2040, there are increased employment densities in these areas, as well as the area along I-85 between SR 316 and I-985 (along Satellite Blvd. and Northbrook Pkwy./Horizon Dr.) which is presently not served by local transit service.

Work Trip Destinations

The ARC travel demand model was run to determine work trip destinations within Gwinnett County. This data was compiled only for work trips that remain within Gwinnett County.

Total countywide work trips, and work trip estimates within 1/3-mile buffers of existing GCT local transit stops are shown in **Table 6**. Work-related trip destinations are expected to grow by 48% between 2015 and 2040. As noted in this table, the portion of work trip destinations with access to local transit diminishes slightly in the future.

Table 6: Gwinnett County Work Trip Destinations Person Trip Activity (Work trips generated and remaining within Gwinnett County)

Year	Total County Work Trips	Work Trips Near Local Transit	Percent Coverage
2015	604,387	174,068	29%
2030	793,099	223,739	28%
2040	894,246	248,388	28%

Source: Atlanta Regional Commission Travel Demand Model Trip Tables

As noted earlier, Figure 9 at the end of this section presents total work trip destination density maps for 2015, 2030, 2040. As one would expect, concentrations of work trip destinations are similar to areas with high employment. The highest densities of work trips occur along the I-85 and SR 316 corridors.

Total Person Trip Activity

The ARC travel demand model was run to determine total person trips that are produced and attracted for each Gwinnett County TAZ. This data was compiled only for trips that remain within Gwinnett County. This particular characteristic reflects both the origin and destination end of the trip, whereas the other characteristics have evaluated either the origin or destination end of the trip.

Total countywide trips and trip estimates within 1/3-mile buffers of existing GCT local transit stops are shown in **Table 7**. Total person trip activity is anticipated to grow by 50% between 2015 and 2040. As noted in this table, the portion of trips with access to local transit diminishes slightly in the future, thus indicating that person trip growth rates within the existing transit service area are similar to countywide growth rates.

Table 7: Gwinnett County Total Person Trip Activity (Trips originating and remaining within Gwinnett County)

Year	Total County Person Trip Ends	Person Trip Ends Near Local Transit	Percent Coverage
2015	3,953,090	1,027,441	26%
2030	5,122,062	1,313,087	26%
2040	5,942,976	1,494,467	25%

Source: Atlanta Regional Commission Travel Demand Model Trip Tables

As noted earlier, Figure 10 at the end of this section presents total trip density maps for 2015, 2030, 2040. Concentrations of total trip activity are found in areas previously noted for the other characteristics – primarily along I-85 (between Peachtree Industrial Blvd. and Lawrenceville Hwy.) and in the Lawrenceville area. By 2040, there are increases in trip activity along Buford Highway to Sugar Hill

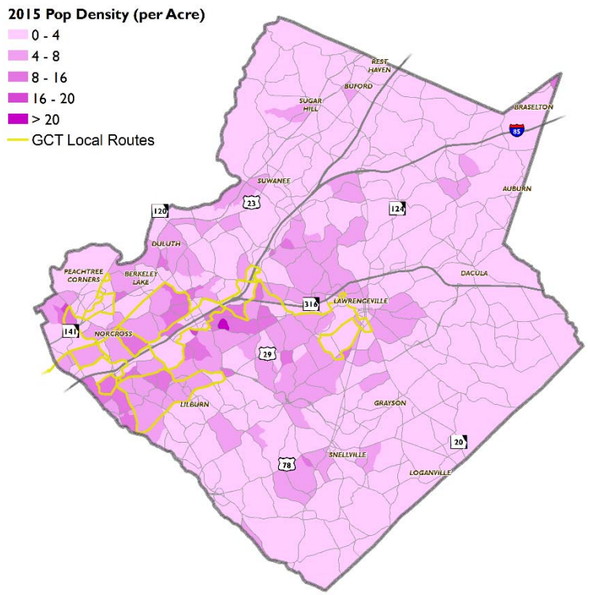
and Buford and in the Snellville area where there presently is no local transit service. The far eastern area of the county remains with low person trip densities.

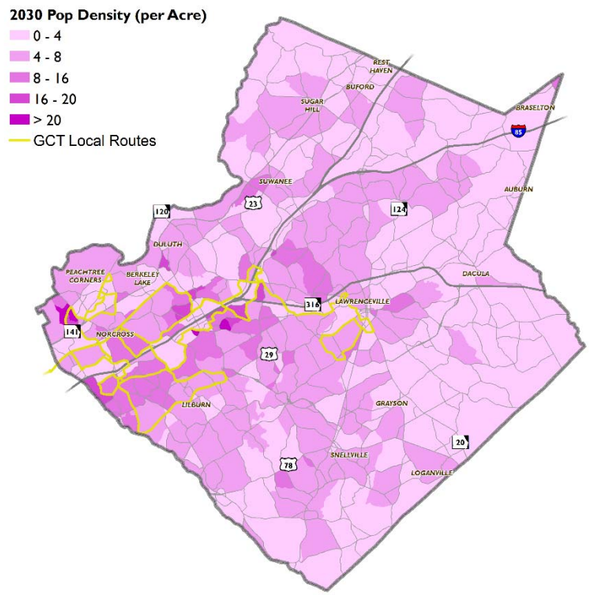
Compiled Transit Propensity Analysis

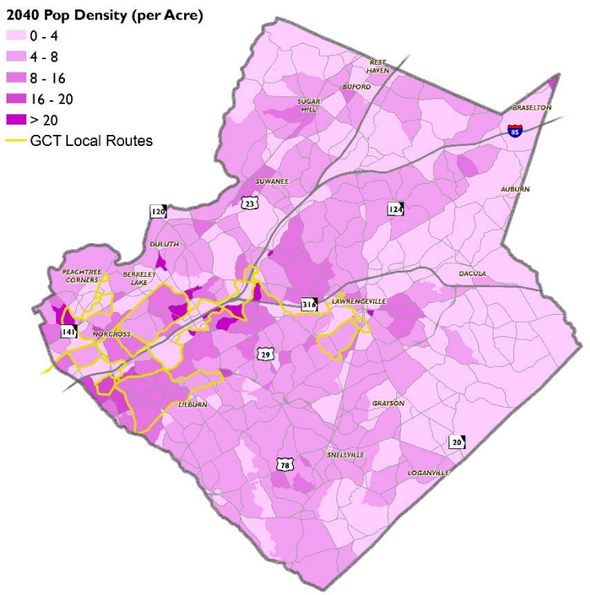
Resulting density calculations from the above-noted demographic and trip characteristics were compiled to generate an overall transit propensity score. Characteristics that focus on the origin end of the trip (population, households and households with under $25,000 income) were cumulatively weighted by 50 percent. Characteristics that focus on the destination end of the trip (employment, work trip destinations) were cumulatively weighted by 25%. Total trip activity (which addresses both the origin and destination end of each trip) was weighted by 25%. The maximum total score in this propensity analysis is 100 points. **Figure 11** (at the end of this section) presents results of this compiled propensity analysis for 2015, 2030, and 2040. Findings of interest are as follows:

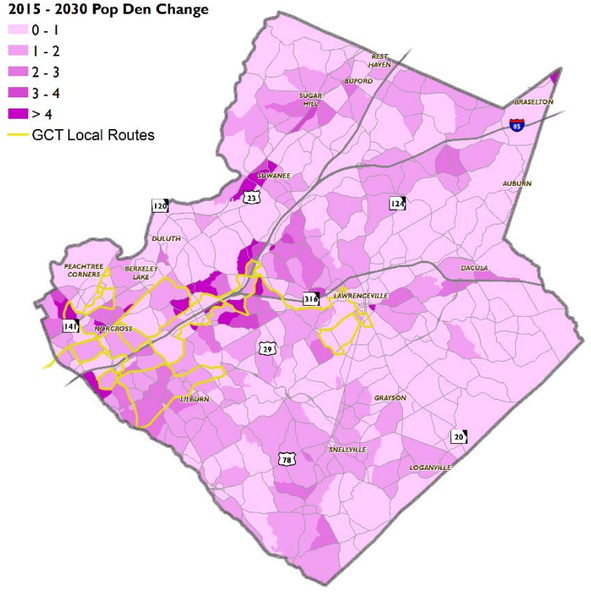
- In 2015 there are two TAZs with a combined propensity score of 70 points or more. By 2040, this grows to 16 TAZs. Most of these zones are located in the I-85 and SR 316 corridors.
- Current TAZs with high propensity scores are located along the I-85 corridor between Peachtree Industrial Blvd. and Lawrenceville Highway, in addition to zones located in the Lawrenceville area. Propensity scores increase significantly for many zones in these areas by 2040. As noted earlier, this area is served by existing GCT local transit service. Consideration should be given to the potential need for increased transit service levels to serve the projected growth in this area of the county.
- Other areas with increasing propensity scores that might warrant transit include:
  - Georgia Gwinnett College area, north of Lawrenceville
  - Suwanee/Sugar Hill/Buford corridor
  - Mall of Georgia
  - I-85 corridor north of SR 316 and south of I-985
  - Snellville area

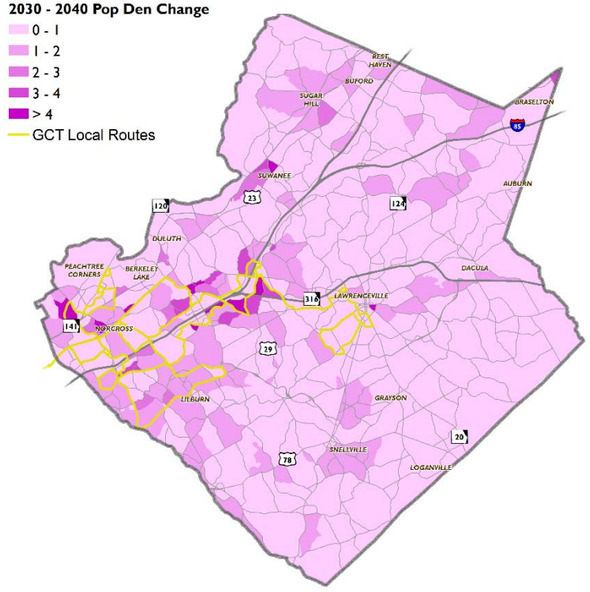
Figure 5: 2015, 2030, and 2040 Population Densities





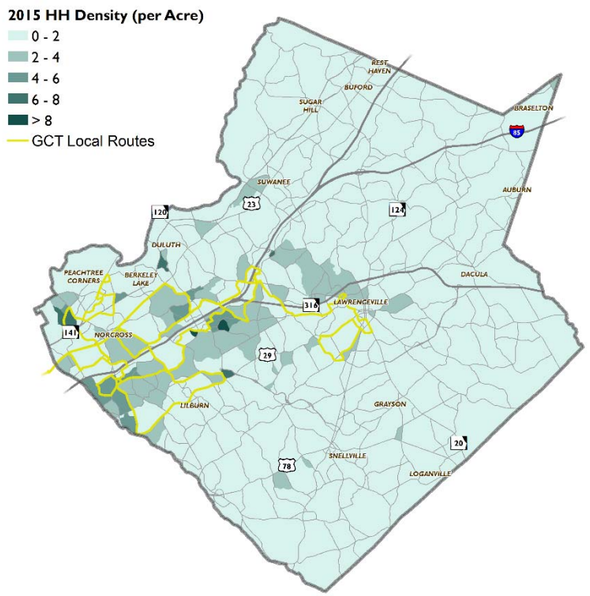


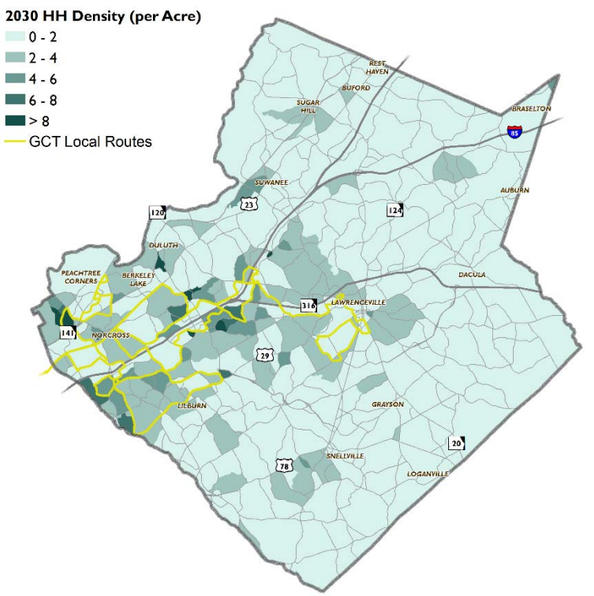


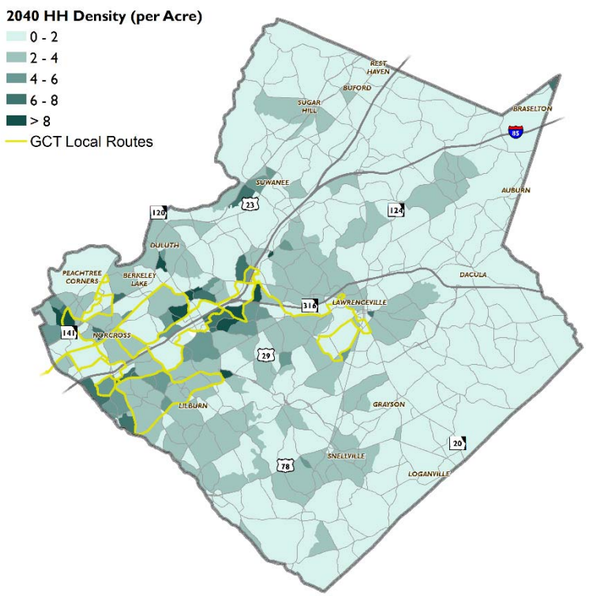


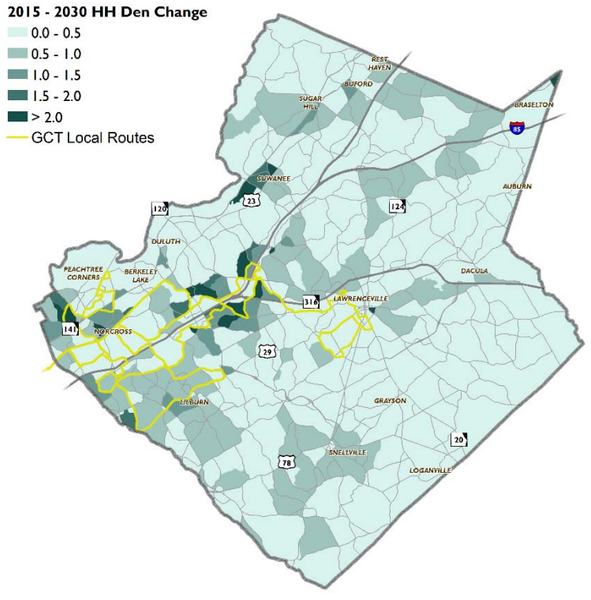
Data Source: Atlanta Regional Commission Tra

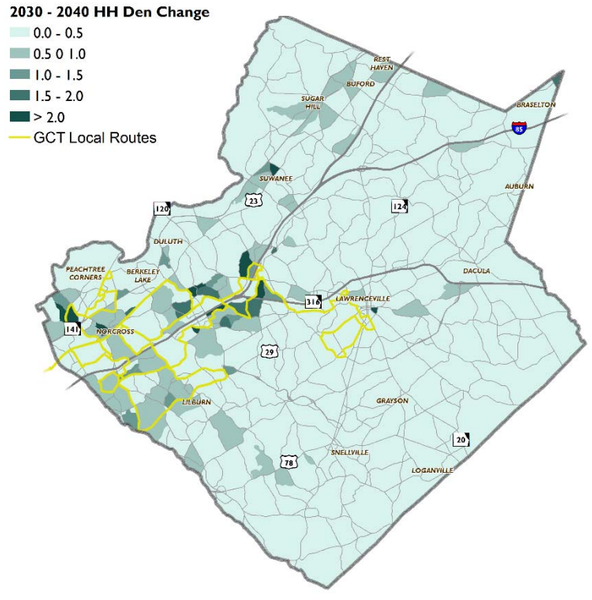
Figure 6: 2015, 2030, and 2040 Household Densities





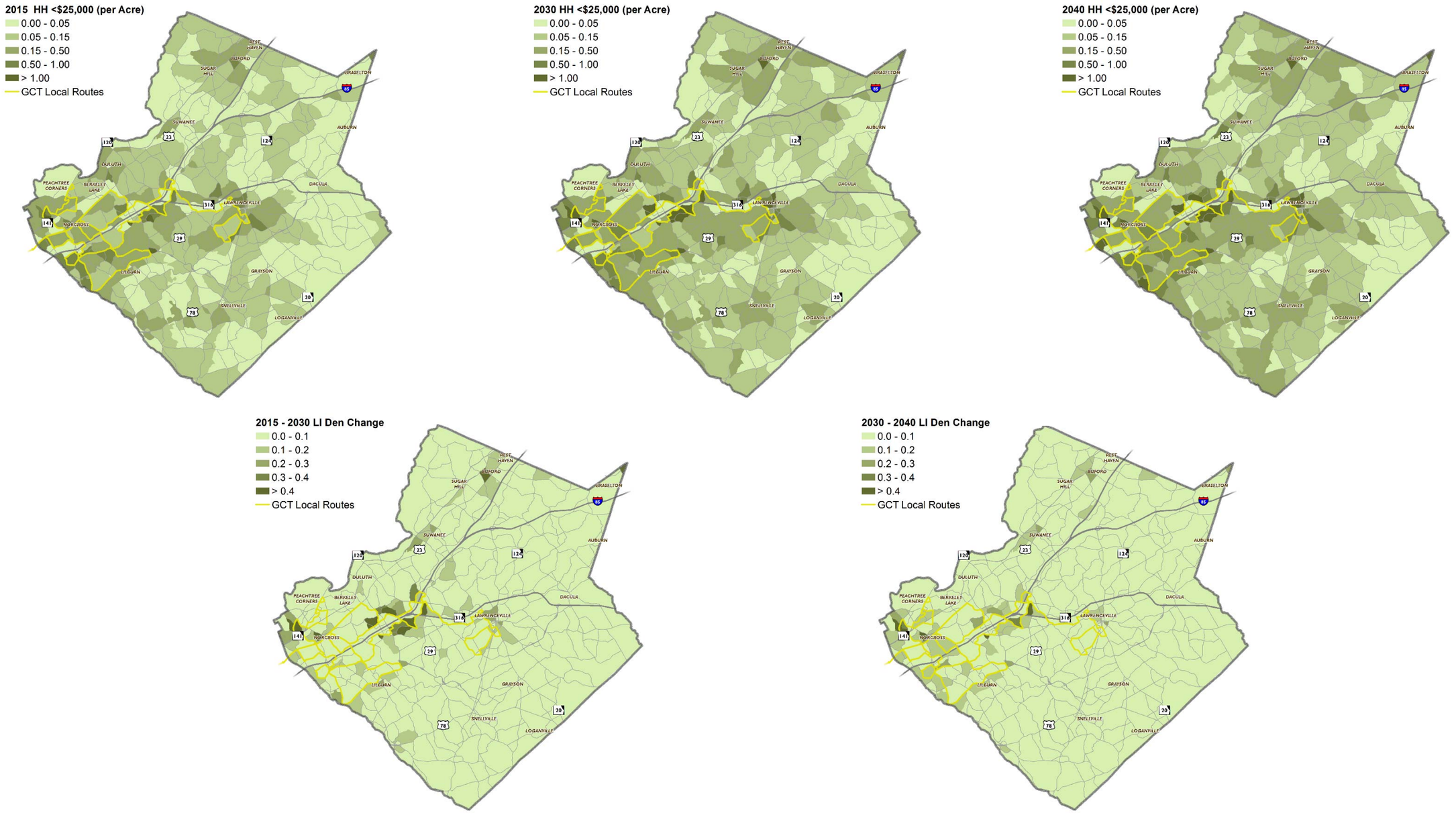






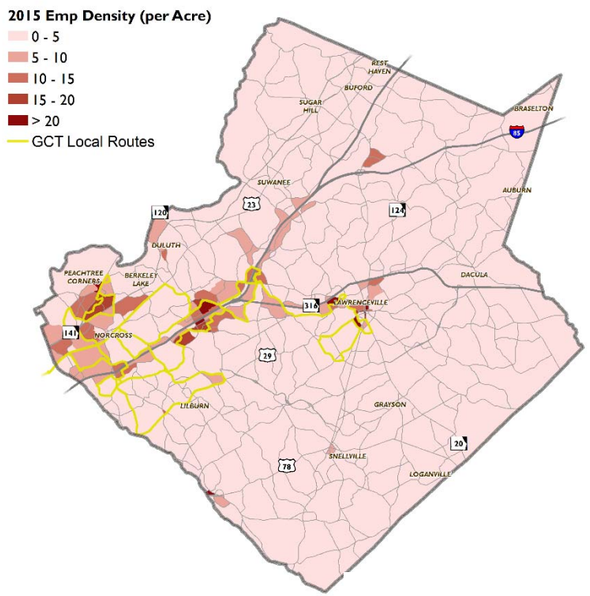
Data Source: Atlanta Regional Commission Travel Demand Model

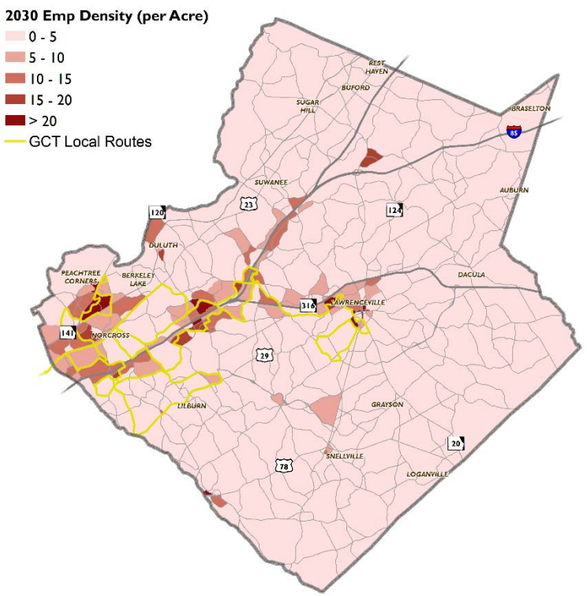
Figure 7: 2015, 2030, and 2040 Household Incomes Under $25,000 Densities

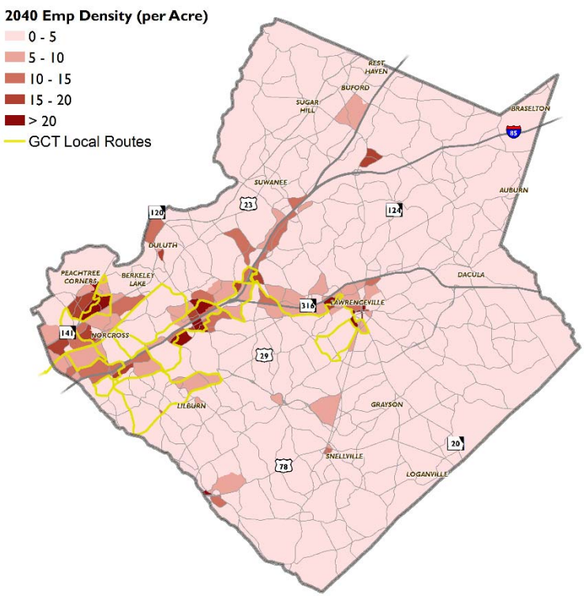


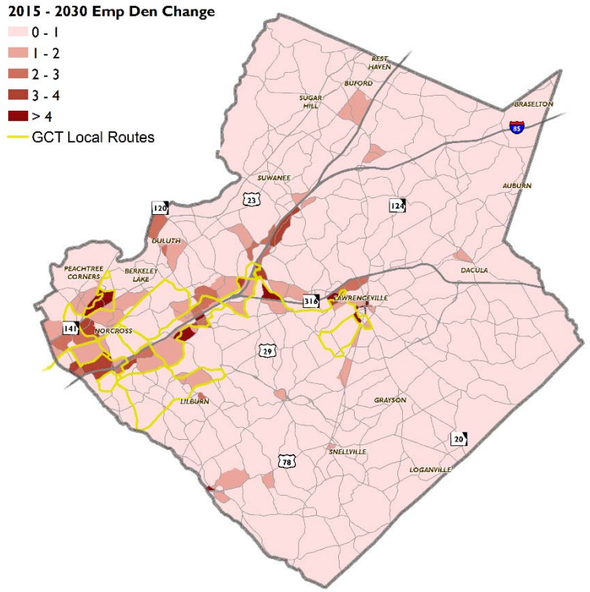
Data Source: Atlanta Regional Commission Travel Demand Model

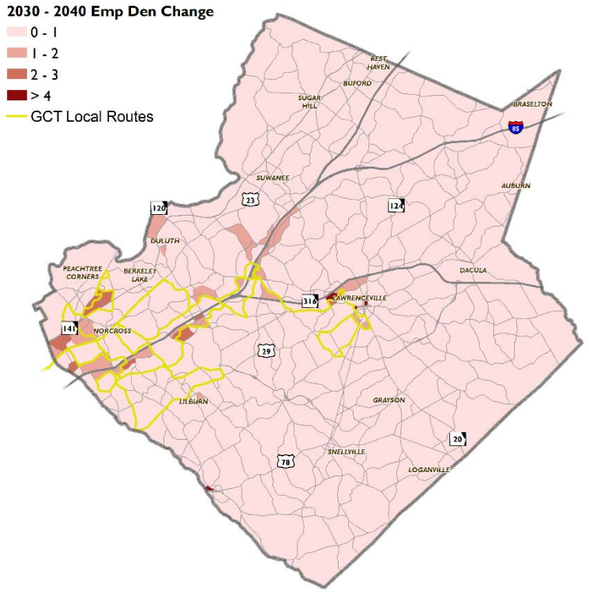
Figure 8: 2015, 2030, and 2040 Employment Densities





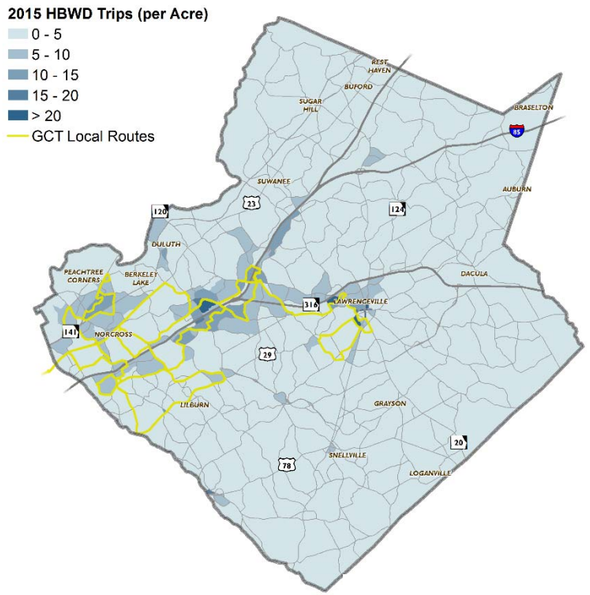


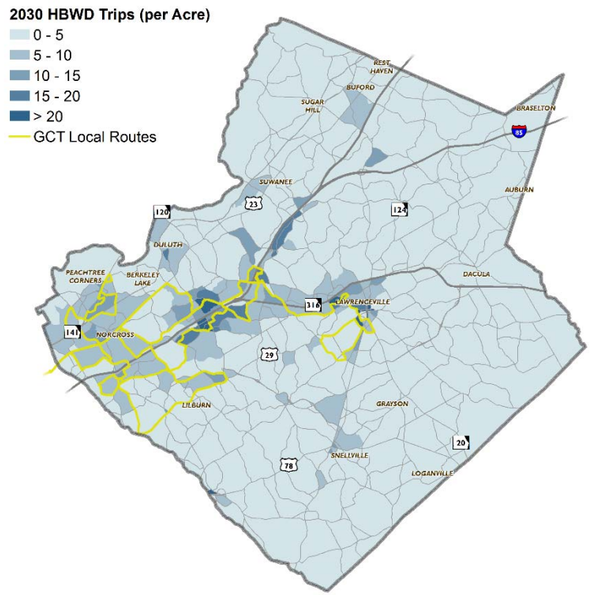


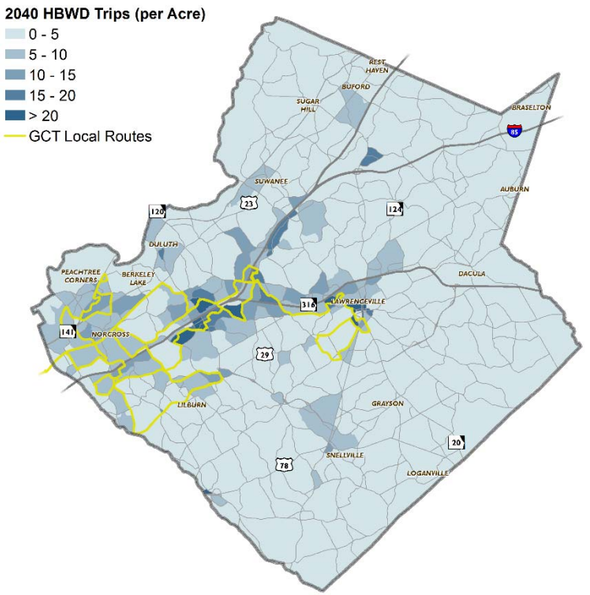


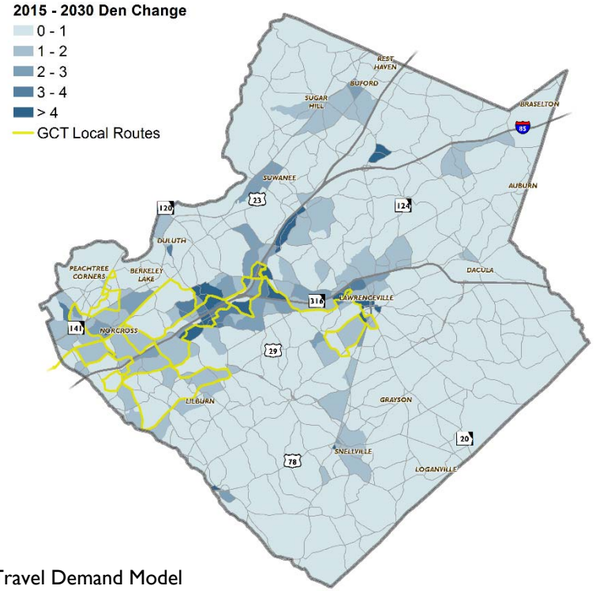
Data Source: Atlanta Regional Commission Travel Demand Model

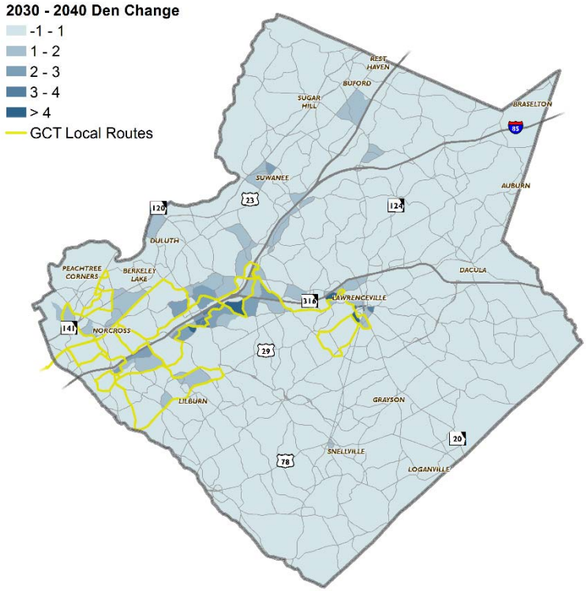
Figure 9: 2015, 2030, and 2040 Home-Based Work Trip Destination Densities





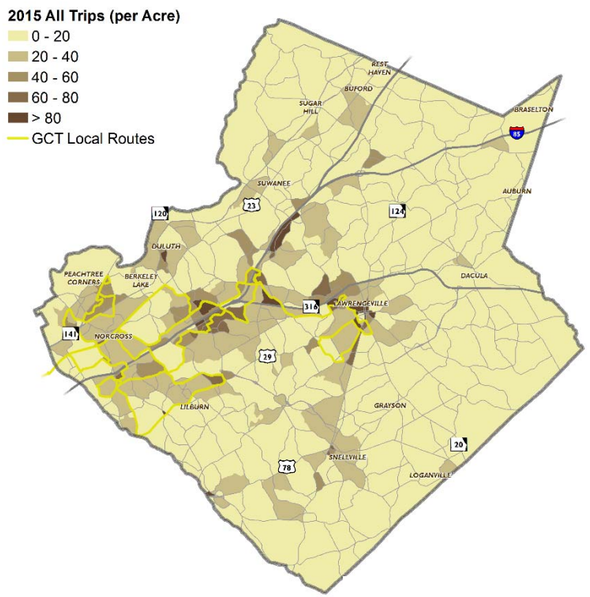


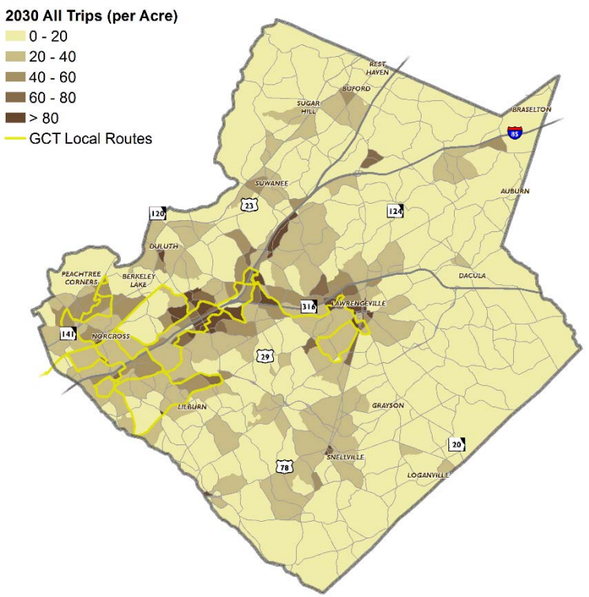


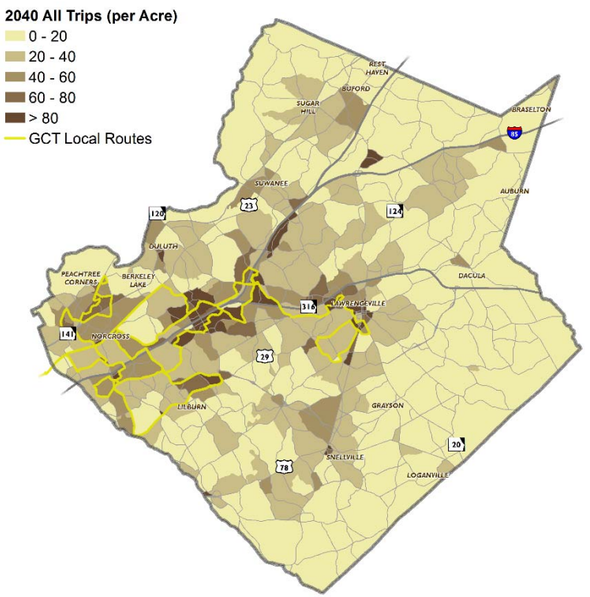


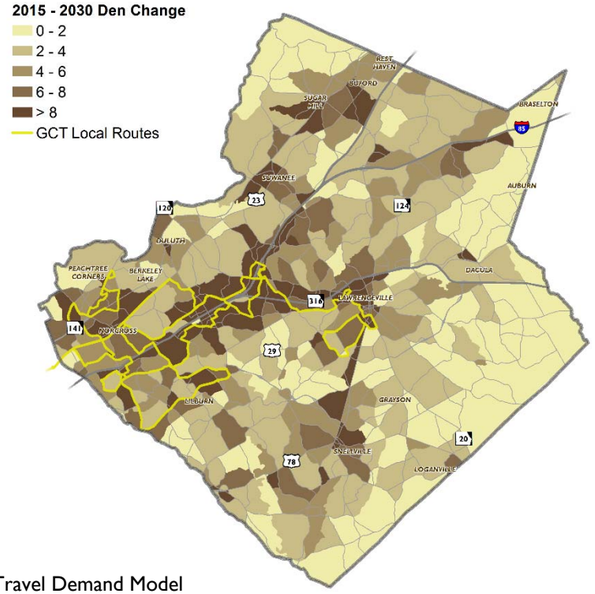
Data Source: Atlanta Regional Commission Travel Demand Model

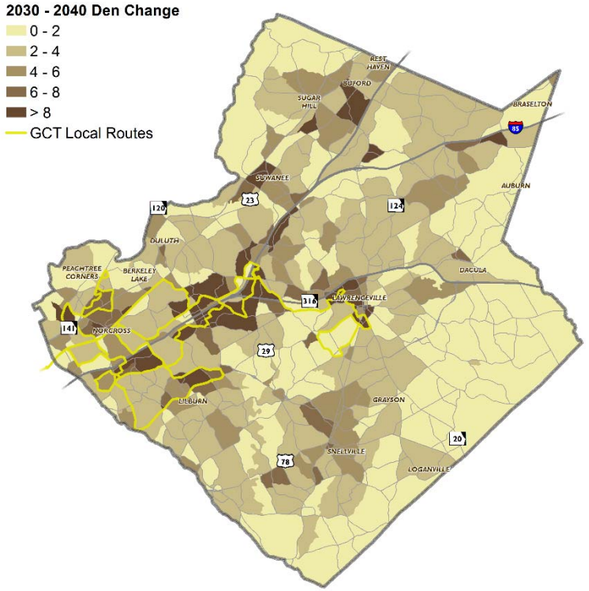
Figure 10: 2015, 2030, and 2040 Total Trip Activity Densities





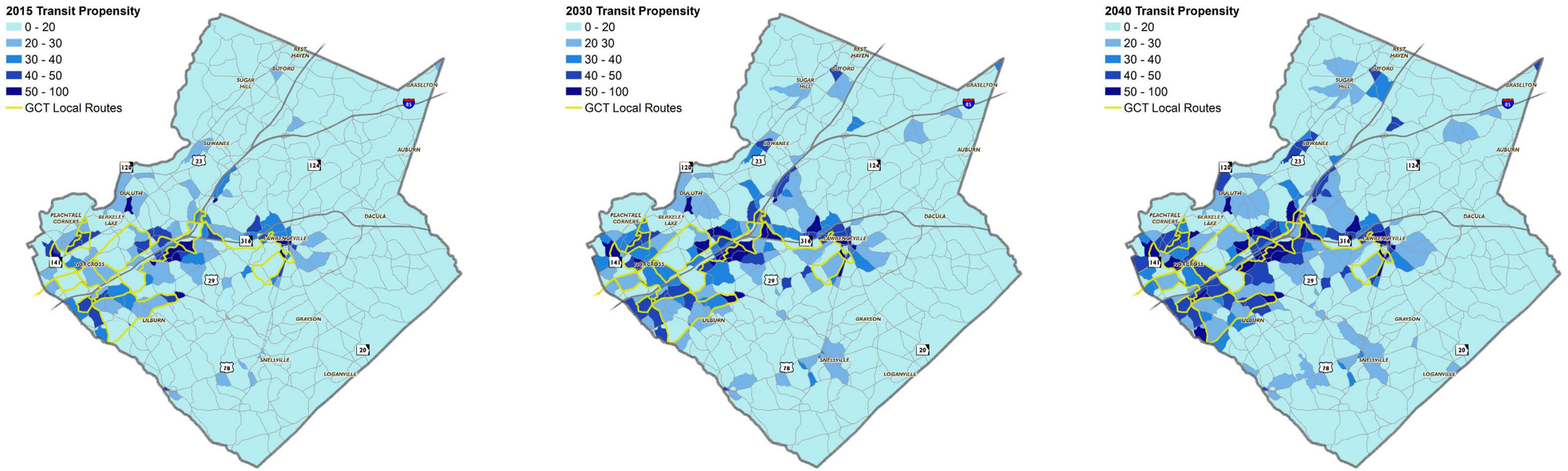






Data Source: Atlanta Regional Commission Travel Demand Model

Figure 11: 2015, 2030, and 2040 Compiled Transit Propensities



Data Source: Atlanta Regional Commission Travel Demand Model Data

EXISTING AND FUTURE EXPRESS TRANSIT MARKET ASSESSMENT

Assessment Methodology

This assessment addresses the express transit market in Gwinnett County. Existing Gwinnett County park-and-ride lots are generally along the I-85, SR 316 and US 78 corridors. Service providers at each park-and-ride lot are as follows:

- Indian Trail – GCT
- Sugarloaf Mills – GCT, GRTA
- I-985 & I-20 – GCT
- Mall of Georgia – GRTA
- Hamilton Mill – GRTA
- Dacula – GRTA
- Stone Mountain – GRTA
- Hewatt Road – GRTA
- Snellville – GRTA

The ARC travel demand model was used to determine estimated work trips to major activity centers in the Atlanta region for 2015, 2030, and 2040. As noted in the prior section of this Tech Memo, countywide population growth rates are anticipated to grow faster than countywide employment rates, thus reflecting more Gwinnett County residents crossing county borders to travel to/from work.

Specific activity centers evaluated are as follows:

- Downtown Atlanta
- Midtown Atlanta
- Emory University/CDC
- Buckhead
- Perimeter Center
- North Point/North Fulton

Activity center definitions are consistent with those used by ARC. Work trips originating in Gwinnett County to each of these activity centers were tabulated and mapped.

Assessment Results

The ARC travel demand model estimates there are over 872,000 daily work-related trips generated in Gwinnett County in 2015, growing to over 1.24 million by 2040 (43% growth). Of this total, approximately 69 percent are estimated to remain within Gwinnett County in 2015, growing to 72 percent by 2040. There are 268,000 daily work-related trips leaving the county in 2015, growing to 350,000 by 2040. Major activity centers that attract work-related trips are listed above. Resulting work trip volumes for each of these activity center markets are shown below in **Table 8** and mapped in **Figures 12 through 17** at the end of this section. Figures at the end of this section identify existing park-and-ride lot locations in relation to trip demand volumes for each activity center.

As shown below in Table 8, Downtown/Midtown and the Perimeter Center areas are high attractors of work trips from Gwinnett County, with Gwinnett trip growth rates of more than 30 percent. There presently is no express service from Gwinnett County to Perimeter Center, however, GRTA is planning to implement a new Route 417 this fall to serve this market from Sugarloaf Mills. Projected employment increases in Downtown and Midtown also suggest potential need for increased service levels to those destinations.

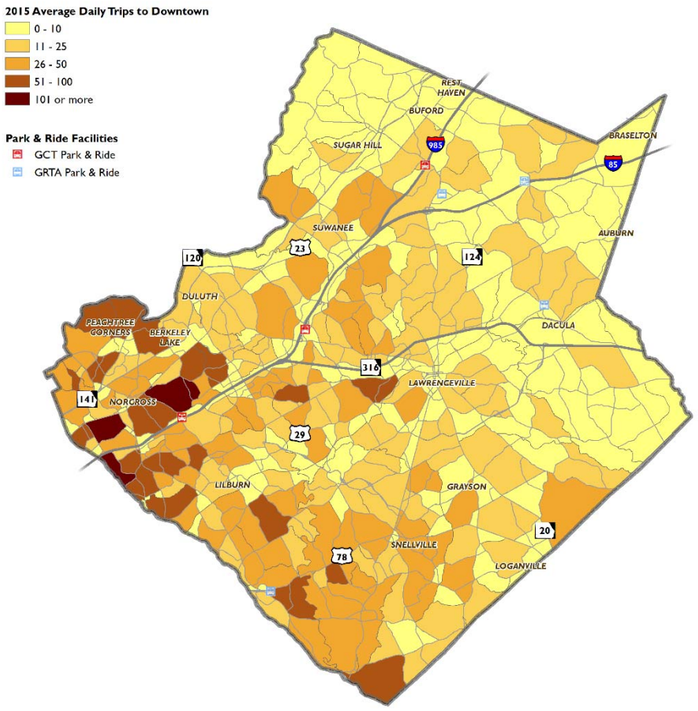
Table 8: Gwinnett County Work Trips to Activity Centers

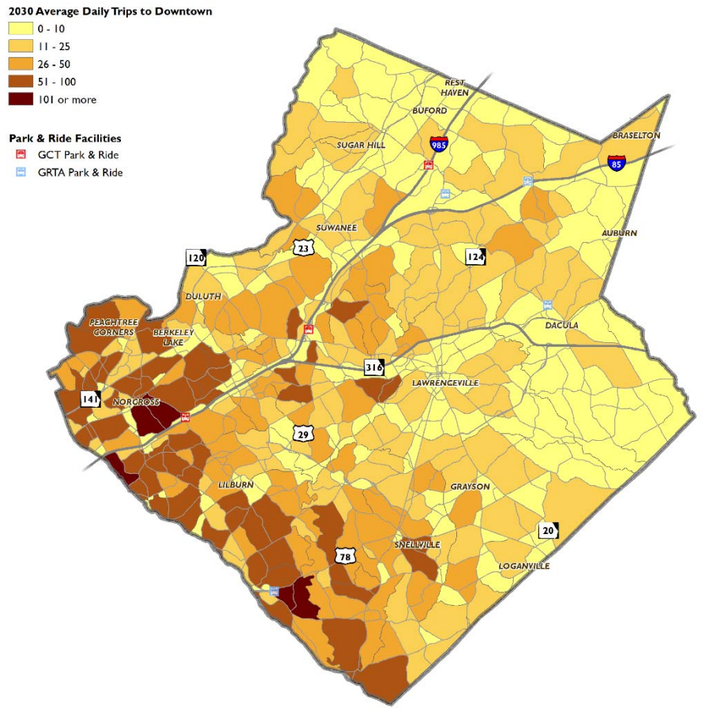
Activity Center	2015	2030	2040	2015-2040 % Growth
Downtown Atlanta	8,035	9,934	10,613	32.1%
Midtown Atlanta	4,867	5,724	6,365	30.8%
Emory University/CDC	4,536	4,616	6,200	36.7%
Buckhead	6,624	8,026	8,534	28.8%
Perimeter Center	12,043	15,071	16,384	36.1%
North Point/North Fulton	7,595	8,558	8,766	15.4%

Data Source: Atlanta Regional Commission Travel Demand Model Trip Tables

As shown in Figures 12-17, the greatest concentrations of trips come from the western portion of Gwinnett County, where there is also higher population densities. Work trips to Buckhead, Perimeter Center and North Point/North Fulton tend to have higher concentrations in the northwestern portion of the county (Peachtree Corners and Norcross). Park-and-ride lots in the western portion of the county are Indian Trail (in the I-85 corridor) and Stone Mountain, Hewatt Road and Snellville (in the US 78 corridor). However, it is important to note that western Gwinnett County residents are also in close proximity to frequent all-day rail service via MARTA's Red Line (Doraville Station) and Blue Line (Kensington Station. A transit on-board survey collected for Gwinnett County's Comprehensive Transportation Plan (CTP) indicates that 70 percent of GCT express route users drive up to 5 miles to access express bus service at park-and-ride lots.

Figure 12: Downtown Work Trip Origins from Gwinnett County





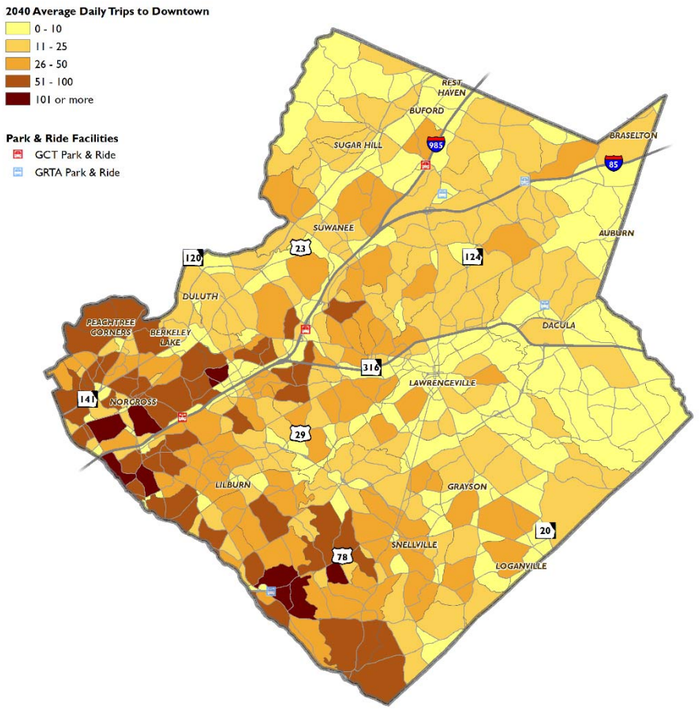
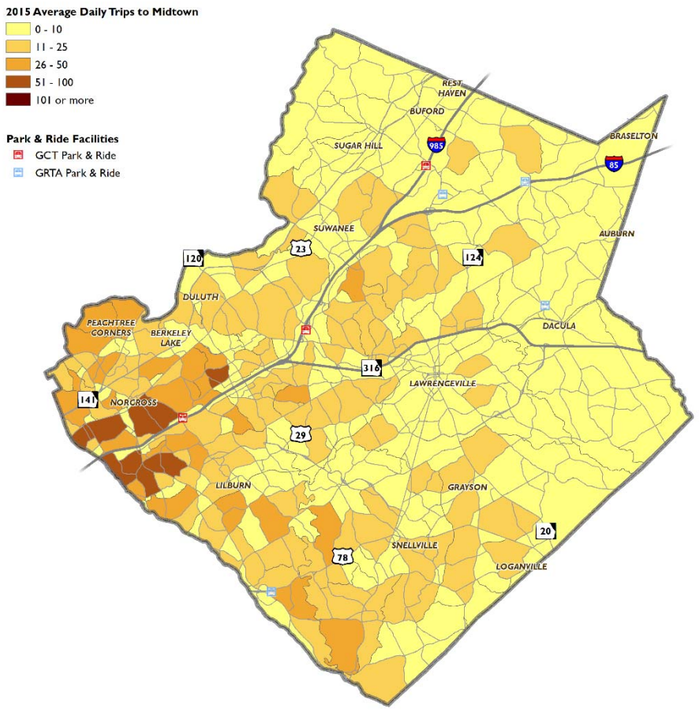
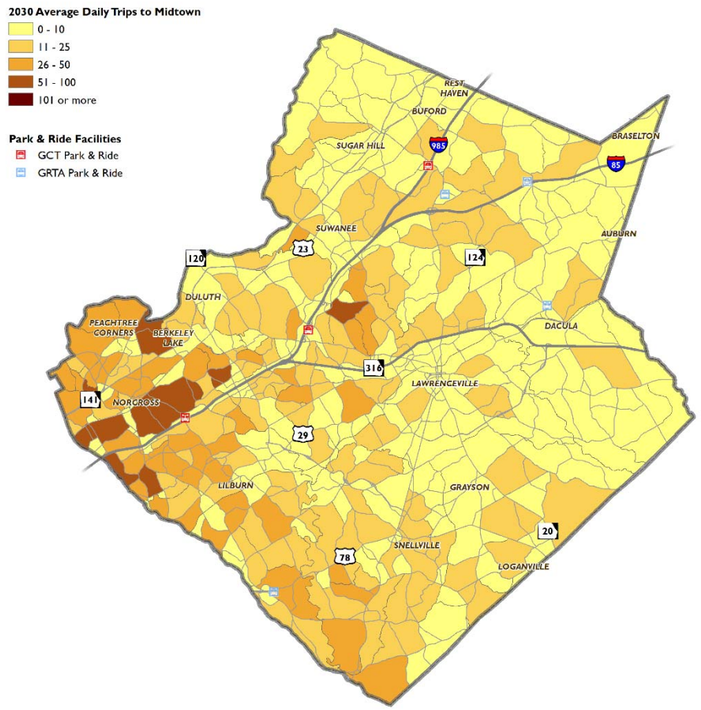


Figure 13: Midtown Work Trip Origins from Gwinnett County





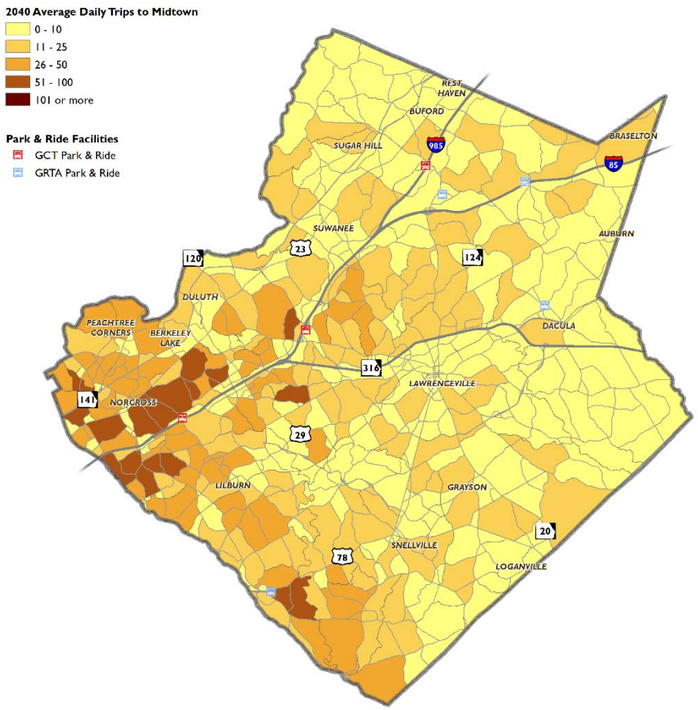


Figure 14: Emory University / CDC Work Trip Origins from Gwinnett County

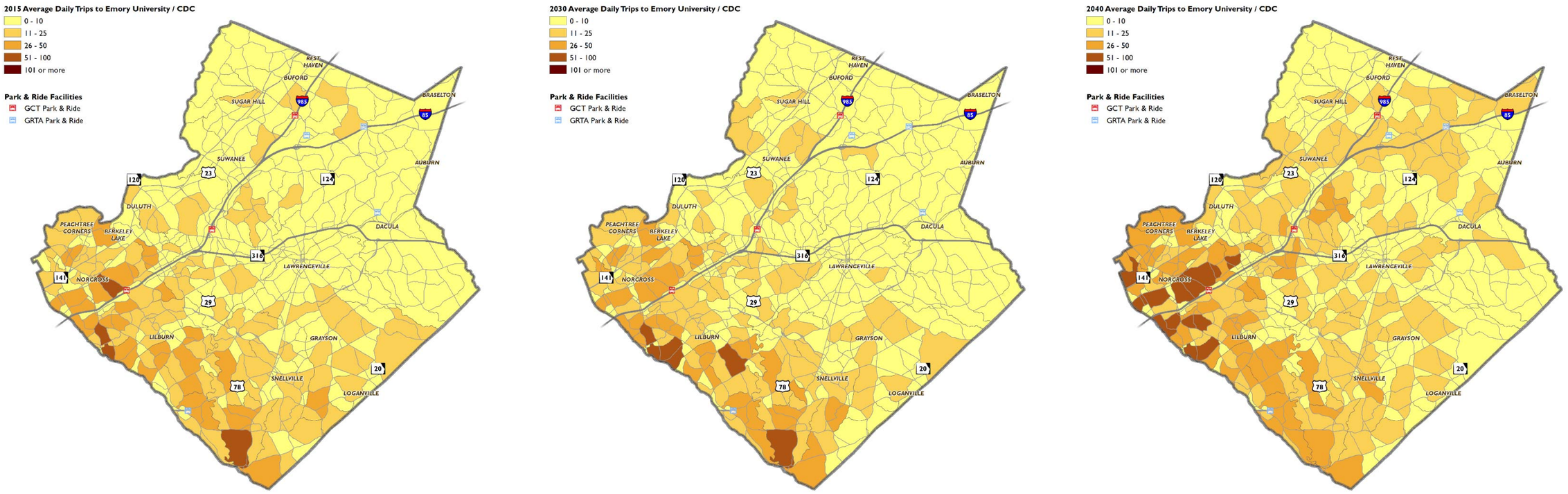
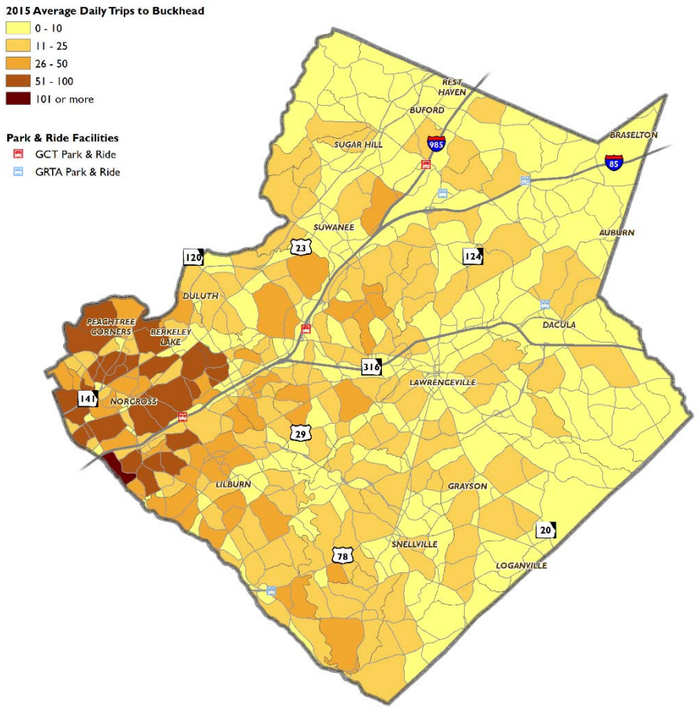
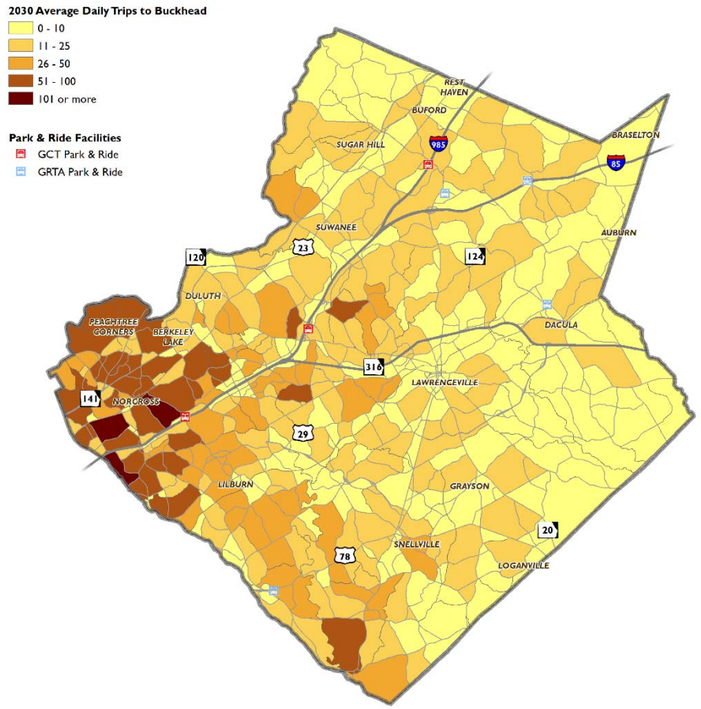


Figure 15: Buckhead Work Trip Origins from Gwinnett County





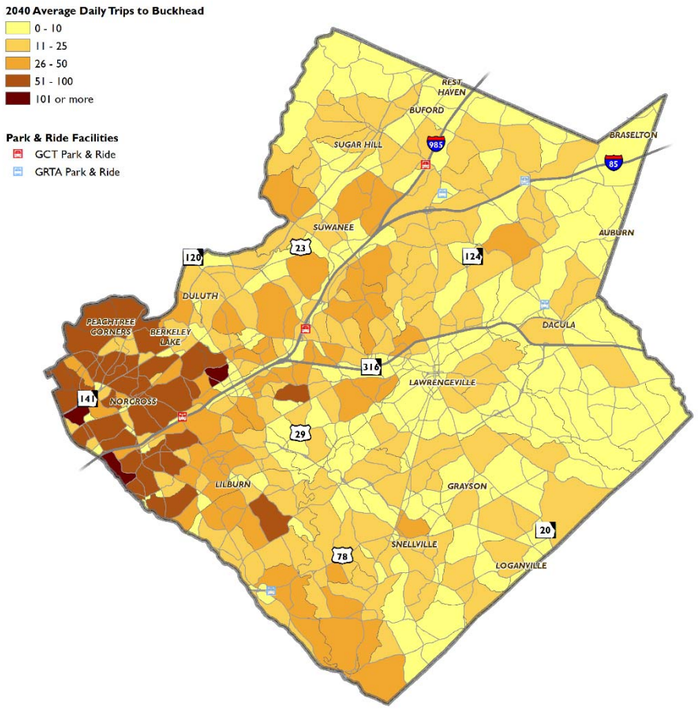


Figure 16: Perimeter Center Work Trip Origins from Gwinnett County

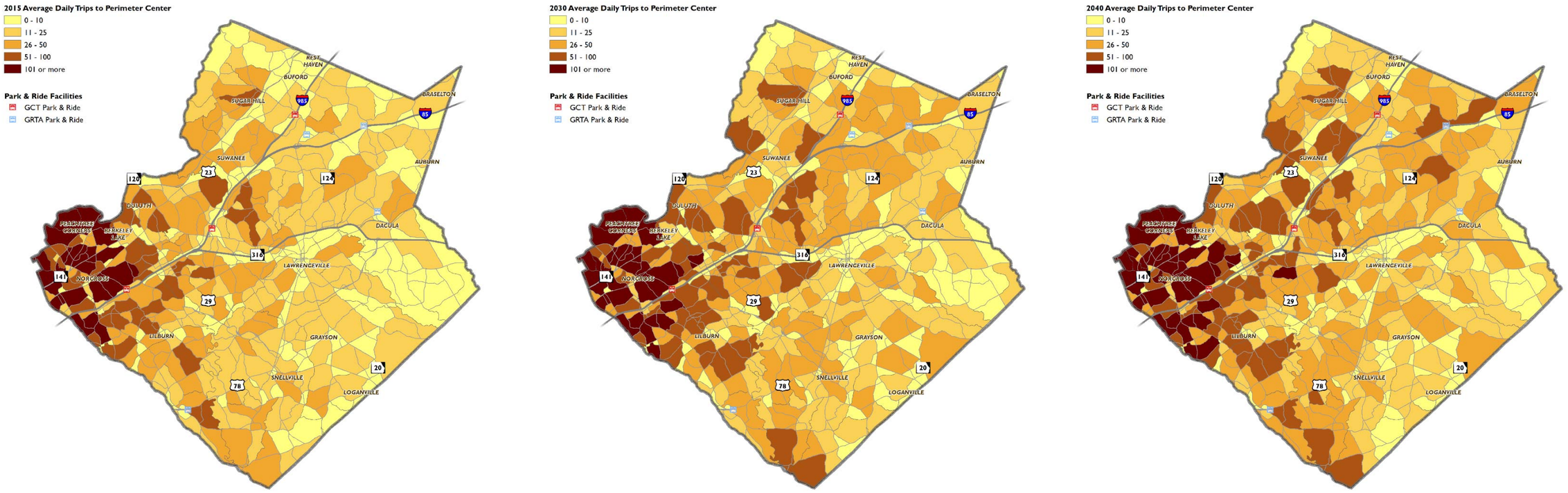
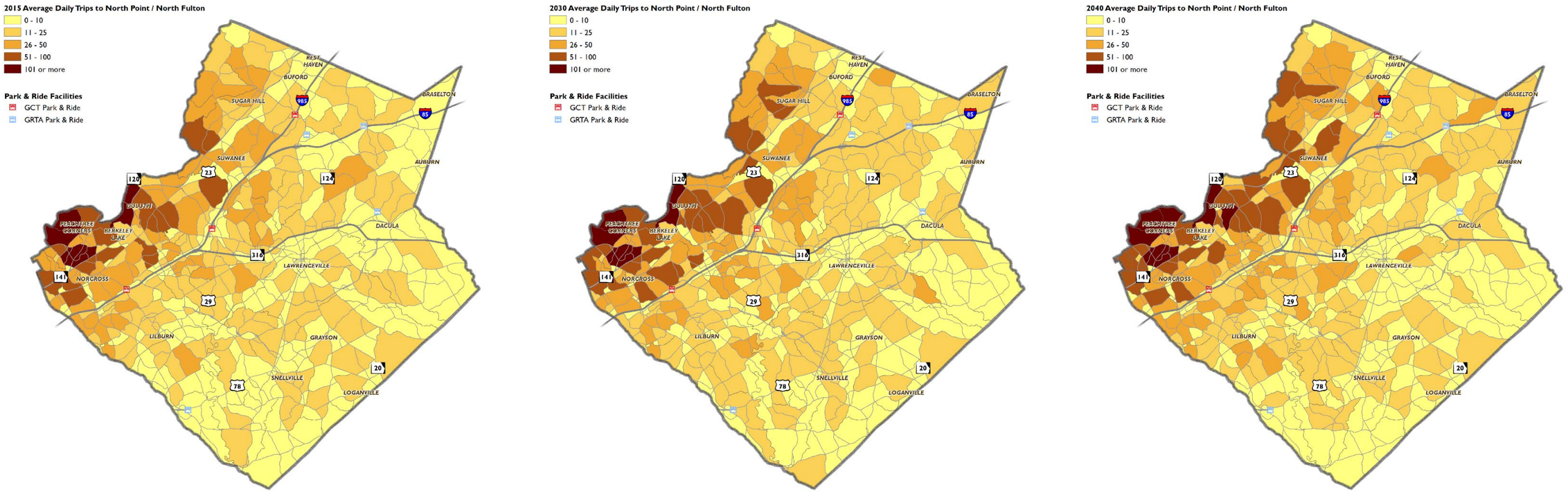


Figure 17: North Point / North Fulton Work Trip Origins from Gwinnett County



TRANSIT-DEPENDENT POPULATIONS MARKET ASSESSMENT

Assessment Methodology

This assessment focused on determining locations of Title VI transit-dependent populations and the extent to which the existing GCT local transit network is adequately serving this market. The Federal Transit Administration (FTA) requires transit agencies of significant size to complete a Title VI analysis prior to implementing service changes, to determine impacts on minority and low income populations. Potential service changes have yet to be determined for this project. However, as part of this task, the consultant team has identified the extent to which minority and low income populations are presently served by local GCT service, to assist in determining if there are areas with Title VI communities not presently service, and for use as a benchmark as future service plans are considered.

The 2011–2015 American Community Survey was used in this analysis. Datasets for minority/Hispanic populations and households in poverty are available at the census block group level. Gwinnett County Transit defines low income households as those households with an income below the Federal-defined poverty level for a family of four. The Federal Poverty Guidelines for the state of Georgia define poverty for a family of four as less than $24,250 in annual income in 2015. Each characteristic was mapped on the basis of the percentage of minority population or low income households within a census block group.

The existing local transit network was added to these maps to determine if there were areas with concentrations of one or more attribute that is not served by transit.

Assessment Results

Resulting analysis for each of characteristic is presented in **Figures 18 and 19** at the end of this section. Key conclusions from this analysis are as follows:

Minority Populations

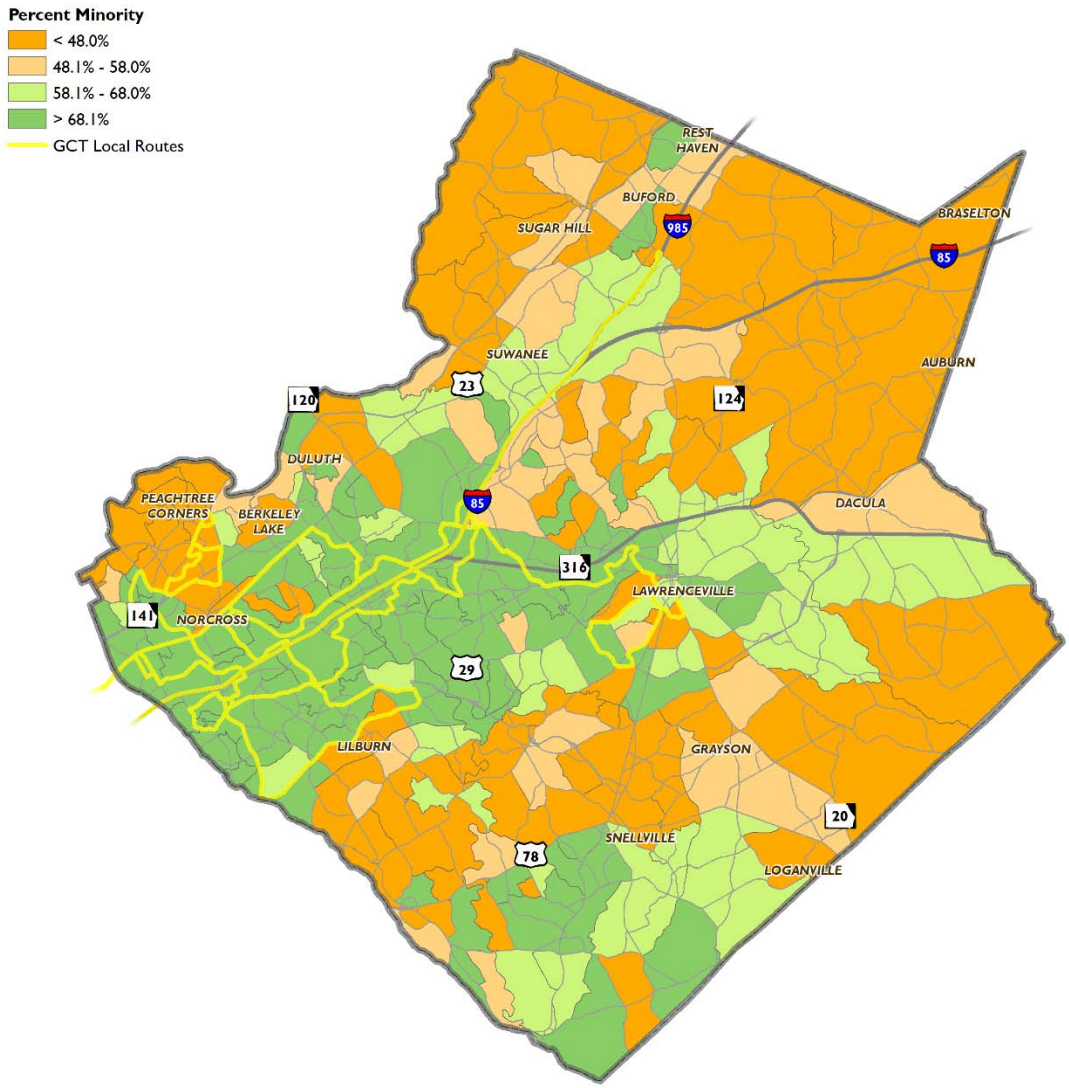
- There were a reported 504,953 minorities and Hispanics living in Gwinnett County reported in the 2011-2015 ACS. This represents 58% of the total county population that is identified in the ACS.
- Of this total, 24% are estimated to reside within 1/3 mile of an existing GCT bus stop.
- Figure 18 illustrates the minority percentage for each census block group. Over 77% of existing GCT local bus trip origins and destinations occur in zones with minority populations greater than the county average, thus indicating a strong correlation between transit ridership and minority/Hispanic populations.
- Areas where there appear to be concentrations of minority and Hispanic populations with no nearby local service are in the Snellville, Lawrenceville, and Buford areas.

Households in Poverty

- The 2015 Federal Poverty Guidelines for a family of four in Georgia was $24,250 in annual income.
- The 2011-2015 ACS reports 46,736 households that have an annual income of less than $25,000. This represents 17.1% of all households in Gwinnett County.
- Of this total, 51% of households in poverty are estimated to be within 1/3 mile of an existing GCT bus stop.
- Figure 19 illustrates the percentage of households in poverty for each census block group. Over 74% of existing GCT local bus trip origins and destinations occur in zones with households in poverty greater than

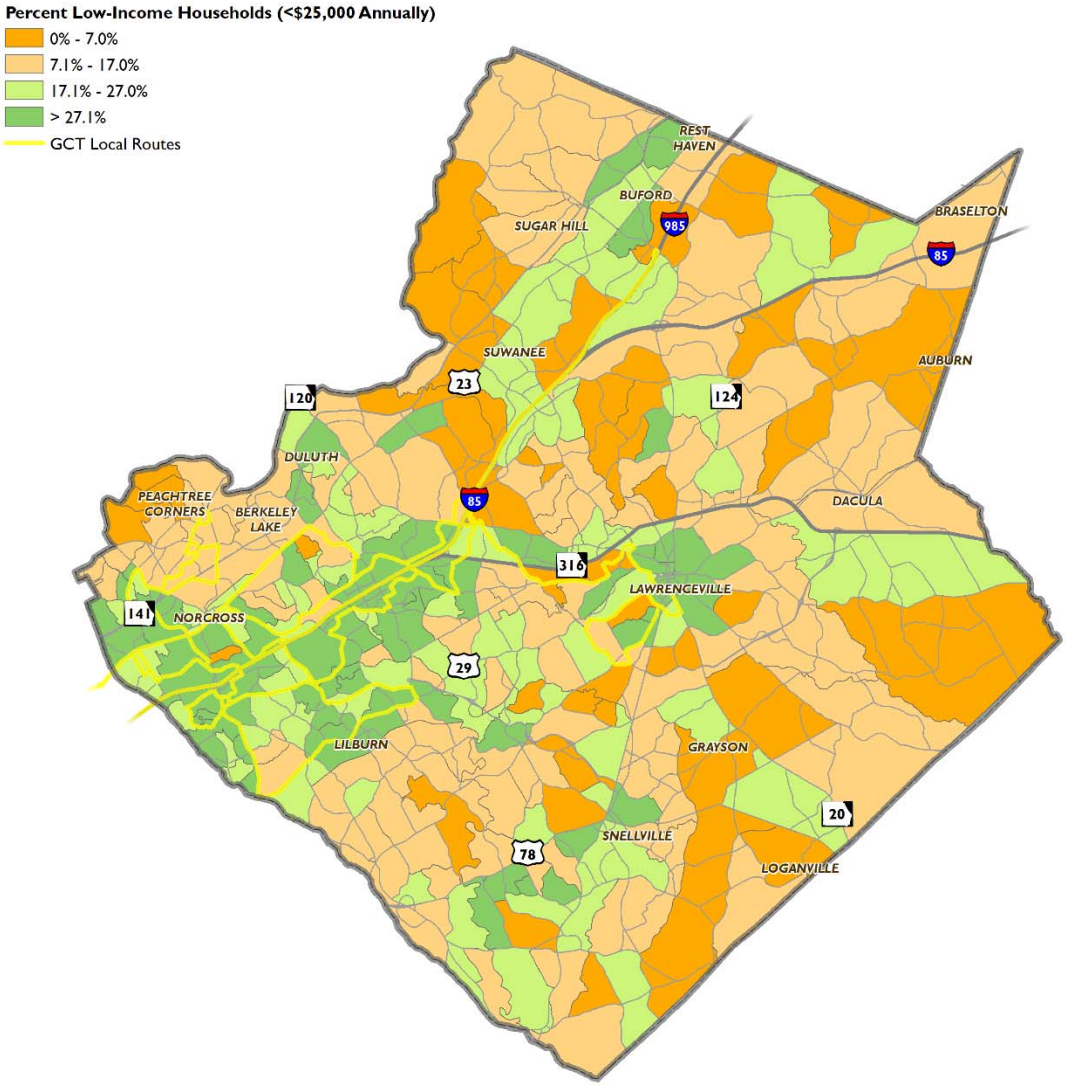
the county average, thus indicating a strong correlation between transit ridership and households in poverty. Areas where there appear to be concentrations of households in poverty with no nearby local service are in the Snellville, Lawrenceville and Buford areas.

Figure 18: Minority/Hispanic Populations in Gwinnett County



Note: The U.S. Census ACS reports 58% of county residents as minorities and Hispanics. Census block groups shown in dark and light green are above the countywide average. Census block groups shown in orange and red are below the countywide average.

Figure 19: Low Income Households in Gwinnett County



Note: The U.S. Census ACS reports 17% of county households with an income of $25,000 or less. Census block groups shown in dark and light green are above the countywide average. Census block groups shown in orange and red are below the countywide average.

CONCLUSIONS

Gwinnett County's population is expected to grow by 57 percent to over 1.3 million by 2040. Employment in the county is expected to grow by almost 40 percent to 548,000. This growth will result in a need for expansion of both local and express transit in the county.

Typical businesses and agencies that are destinations for transit users were identified and mapped. This analysis identified the following locations where local transit service may be warranted:

- The Mall of Georgia is only served by existing express services that operate peak period, peak direction service to and from major employment centers outside of Gwinnett County.
- There are several Walmarts and Targets with no nearby local transit service. Most are located in Buford, Suwanee, and Snellville where there currently is no local service.
- One community health center (The Buford Health Center) has no nearby local service.
- Eastside Medical Center in Snellville has no nearby local service. There are approximately 1,200 employees at this hospital complex.
- Georgia Gwinnett College has no nearby local service. This college has an enrollment of 11,500 students. The University of Georgia Gwinnett campus also has no nearby transit service.

Demographic and trip table information from ARC's regional travel demand model was used to determine areas that have characteristics conducive for new or expanded local transit service. Results from this analysis were compiled to arrive at an overall transit propensity score. Conclusions from this analysis were as follows:

- TAZs with existing high propensity scores are often located along the I-85 corridor between Peachtree Industrial Blvd. and Lawrenceville Highway, in addition to zones located in the Lawrenceville area. Propensity scores increase significantly for many zones in these areas by 2040. Much of this area is served by existing GCT local transit service. Consideration should be given to increased transit service levels to serve projected growth in this area of the county.
- Other areas with increasing propensity scores that might warrant new local transit service include:
  - Georgia Gwinnett College area, north of Lawrenceville
  - Suwanee/Sugar Hill/Buford area
  - Mall of Georgia
  - I-85 corridor north of SR 316 and south of I-985
  - Snellville area

The ARC travel demand model was also used to assess express service needs to major activity centers in the Atlanta region. Downtown/Midtown and the Perimeter Center areas are high attractors of work trips from Gwinnett County, with anticipated growth in Gwinnett County work trips by more than 30 percent by 2040. There presently is no express service from Gwinnett County to Perimeter Center. However, GRTA is planning to implement a new Route 417 this fall to serve this market from Sugarloaf Mills. Projected employment increases in downtown and Midtown also suggest potential need for increased service levels to those destinations.

Finally, existing minority/Hispanic populations and low income households were identified with Census Bureau ACS data. This analysis found that for the most part, existing GCT local route service is serving areas with high concentrations of minority populations and low income households. There are,

however, some areas with high concentrations of minority populations and/or low income households without transit service – particularly in the Snellville, Lawrenceville, and Buford areas.