



GWINNETT COUNTY
BOARD OF COMMISSIONERS

75 Langley Drive | Lawrenceville, GA 30046-6935

(O) 770.822.7000 | (F) 770.822.7097

www.gwinnettcounty.com

Charlotte J. Nash, Chairman

Jace W. Brooks, District 1

Ben Ku, District 2

Tommy Hunter, District 3

Marlene M. Fosque, District 4

Official

Informal Business Discussion Minutes

Tuesday, March 10, 2020 – 12:00 PM

Present: Charlotte J. Nash, Jace Brooks, Ben Ku, Marlene M. Fosque

Absent: Tommy Hunter

1. Transit Discussion

Jim Baker with Kinetics Transportation Group and Adam Dankberg of Kimley-Horn led the Board in a discussion on transit. No official action taken.



Transit Planning Process



Agenda

- Discussion of Priorities
- Mode Choice Influences
 - Demographics
 - Trip Characteristics
 - Price & Availability
 - Quality of Service
- Transit Modes
- Network Design Process
- Paying for Transit

System Goals and Priorities



SUSTAINABILITY

Preserve and promote social and environmental character through an integrated strategy that addresses transportation solutions

ENVIRONMENT

Encourage the reduction of air pollution, fuel consumption, and impacts to natural resources by providing/enhancing more sustainable modes of transportation

ECONOMIC DEVELOPMENT

Influence economic development patterns by providing an enhanced transportation network to better connect population, employment, and commercial centers

CONGESTION RELIEF

Reduce congestion and/or the demand to increase roadway capacity for automobiles by encouraging transit use



STEWARDSHIP

Utilize available resources in an efficient manner to meet the transportation need

EQUITY

Increase the mobility of those with limited financial or traveling capabilities by focusing service on the mobility needs of disadvantaged communities

PRODUCTIVITY AND EFFICIENCY

Use constrained financial resources in the most cost-effective manner while maximizing ridership

SYSTEM MAINTENANCE

Continuously maintain existing capital investments to achieve a state of good repair



SERVICE QUALITY

Enhance the desirability and utility of the transit service for Gwinnett residents and workers

COVERAGE AND CONNECTIVITY

Expand the number of communities and destinations served to increase transit accessibility

TRAVEL TIME REDUCTION

Make the transit network more competitive and effective for its users through capital and operating investments

RELIABILITY

Increase the reliability of the transit network through investment in priority treatments, technologies, safety, and operations

Board Priority Themes

- **Balanced Approach**
- **Scalable**
- **Coverage** (Options/Modes)
- **Connectivity** (Options/Modes)
- **Funding/Fiscal Responsibility**
(Affordable to County | Appropriate use of fiscal resources | Scalability)
- **Experience**
(Service Quality and Dependability | Reliability | Safe | Affordable for Riders)
- **Economic Development**
(Workforce Access to Transit | Land Use | Stability | Reduce Growth of Congestion/
Quality of Life)

System Goals and Priorities

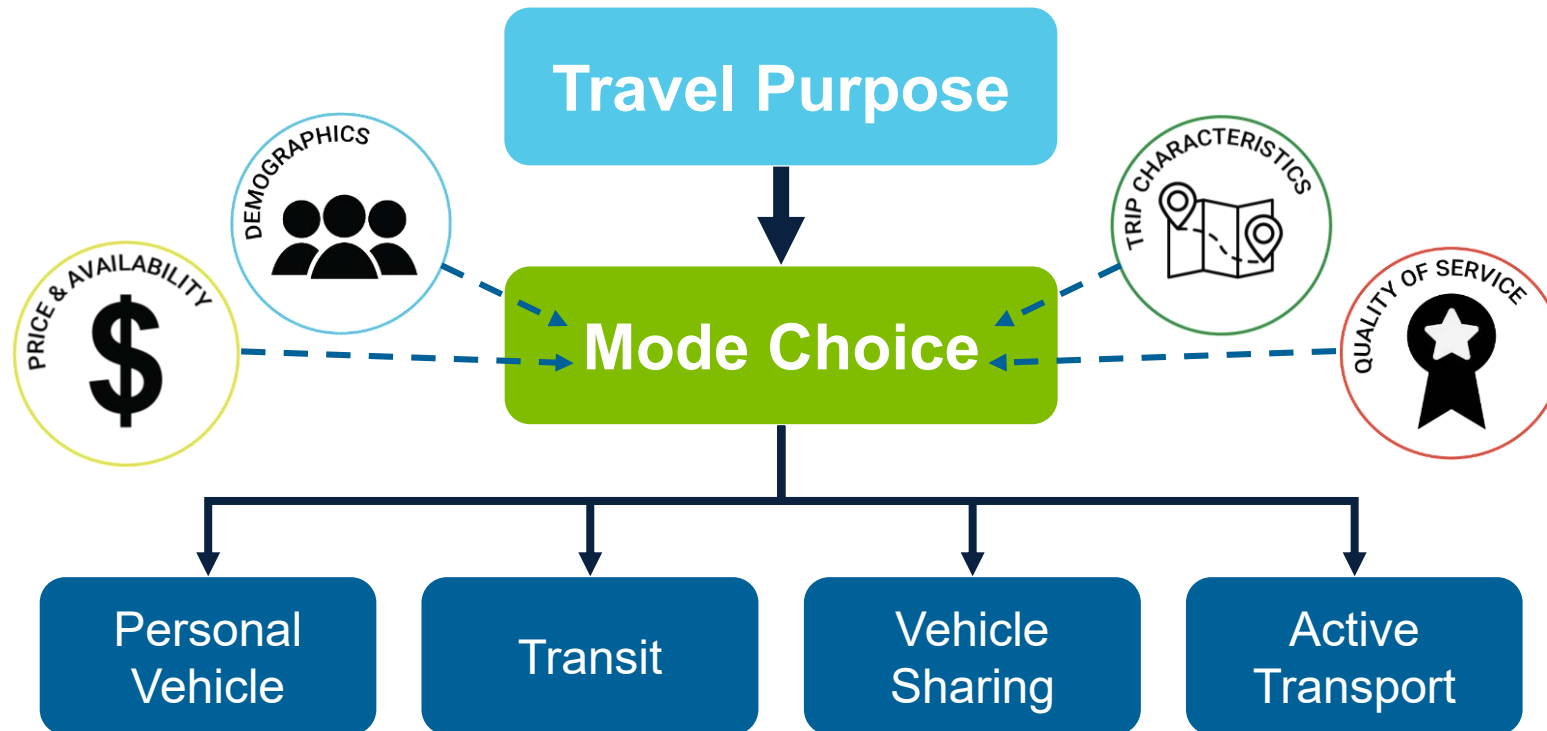




Gwinnett

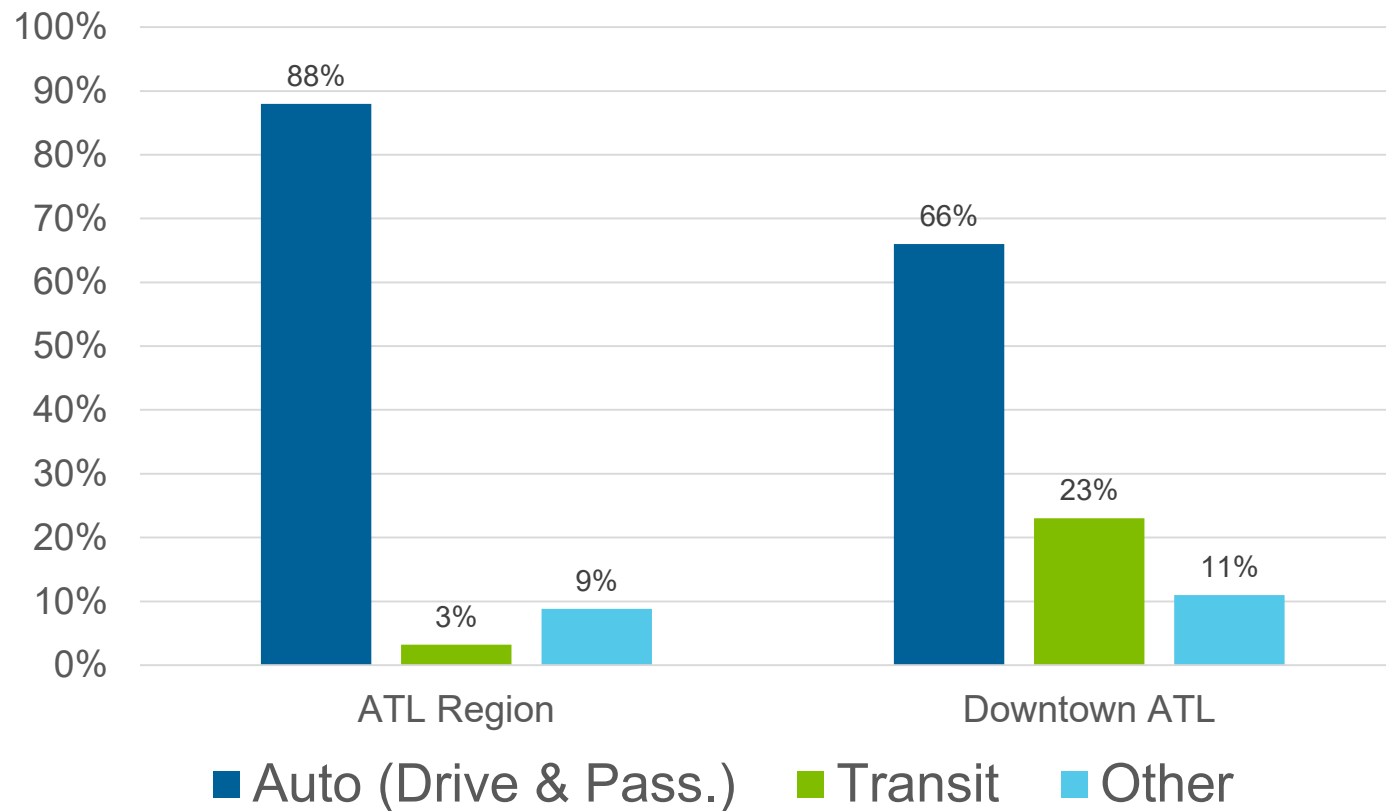
Mode Choice

Choosing a Mode



Atlanta Modal Splits

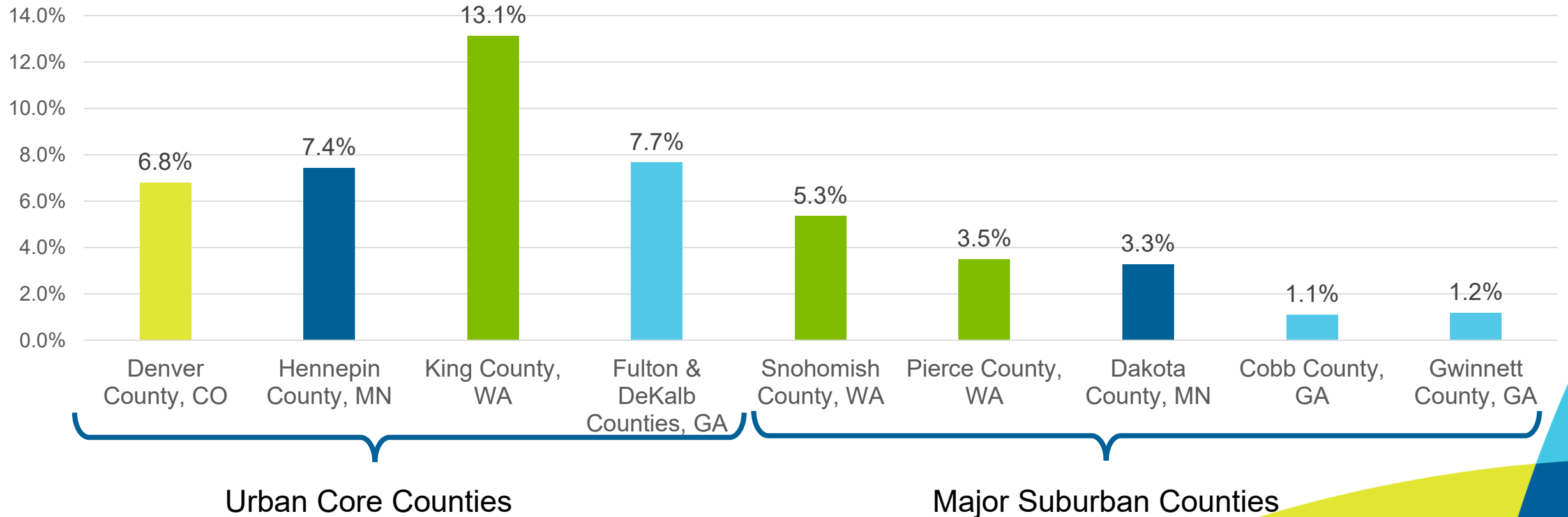
All Trips



Peer City Modal Splits

Work Trips

Transit Mode Shares





Gwinnett

Price and Availability





Price & Availability

- What modes are options?
- Automobile cost – \$9,260 annual average
 - Fuel
 - Maintenance
 - Insurance
 - Registration, licensing and taxes
 - Depreciation and financing
- Transit cost - \$960 to \$2,160
 - Fare
 - Employer subsidy
 - Access costs



Gwinnett

Demographics





Demographics

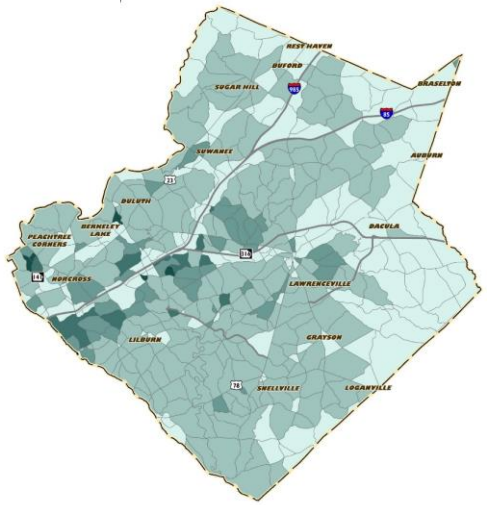
- Gender
- Race/Ethnicity
- Age
- Income
- Education
- Immigrant/Non-Immigrant
- Work or Mobility Limited
- Vehicle Access



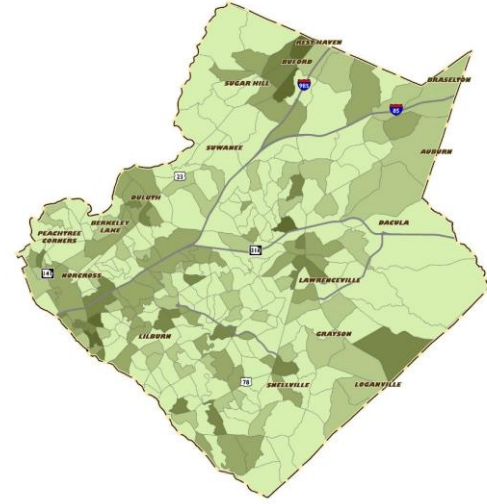
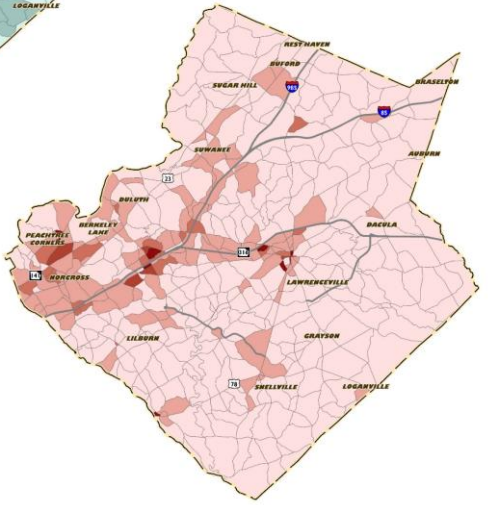
Market Niches	MSA Transit Index
Sex	
Men	.85
Women	1.18
Race and Ethnicity	
White	.68
Black	2.72
Hispanic (all races)	1.73
Asian	1.74
Vehicle Ownership	
No Car	5.76
One or More	.68
Age of Worker	
17-29	1.14
30-39	.96
40-49	.87
50-59	.92
60-64	1.07
65-69	1.10
Education	
No School	2.59
Elementary	2.08
Junior High	1.69
Some High School	1.25
High School	.91
Some College	.82
College	1.05
Graduate School	1.06

Market Niches	MSA Transit Index
Household Income	
< \$5k	1.23
\$5 - 10k	1.24
\$10 - 15k	1.08
\$15 - 20k	1.04
\$20 - 25k	.97
\$25 - 30k	.90
\$30 - 40k	.78
\$40 - 50k	.77
\$50 - 60k	.84
\$60 - 70k	.91
\$70 plus	.95
Immigration Status	
Non-immigrant	.84
Immigrant	2.08
Years in US	
< 5	3.01
5 - 10	2.25
10 - 15	1.74
15 - 20	1.89
20 - 25	1.88
25 - 30	1.49
30 - 40	1.48
40+	1.80
Limitations	
Work Limitation	1.25
Mobility Limitation	2.41

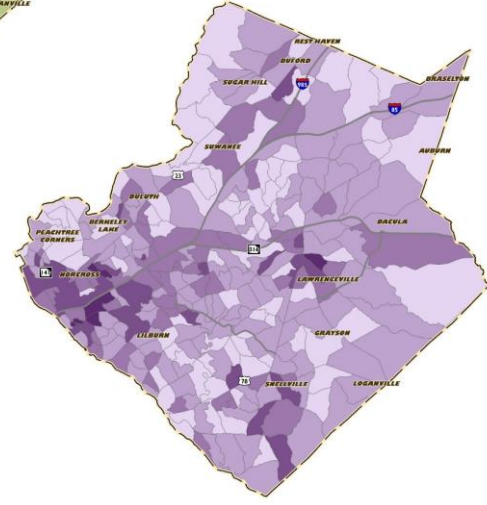
Community Characteristics



**Population and
Employment**



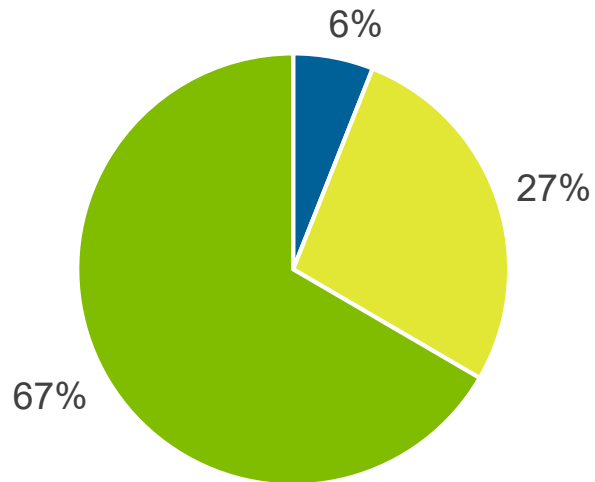
Demographics



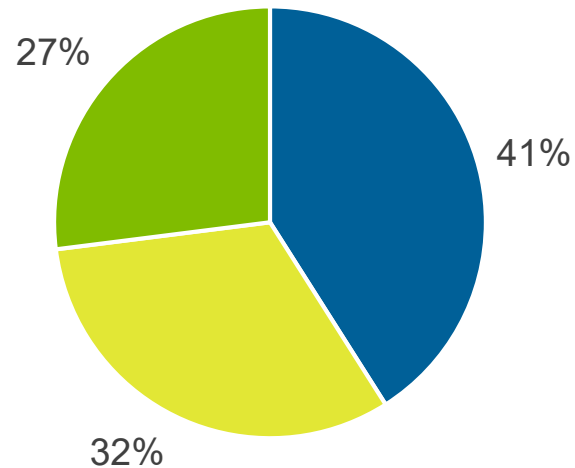
Atlanta Mode Choice Characteristics - Demographics

Household Auto Ownership

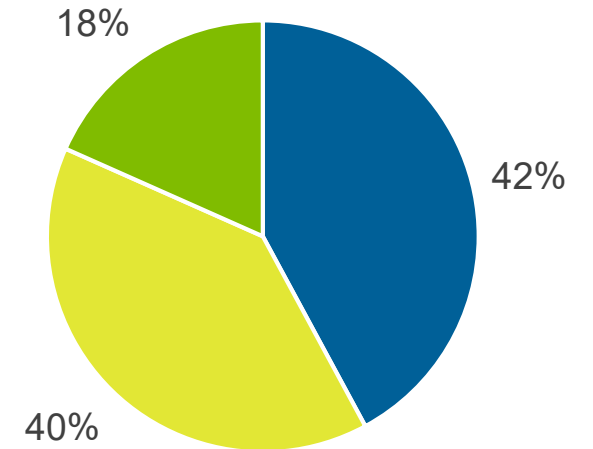
Atlanta Region - All Households



Atlanta Region - Transit Riders



Gwinnett Transit Riders

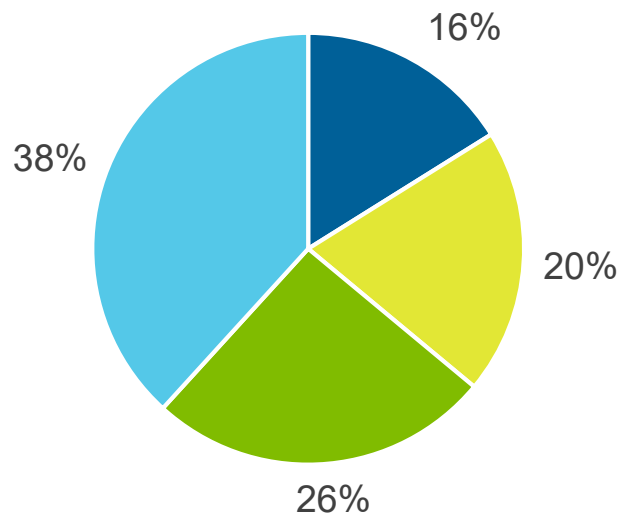


■ 0 ■ 1 ■ 2+

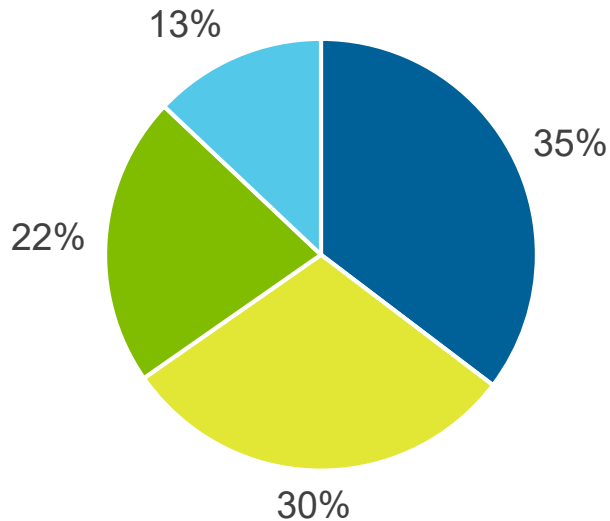
Atlanta Mode Choice Characteristics - Demographics

Household Income

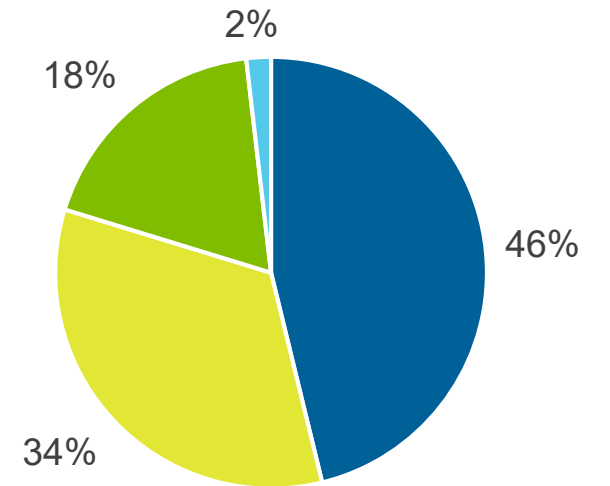
Atlanta Region - All Households



Atlanta Region - Transit Riders



Gwinnett Transit Riders



■ <\$20k
 ■ \$20k-\$40k
 ■ \$40k-\$75k
 ■ >\$75k



Gwinnett

Trip Characteristics





Trip Characteristics

- Trip type
 - Purpose
 - Single or multiple destinations
- Travel market
 - Origin-destination
 - Trip distance
- Trip time
- Number of people to be making the trip (passengers)

Travel Purpose

- Home to work and back

- Home to the grocery store and back

- Home to school

- Home to a movie

- Work to a meeting

- Work to daycare

- Daycare to grocery store

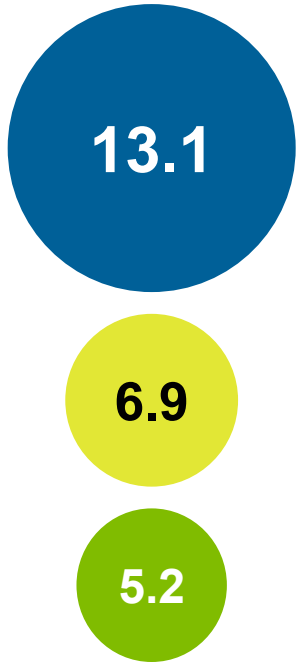
**Home-Based Work
(HBW)**

**Home-Based Other
(HBO)**

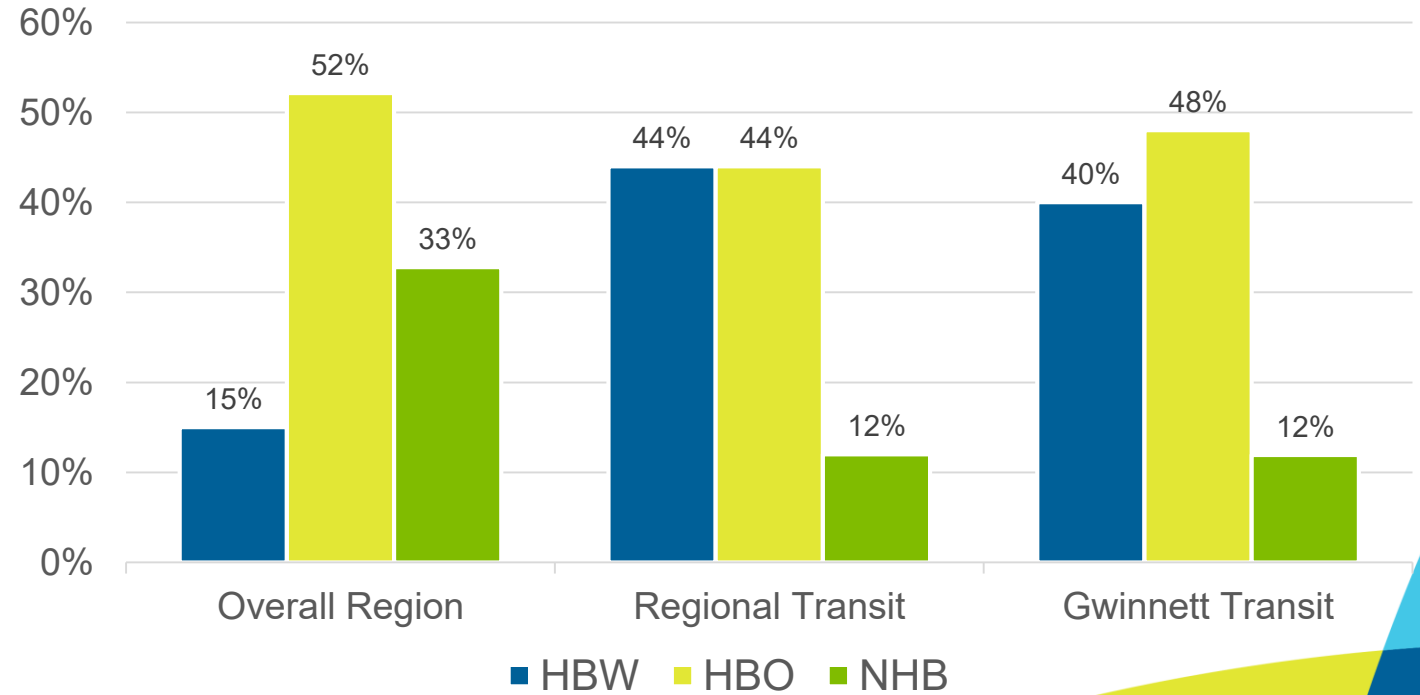
**Non Home-Based
(NHB)**

Regional Travel Purpose

Average Trip Length (mi)



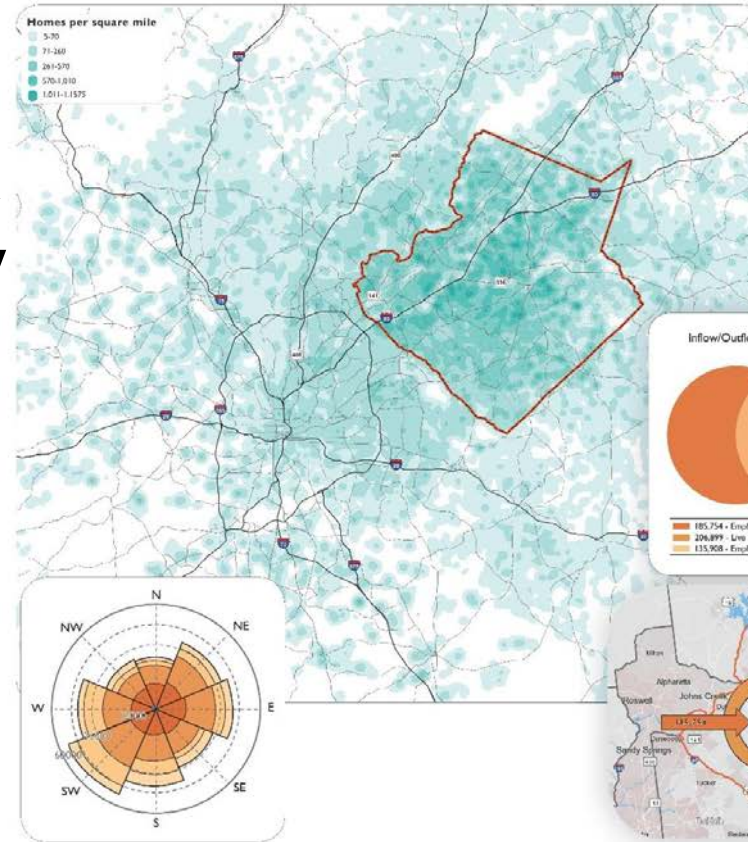
Percent Trip Type



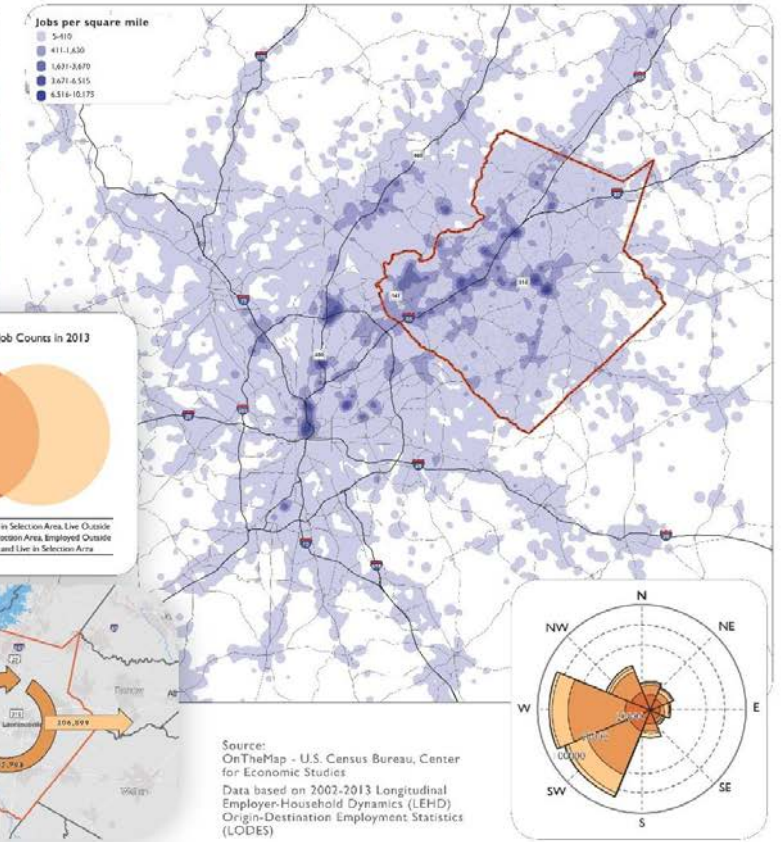
Home/Work Locations

- 60% of Gwinnett's work force leaves the County everyday
 - 206,000 workers

Where Gwinnett Workers Live

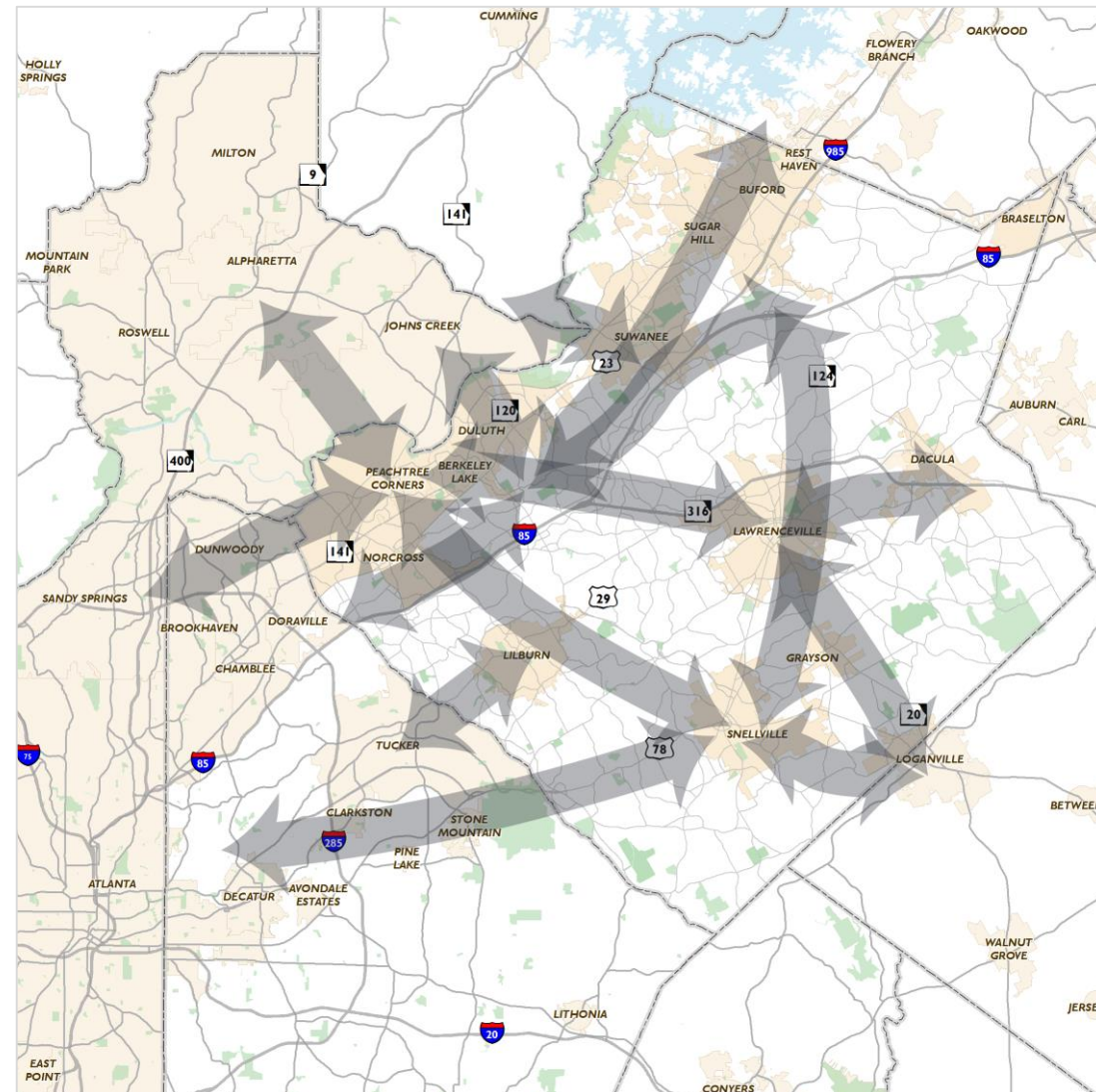


Where Gwinnett Residents Work



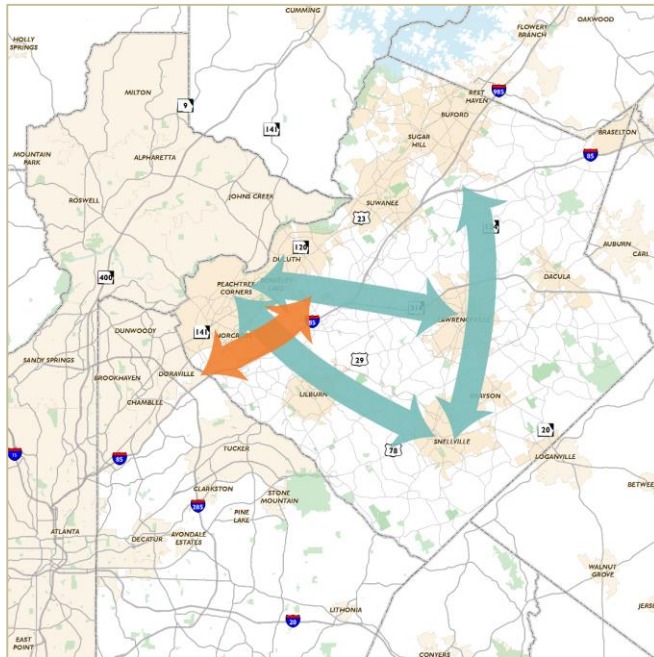
Source: OnTheMap - U.S. Census Bureau, Center for Economic Studies
Data based on 2007-2013 Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES)

General Travel Patterns

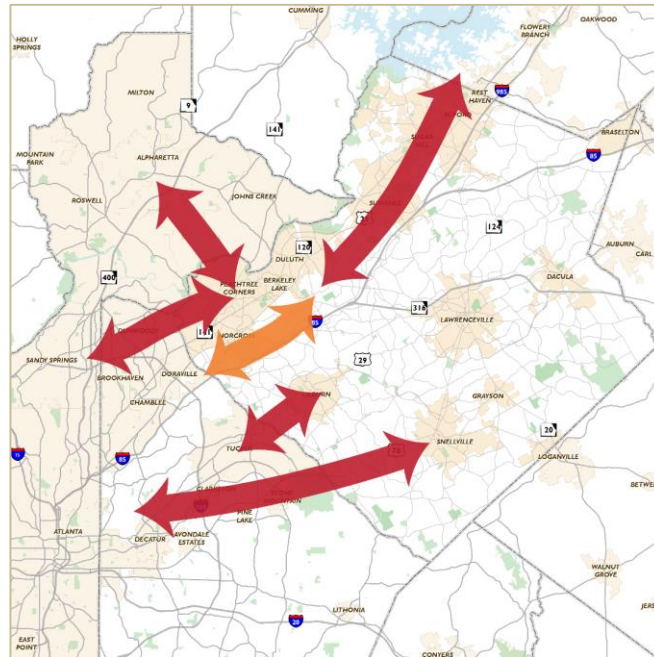


Major Corridors

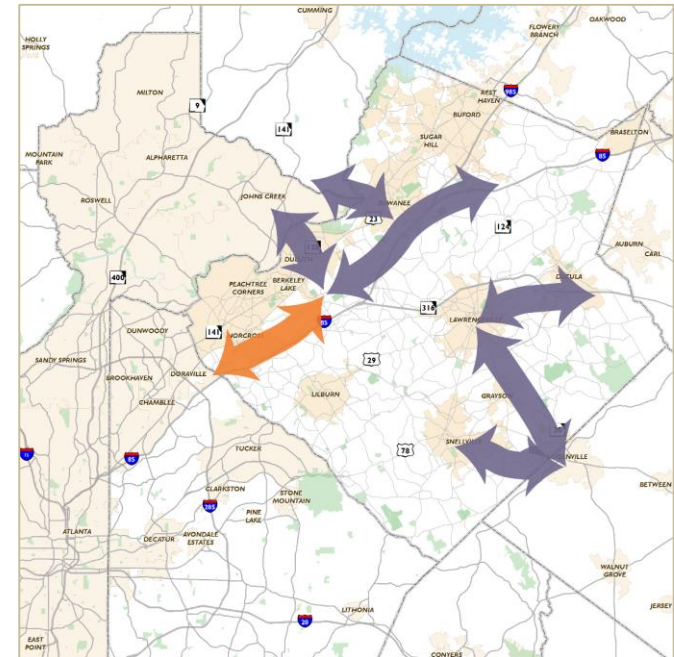
Cross-County Corridors



Regional Corridors



Commuter Opportunities





Gwinnett

Quality of Service





Quality of Service



Travel Time



Convenience



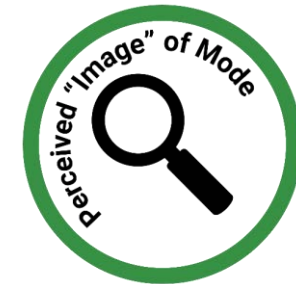
Reliability



Comfort



Perceived
Personal Safety



Perceived
"Image" of Mode

Community Values on Transit

FREQUENCY AND SPAN



Provide more frequent service for a shorter time



Provide less frequent service for a longer time

COVERAGE



Provide less frequent service to more areas



Provide more frequent service to fewer areas

DAYS OF SERVICE



Provide less weekday service and more weekend service



Provide more weekday service and less weekend service

TRANSFERS



Provide more routes with less frequent service but fewer transfers



Provide fewer routes with more frequent service but more transfers

DIRECTNESS



Provide slower and less direct service with shorter walks to stops



Provide faster, more direct service with longer walks to stops

STOP SPACING



Serve many stops that make service slower but reduce walking distance



Serve fewer stops to speed service up but increase walking distance

SERVICE TYPE



Improve the local bus network



Improve the commuter bus network

SERVICE DISTRIBUTION



Provide service in areas in proportion to funding



Provide service to areas with the most need

Travel Time and Reliability

- Product of
 - Congestion
 - Route Geometry
 - Length
 - Deviations and Turns
 - Scheduling
 - Recovery Time
 - Bus Stops
 - Number
 - Locations
 - Payment Type



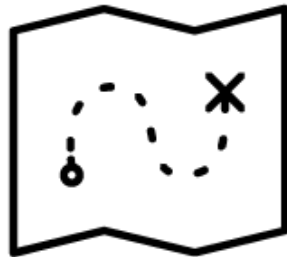
User Perception of Travel Time

- People Don't Like to Wait
 - Waiting time perceived as 2 to 4 times longer than in-vehicle time
 - Perception of waiting time influenced by stop amenities
- Transfers Cause Significant Drop in Ridership
 - Each transfer perceived as equivalent to 12 to 30 minutes of travel time in addition to transfer wait time

Transit Service Design



Frequency



Routing



**Stop Spacing and
Accessibility**



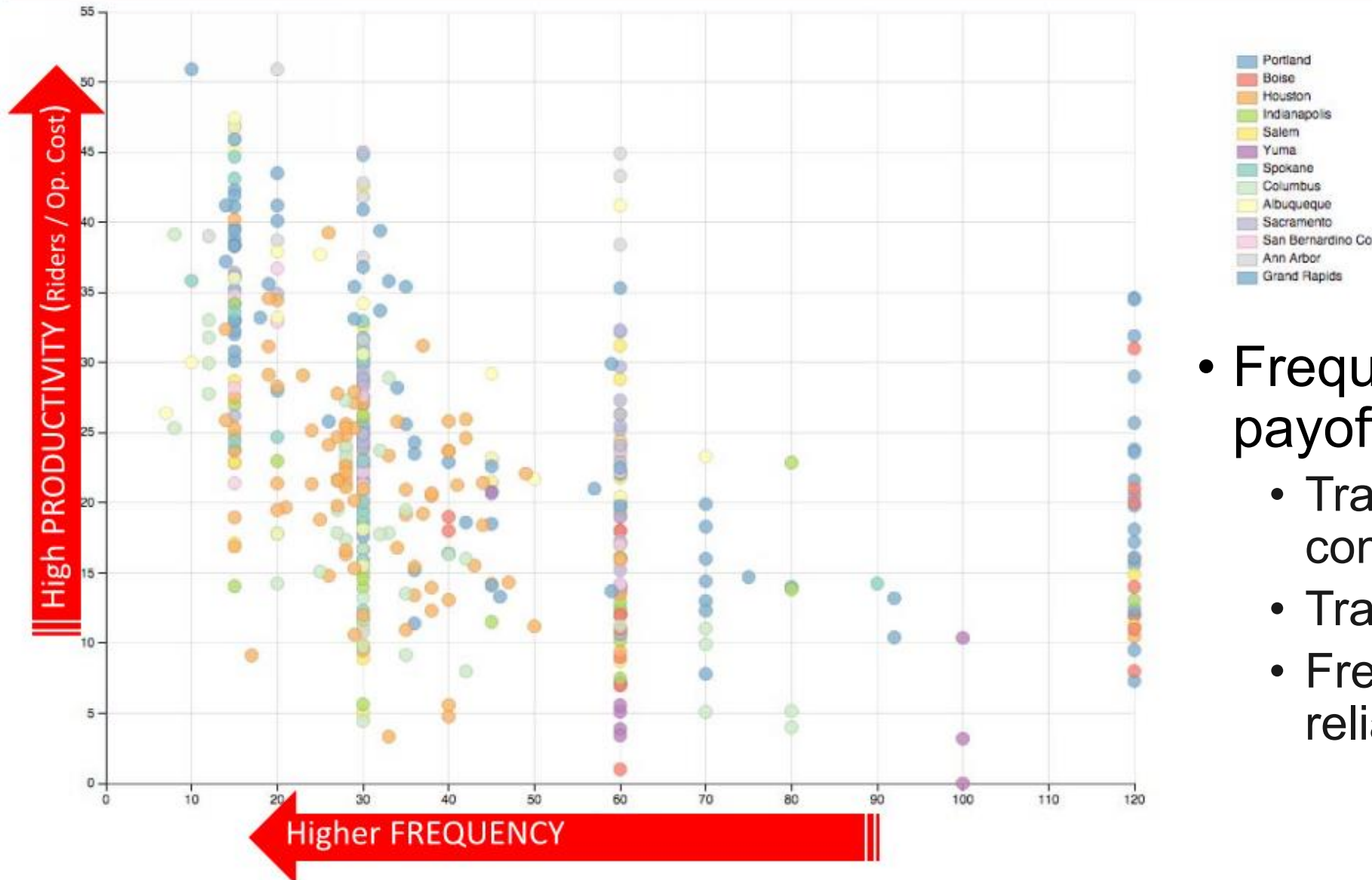
Span of Service



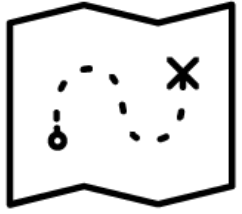
Frequency

<= 5 minutes	<ul style="list-style-type: none"> • Very frequent service, no need to check schedule • Very high density corridors/activity centers
5 to 10 minutes	<ul style="list-style-type: none"> • Frequent service, no need to check schedule • High density corridors/activity centers
11 to 15 minutes	<ul style="list-style-type: none"> • Relatively frequent service, check schedule to minimize wait • High density corridors with strong anchors
16 to 30 minutes	<ul style="list-style-type: none"> • Always check schedules, change travel to meet the schedule • Moderate density corridors
31 to 59 minutes	<ul style="list-style-type: none"> • Always check schedules, change travel to meet schedule • Low to moderate density
60 minutes	<ul style="list-style-type: none"> • Meets basic travel needs, change travel to meet schedule • Low density

Top performers are frequent ...

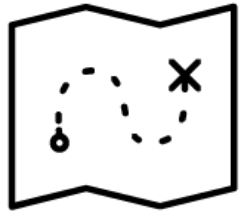


- Frequency has triple payoff
 - Transit is always coming soon
 - Transfers are short
 - Frequency creates reliability



Routing

- Where does the transit travel?
- Direct vs Non-Direct
- Loop vs Bidirectional

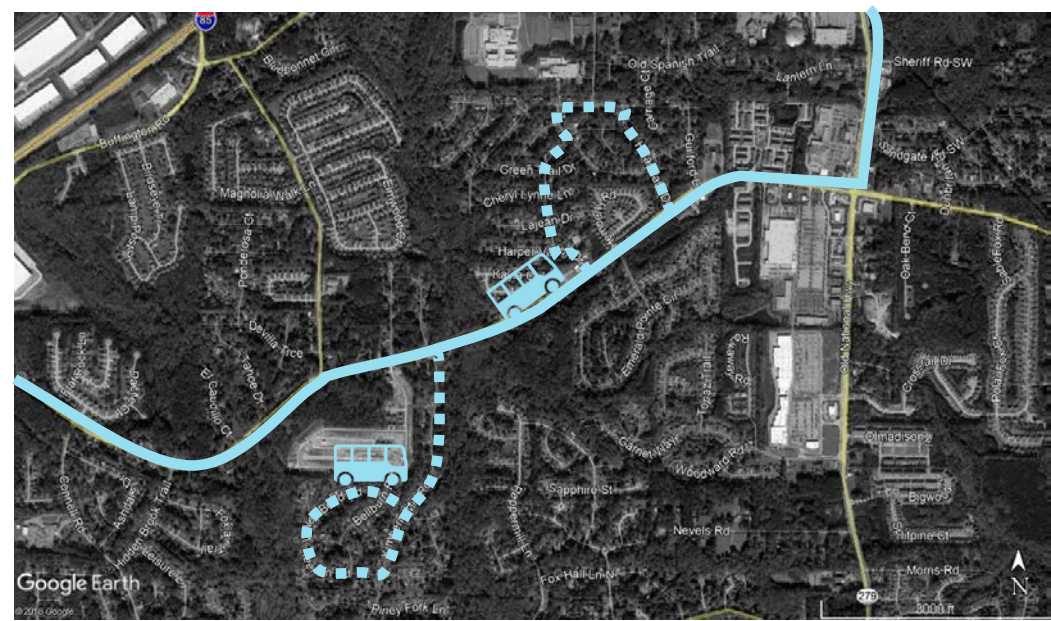


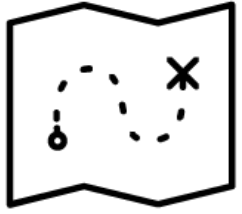
Routing: Direct vs. Deviation

Direct



Deviation



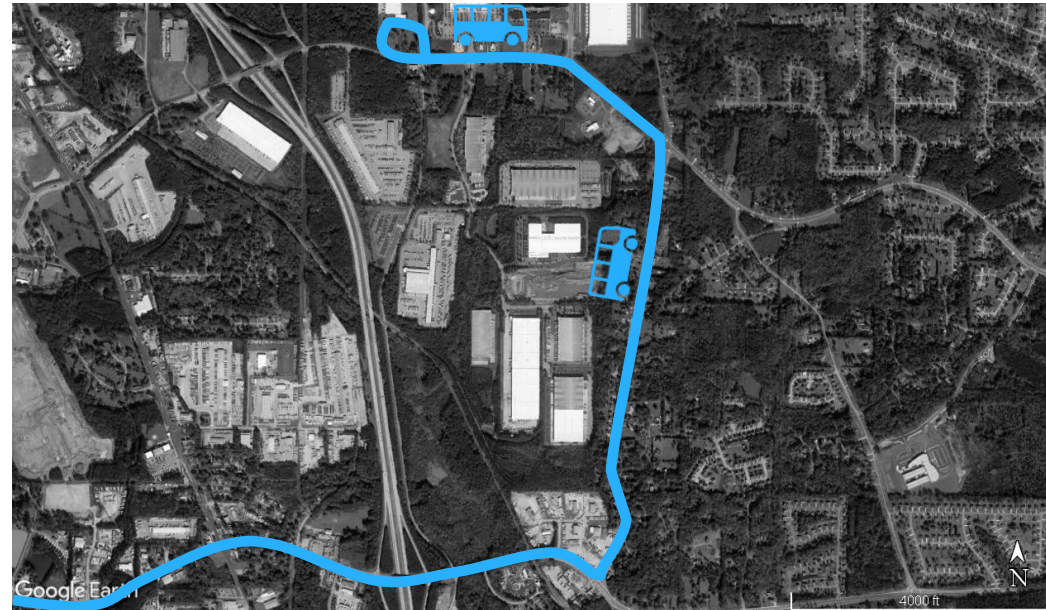


Routing: Loop vs. Bi-Directional

Looping



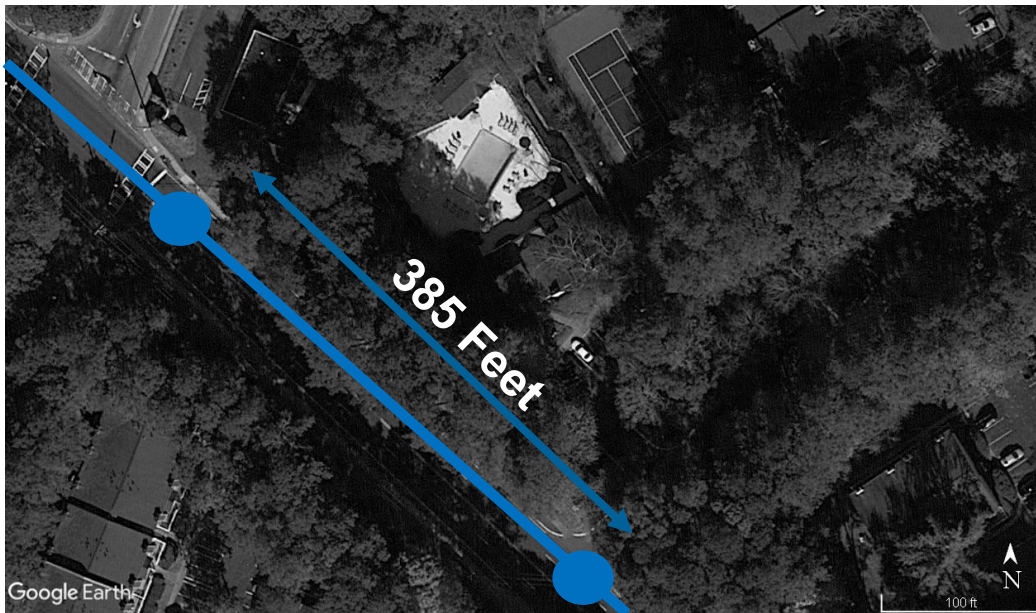
Bi-directional



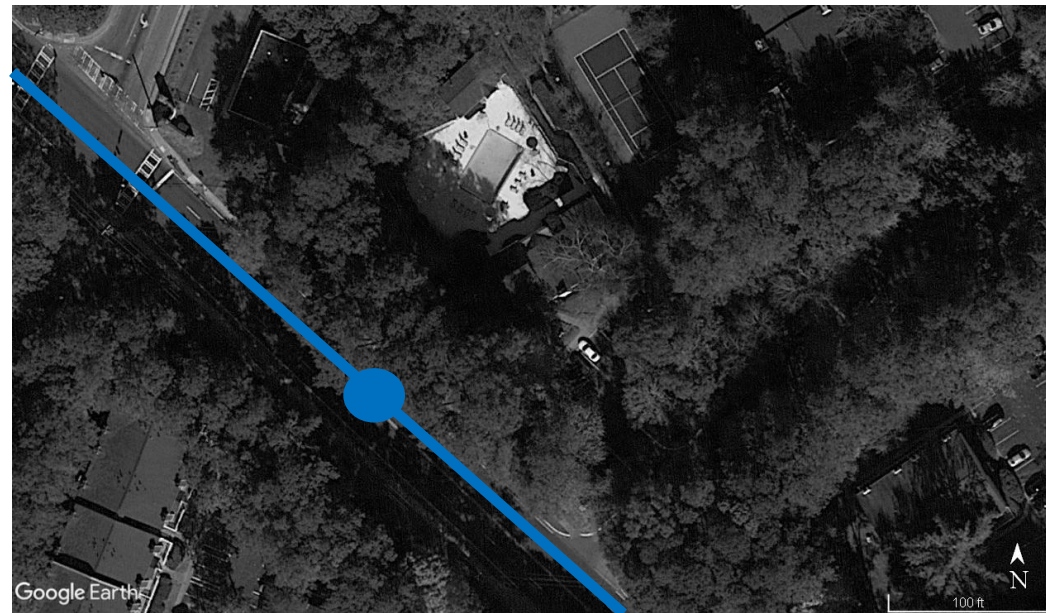


Stop Spacing

Local



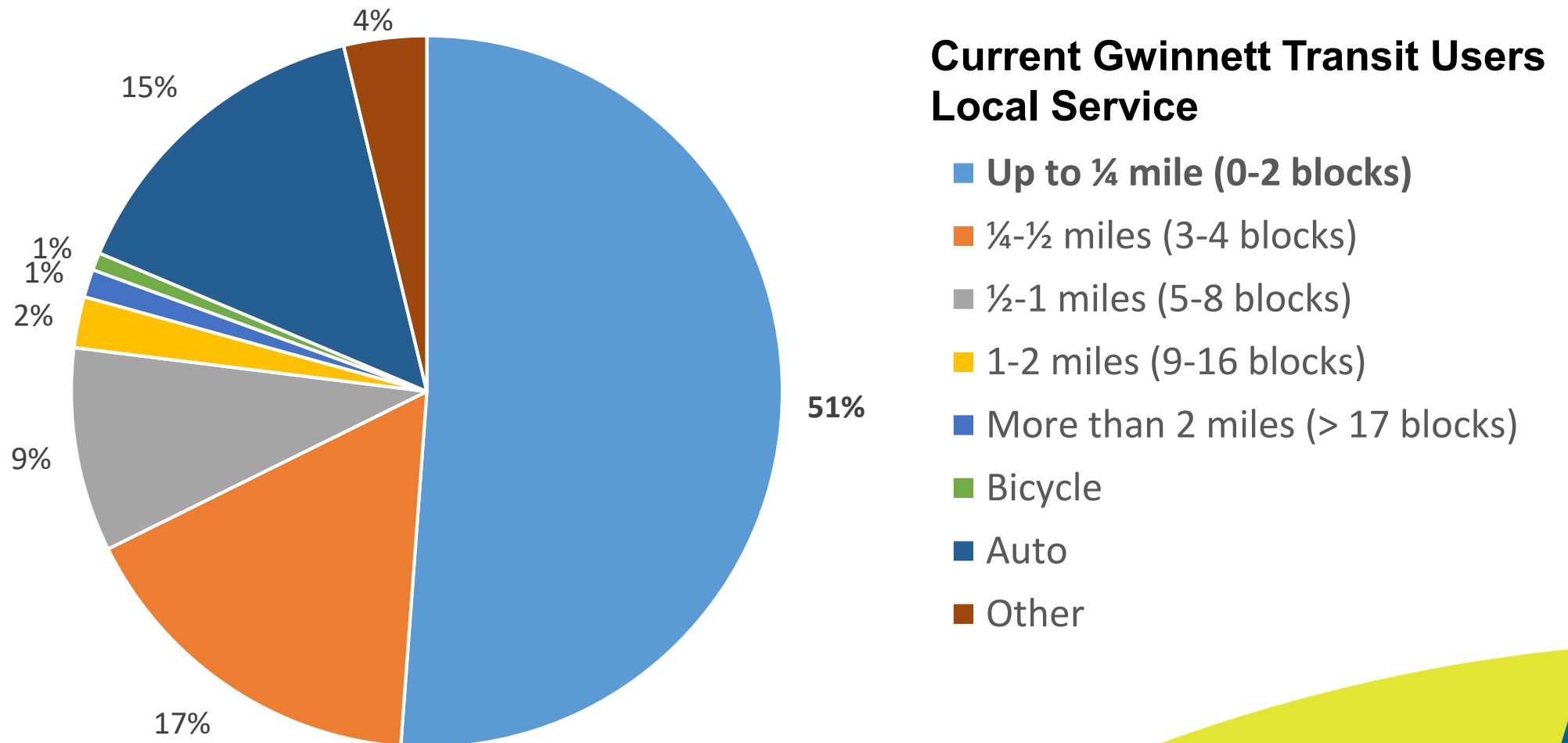
Consolidated

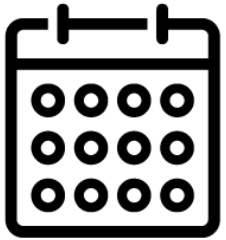


Trade-off Between Stop Spacing and Ridership

- Bus stop reduction is often the easiest way to achieve travel time and reliability gains, but often only results in a fraction of total travel time (usually <25%)
- However, nationally:
 - Over 50% of bus riders walk less than $\frac{1}{4}$ mile to their bus stop
 - Approximately 90% of bus riders walk less than $\frac{1}{2}$ mile to their bus stop
- Lack of sidewalks causes significant drop in bus access

Bus Stop Access





Span of Service

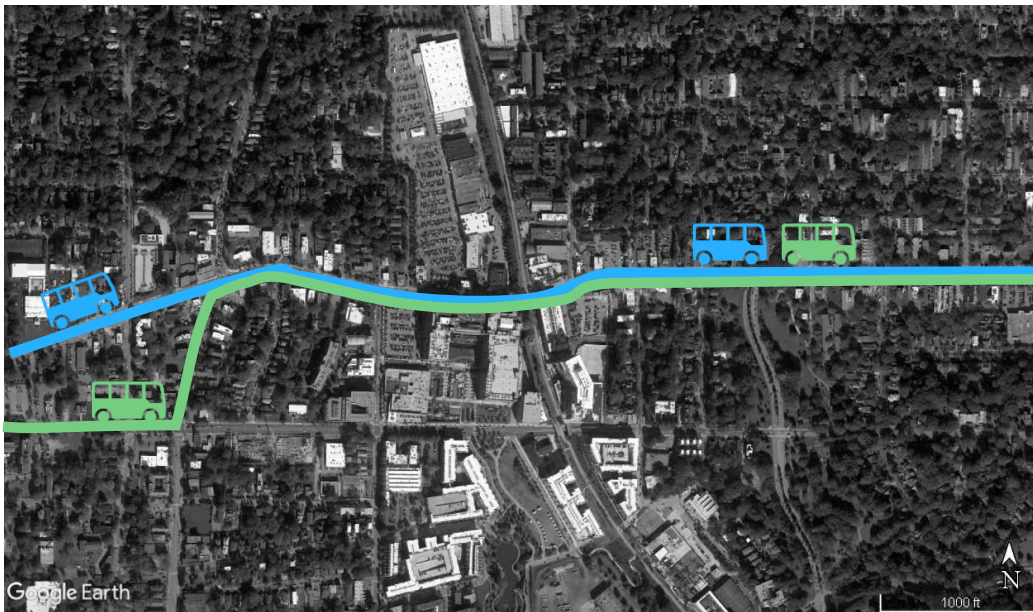
- When is the service going to be more frequent?
- How late does the service run?
- Saturday and Sunday Service?
- Important for trip type

Frequency vs Coverage

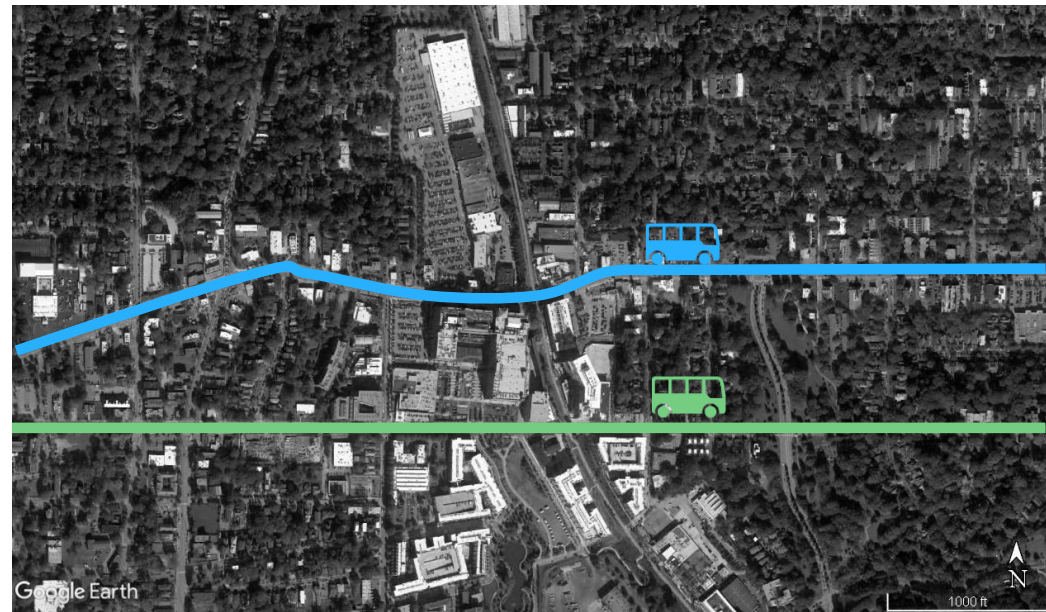
- Budget limits combined with routing choices force the conversation between coverage vs. frequency
- Tradeoffs of providing frequent service only along a dense corridor vs providing more coverage service across areas of need

Frequency vs Coverage

Frequency



Coverage



Infrastructure & Capital Investments

- Amenities at stops, stations, and on-board
- Connectivity to stops and stations





Activity: Mode Choice





Gwinnett

Transit Modes

Transit Modes

- General Travel vs. Commuter Travel Modes
- Mode Operating Environments

Common General Travel Modes



Heavy Rail (HRT)

- High speed/rapid acceleration rail cars
- Electrified and fully grade-separated
- Substantial stations with faregates
- Stations spaced every 1 to 5 miles



Light Rail (LRT)

- Operates most commonly in dedicated right-of-way
- Electrified, can be grade-separated or street level
- Lower capacity and speed than heavy rail
- Stations spaced every ½ to 1 mile



Bus Rapid Transit (BRT)

- Rubber tired vehicles in primarily dedicated ROW
- Priority treatments to increase speed and reliability
- Enhanced stations spaced like LRT with distinctive branding and off-board fare collection

Common General Travel Modes



Arterial Rapid Transit (ART)

- Rubber tired vehicles
- Runs some dedicated lanes
- Mostly queue jumper lanes and transit signal priority
- Station spacing $\frac{1}{4}$ to $\frac{1}{3}$ mile



Local Bus

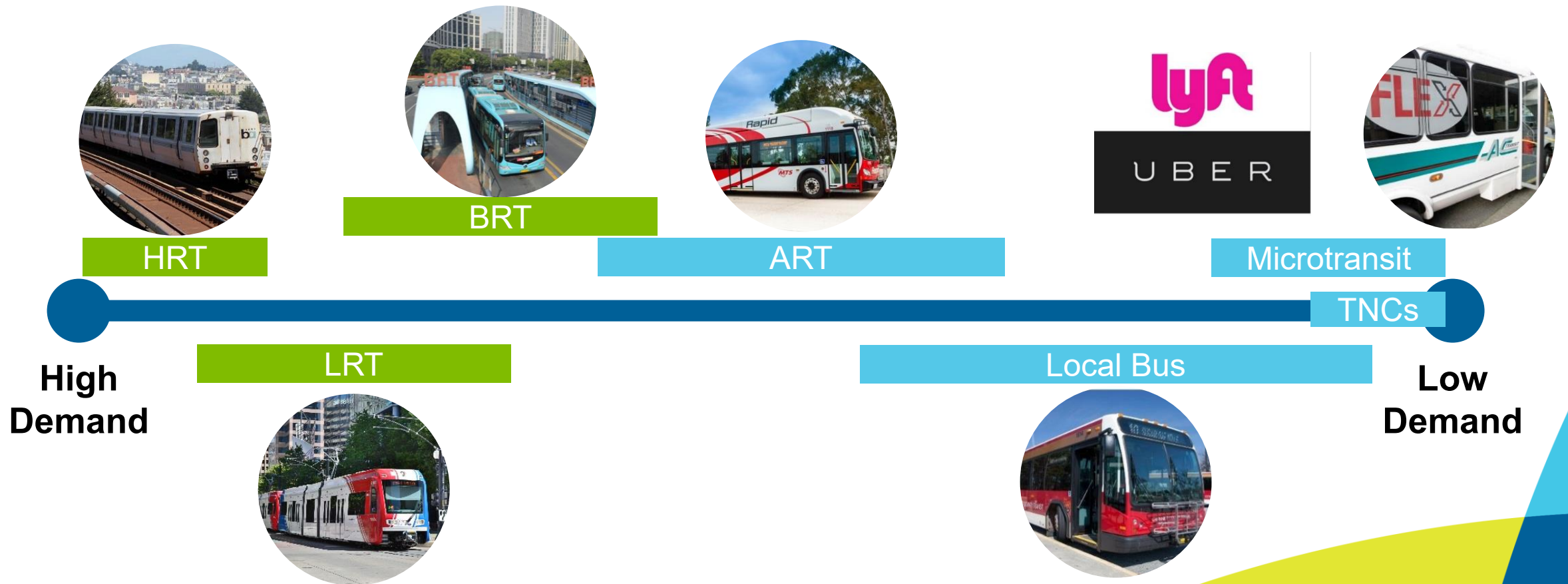
- Electric, hybrid, natural gas, or diesel vehicles
- Mixed flow traffic, shared-right-of-way
- Limited amenities at stops
- Stations spaced 1-2 blocks to $\frac{1}{4}$ mile



Microtransit

- Demand responsive bus or shuttle
- Mixed flow traffic, shared-right-of-way
- Operates in a defined geographic area without fixed routes
- Combination of door-to-door service and/or designated stops

General Travel Demand



High Demand

Low Demand

Common Commuter Travel Modes



Commuter Rail (CR) – limited

- Electric or diesel propelled
- Carries moderate to long distance commuters
- Often runs in corridor shared with freight services
- Stations spaced at least every 2 to 5 miles



Express Commuter Bus

- Rubber tired coach vehicles
- Serves long-distance, commute flow
- Mostly mixed flow, benefit from managed lanes
- Limited stops, primarily route termini



Vanpool

- Uses vans for targeted small groups
- Serves commuters who have similar home and work locations
- Limited stops focused on route termini

Commuter Travel Demand



Commuter Rail



Vanpool

High
Demand

Commuter Bus

Low
Demand



Capital Costs for Transit Projects



Heavy Rail Transit
\$250M+ per mile



Bus Rapid Transit
\$20M-\$30M per mile



Commuter Rail Transit
\$20M-\$25M per mile*
**Assumes operation on existing rail*



Rapid Bus (ART)
\$3M-\$15M per mile



Light Rail Transit
\$95M-\$125M per mile



Commuter Bus
\$10M-\$150M per mile
for Park-and-Ride

Note: Costs shown above reflect common ranges. Actual costs can vary significantly depending on project specifications.

Productivity

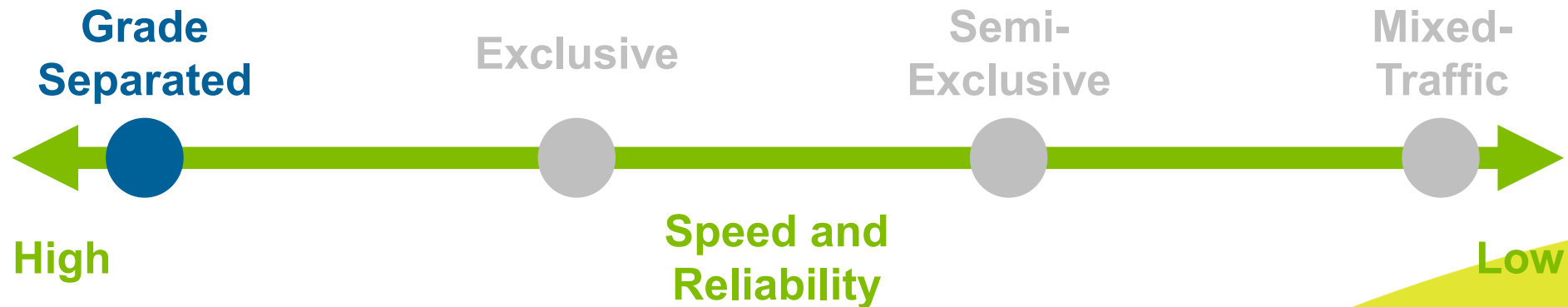
Service Type	Passenger trips/service hour
Urban subway	>200
Urban light rail	>100
Urban frequent bus	40-100
Ridership-justified suburban bus	15-40
Coverage-justified suburban bus	10-15
General Public Dial-a-Ride	0-3
Microtransit Pilots to Date	0-3
TNCs	1-2
ADA Paratransit	1-2

Mode Operating Environment



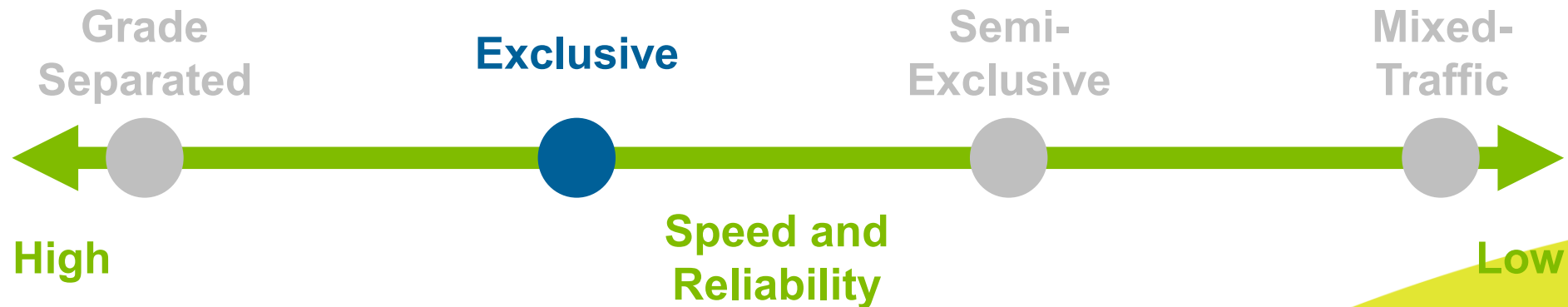
Grade Separated

- No potential conflict points with any traffic
- Allows for highest speed and most reliability
- HRT, LRT, and BRT



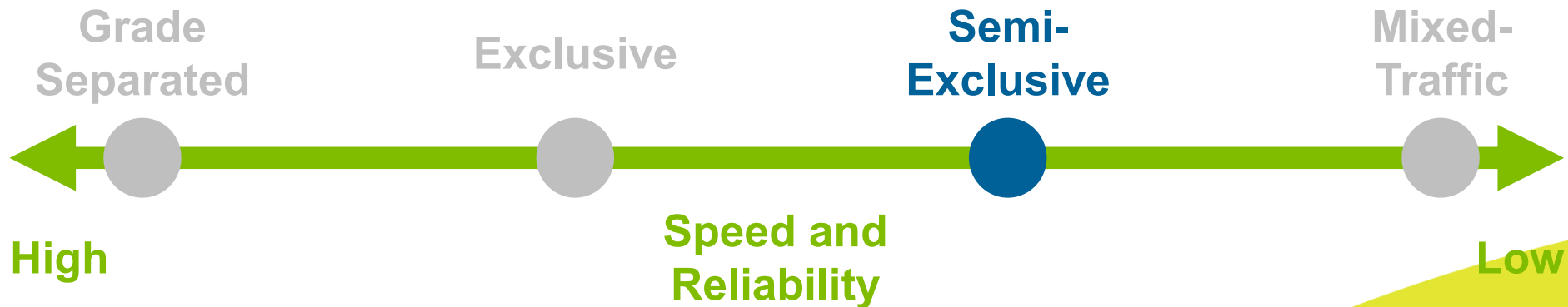
Exclusive

- Exclusive transit right-of-way where there is some interaction with other traffic
- On-street transit lanes, Commuter Rail right-of-way grade crossings
- LRT, BRT, Commuter Rail



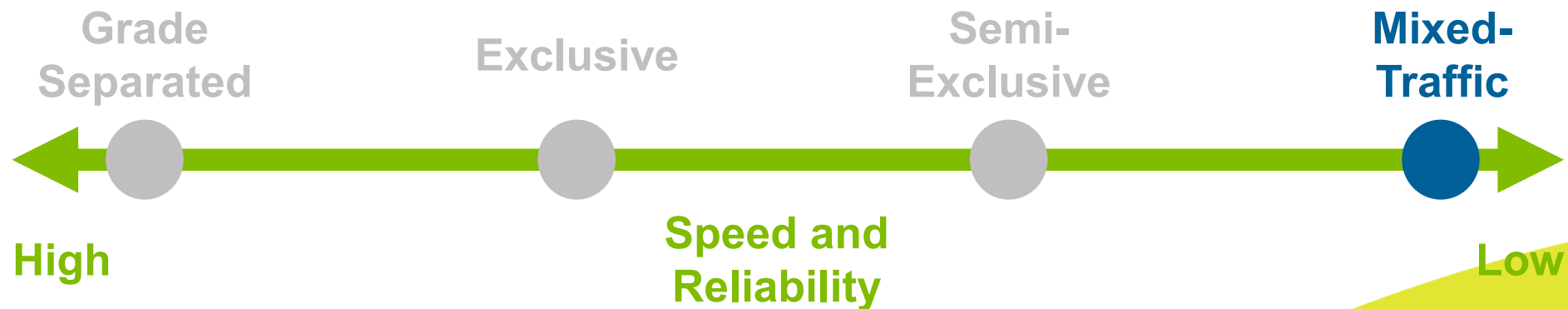
Semi-Exclusive

- Partially dedicated transit right-of-way that allows some other vehicles to use depending on location and time
- Peak hour bus lanes, managed lanes
- BRT, Streetcar, Rapid Bus, Commuter Bus



Mixed Traffic

- Transit operates in regular travel lanes with normal traffic
- Streetcar, Local Bus, Rapid Bus, Commuter Bus





Gwinnett

Network Design Process

Building the Transit Network

Matching Transit Services to Travel Markets

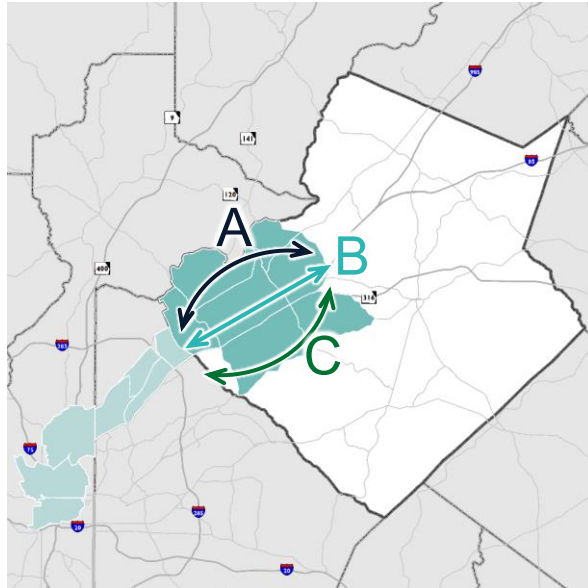
- Use guiding principles
- Let the market determine appropriate service type
- Create realistic recommendations
- Consider equity implications
- Be mindful of the importance of transit facilities

Service Layers Form a Network

The network is based on a layering of service types to provide additional transit access to less populated areas while providing faster and more direct connections between activity centers.

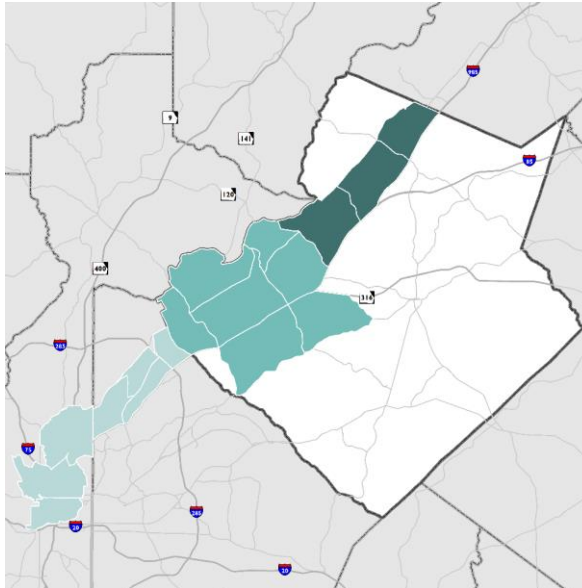


Building the Transit Network: Daily Trips per Mile



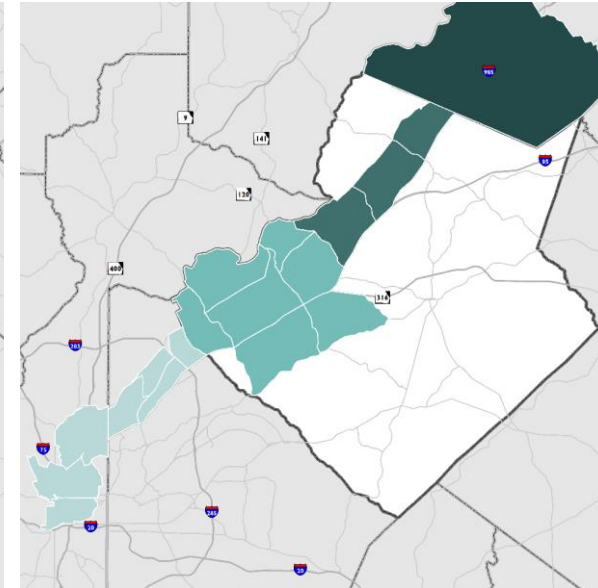
South I-85 Corridor

2015:	7,286	8,489	15,319
2040:	10,178	12,276	22,181
	A	B	C



North I-85/I-985 Corridor

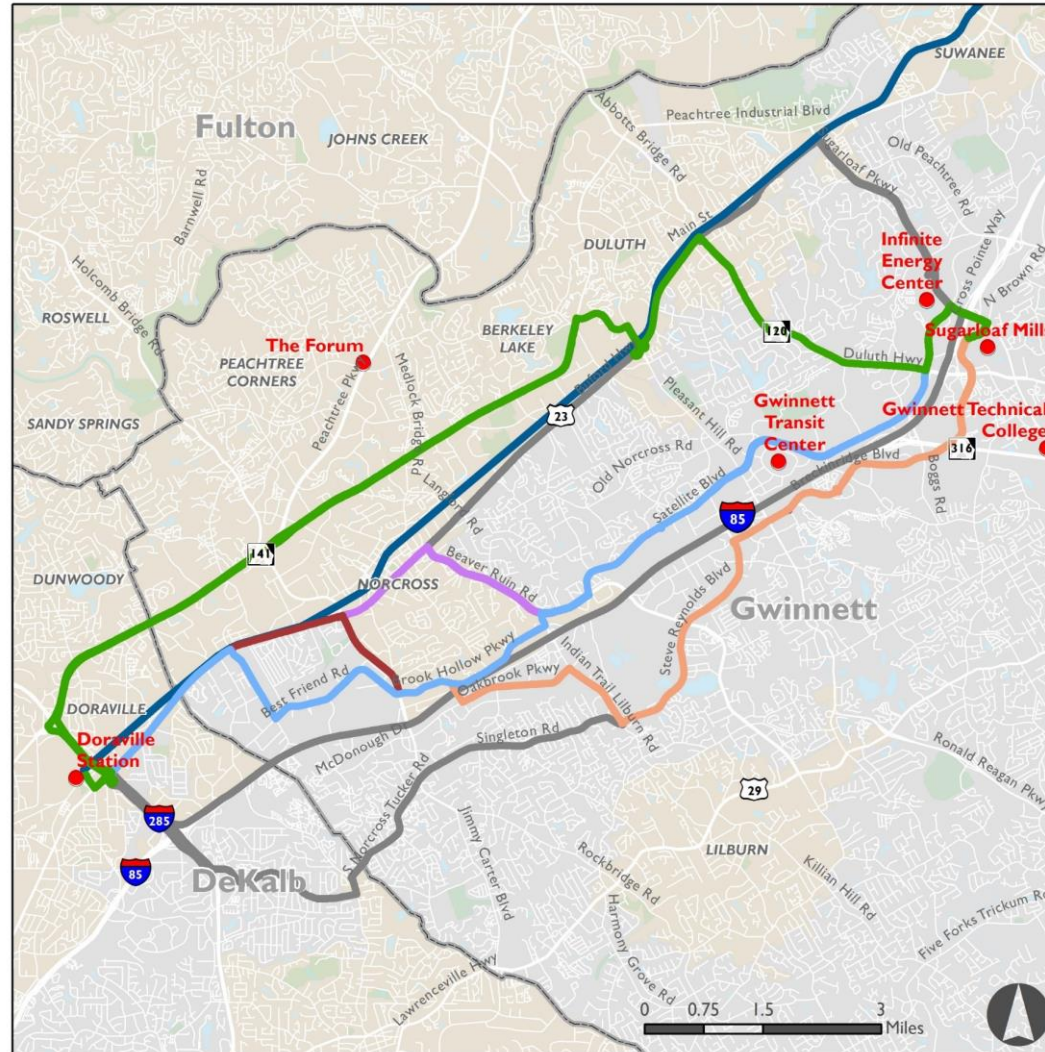
2015:	3,850
2040:	6,243



Connection to Hall County

2015:	1,194
2040:	2,075

Building the Transit Network: Alignment Considerations



Building the Transit Network: Satellite Boulevard Alignments

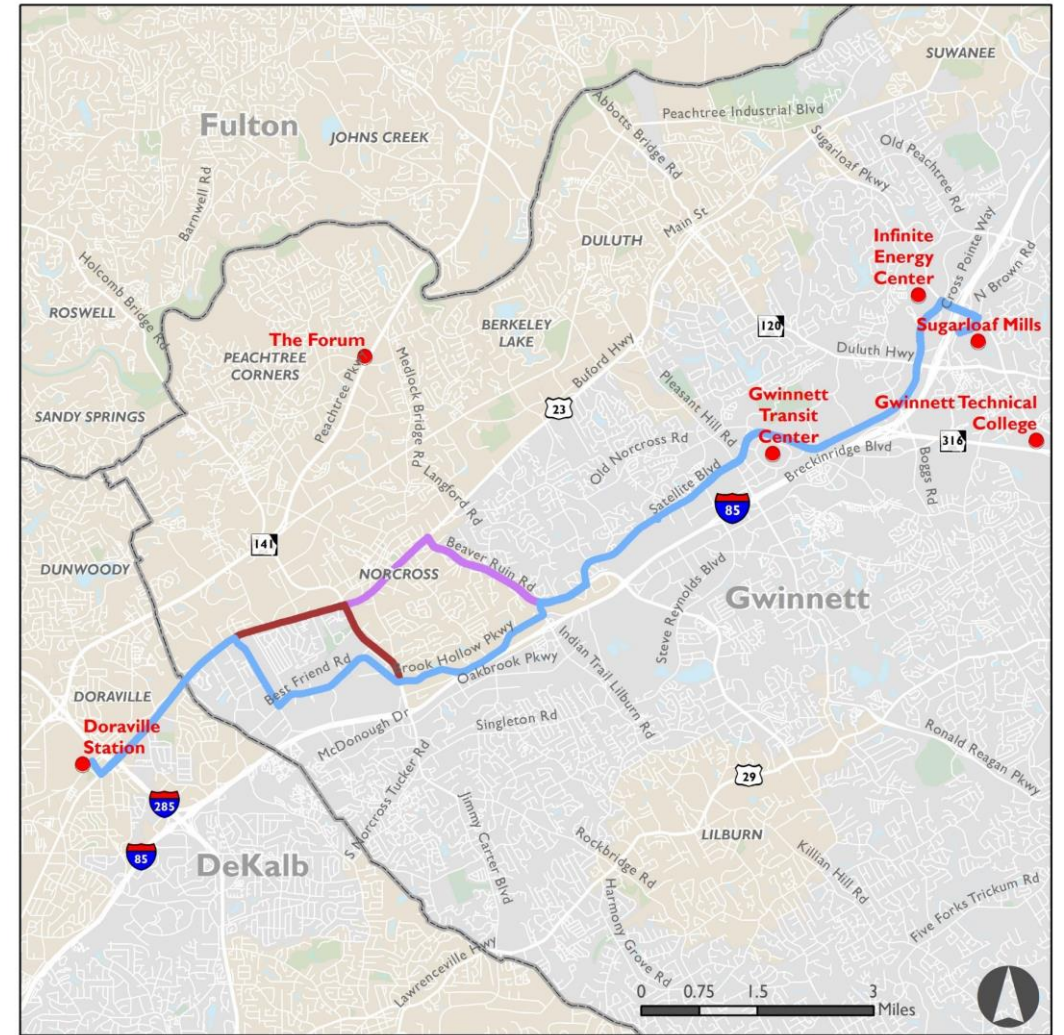


Traffic Constraints

- Congestion on Buford Hwy between Button Gwinnett Rd and Beaver Ruin Rd and on Brook Hollow Pkwy between Jimmy Carter Blvd and Indian Trail Lilburn Rd

Major Right-of-Way Constraints

- Button Gwinnett: **50'**, 2 undivided lanes
- Jimmy Carter: **100'**, 6 lanes with two way left turn lane
- Beaver Ruin: **85'**, 5 lanes with two way left turn lane

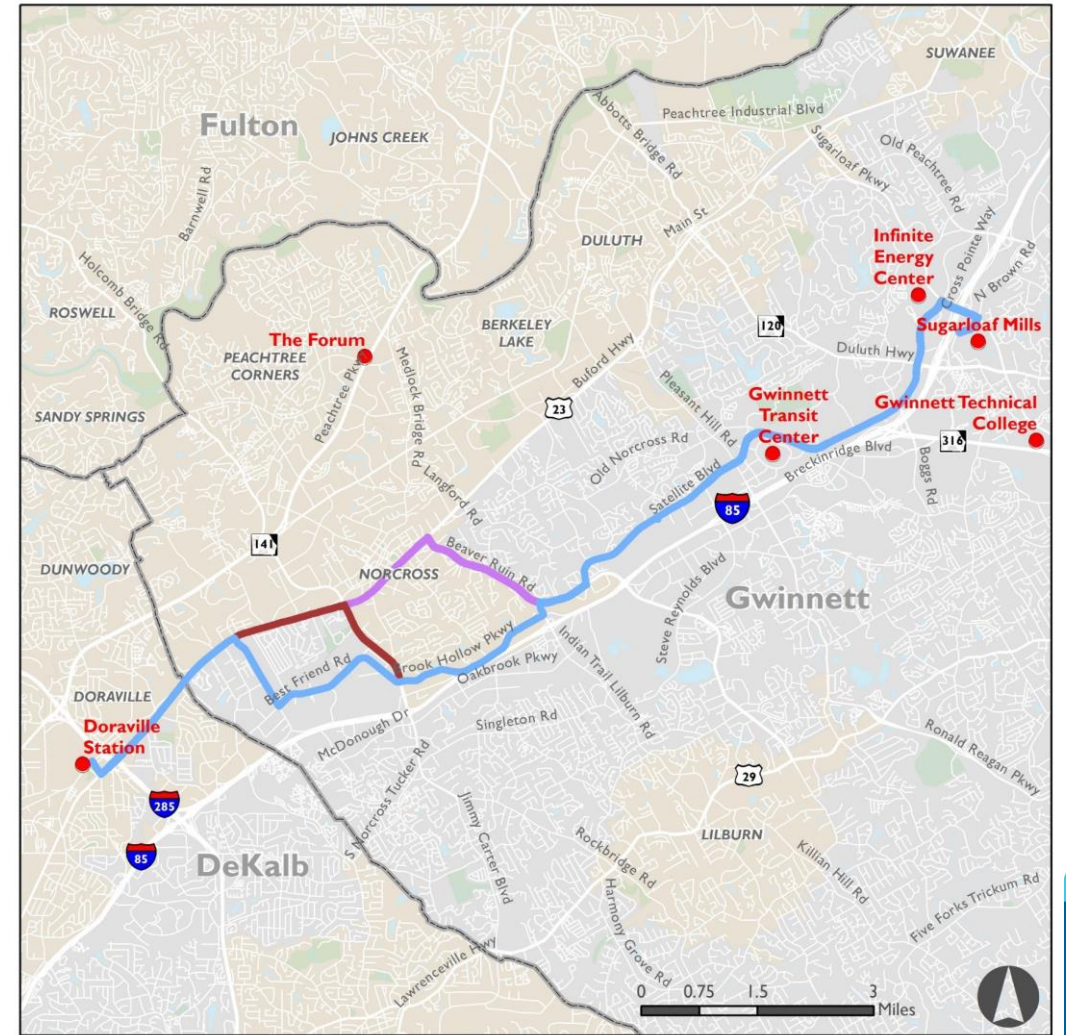


Building the Transit Network: Satellite Boulevard Alignments



Alignment Considerations

- Beaver Ruin
 - Low-density residential
 - ROW on Beaver Ruin Road ranges from 85 to 150 feet for 4 lanes; least ROW-constrained among Satellite options
- Jimmy Carter
 - Mixed-use employment area; low-density office
 - ROW on Jimmy Carter Blvd ranges from 100 to 150 feet for 6 lanes
- Button Gwinnett
 - Mostly industrial areas; best connection to OFS Fitel site
 - Most ROW-constrained among Satellite options; 2-lane road would require widening



Building the Transit Network



Alignment Comparisons

Alignment	Peachtree Industrial Blvd	Satellite via Button Gwinnett	Satellite via Jimmy Carter	Satellite via Beaver Ruin	Steve Reynolds
Corridor Length (miles)	18.6	16.2	16.1	15.7	17.0
Existing Transit Use	1,147 Daily Boardings	2,101 Daily Boardings	2,301 Daily Boardings	2,232 Daily Boardings	1,708 Daily Boardings
Population Served	20,196	18,697	18,145	17,747	18,620
Jobs Served	24,577	29,411	27,024	24,354	22,939



Gwinnett

Paying for Transit

Paying for Transit

- Capital Costs
- Operations and Maintenance (O&M) Costs
 - Daily operations of service
 - Labor Costs (70-75%)
 - Drivers and support staff
 - Non-Labor Costs (25-30%)
 - Fuel, vehicle parts, insurance
- State of Good Repair Costs
 - “System components are properly maintained or replaced”
 - Need to program funds for transit infrastructure repair and replacement

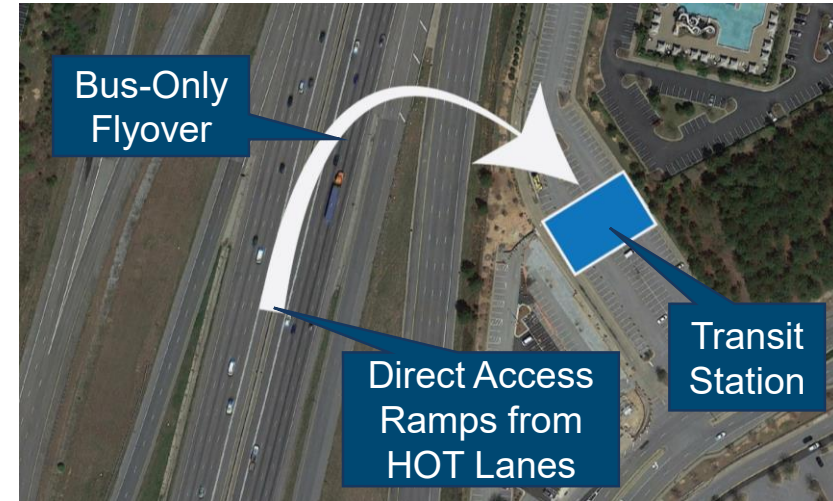
Capital Costs

- Cost associated with physical assets of transit
- Stations
- Guideways
- Vehicles



Infrastructure

- Direct Access Ramps
- Major Transfer Point Facilities
- Bus Stop Improvements



Capital Funding Sources

- FTA New Starts Federal Grant Program
 - Projects greater than \$300M
 - Competitive program with limited funds
 - Time needed to secure funds can take several years
- FTA Small Starts Federal Grant Program
 - For smaller projects (e.g., \$300 million or less) with smaller federal share (< \$100 million)
 - Less restrictive criteria and requires less time to secure funding
- Federal funding covers 30% to 80% of project cost
- Local and/or state matching funds cover the rest of the cost



FTA CIG PROGRAM FUNDING – MODAL BREAKDOWN

- ▶ Average federal funding levels across all modes are at **37.53%** for new transit projects
- ▶ Total of 13 FFGAs and additional 8 projects with anticipated agreements (21 total projects)



Bus Rapid Transit

CIG Fed. Share: 57%

Total Projects: 12



Streetcar

CIG Fed. Share: 35%

Total Projects: 3



Commuter Rail

CIG Fed. Share: 34%

Total Projects: 2



Light Rail

CIG Fed. Share: 36%

Total Projects: 3



Heavy Rail

CIG Fed. Share: 39%

Total Projects: 3

O&M Costs

- Costs associated with daily operations and maintenance
- Costs included in running service with capital assets

Labor Costs

- Driver pay and benefits
- Support staff pay and benefits

Non-Labor Costs

- Fuel costs
- Vehicle parts and supplies
- Insurance



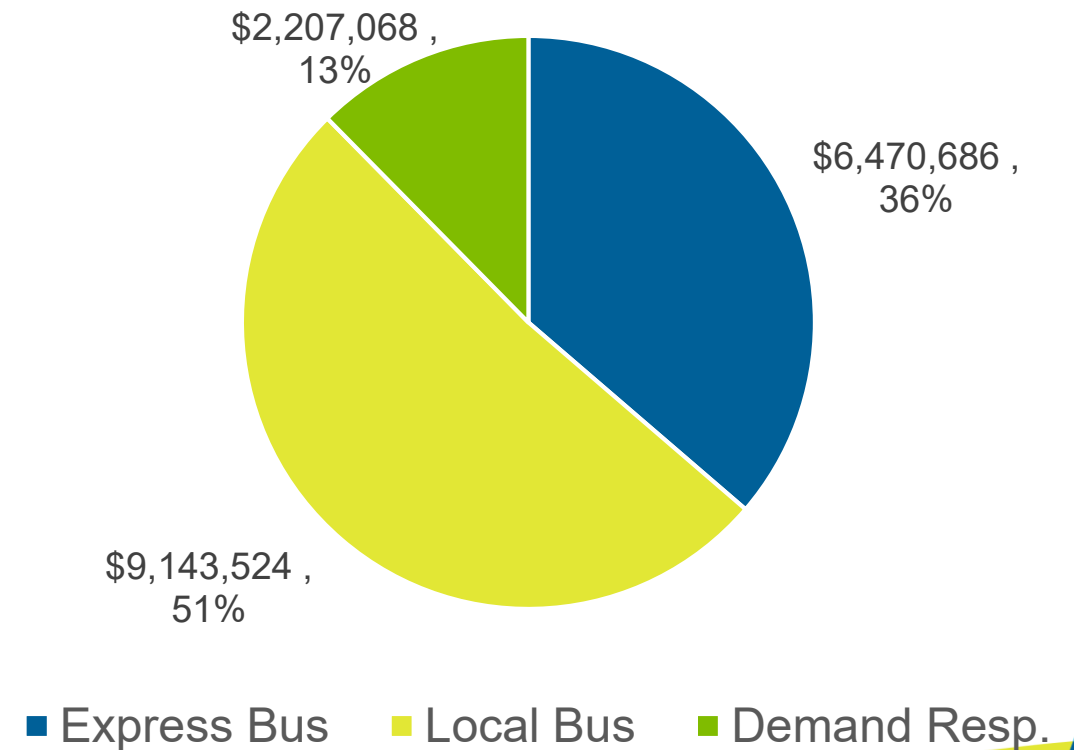
Labor costs (wages & fringes) typically account for 70-75% of all costs

O&M Costs in Gwinnett County

- Gwinnett's cost to add one hour of revenue service:
 - Express Bus – \$150
 - Local Bus – \$90
 - Demand Response – \$90

**Current Approximate Annual O&M Cost:
\$18 Million**

Gwinnett County Annual O&M Cost by Mode

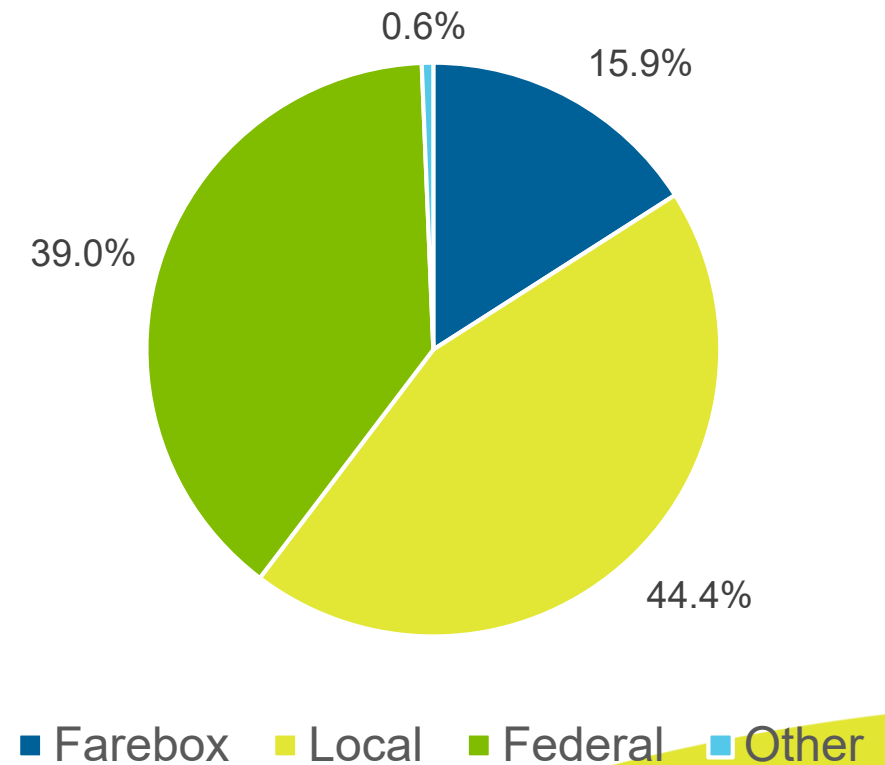


Funding Sources for O&M Costs

Gwinnett Transit Farebox Revenues Cover:

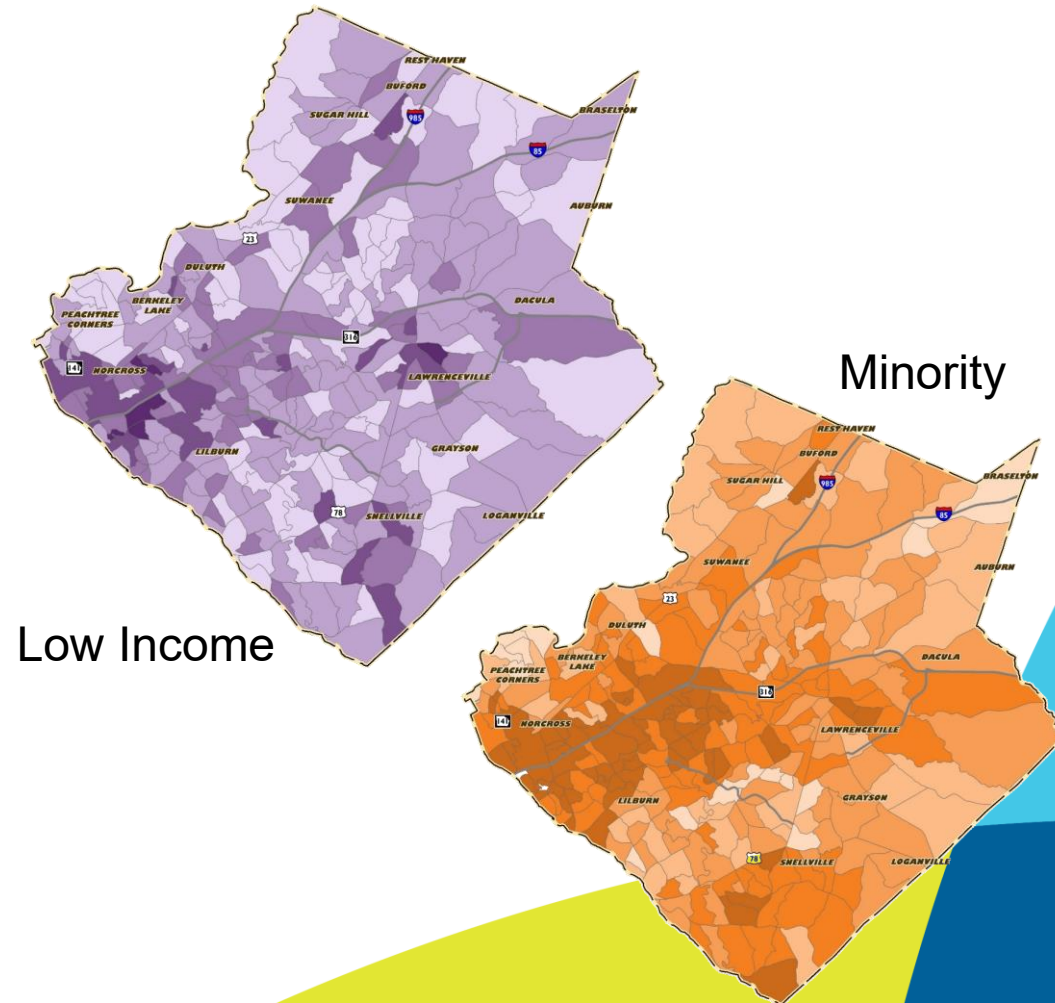
- 22% of commuter bus costs
- 16% of local bus costs
- 3% of demand response costs

Gwinnett County O&M Funding Sources



Title VI Requirements

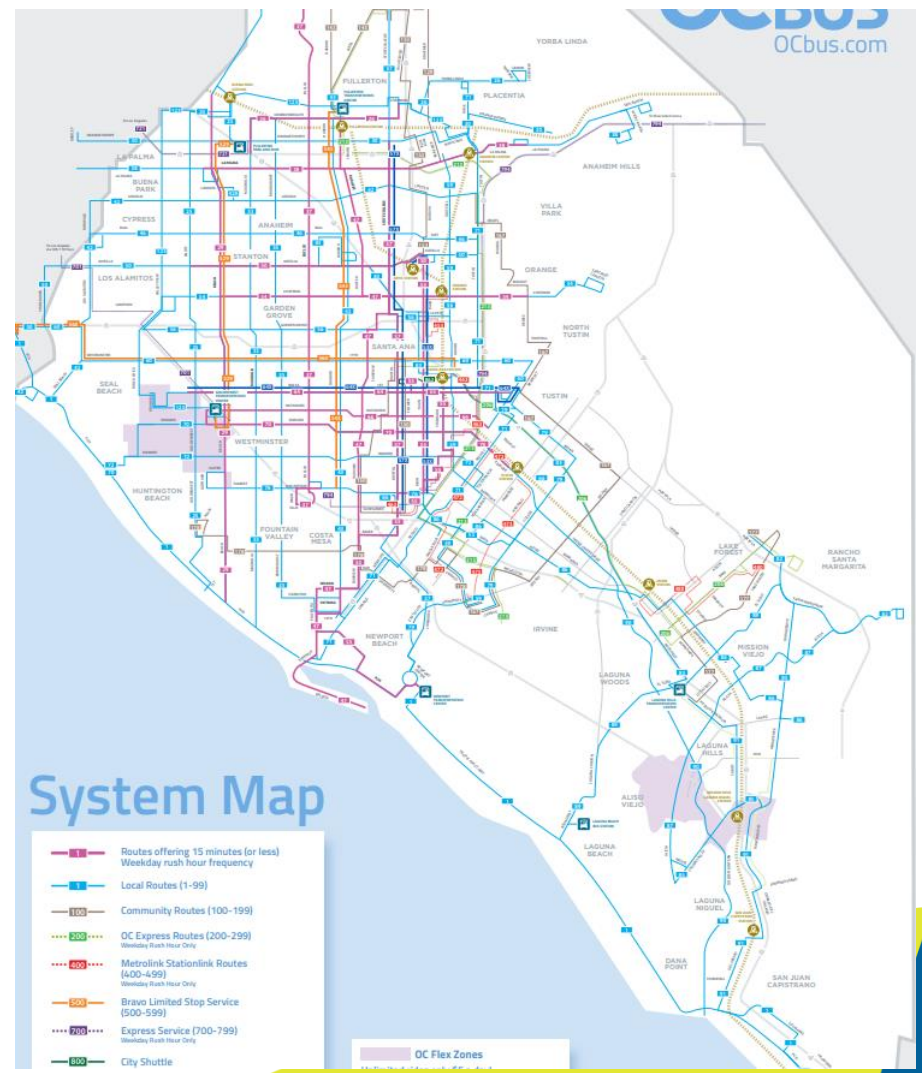
- Implementation of the Civil Rights Act
- Required for federal funding recipients
- Reporting required every three years plus with any service change, fare change, or parking charge
- New service must be equitable
 - Must provide equivalent service investment in minority and low-income areas
 - Minority and low-income areas defined relative to service area



State of Good Repair

- A transit system is in a State of Good Repair when:
 - “system components are properly maintained or replaced.”
- Need to program funds for transit infrastructure repair and replacement
- Typical Bus Replacement Requirements
 - Buses = 12 years
 - Paratransit/Small Buses = 4-6 years
 - Rail Vehicles = 25 years

Comparison – OCTA



OCTA Community Vision

- Faster and More Frequent Service
 - 15-Minute Network
- Longer Hours of Operation
- High-Capacity Transit on Busy Corridors
- Easier Connections to Transit (Walking/Biking)
- Real-Time Information and Amenities

High-Quality Transit Service ...



OCTA Flex Bus

- Two Zones
- After first year, averaging 2.4 riders per revenue hour
- About a third of trips involve transfers with regional rail



Comparison – MVTA

- One BRT, connecting to Metro Transit LRT
- 14 Local Routes
- 17 Express Routes
- 5 Transit Centers/ P&Rs
- 5 Additional P&Rs



Summary of Key Concepts

- Start with understanding trip needs and mode choice
- Find the right balance between trade-offs
- An efficient service provides value for users and maximizes use of operating funds
- Labor is the primary driver of operating cost



Gwinnett

Questions/Discussion

REFERENDUM FOR TRANSIT SALES AND USE TAX (MARTA)
(OFFICIAL CODE OF GEORGIA ANNOTATED SECTION 32-9-20)

04/07/2020	Board of Commissioners adopts revised Transit Plan
	Board of Commissioners requests approval by the ATL of any changed projects in the Regional Transit Plan
07/21/2020	Board of Commissioners approves Contract for Transit Services
07/21/2020	MARTA Board approves Contract for Transit Services
07/21/2020	Board of Commissioners meets and votes to Call Transit Referendum
07/21/2020	Board of Registrations and Elections meets and votes to approve the Resolution, Call, and Notice of Election
07/29/2020	1 st publication of Call in Gwinnett Daily Post (Wednesday)
08/02/2020	2 nd publication of Call in Gwinnett Daily Post (Sunday)
09/30/2020	1 st publication of Notice of Election
10/07/2020	2 nd publication of Notice of Election
10/14/2020	3 rd publication of Notice of Election
10/21/2020	4 th publication of Notice of Election
10/28/2020	5 th publication of Notice of Election
11/01/2020	6 th publication of Notice of Election (Sunday of week of election)
11/03/2020	Date of Referendum

REFERENDUM FOR 30 YEAR TRANSIT SPLOST
(OFFICIAL CODE OF GEORGIA ANNOTATED SECTION 48-5-269)

04/07/2020	Board of Commissioners adopts revised Transit Plan and Resolution that the Region has not proposed a TSPLOST
	Request approval by the ATL of any changed transit projects in the Regional Transit Plan
05/19/2020	Notice to the Cities of Meeting with Board of Commissioners
05/29/2020	Meeting between Board of Commissioners and Cities
	County Notice to the ATL of Intent to Call Referendum, List of Projects, Etc.
07/21/2020	Board of Commissioners meets and votes for Resolution Calling for Implementation of Tax with List of Projects, Operator, etc.
07/21/2020	Board of Registrations and Elections meets and votes to approve the Resolution, Call, and Notice of Election
07/29/2020	1 st publication of Call in Gwinnett Daily Post (Wednesday)
08/02/2020	2 nd publication of Call in Gwinnett Daily Post (Sunday)
11/03/2020	Date of Referendum