



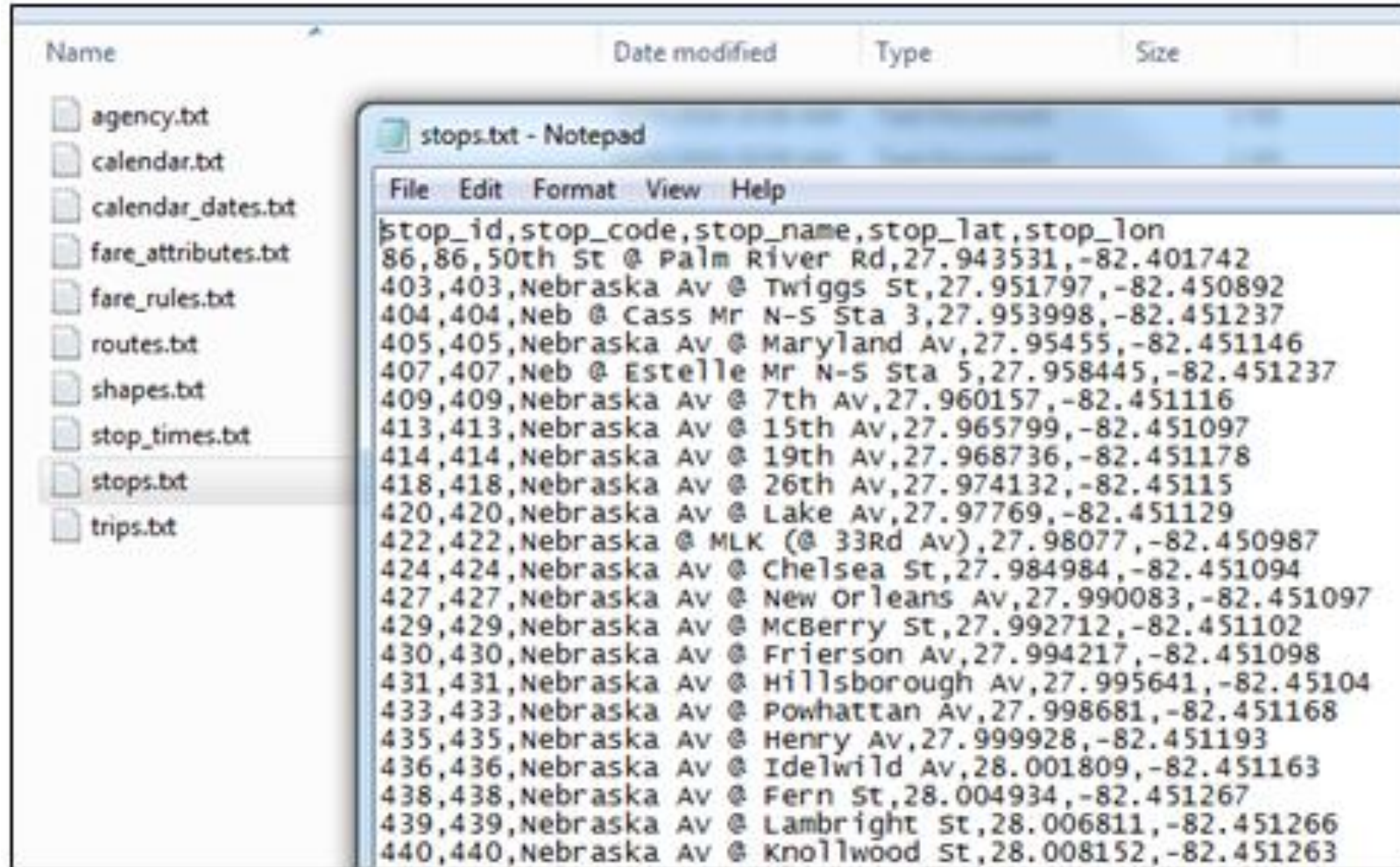
ATL Regional Technology Committee

February 26, 2019

GTFS Overview

➤ Lori Sand, ARC/ATL

What Is GTFS?



The image shows a file explorer window with a list of files on the left and a Notepad window open to the right. The Notepad window displays the contents of the file 'stops.txt', which is a CSV file containing stop information. The data is as follows:

stop_id	stop_code	stop_name	stop_lat	stop_lon
86	86	50th St @ Palm River Rd	27.943531	-82.401742
403	403	Nebraska Av @ Twiggs St	27.951797	-82.450892
404	404	Neb @ Cass Mr N-S Sta 3	27.953998	-82.451237
405	405	Nebraska Av @ Maryland Av	27.95455	-82.451146
407	407	Neb @ Estelle Mr N-S Sta 5	27.958445	-82.451237
409	409	Nebraska Av @ 7th Av	27.960157	-82.451116
413	413	Nebraska Av @ 15th Av	27.965799	-82.451097
414	414	Nebraska Av @ 19th Av	27.968736	-82.451178
418	418	Nebraska Av @ 26th Av	27.974132	-82.45115
420	420	Nebraska Av @ Lake Av	27.97769	-82.451129
422	422	Nebraska @ MLK (@ 33Rd Av)	27.98077	-82.450987
424	424	Nebraska Av @ Chelsea St	27.984984	-82.451094
427	427	Nebraska Av @ New Orleans Av	27.990083	-82.451097
429	429	Nebraska Av @ McBerry St	27.992712	-82.451102
430	430	Nebraska Av @ Frierson Av	27.994217	-82.451098
431	431	Nebraska Av @ Hillsborough Av	27.995641	-82.45104
433	433	Nebraska Av @ Powhattan Av	27.998681	-82.451168
435	435	Nebraska Av @ Henry Av	27.999928	-82.451193
436	436	Nebraska Av @ Idelwild Av	28.001809	-82.451163
438	438	Nebraska Av @ Fern St	28.004934	-82.451267
439	439	Nebraska Av @ Lambright St	28.006811	-82.451266
440	440	Nebraska Av @ Knollwood St	28.008152	-82.451263

What can we do with GTFS Data?



THIRD PARTY PROVIDERS: GOOGLE MAPS

Atlanta

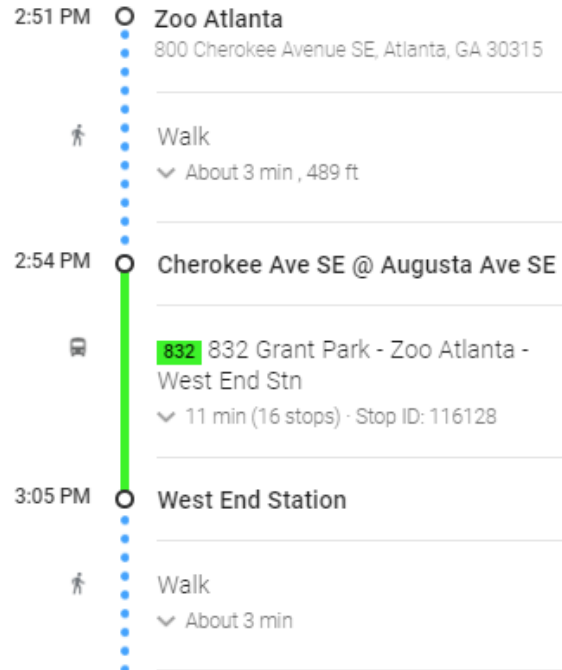
← from Zoo Atlanta, 800 Cherokee Avenue SE, Atlanta, G...
to Peachtree Center Transit Station, 216 Peachtree St ...

2:51 PM - 3:18 PM (27 min) 📄 ↶ 🖨

🚗 832 > 🚶 > 🚇 Gold

2:54 PM from Cherokee Ave SE @ Augusta Ave SE
🚶 6 min every 30 min

☰ SCHEDULE EXPLORER



Hartford, CT

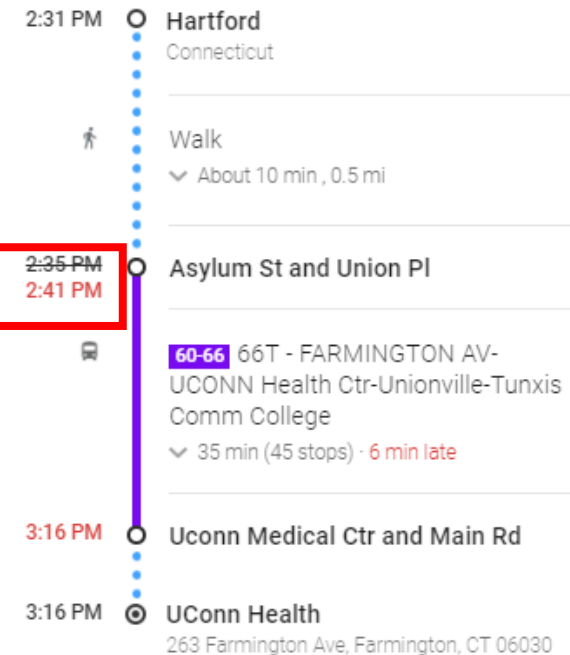
← from Hartford, Connecticut
to UConn Health

2:31 PM - 3:16 PM (45 min) 📄 ↶ 🖨

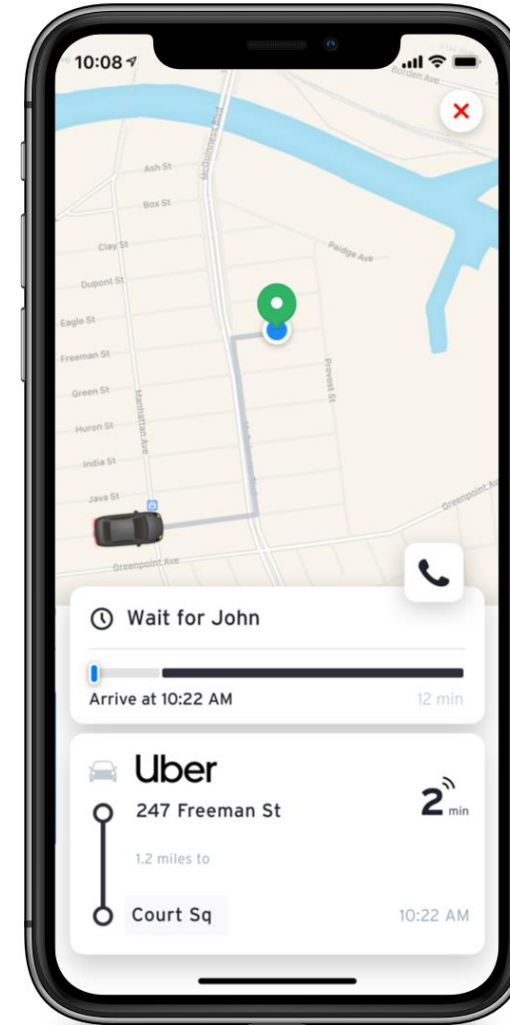
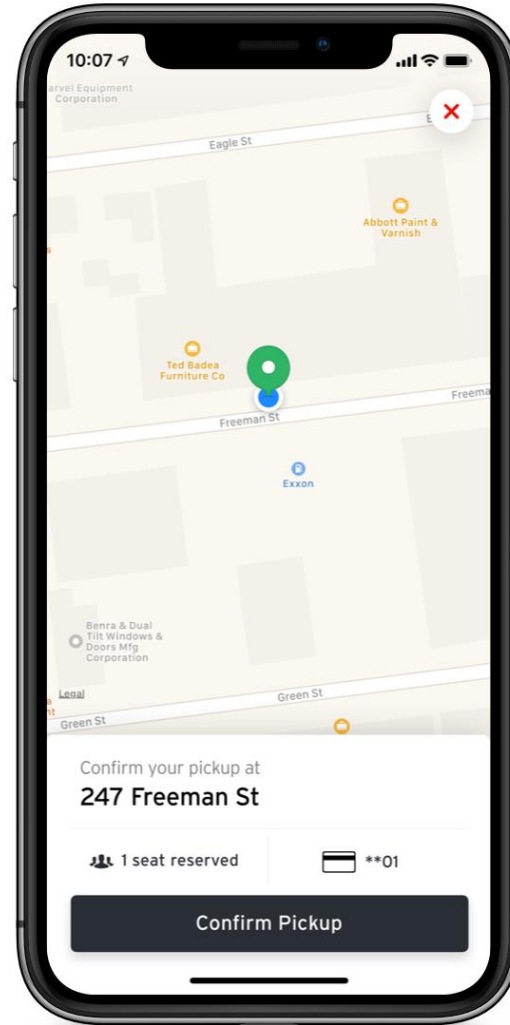
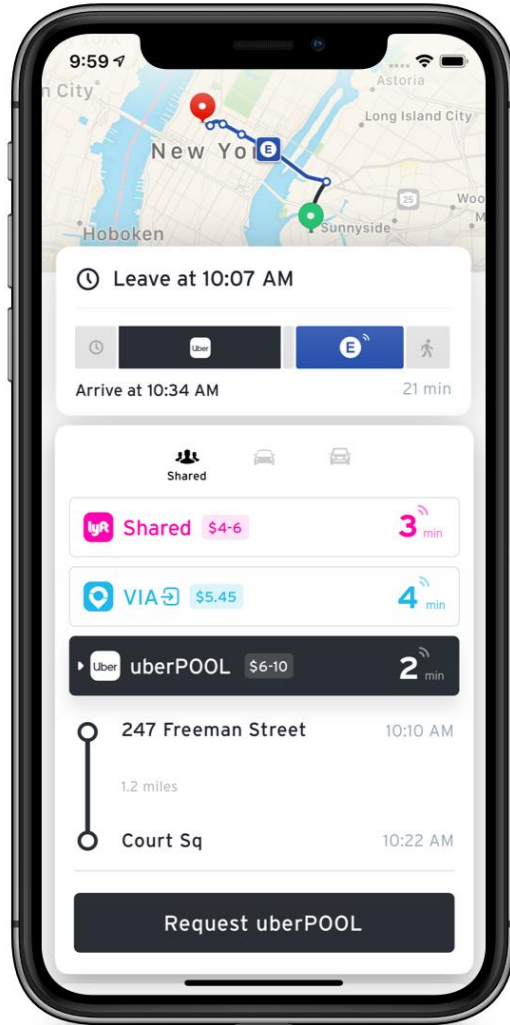
🚶 > 🚗 60-66

2:41 PM from Asylum St and Union Pl - 6 min late
🚶 10 min every 30 min

☰ SCHEDULE EXPLORER



THIRD PARTY PROVIDERS: TRANSIT



AGENCY-LED TRIP PLANNING: MARTA

Option 1: 1 hr, 7 min



2:05pm - 3:12pm

Walk 6 min

to MONTREAL RD @ CLARKSTON INDUSTRIAL BLVD

Start on road heading NORTHEAST 291 feet

LEFT on to The Oaks 0.2 miles

LEFT on to Montreal Road 114 feet

Board bus

125 Clarkston / Northlake to MEMORIAL DR @ MOUNTAIN DR

2:12pm **Depart:** MONTREAL RD @ CLARKSTON INDUSTRIAL BLVD

Time in transit: 16 min

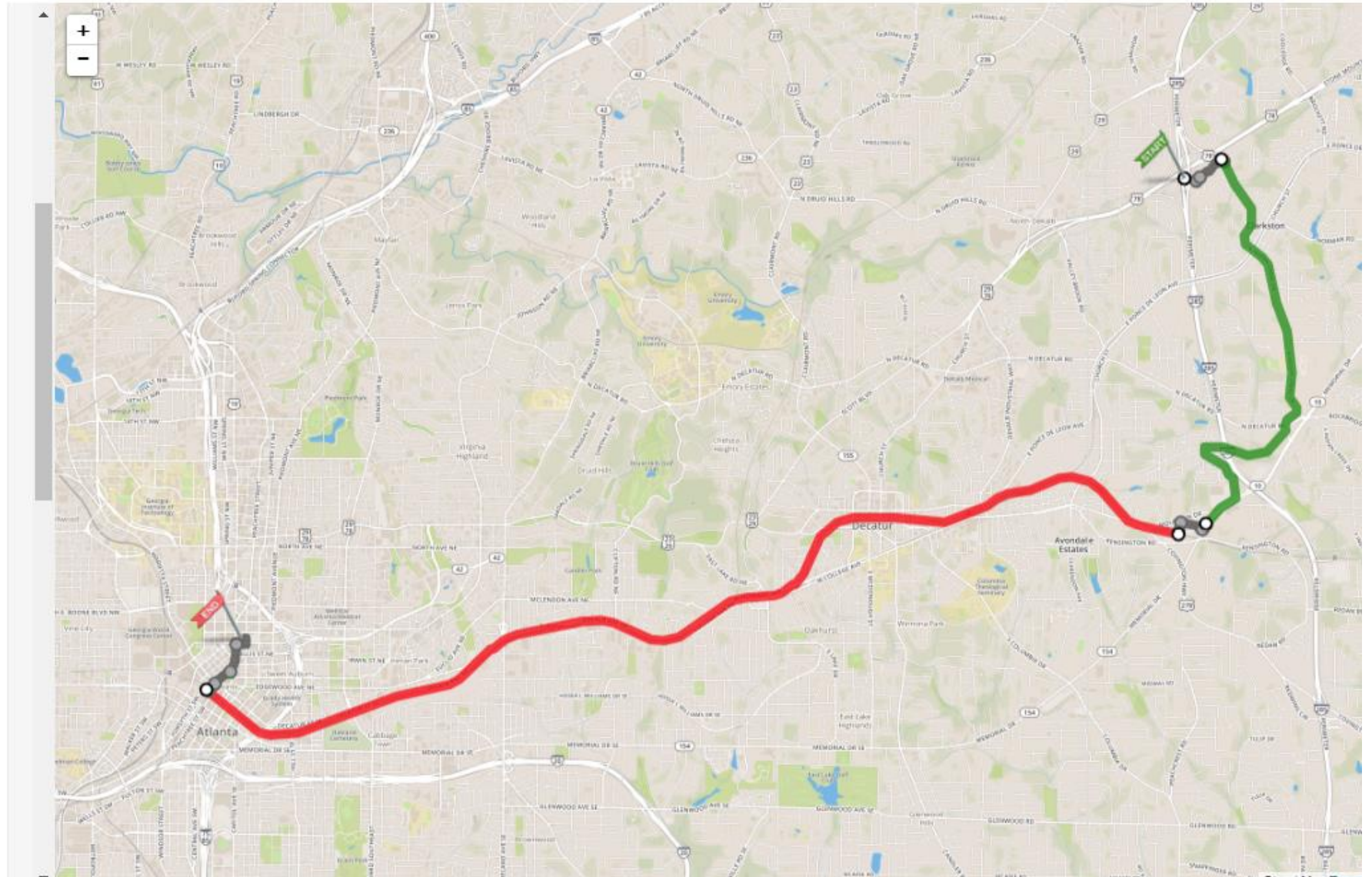
2:28pm **Arrive:** MEMORIAL DR @ MOUNTAIN DR

Walk 6 min

to KENSINGTON STATION

Start on Memorial Drive heading SOUTHWEST 295 feet

RIGHT on to service road 0.2 miles



AGENCY-LED TRIP PLANNING: TRIMET

From
N Going & Port Center Way W, Portland (Stop ID 2161)

To
Portland International Airport, Portland

Depart at 10:58am Tuesday, January 22, 2019, using Transit
Quickest trip with a maximum walk of 1 mile
Fare for this trip: Adult: \$2.50, Youth: \$1.25, Honored Citizen: \$1.25

EDIT TRIP PRINT

Best bet	Option 2	Option 3
59 mins, 1 transfer	74 mins, 1 transfer	67 mins, 1 transfer

Walk 1/3 mile to N Greeley & Going Stop ID 2196

11:07am Board 35-Macadam/Greeley to Oregon City TC via Portland City Ctr

Check TransitTracker View route map View full schedule

11:14am Get off at N Interstate & Multnomah (Rose Quarter) Stop ID 11813

Walk 832 feet to Rose Quarter TC MAX Station Stop ID 8340

11:25am Board MAX Red Line to Airport

11:54am Get off at Portland Int'l Airport MAX Station Stop ID 10579

Walk 718 feet to Portland International Airport, Portland

The southbound stop at SW River Pkwy & River Dr (Stop ID 13180) has closed for about 19 months, due to construction. Use the new stop at SW Moody & River Pkwy (Stop ID 13994). As of January 16 More

N Greeley & Going Southbound 11:09 am

Stop ID 2196

ADD TO FAVORITES

35	Macadam/Greeley to Oregon City TC via Portland City Ctr	1	1 min	33 min	^
Arriving in			1 min	33 min	Scheduled
Scheduled at			11:07am	11:42am	12:16pm
View full schedule					
<p>The southbound stop at SW River Pkwy & River Dr (Stop ID 13180) has closed for about 19 months, due to construction. Use the new stop at SW Moody & River Pkwy (Stop ID 13994). Effective as of Jan 16, 2018</p>					



PERFORMANCE TRACKING

T DASHBOARD ABOUT CONTACT FAQS

DASHBOARD
Reliability
Ridership
Financials
Customer Satisfaction

DATA BLOG

SURVEYS

MORE DATA

RELIABILITY


Bus

AVERAGE RELIABILITY

70% January 21, 2019	71% Past 7 Days	73% Past 30 Days
--------------------------------	---------------------------	----------------------------

Data from January 21, 2019

PAST 7 DAYS



100%
80%
60%

Reliability / Bus

MODE:

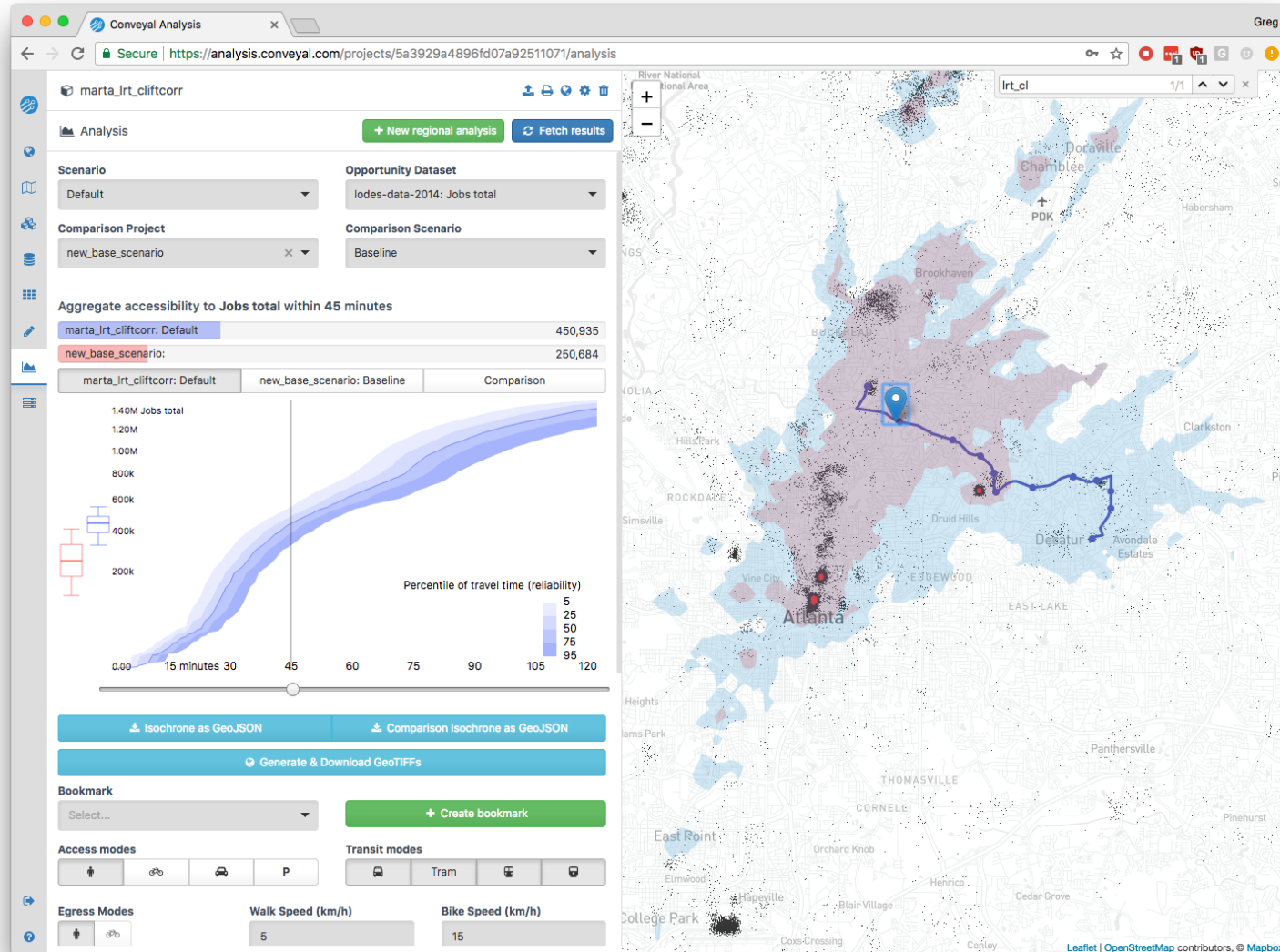
ROUTE TYPE:

DISPLAY:

PERIOD:

DATE:

Transit Project Evaluation



State of GTFS in the Region:

- ▶ Need Real time feeds
- ▶ Need consistent data across all providers, regularly updated from each provider

What have we done so far:

- ▶ Surveyed agencies for expertise, maintenance tools used, general process
- ▶ Conducted day long workshop to increase understanding of GTFS, provide training in specific GTFS data management processes

ARC RFP

- ▶ Identify pinch points in the development and distribution of each agency's GTFS feeds
- ▶ Provide implementable guidance on improving data flows
- ▶ Work with CAD/AVL vendors to achieve better GTFS real-time outcomes
- ▶ Develop a regional vision for GTFS coordination
- ▶ Procurement for Improving data accuracy
- ▶ Develop regional data standards
- ▶ Outline regional roles and responsibilities for the develop of the regional GTFS and GTFS real time feeds

Next Steps

- ▶ Move to Open Portal hosting for consumption by apps
- ▶ Contract for post-processing of CAD/AVL data and GTFS static feeds into GTFS Real-Time
- ▶ A second phase of technical assistance

TAM and EAMS

➤ Lori Sand, ARC/ATL

TAM Rule (49 CFR Part 625)

- ▶ Require FTA grantees to develop a TAM plan
- ▶ **Establish TAM performance measures**
- ▶ Reporting requirements



Targets

- ▶ **Rolling Stock:** % of revenue vehicles that have either met or exceeded their ULB
- ▶ **Equipment:** % vehicles that have either met or exceeded their ULB
- ▶ **Infrastructure:** % of segments with performance restrictions
- ▶ **Facilities:** % of facilities rated below condition 3 on the TERM scale



Regional Targets

Rolling Stock	Equipment	Infrastructure	Facilities
Over-the-Road Bus: 30%	Automobile: 50%	Heavy Rail: 5%	Passenger/Parking: 50%
Bus: 30%	Trucks & other rubber tire vehicles: 50%	Streetcar Rail: 0%	Maintenance: 50%
Cutaway Bus: 50%			Administrative: 50%
Heavy Rail Vehicle: 20%			
Light Rail Vehicle: 25%			
Van: 25%			
Automobile: 22%			

Rolling Stock

Asset	Target	Asset Quantity	2019 Estimate
Over-the-Road Bus	30%	248	1%
Bus	30%	657	22%
Cutaway Bus	50%	314	42%
Heavy Rail Vehicle	20%	338	0%
Light Rail Vehicle	25%	4	0%
Van	25%	64	32%
Automobile	50%	3	67%

Equipment

Asset	Target	Asset Quantity	2019 Estimate
Automobile	50%		58%
Trucks and other rubber tire vehicles	50%		68%

Facilities

Asset	Target	Asset Quantity*	2019 Estimate
Passenger/Parking	50%	50	9%
Maintenance	50%	7	0%
Administrative	50%	3	0%

* Asset quantity only refers to those assets that have been evaluated to date; not all assets were required to be evaluated in the first year

Infrastructure

Asset	Target	Asset Quantity (DRM)	2019 Estimate
Heavy Rail	5%	101.3	1%
Streetcar Rail	0%	2.7	0%

Transit Asset Management:

- ▶ Enterprise Asset Management System (EAMS)
- ▶ ATL Procurement involving SRTA, CobbLinc, and ARC on behalf of Henry, Douglas, Cherokee and CPACS
- ▶ RFP released February 8, proposals due April 8
- ▶ Project should begin June 2019
- ▶ Project completion January 2020

Next Steps

- ▶ Integrate asset tracking into regional dashboard
- ▶ Monitor transit operator performance
- ▶ Use data to support the development of the Regional Transit Plan and TIP



Collaboration Opportunities/Existing Regional Technology Groups

➤ Jamie Fischer, PhD | Director of Transportation Performance Innovation

A MISSION OF EXPLORATION

► The ATL Regional Technology Committee...

Explores practical and innovative ways to leverage technology to integrate transit services and promote a more seamless, unified transit system across the region. Reviews and recommends technology standards and policies that if adopted will apply to transit operators, systems and/or other related service providers. The goal of such standards shall be to promote the safe, secure and efficient sharing of data to enhance the interconnectivity of transit services and operations within the region and to enhance customer experience and ease of use. The committee may explore strategic partnerships with educational institutions, the private sector and public agencies and recommend the formation of ad hoc projects and groups focused on the strategic use of technology to integrate and promote a more seamless unified transit system across the region.

OVERVIEW

- ▶ Existing Agency-Led Technology Groups
 - GDOT - State Transportation Innovation Council
 - MARTA - Regional Technology Group

- ▶ Other Interagency Collaborations
 - ARC - Regional TSMO and ITS Architecture Update

- ▶ Guidance & Next Steps



STATE TRANSPORTATION INNOVATION COUNCIL
(FEDERAL HIGHWAY & GEORGIA DOT)

FEDERAL HIGHWAY FOCUS ON TECHNOLOGY DEPLOYMENT



- ▶ The Federal Highway Administration (FHWA) established the Center for Accelerating Innovation (CAI) in 2012
- ▶ The national STIC network is one CAI program, established to:
 - Bring together public and private transportation stakeholders to evaluate innovations and spearhead their deployment in each State
 - Promote and support rapid deployment of selected technologies, tactics and techniques
 - Identify and mobilize champions for deployment
 - Share information with all state stakeholders through meetings, workshops and conferences

GEOGIA STIC PARTICIPATION & INITIATIVES



▶ Expanding membership

- Georgia DOT Personnel
- FHWA Personnel
- MPO Representative – ARC
- University Transportation Center (UTC) Representative – GA Tech
- American Council of Engineering Companies (ACEC)
- Georgia Highway Contractors Association (GAHCA)

▶ Historical focus on technology transfer and institutionalizing nationally selected EDC Initiatives

- Automated traffic signal performance measures
- Data-driven safety analysis / pedestrian safety
- Streamlined project management and delivery

▶ Open to partnership with ATL on transit initiatives



REGIONAL TECHNOLOGY GROUP

MARTA & REGIONAL OPERATORS

REGIONAL TECHNOLOGY GROUP



- ▶ Informal membership and structure
 - Grass-roots effort to facilitate staff-level communication on transit technology
 - Bimonthly meetings convened by MARTA include participants representing CobbLinc, Xpress, GCT, ARC, and smaller operators
- ▶ Technology-anchored discussions
 - Regional technology projects
 - Ticketing upgrades
 - Fare system upgrades
 - Operational challenges
 - Super Bowl preparations
 - GTFS clean-up
 - Strategic topics
 - Regional transit customer experience
 - Regional transit digital experience
- ▶ Currently being restructured and re-tooled; open to formalization and partnership with the ATL



OTHER INTERAGENCY EFFORTS

Regional TSMO Vision and ITS Architecture Update

- ▶ Transportation Systems Management & Operations (TSMO) strategies focus on operational improvements that can maintain and even restore the performance of the existing transportation system before extra capacity is needed.
- ▶ Intelligent Transportation Systems (ITS) integrate advanced communication technologies into transportation infrastructure and vehicles.
- ▶ TSMO Vision and Architecture Update, 2018-2020
 - ARC-funded project led by consultant team and cross-agency steering committee
 - Addressing transportation technologies and data governance across multiple modes: highway, transit, and non-motorized transportation
 - Engaging transportation staff across the Atlanta region
 - More than 100 survey respondents
 - Approximately 40 workshop participants so far
- ▶ ATL staff are participating on steering committee



NEXT STEPS & COMMITTEE GUIDANCE

Guiding Questions

▶ How might the ATL...

- Formally integrate efforts with the Georgia State Transportation Innovation Council (STIC), and leverage this collaboration for technology transfer?
- Formally or informally integrate efforts with the staff-level Regional Technology Group in crafting regional recommendations for transit technology?
- Leverage the ongoing development of a regional TSMO Vision & ITS Architecture Update?
- Engage directly with academic community and private sector?



Thank You

Regional Mobile Ticketing Update

➤ Kirk Talbott, MARTA



Gwinnett

GCT MicroTransit Pilot

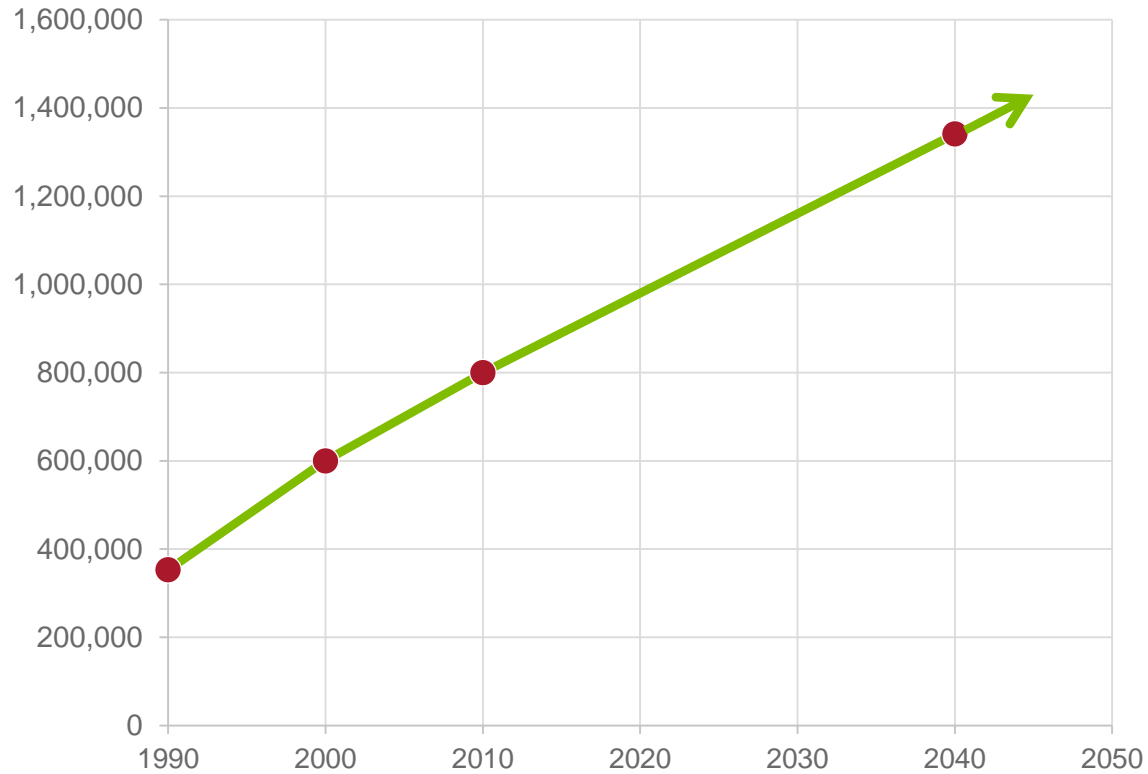
February 26, 2019

ATL Technical Committee Meeting

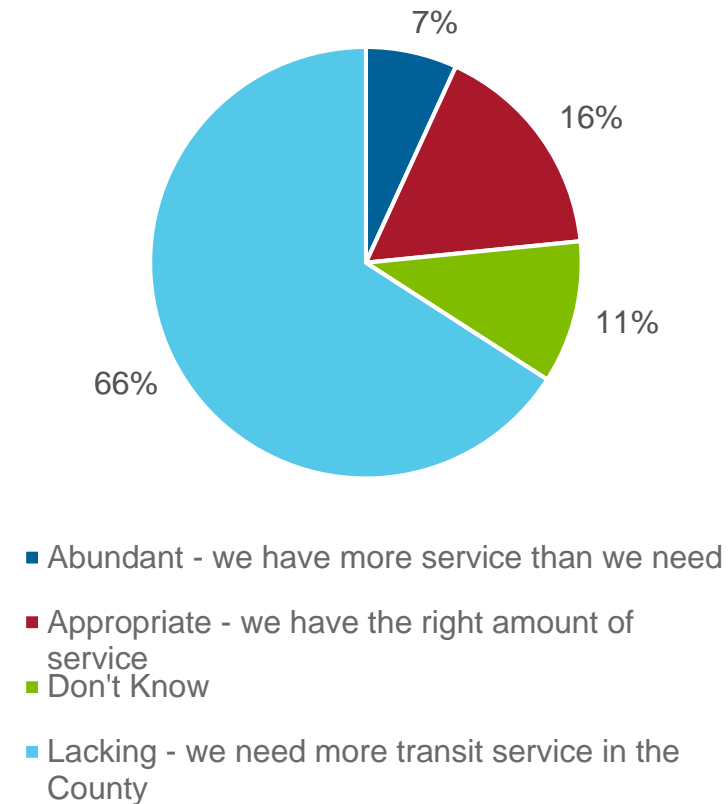
Why MicroTransit



Gwinnett Population Growth



Community Support for More Transit

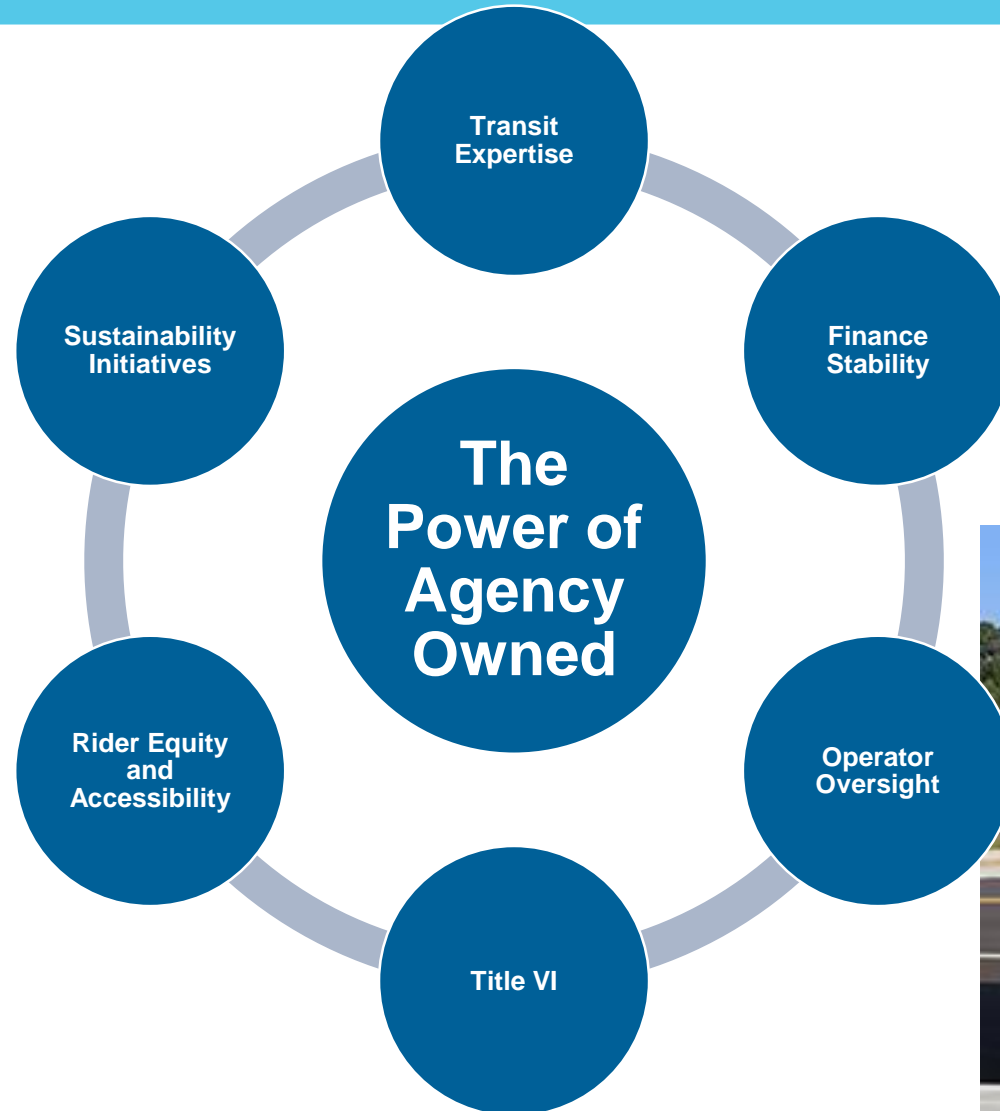


Why a MicroTransit Solution



- First Mile/Last Mile
- Route Replacement & Modification
- Underserved Areas
- Unserved Areas
- Evening/Weekend Route Replacement

Why Agency Owned MicroTransit



The Pilot



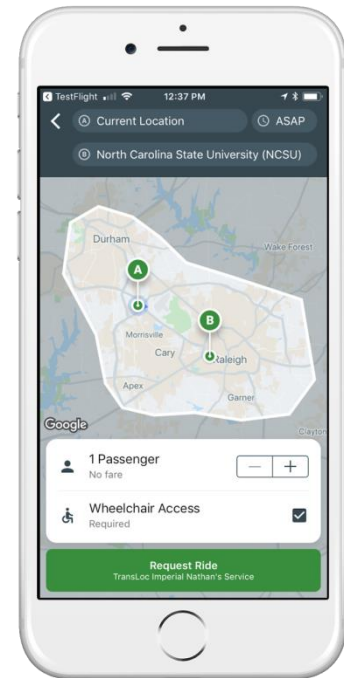
- Partnered with TransLoc for the Pilot
- Pilot included Scenario Simulations
- Full Support for Technology Deployment
- TransLoc walked us through the implementation process step by step

TransLoc®

Advantage of a Pilot



- Opportunity to test drive the program
- Support proof of concept
- Determine contracting methods
- Determine policy for the program



GCT Pilot Scenario Analytics



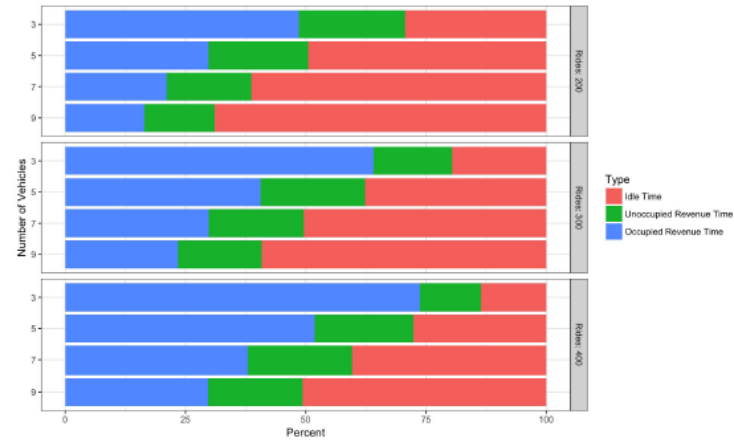
Operating Efficiency

Snellville

Rides	Vehicles	Vehicle Utilization (trips per vehicle hr)*	Vehicle Miles Traveled	Average Miles per Vehicle	Revenue Hrs per Vehicle
200	3	4.1	814	271	11.4/16.1
200	5	2.5	1,012	202	8.1/16.1
200	7	1.8	1,117	160	6.2/16.1
200	9	1.4	1,175	131	5/16.0
300	3	6	924	308	13.3/16.5
300	5	3.7	1,240	248	10.1/16.2
300	7	2.7	1,420	203	8/16.2
300	9	2.1	1,531	170	6.6/16.1
400	3	7.9	959	320	14.5/16.8
400	5	4.9	1,420	284	11.8/16.3
400	7	3.5	1,699	243	9.7/16.2
400	9	2.8	1,840	204	8/16.2

Time Utilization

Snellville



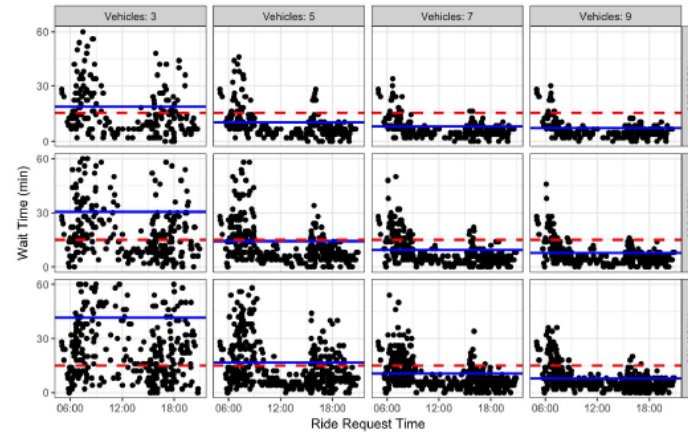
Ride Quality

Snellville

Rides	Vehicles	Average Wait Time (min)	95%ile Wait Time (min)*	Average Ride Duration (min)	95%ile Ride Duration (min)*	Average Total Trip Time*	95%ile Trip Time (min)*
200	3	18.5	52.1	13.4	32.2	32	76
200	5	9.8	28	9	18	18.8	40
200	7	7.5	22.1	8	16	15.5	30.1
200	9	6.6	22	7.8	14	14.4	30
300	3	30.6	98.1	19.8	54	50.4	122.1
300	5	14.3	42	11.3	24	25.5	62.2
300	7	9.4	26	9.1	18	18.5	40
300	9	7.7	22	8.5	16	16.2	38
400	3	41.6	127.6	25	68.4	66.7	164
400	5	16.7	46.1	13.3	34	30	68.1
400	7	10.5	26	9.8	22	20.3	40.1
400	9	7.9	24	8.8	18	16.7	34.1

Wait Times

Snellville



Why this Solution for Gwinnett



- Portions of the County with suburban design are difficult to serve with traditional transit means
- Refreshes an old model with technology
- Can be integrated with the rest of the network

Current Pilot/Feedback



- Positive overall
- Service continues to increase
- First month issues mainly involved staff training and policy development, rather than technology

Pilot Results – Reporting



- Rides by Status
- Rides by Source
- Rides by Hour
- Ride Duration
- Ride Wait Time
- Total Passengers**
- Vehicle Mileage
- Total Mileage
- Origins & Destinations
- Fare Payment

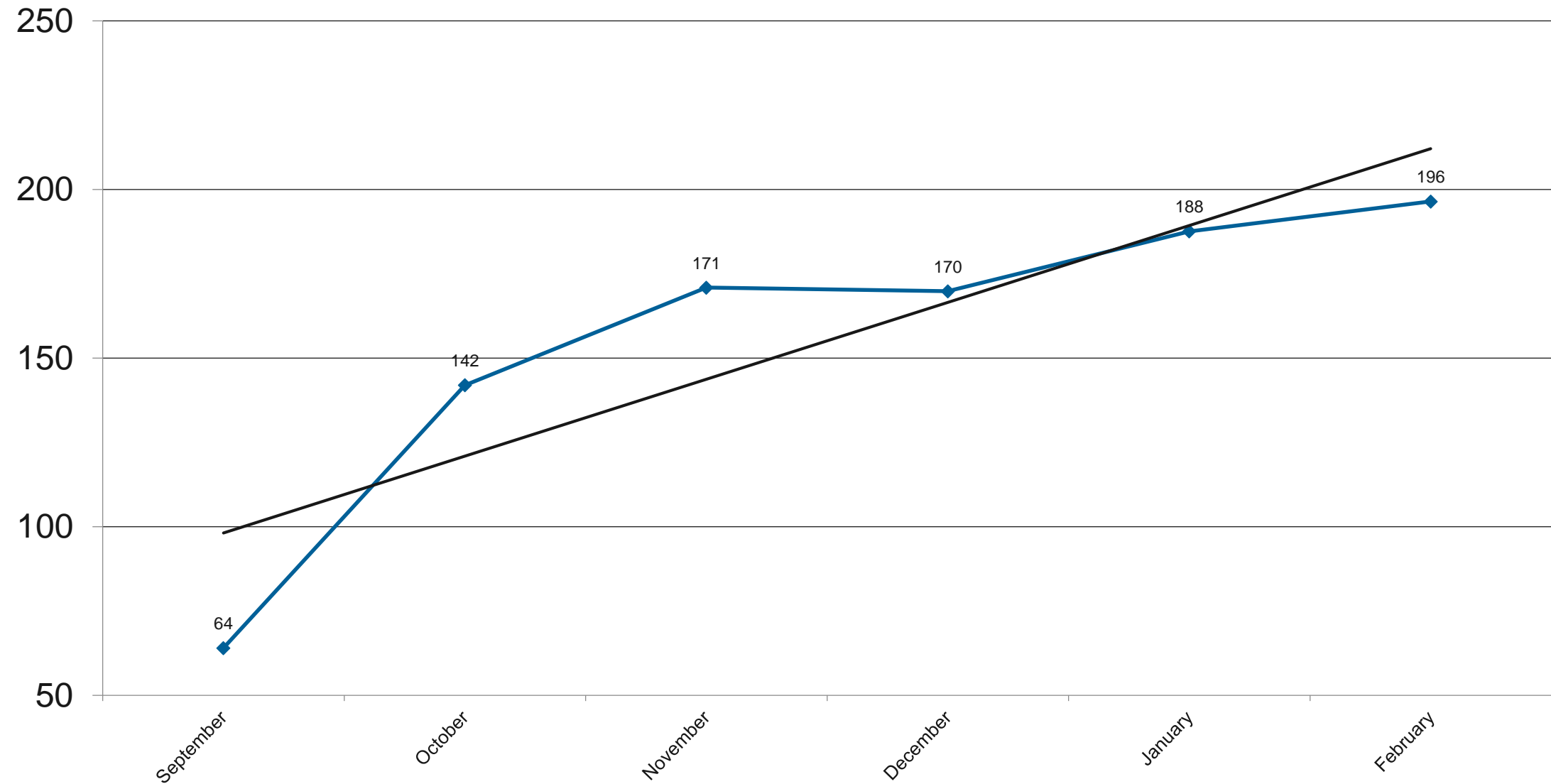
Total Passengers

This report shows the total number of passengers who boarded and completed rides in a day.

Service: All services | Start Date: 01-01-2019 | End Date: 01-31-2019



Pilot Results – Average Daily Trips



Next Steps



- Run pilot for 8 months
- Evaluate program, pro and cons
- Competitively procure technology
- Redeploy into Snellville and then Buford
- Work on items such as fare integration with Cubic System



Questions

Karen Winger, ACIP CCTM
karen.winger@gwinnettcounty.com

Mobile App Concept Presentation

- Steve Dickerson, ATL Board Member



ADJOURN