

# CHAMBLEE

## Self-Driving Shuttle

---

City of Chamblee, Georgia

# Smart Solutions Workshop



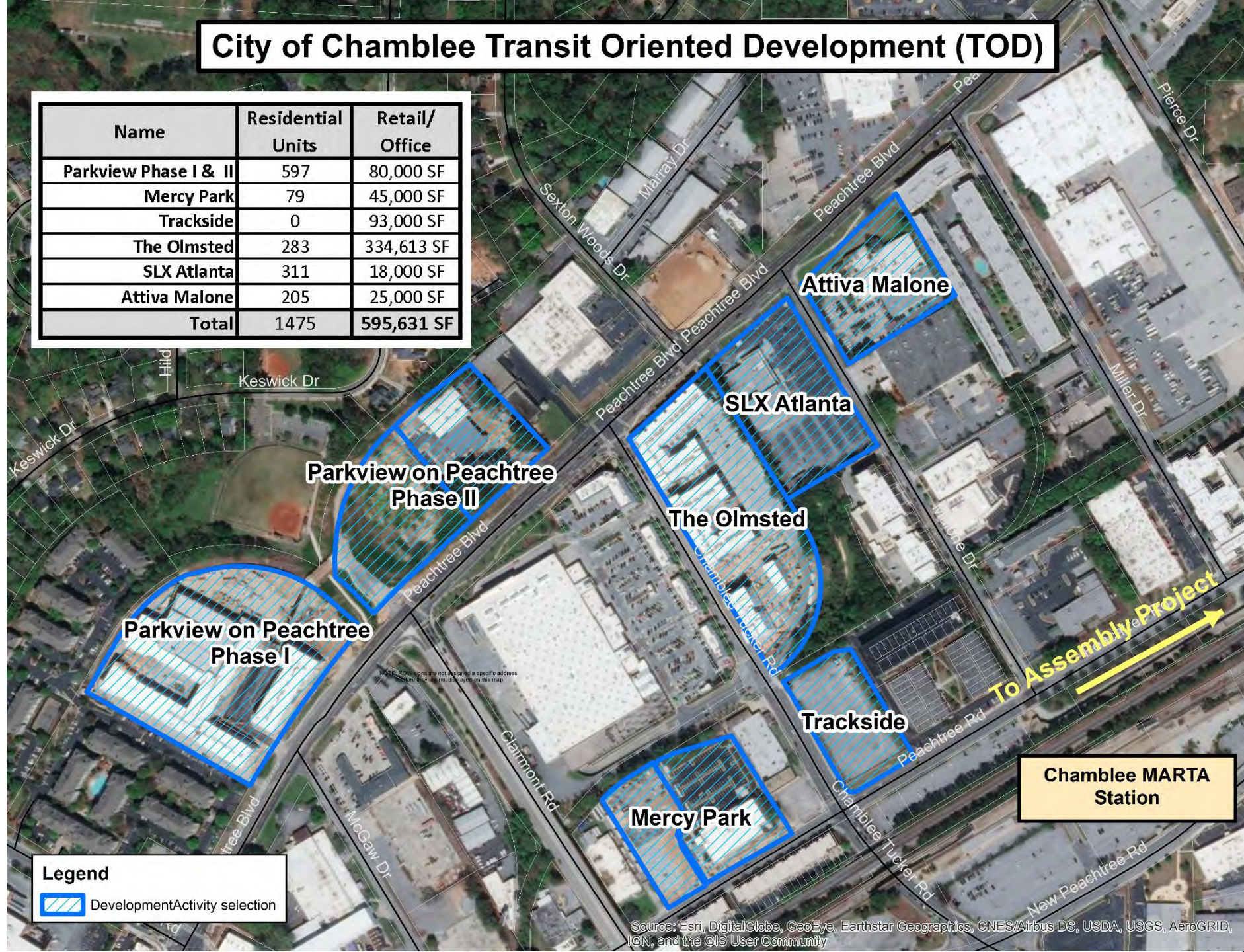
December 7, 2018



# Chamblee Development

## City of Chamblee Transit Oriented Development (TOD)

Name	Residential Units	Retail/Office
Parkview Phase I & II	597	80,000 SF
Mercy Park	79	45,000 SF
Trackside	0	93,000 SF
The Olmsted	283	334,613 SF
SLX Atlanta	311	18,000 SF
Attiva Malone	205	25,000 SF
<b>Total</b>	<b>1475</b>	<b>595,631 SF</b>



**Legend**

 DevelopmentActivity selection

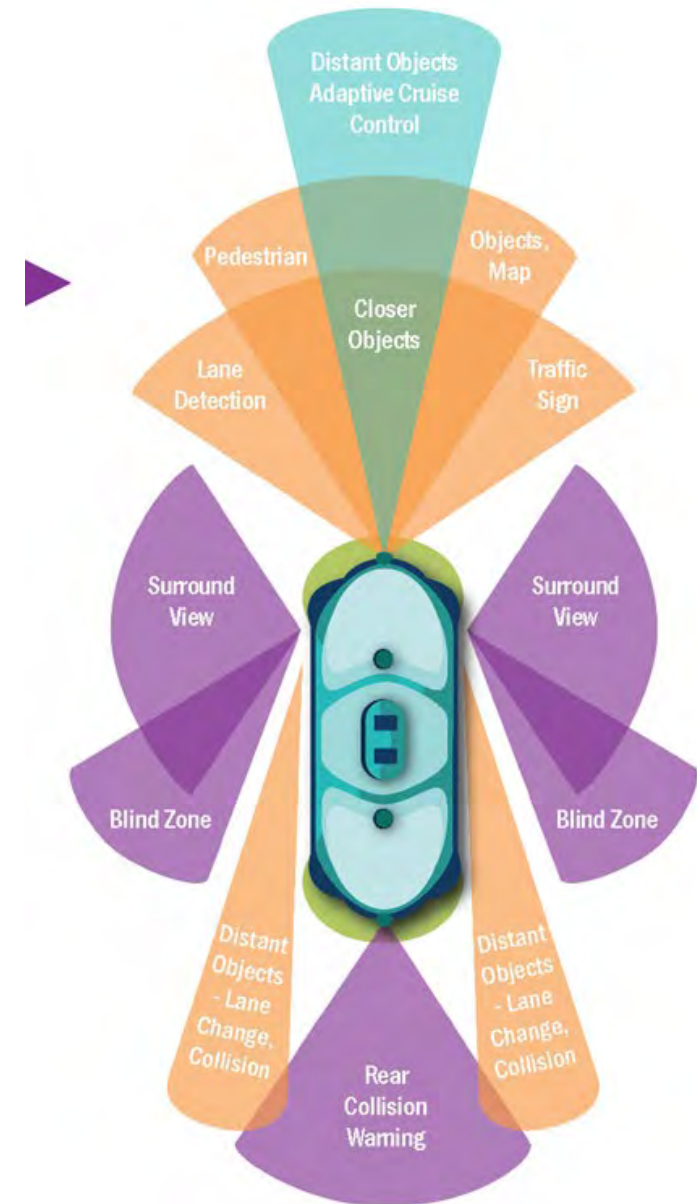
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



# Chamblee Self-Driving Shuttle

## What?

Self-driving shuttles are fully autonomous vehicles that carry between 8-16 people and typically operate at top speeds of 25 mph. They are ideally suited for first/last mile solutions on quiet, lower speed streets and can operate in mixed traffic.



# Chamblee Self-Driving Shuttle



## Why?

1. Marketing
2. Increased Mobility
3. Sustainability
4. Parking Demand

***The City of Chamblee aspires to be a healthy, vibrant, safe environment where residents live, work, play and grow in a diverse community valuing families and neighbors, respecting the historic qualities of our city.***

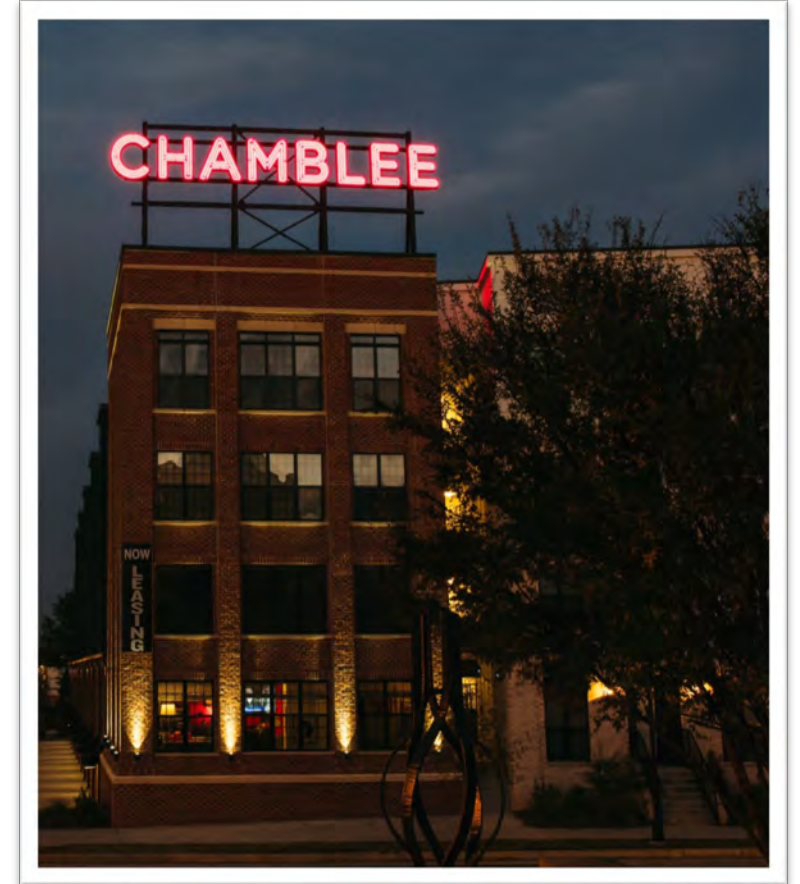
*City of Chamblee Comprehensive Plan, 2016*



# Chamblee Self-Driving Shuttle



**Economic goals.** Being one of the first in the region to pilot SAVs on public roads will strengthen the identity of Chamblee as a center for innovation and forward thinking. The cool and newness factors of the technology will attract people from across the region, helping to support a thriving business environment.

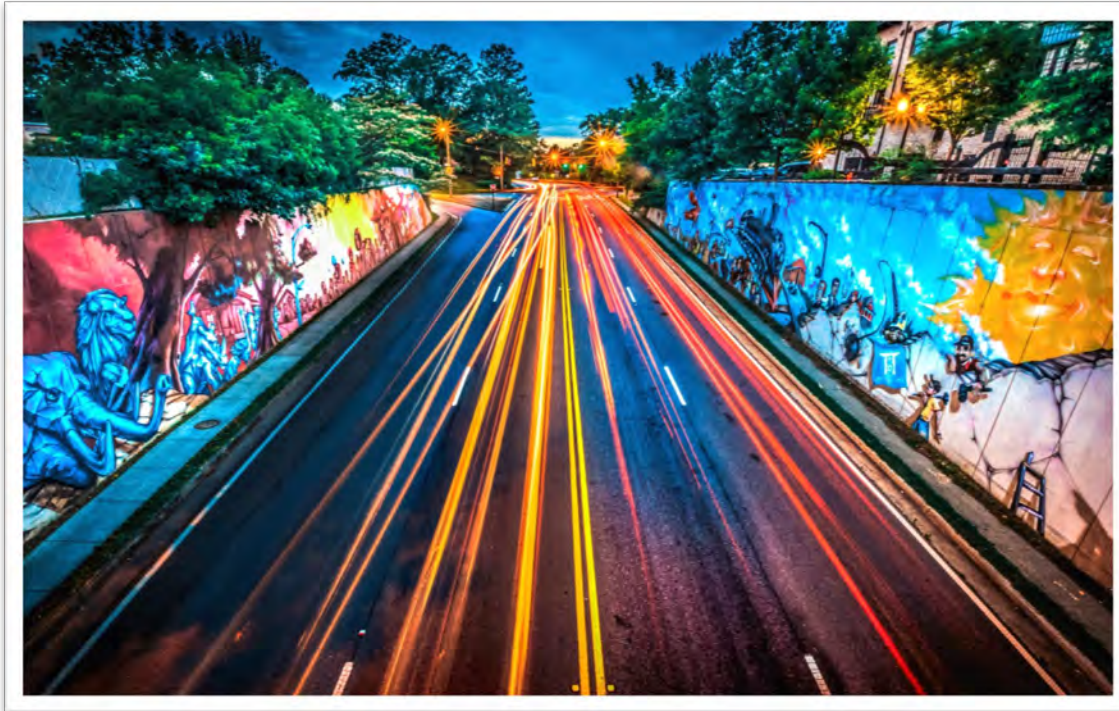




# Chamblee Self-Driving Shuttle



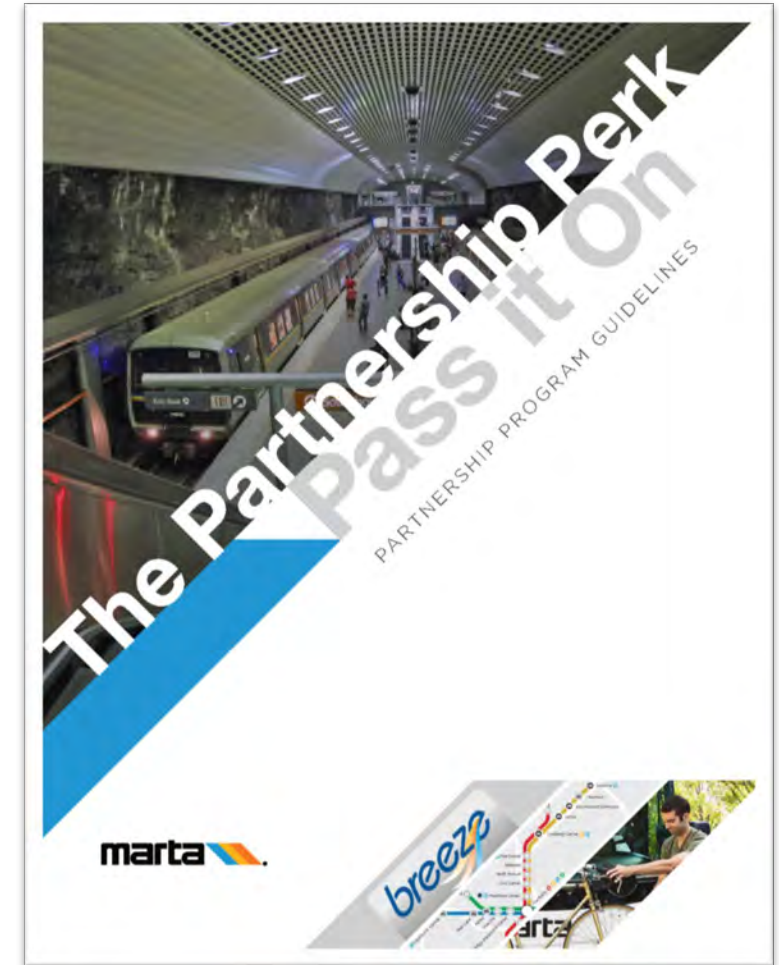
**Mobility goals.** An SAV pilot project also directly supports the fourth goal in the Comprehensive Plan: develop and maintain strong multi-modal connections. Convenient and attractive multi-modal options help reduce the parking challenges in Chamblee's historic downtown district, while also enabling residents to choose the mode most appropriate for each specific trip (walk to the grocery store, drive to work, transit to dinner, etc.).





# Chamblee Self-Driving Shuttle

**Environmental goals.** Essential to supporting a healthy lifestyle is a healthy environment. Thirty-one percent of greenhouse gas (GHG) emissions in the Atlanta region come from transportation, as described by the Atlanta Climate Action Plan. As electric vehicles gain market share, reductions in transportation-related greenhouse gas emissions will decrease, helping to achieve regional transportation related GHG reduction targets and improving air quality.



# Chamblee Self-Driving Shuttle

**Parking infrastructure.** As the downtown core densifies, the City does not require additional parking to be provided, increasing the necessity of convenient transit connections and bicycle and pedestrian infrastructure. Improving connectivity from community-wide parking infrastructure to the downtown will increase the economic vitality of the downtown core.



Source: [weburbanist.com](http://weburbanist.com)

**From the Chamblee UDO:**  
*“Parking structures shall be constructed with a level base and with flat floor plates on every above-ground level.”*



# Chamblee Self-Driving Shuttle



## Why Chamblee?

1. Millennials
2. Density
3. Housing Type
4. Diversity
5. Connectivity

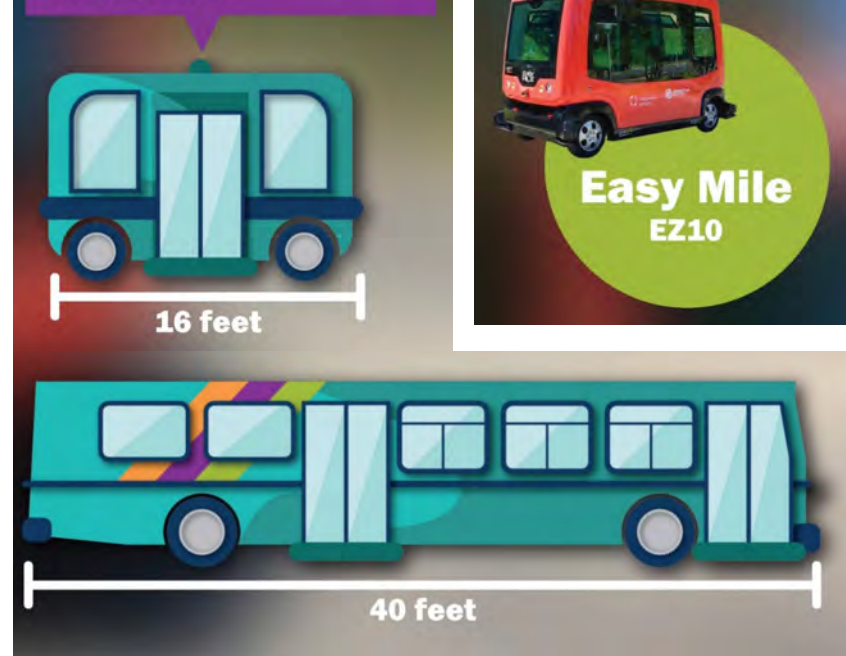


# Chamblee Self-Driving Shuttle

## Notable Features:

- » Tight enough of a turning radius (13-15 feet) to drive on existing streets
- » Operates in both directions, eliminates the need to turn around
- » Works with a mobile app for on demand calls and real time monitoring
- » Wheelchair accessible and working to offer more accessibility features and compliance with Americans with Disabilities Act (ADA) regulations
- » Redundant breaking mechanisms
- » Emergency stop button on-board
- » Direct telecom connection to central command hub for passengers

Self-Driving Shuttle and Standard Bus Comparison



Manufacturers and Self-Driving Shuttles in the process of testing and launching pilot programs.



Self-Driving Shuttle Specifics





# Chamblee Self-Driving Shuttle



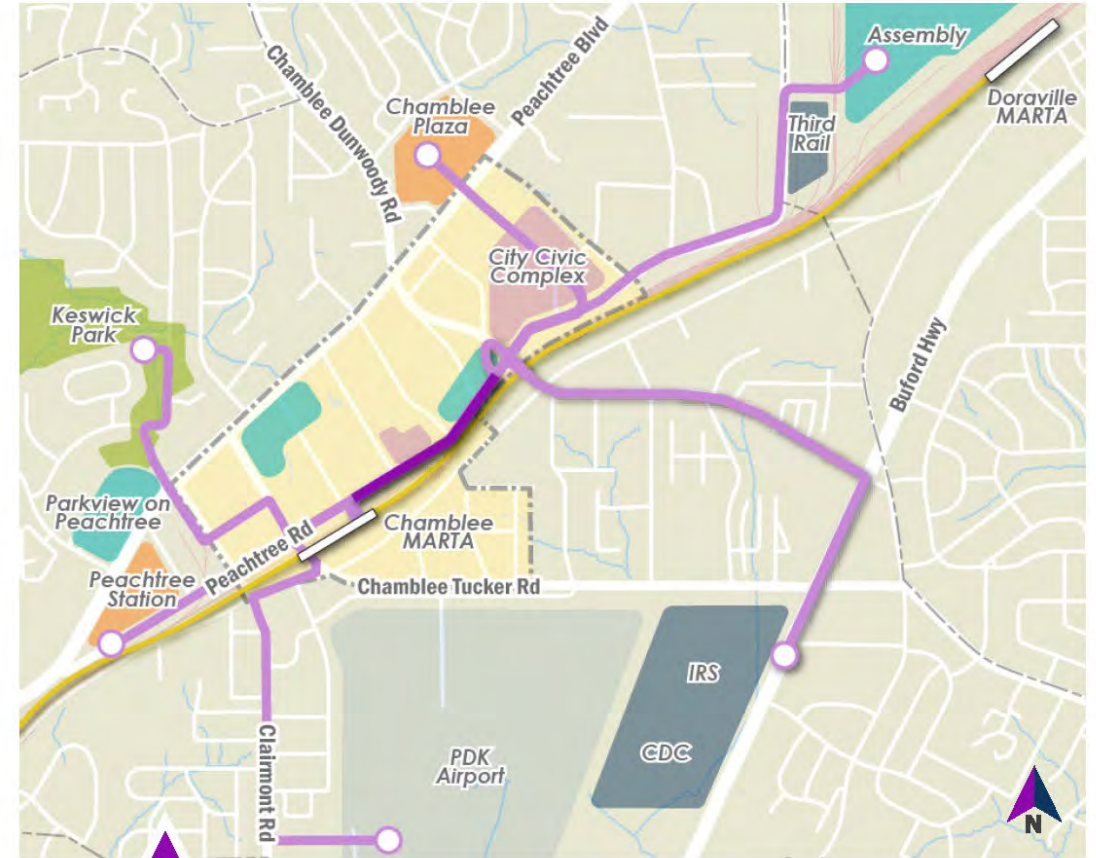
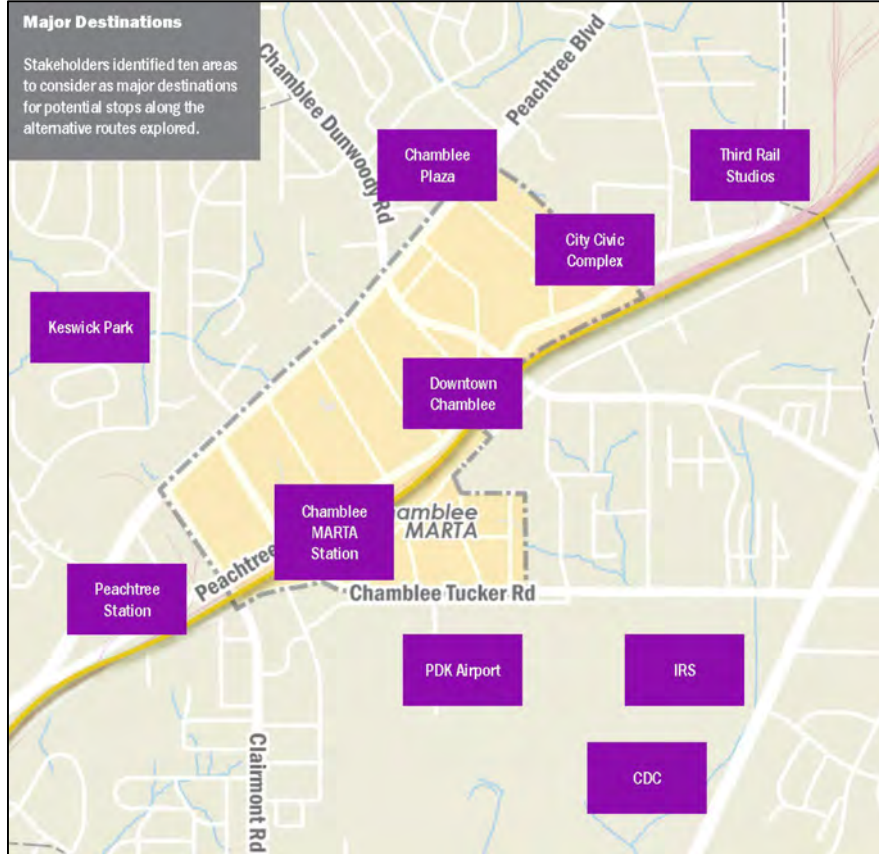
## How?

**April 9, 2018:** Chamblee Self-Driving Shuttle Feasibility Study and Concept Plan

**Fall 2018/Spring 2019:** “Georgia Smart Communities Challenge” Self-Driving Shuttle Operations Plan

# Chamblee Self-Driving Shuttle

## Feasibility Study & Concept Plan



**Seven Routes were evaluated during the study**

All alternative routes in the map above, and compared in the graphic chart to the right: the three highest ranked routes being Third Rail Studios & Assembly, Peachtree Station, and Chamblee Plaza (See page 4 for background map legend).



# Chamblee Self-Driving Shuttle

## Feasibility Study & Concept Plan



### Highest-Ranked Routes:

- Peachtree Station
- Third Rail/Assembly

Comparative Analysis	City Civic Complex	PDK Airport	Peachtree Station	Chamblee Plaza	Keswick Park	Third Rail/Assembly	CDC/IRS
Number of residents along route	OK	OK	OK	Good	Good	Great	Great
Number of job along route	OK	Great	Great	OK	Good	Great	Great
Number of trips per hour with 2 vehicles	Great	OK	Great	Great	Good	Good	OK
Compatibility with low speed shuttle	Great	OK	Great	Great	Good	Great	OK
Increase in transit service coverage	OK	OK	Good	Good	Good	Good	OK

LEGEND  
 OK Good Great

# Chamblee Self-Driving Shuttle

## Feasibility Study & Concept Plan



### Highest-Ranked Routes:

- Peachtree Station
- Third Rail/Assembly





# Chamblee Self-Driving Shuttle

## Feasibility Study & Concept Plan

## Cost?

Costs are constantly changing due to rapidly changing technology and vehicle manufacturing/operator environments.

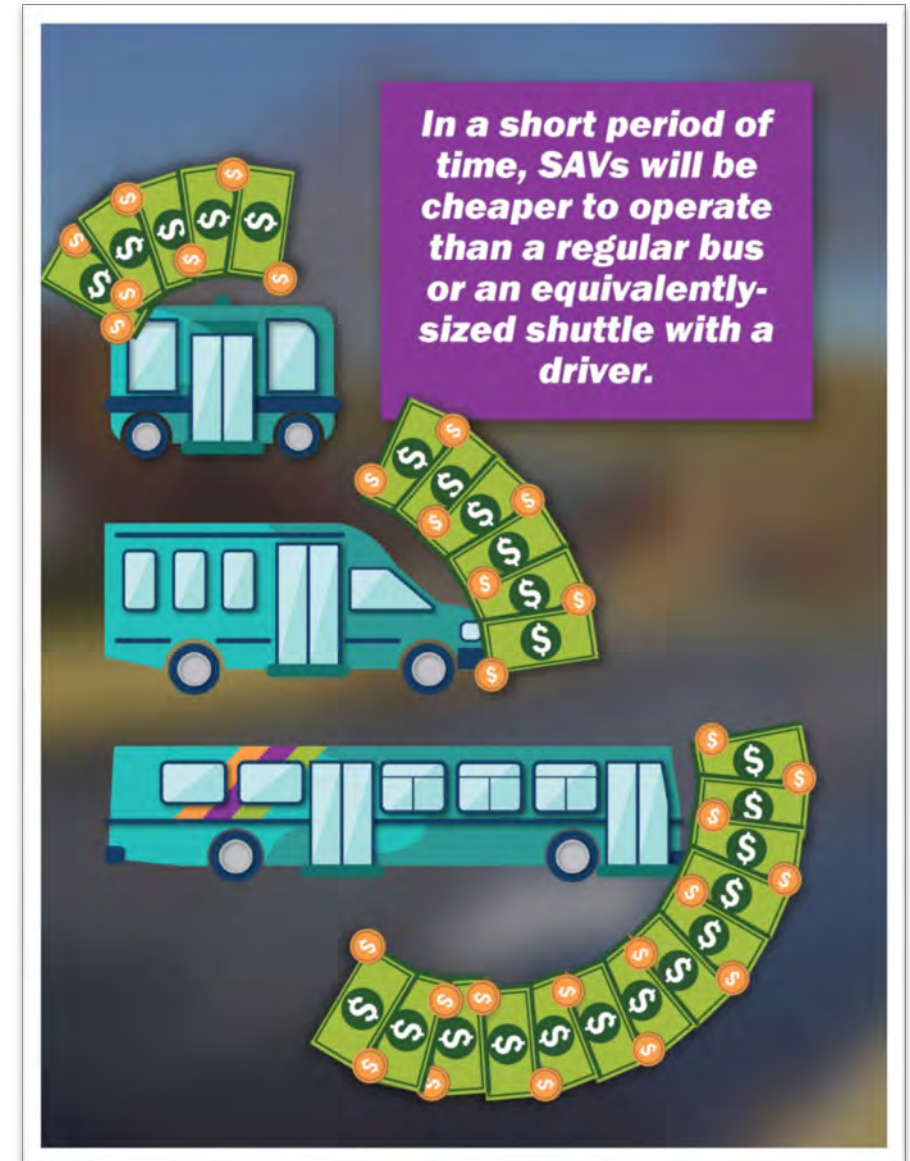
### Capital Expenses

- » Vehicle capital costs
- » Route mapping and digital surveying
- » Charging station(s)
- » Secure storage
- » Dedicated Short Range Communication (DSRC) units along route
- » Station/stop signage and related infrastructure improvements
- » Interface with traffic signals

### Operating Expenses

- » Concierge/Ambassador for early stage operation
- » Program management/operations control
- » Maintenance and cleaning
- » Fare collection
- » Insurance

**EST \$1 million to \$1.5 million per year**



# Chamblee Self-Driving Shuttle

## Georgia Smart Communities Challenge



**Chamblee is one of four communities in Georgia selected for the Georgia Tech Smart Communities Challenge.**

**Purpose:** Bring together industry and public agencies to help local governments implement smart development.

**Chamblee's Partners:** MARTA; City of Doraville; Assembly CID and Stantec.

**Research Partner:** Ellen Dunham-Jones, Georgia Tech





# Chamblee Self-Driving Shuttle

## Georgia Smart Communities Challenge



### Study Includes the Following Components:

- **Impact Study** related to sprawl, equity, safety and public health (Georgia Tech);
- Study related to **funding models, regulatory impacts & “unknown unknowns”** of SAVs (Georgia Tech);
- **Operations Plan** (City/Stantec);
- **Preliminary Engineering** (City/Stantec);
- **Best-Practices Manual** (City/Stantec).

# Chamblee Self-Driving Shuttle

## Georgia Smart Communities Challenge



### Operations Plan

- Final Alignment;
- Priority Treatment;
- Schedule;
- Number of Vehicles;
- Storage and Charging;
- Infrastructure Needs;
- Cost Estimates.





# Chamblee Self-Driving Shuttle

## Next Steps?

- Complete Operations Plan
- Investigate Funding Sources





# Chamblee Self-Driving Shuttle Concepts



Future stage conceptual illustration with improvements including: lane markings denoting the shared street as a "Chamblee Smart Street," proper signage for pedestrians and drivers, sharrows for cyclists to also share the road, street trees, pedestrian-scaled lighting, improved sidewalk conditions, strategically closed driveways to reduce unexpected interference with the self-driving shuttle, pedestrians, and cyclists alike, as well as new development opportunities.



Future stage conceptual illustration with improvements including: lane markings denoting the shared street as a "Chamblee Smart Street," proper signage for pedestrians and drivers, an off-street multi-use path for cyclists and pedestrians, new district identifying signage, street trees, pedestrian-scaled lighting, improved sidewalk conditions, art sculpture opportunities, and a high quality intersection with a traffic signal (only if found necessary upon further analysis).

