Agenda
1. Phase I Feasibility
2. Phase II Objectives
3. Roles and Responsibilities
4. Accomplishments
5. Challenges
6. Next Steps
1. Phase I

Feasibility Study:
- Description of technology
- Chamblee analysis
- Cost estimates
- Route alternatives
- Recommendations
- Next steps

Peachtree Road Streetscape:
- Road diet
- Safety and operational improvements
<table>
<thead>
<tr>
<th>Comparative Analysis</th>
<th>City Civic Complex</th>
<th>PDK Airport</th>
<th>Peachtree Station</th>
<th>Chamblee Plaza</th>
<th>Keswick Park</th>
<th>Third Rail/Assembly</th>
<th>CDC/IRS</th>
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</thead>
<tbody>
<tr>
<td>Number of residents along route</td>
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<td>Number of job along route</td>
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<td>Number of trips per hour with 2 vehicles</td>
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<tr>
<td>Compatibility with low speed shuttle</td>
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<td>✔</td>
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<tr>
<td>Increase in transit service coverage</td>
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**Legend**
- OK 〇〇
- Good ✔
- Great ★
2. Project Objectives

1. How can we design the user experience to ensure this project is more than a novelty – it should be a true mobility solution?

2. What utilitarian decisions need to be made to be a leader in this technology and pilot an AV shuttle in Chamblee?
Do we want private AVs to bypass existing communities for more sprawl? Or do we want shared autonomous shuttles to help revitalize existing communities?

Best Practices Manual

- Study of how to encourage more people to choose shared rides
- Focus on user experience of getting to, waiting for, and riding on autonomous shuttles
- Research on existing and proposed SAV installations and industry expert interviews.
- Recommendations for communities on best practices for land use, bus stop and vehicle design, and future data collection from users
Operations Plan

- Project description and schedule
- Charging/Storage/Maintenance plan
- Routing and signage/signalization criteria
- Technology provider(s) and operations team and responsibilities
- Use case scenarios
- Testing and evaluation plan
- Funding (if applicable) and procurement of system/services
- Risk assessment and mitigation strategies
- Emergency response plan
- Licensing requirements
- Cost estimates
3. Project Partners

1. Chamblee – Lead
2. Stantec – Consultant
3. GA Tech – Research
4. Other stakeholders and supporters
4. Accomplishments

1. Operations Plan draft under review
2. USDOT Autonomous Driving Demonstration Grant submitted
Core Route

1. Mercy Care

2. MARTA (Chamblee Station)

3. Entertainment District (Chamblee Dunwoody Way)
Southern Terminus (Peachtree Station)

- Turnaround at McGaw Drive 3-Way Stop
Northern Terminus (Broad Street)

- Turnaround in pergola / parking lot area
- Flashing Beacon Stop Signs & Warning Signage
Chamblee Tucker Intersection

• Required: Connected Intersection
SAV Stops

Requirements:
1. ADA concrete landing pad
2. Sidewalk connectivity
3. Signage

Recommendations:
4. Passenger amenities
5. Road painting

Optional:
6. Interactive map
Operations

Peachtree Station - Assembly
Length = 2.2 miles

2019
10 hour service day / 7 days / week
Single SAV (no spare) = 15-minute headway
Service Profile

• Commuter / Last Mile Service
Service Profile

• Leisure / Entertainment Service
Service Profile

- Hybrid Service
Estimated Cost to Implement

Infrastructure Improvements
$75,000 - $100,000
- Connected infrastructure
- Flashing beacon stop signs
- Benches
- Sidewalk connectivity
- Lane painting / signage

Capital Expenditures
$10,000 - $35,000 (monthly lease)
$250,000 - $425,000 (own)
- Vehicle
- Start up training & programming

Annual Operating Costs
$250,000 - $350,000
- Software licensing
- Insurance
- Maintenance
- Onboard attendant
- Program management
USDOT Grant

SAV Implementation Schedule
Could Self-Driving Shuttles be Coming to Chambly?

Posted on August 7, 2021

Imagine tapping an app on your phone and just a few minutes later, a car shows up to take you whenever you want to go at an affordable price.

On right, you can already do that.

Now imagine that the vehicle pulling up to your home has no driver. The city of Chambly, along with several partners, is preparing for just that.

Chambly is one of four cities across Georgia to win a grant from Georgia Tech’s Smart Communities Challenge. Chambly will include new shared, autonomous vehicles – think a self-driving Uber or Lyft – and other autonomous and connected technologies may shape the future of life in Chambly County City.
Chamblee, US is preparing

Policy and Planning Priorities:

In 2017, Chamblee, Ga. (pop: 29,000) began exploring the possibility of a shared autonomous vehicle pilot to provide fast last-mile connections at the city’s MARTA rail station. The $48,000 study is being conducted by Shawnee, an engineering firm, whose Urban Studio is engaged in several AV projects throughout North America. A draft of the completed feasibility study, which involved community group discussions and an online survey was adopted by city council in March 2018, and proposes a number of possible driverless shuttle routes serving the city’s main thoroughfare of Peachtree Road, including employers such as the Center for Disease Control, Internal Revenue Service, and the Peachtree-DeKalb Airport. Key findings include an estimated operating cost of $22,000 to $24,000 per month per vehicle, some 70 percent less than conventional human-driven, full-size buses on the same routes.
Chamblee, US is preparing

In 2017, Chamblee, Ga. (pop: 28,000) began exploring the possibility of a shared autonomous vehicle pilot to provide direct rail connections at the city’s MARTA rail station. The $480,000 study is being conducted by Santos, an engineering firm, whose UrbanShuttle is engaged in several N7 projects throughout North America. A draft of the completed feasibility study, which involved community group discussions and an online survey was adopted by city council in March 2018, and proposes a number of possible driverless shuttle routes serving the city’s main thoroughfares of Peaches Road, including employers such as the Center for Disease Control, Internal Revenue Service, and the Peaches Dekalb Airport. Key finding: Include an estimated operating cost of $22,000 to $44,000 per month per vehicle, some 70 percent less than conventional human-driven, full-service buses on the same routes.

Driverless shuttles could be coming to DeKalb County city

By: Steve DelBianco

Posted: 08.01.16 - 6:24 PM

Driverless SHUTTLES

Craig Lucie
Chamblee, US is preparing
Policy and Planning Priorities:
Land Use and Transit Planning, Pilot Zone Identification

In 2017, Chamblee, Ga. (pop. 28,000) began exploring the possibility of a shared autonomous vehicle pilot to provide bus-like shuttles connections at the city’s MARTA rail station. The $480,000 study is being conducted by Shanxi, an engineering firm, whose Urban Shuttle is engaged in several AF contracts throughout North America. A draft of the completed feasibility study, which included community group discussions and an online survey, was adopted by city council in March 2018, and proposes a number of possible autonomous shuttle routes serving the city’s main thoroughfare of Peachtree Road, including employers such as the Center for Disease Control, Internal Revenue Service, and the Peachtree–DeKalb Airport. Key findings include an estimated operating cost of $23,000 to $34,000 per month per vehicle, some 70 percent less than conventional human-driven, full-size buses on the same routes.

Chamblee eyes launching autonomous vehicle shuttle routes
(Video)

Driverless shuttles could be coming to DeKalb County city
By: Steve Deben
Visted: Mar 18, 2019 – 6:41 PM
Chamblee, US is preparing

Policy and Planning Priorities:
Land Use and Transit Planning, Pilot Zone Identification

In 2017, Chamblee, Ga. (pop. 28,000) began exploring the possibility of a shared autonomous vehicle pilot to provide last-mile connections at the city’s MARTA rail station. The $480,000 study is being conducted by SAE, an engineering firm, whose Urban Future is engaged in several AMP projects throughout North America. A draft of the completed feasibility study, which involved community group discussions and an online survey was adopted by city council in March 2018, and proposes a number of possible driverless shuttle routes serving the city’s main thoroughfare of Peachtree Road, including employers such as the Center for Disease Control, Internal Revenue Service, and the Peachtree-Dekalb Airport. Key findings include an estimated operating cost of $23,000 to $24,000 per month per vehicle, some 70 percent less than conventional human-driven, full-size buses on the same routes.

Press
Would metro commuters ride a self-driving shuttle?

March 16 - Mar. 15 - Shuttles without a driver behind the wheel could be rolling onto a busy DeKalb County corridor.

At a meeting next Tuesday, Chamblee City Council is set to vote on a resolution to apply for a grant from the U.S. Department of Transportation that would fund a set of self-driving shuttles.

City has looked into the possibility of autonomous shuttles, which would take passengers up and down Peachtree Road, since 2017.

whole idea of an autonomous shuttle for local mobility seemed intriguing,” said Mayor Eric Clarkson said in an interview. “We could really be on the leading edge if we get this grant.

A $10 million grant can be up to $10 million; if Chamblee applies and is chosen, the city would receive $100,000 toward the pilot program. Clarkson said he expects the...
5. Challenges

1. Tempering community expectations
2. Engaging project partners
3. Identifying alternative funding sources
6. Project Next Steps

1. Project Open House April 16\textsuperscript{th} – additional survey research and operations plan feedback
2. Operations Plan in process to be adopted May 2019
3. Late Summer/Fall Adoption of Best Practices Manual
USER AUTONOMY
Urban Design Best Practices
For Autonomous Transportation
in Periurban Communities

THE AUTONOMOUS ENVIRONMENTS GROUP
Professor Ellen Dunham-Jones
PhD Research Assistant Zachary Lancaster

In Cooperation With
City of Chamblee     Stantec

With Support From
Georgia Institute of Technology
Georgia Smart Communities Challenge
RESEARCH GOALS:

1. Help communities leverage AVs to reach their larger economic, environmental and mobility goals
   • focus on users and SHARED mobility
   • help Chamblee build a mobility asset, not a “pilot”

2. Advance understanding of design considerations to improve usage of AV shuttles
   • compete for riders by enhancing the user experiences of getting to, waiting for, and riding on AV shuttles
   • establish a data plan for future user feedback

3. Understand both the impacts of urban areas on AV shuttles and vice versa
   • establish means to benchmark the impact of Chamblee’s densification and urban improvements on local ridership and vice versa

PROPOSED BPs: 
PREPARING FOR

GROWING SAV USERS & DESTINATIONS

• **Zoning Reform** to shift from auto-oriented to denser, walkable/bikable development

• **Investment** in trails, streetscaping, and a better quality public realm

• **Incentives** for private redevelopment of under-used properties and parking lots

Chamblee’s past and ongoing planning and redevelopment efforts exemplify how to lay the groundwork for change
PROPOSED BPs: Getting To

CREATE SAFE, DIVERSE PLACES & NETWORKS

• Create networks connecting hubs, bus stops, and neighborhoods

• Improve routes to hubs and bus stops for safe and pleasant active transportation and diverse mobility modes

• Plan for diverse uses near hubs and bus stops of the right scale in the right place

Proposed connection of smart phone to smart street lights and bus stop lights to turn on and off as needed
PROPOSED BPs

MAKE WAITING A PLEASURE FOR ALL

• Build Bus Stops as Community Infrastructure: info about community events, neighborhood-specific info, recycling, little libraries, pop-up retail opportunities, etc.

• Provide Digital Infrastructure: wifi, on-time bus info, device charging, interactive games, etc.

• Insure Accessibility and Safety for All

Waiting For:

musical swingset in Montreal

possible integration of digital billboards for info, news, games
PROPOSED BPs:

Riding On

**PEOPLE-CENTERED**

- Focus on comfort for diverse users, including seating options for those who prefer isolation and those who prefer interaction
- Consider Attendant/Concierge serving multiple roles
- Collect data from users about their experience and preferences
- Use shuttle’s “eyes on the street” to assist in community policing

As fleet grows there’s no reason for one-size fits all. AVs come in all sizes and can be customized for local identity.
DATA PLAN FOR FUTURE USER FEEDBACK

DRAFT:

• getting to the shuttle
  • Survey perception of safety, preferred routes, modes and reasons for "getting to" the shuttle
  • Survey whether they would have driven to their destination without the shuttle
  • Request suggestions to improve user experience of “getting to” the shuttle
  • Benchmark urban changes: walkability, active frontages, growth in destinations, traffic counts

• waiting for the shuttle
  • Survey perception of safety, comfort, information for “waiting for” the shuttle
  • Request suggestions to improve the user experience of “waiting for” the shuttle
  • Test means to make waiting more social, more comfortable, more useful, more fun – and seek user responses

• riding on the shuttle
  • Survey perception of safety, convenience of stops, speed, and comfort of “riding on” the shuttle
  • Request suggestions to improve the user experience of “riding on” the shuttle
  • Test means to improve the user experience of “riding on”: attendant as tour guide, different seating arrangements, signage/text alerts with different social protocols
  • Psycho-analysis of rider posture
Background Research:

Analysis of 18 existing AV shuttle pilots:

- Avg 1.5 miles in length at $721M/mile
- Avg 7,500 riders/year, 9 passengers/vehicle
- 50% are on shared streets, 3 are on public streets, NONE are on non-fixed routes

Interviews of 11 Industry Experts

- Agree there’s not enough data to interpret significant differences in approaches yet
- Split on shared or private AVs as dominant alternative
- Industry worried about inconsistent regulations
- Cities worried about equity, accessibility and liability
- All agree that flexibility, scalability, and adaptability will provide better results than any one technology

Survey of 6 potential users

- Most likely to use it to run errands and go to shops (not connect to MARTA)
- Most interested in Shelter and Wifi at stations, less in News, Advertising or Games
- Most think $1-2 is a fair price
- Most think 10-12 passengers per van is most comfortable size
- Most would prefer to ride in silence than socialize