



City of Chamblee & Stantec
Greenlight Program

Driverless Shuttle Feasibility Study





Shared Autonomous Vehicles (SAVs)

Autonomous Busses
Self-Driving Shuttles
Micro-Transit



What is a Self-Driving Shuttle?

Self-Driving Shuttle Specifics



16'x7'x9'
typical size

25 mph
top speed

8-16 people
maximum capacity

3-10 hours
amount of time on a
single battery charge



Easy Mile
EZ10



Local Motors
Olli



Navya
Arma

Self-Driving Shuttle and Standard Bus Comparison



16 feet



40 feet

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

What is a Self-Driving Shuttle?



It's a bus without
a driver and...

...a streetcar
without the cost



MOMENTUM
STATION

delphi
EASY
MILE

eco



90%

By weight with 3D printed vehicle
using Direct Digital Technology

Bishop's Ranch
and Las Vegas
Driverless
Shuttle Pilot
Projects
& 41 others
across North
America



Chamblee, GA

LEGEND

Major Office Centers

Major Employment Centers

Mixed-use Centers

Major Retail Centers

Park

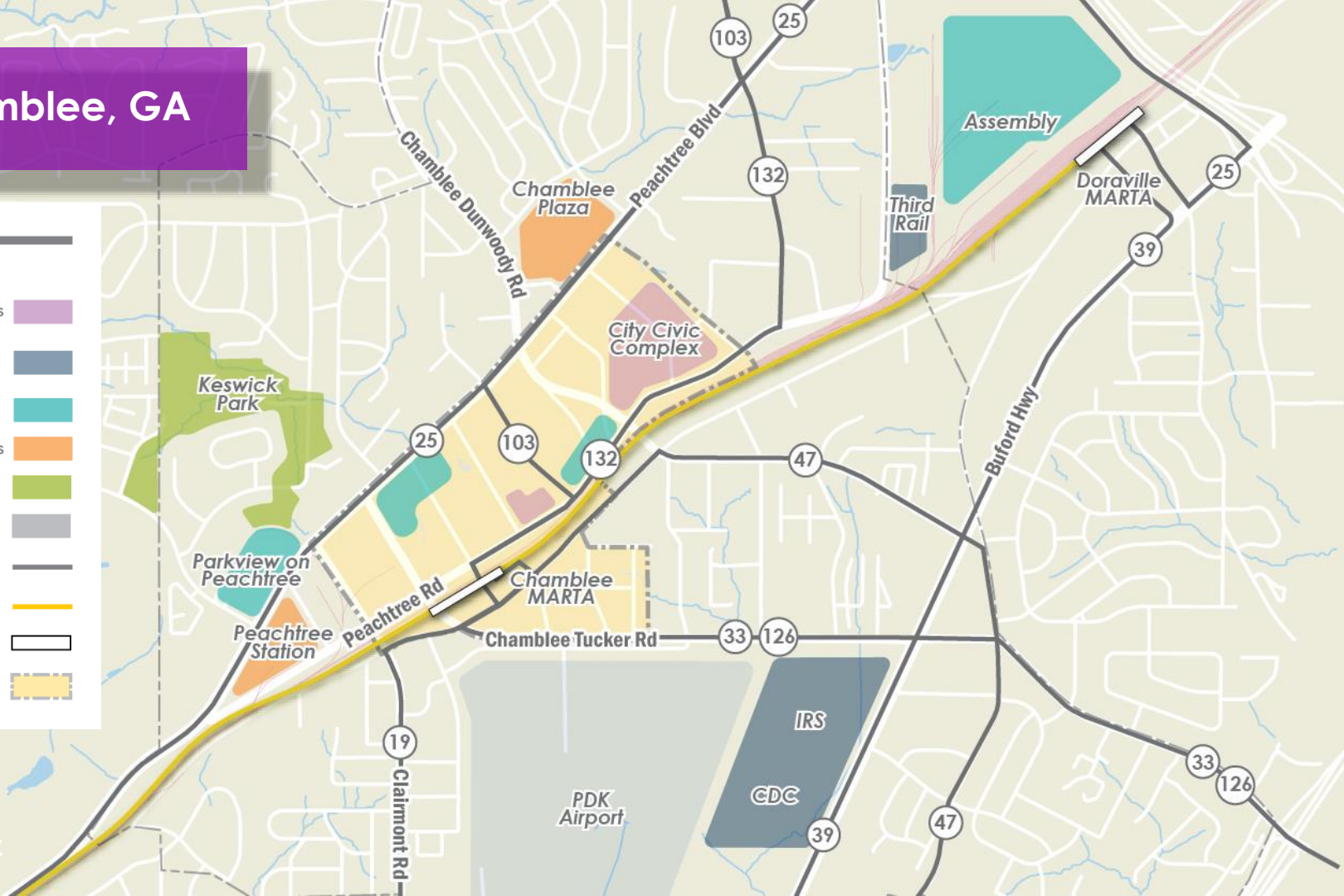
Airport

Bus Routes

MARTA Route

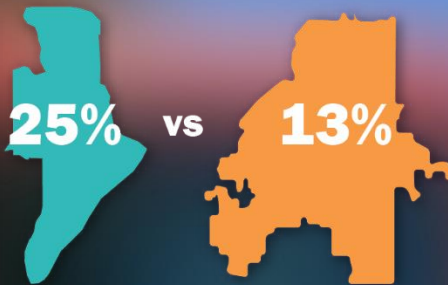
MARTA Station

LCI



Chamblee, GA

Driverless Shuttle Feasibility Study



The percentage of millennials/young adults (25-34) who call Chamblee home is nearly double the metro area population of millennials.

Chamblee is far more densely populated than Metro Atlanta (3,720 v. 630 residents per square mile) and is slightly more densely populated than the City of Atlanta.

Nearly half of the population in Chamblee is single.

Only 29% of the population have children under 18 years old.



Two-thirds of the Chamblee population, compared to one-third of the Metro Atlanta population rents.



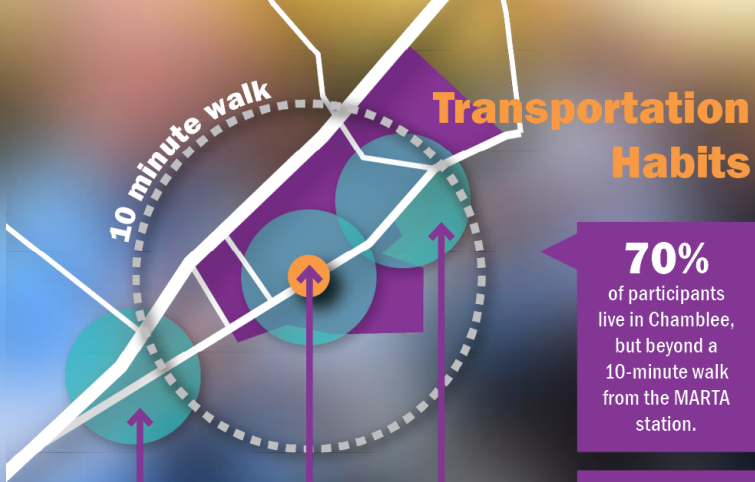
The median home value is higher in Chamblee, but there are also fewer single family homes available (as a percent of total).



Chamblee has a similar proportion of residents with a high level of education attainment, but a noticeably higher percentage of residents with limited education attainment.

The largest cultural group of residents in Chamblee are Spanish-speaking Hispanic (45%) compared to only 11% in Metro Atlanta.





Peachtree
Station

Chamblee
MARTA station

Downtown
Chamblee



91%
**drive
alone**

How do you
normally travel?



42%
**use MARTA
less than once
a month**

How often do you use MARTA transit?

70%
of participants
live in Chamblee,
but beyond a
10-minute walk
from the MARTA
station.

top 3
Chamblee
destinations.

Self-Driving Shuttles



87%
of participants
had heard of
autonomous
vehicles before
the survey













54%
of participants
had heard of
self-driving
shuttles before
the survey.



83%
of participants have a somewhat
to very positive general opinion
of self-driving shuttles.

City Civic Complex Route

Evaluation Criteria	Ranking
Number of residents along route 	
Number of job along route 	
Number of trips per hour with 2 vehicles 	
Compatibility with low speed shuttle 	
Increase in transit service coverage 	

LEGEND

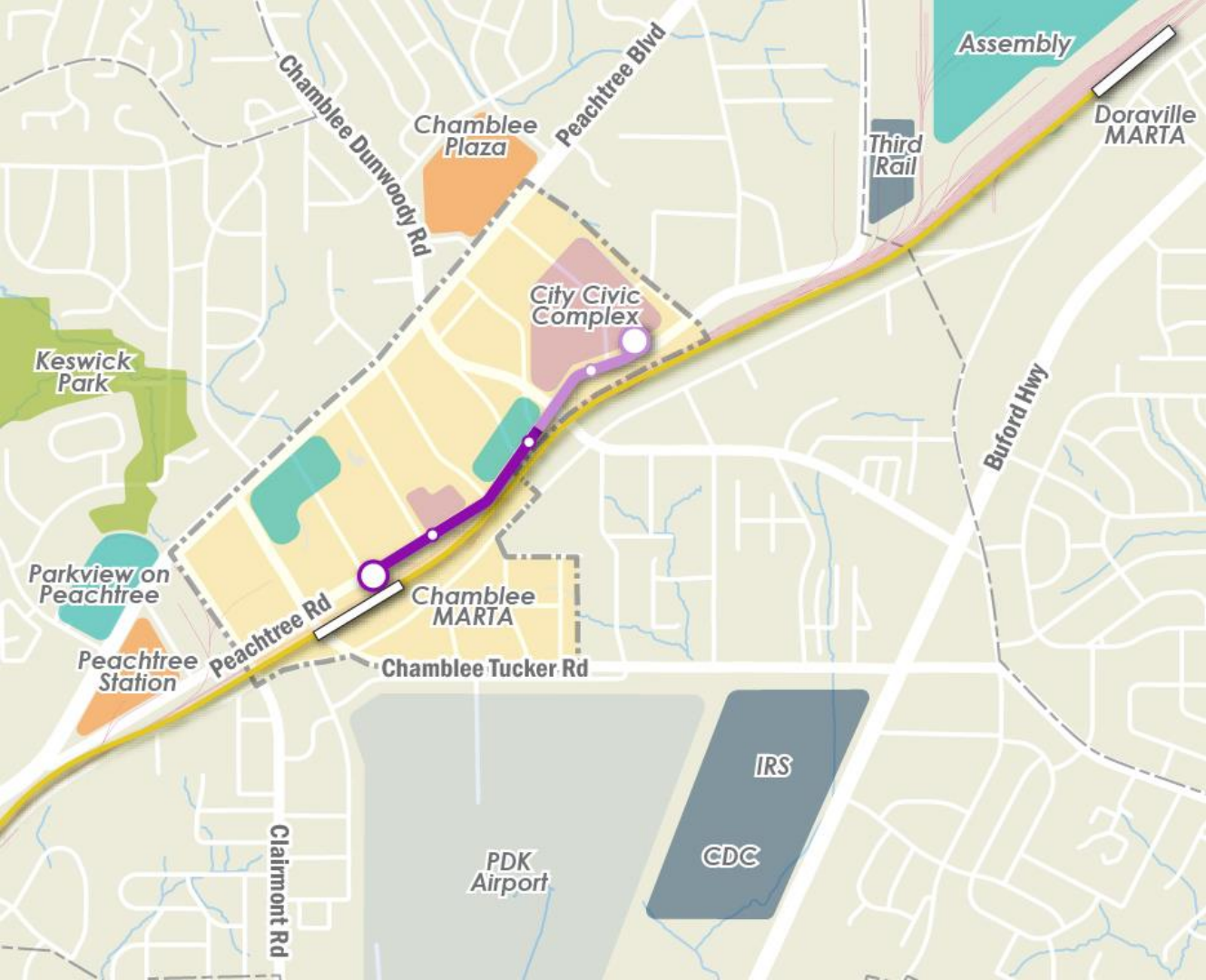
OK



Good



Great



Comparative Analysis

LEGEND

OK 

Good 

Great 

Number of residents along route



City Civic Complex



PDK Airport



Peachtree Station



Chamblee Plaza



Keswick Park



Third Rail/ Assembly



CDC/ IRS



Number of job along route



Number of trips per hour with 2 vehicles



Compatibility with low speed shuttle



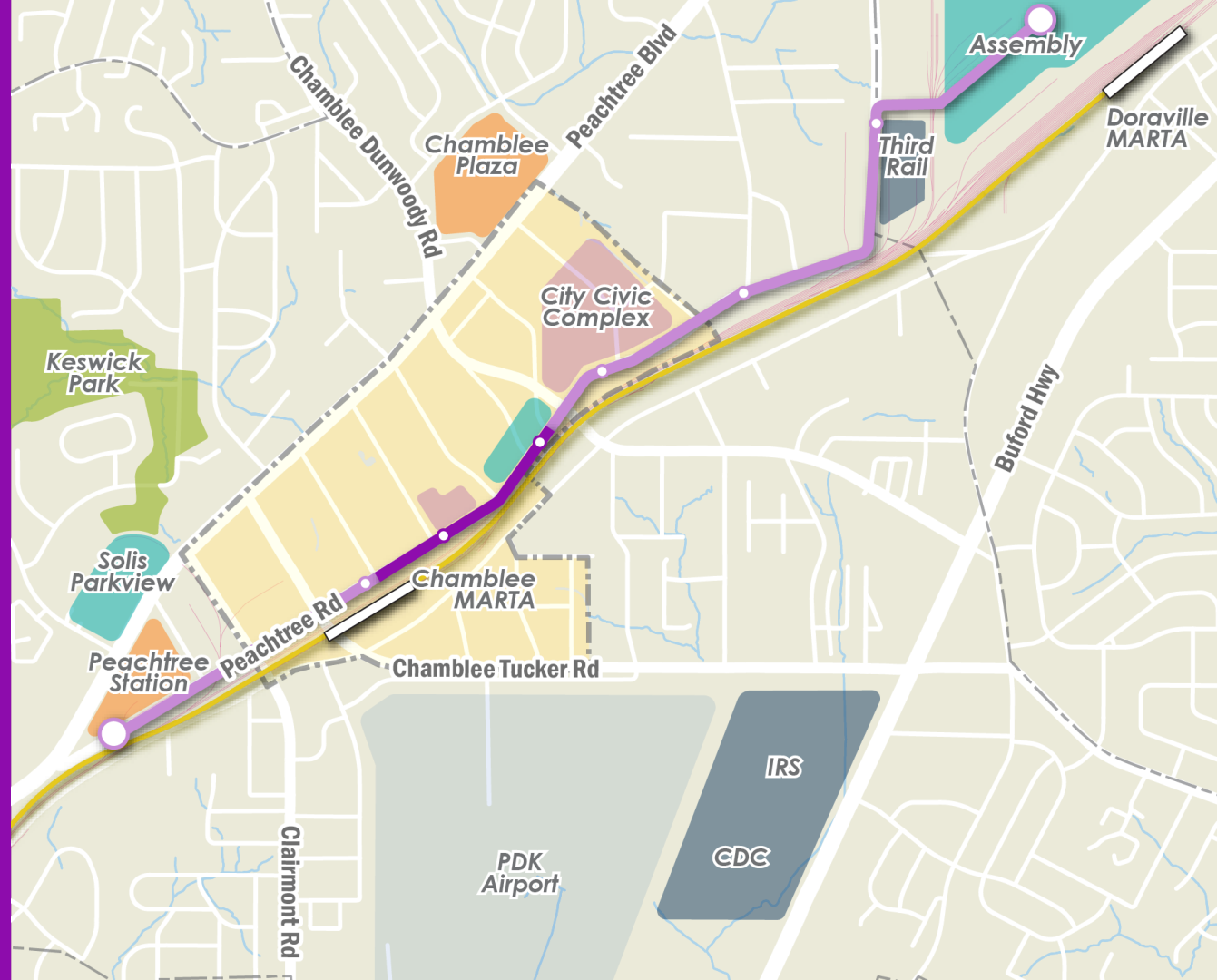
Increase in transit service coverage



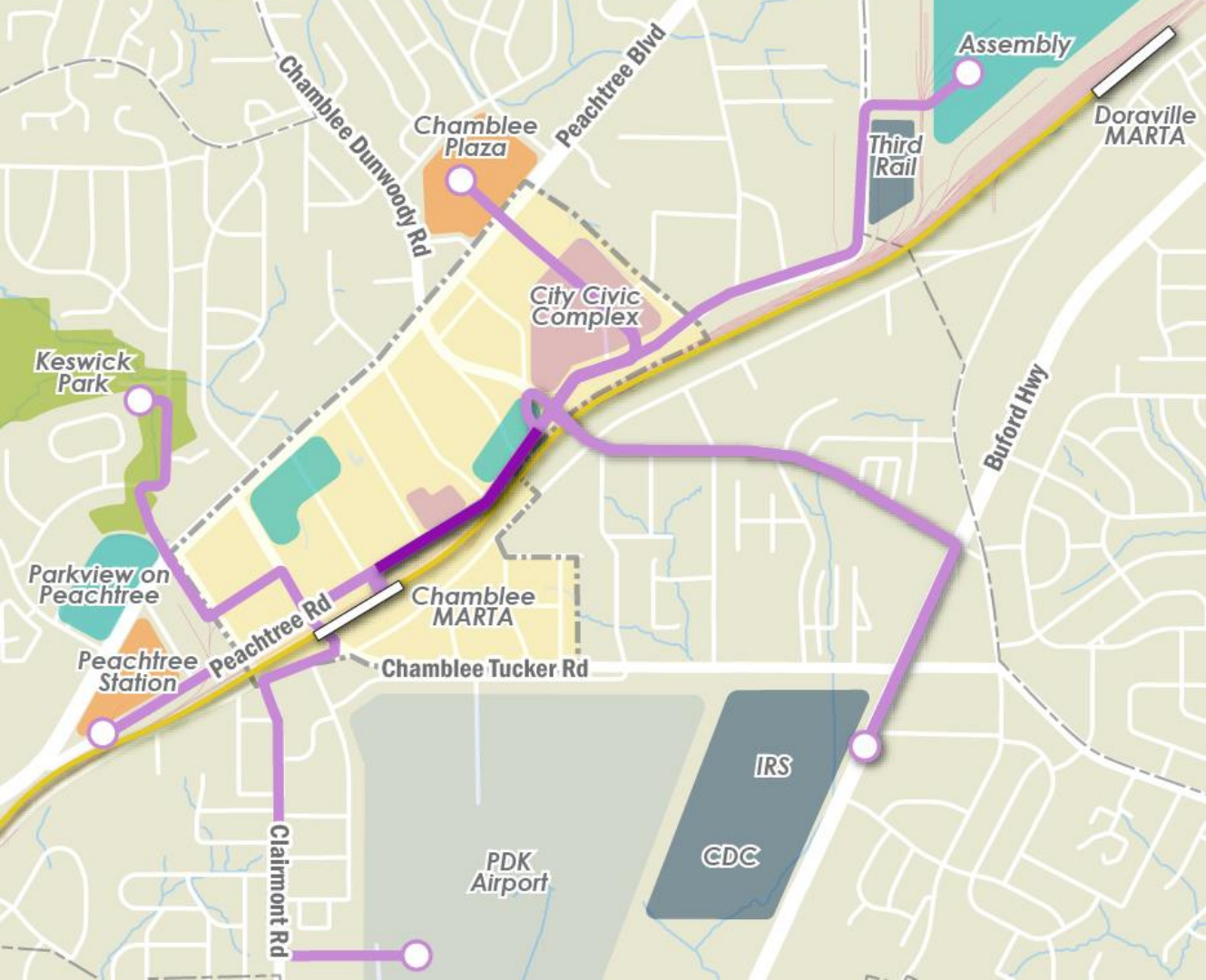
Preferred Routing

The principal elements:

- Cost
- Multi-modal connectivity
- Alignment with local goals and priorities
- Local support
- Corridor characteristics
- Destinations and employment
- Population



Potential Expansions



Peachtree Road at City Hall

Existing

Peachtree Road at City Hall

Conceptual Illustration
of a Future Stage



Peachtree Road at MARTA Station

Existing



Peachtree Road at MARTA Station

Conceptual Illustration
of a Future Stage



LANE
SMART
BUS



Implementation

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



In a short period of time, SAVs will be cheaper to operate than a regular bus or an equivalently-sized shuttle with a driver.



Next Steps



Costs and Benefits



What we know

- Nascent technology – lots to learn
- Operates best in low speed, low volume environments
- Will be less expensive to operate
- Highly adaptable to a range of transit environments
- Must be part of a larger, integrated mobility system
- Likely no impact on densification or parking reduction unless connected to fixed transit

Costs and Benefits



What we don't know

- Can the current set of manufacturers scale to bring down costs and go mainstream?
- Will these be able to interact with mixed-speed traffic in a pre-AV future?
- Will this replace busses?
- Will they be a legitimate mobility service or just a cheaper streetcar?

