City of Mountain View
Automated Guideway Transit (AGT) Study

November 6, 2019

Jim Lightbody, Project Manager
Mountain View

- City of 81,000
- Google, Intuit, Microsoft in North Bayshore
- Also LinkedIn, Samsung, others
- More jobs (90,000 +) than employed residents
- Caltrain and light rail stations
Bay Area Job Growth

Bay Area job totals
4.2 million

Aug. 2018
4,012,300

Dec. 2000:
3,614,600

Dot-com boom peak

900,000 Jobs
Bay Area Job Growth

Bay Area job totals
4.2 million

Aug. 2018
4,012,300

Dec. 2000:
3,614,600

Dot-com boom peak

Now
1,000,000 Jobs
North Bayshore Precise Plan

- Allows additional job growth – total of 10+ million sq. ft.
- Creates new residential neighborhoods – 10,000 units
- Walkable and highly sustainable
• Target 45% auto commute
• Currently about 56% - mainly corporate commuter buses, but limited public transit
• Includes protected bike lanes and transitways
• Trips internalized w/ housing
• More is needed!
AGT Phase 1 Study (2018)

- Determine which AGT technologies are feasible and best-suited to Mountain View travel needs and the characteristics of the Downtown-North Bayshore corridor
AGT Definition

- Automated
  - Cost-effective to provide high frequency service
- Guideway
  - Primarily exclusive right-of-way / grade separated to provide competitive travel time
- Transit
  - Serve peak demand with sufficient capacity
First & Last Mile Corridor

- GooglePlex
- NASA / Moffett Field
- Microsoft
- Caltrain
- Downtown

2.2 miles
AGT Technologies

• Aerial Cable
• Automated People Mover (APM)
• Automated Transit Network (ATN)
• Autonomous Transit
Preferred Concept

- Autonomous Transit recommended
  - 10 minute travel time
  - 30 second peak frequency
  - 20+ vehicle capacity
- Daily riders – 5,000 to 8,000
- Capital cost - $50 to 100+ million per mile
AGT Phase 2 Study (2020)

- Confirm & update preferred technology
- Evaluate alternative alignment segments
- Engage community
- Identify implementation strategy
City Issues and Challenges

- City is not a Transit Operator – pros and cons
  - Develop partnerships
- DBOM potential – income stream?
- Funding – who benefits
City Issues and Challenges

- Development Linkage - no new vehicle trips
- Community and Political Support
The Big Questions

- Are new technologies and elevated structures compatible with suburban land use patterns?
- Can new urban corridors be established?
The Travel Future?
Vehicles
Elevated Guideway Examples
At-Grade Guideway Examples
Proposed System Characteristics

- Speeds up to 30+ mph (less than 10 min. travel time)
- Vehicles – 20 to 30 riders; electric or battery powered
- 30 second peak frequency; 5 minutes off-peak
- Capability to operate on elevated guideway (costly) or in exclusive at-grade lanes (w/guidance elements; e.g. docking)
- Operating control system (e.g. dispatching, platooning)
- ADA compliance; safety and security provisions
Desired System Definition

- First/last mile connection
- Competitive travel time
- Moderately high capacity in peak
- Frequent, all-day cost-effective service
- Operational flexibility, particularly in off-peak
Status of the Industry

- ATN//PRT/GRT firms shifting focus to AVs
- Many autonomous shuttles pilots underway
- Deployable Autonomous Transit vehicles and technology may be available in 4-5 years
- Uncertainty about regulatory roles and process
- Regulatory questions make timeline unclear
- But operations in a controlled guideway helps
Next Steps

- Evaluation of alignment options, including elevated and at-grade concepts; coordination with North Bayshore and NASA development plans
- Further evaluation of technology options, regulatory timeline, optimum vehicle & fleet size
- Potential implementation and funding strategies; public/private partnership
“Without public policy intervention, however, the first steps into an autonomous future are almost certain to greatly exacerbate big-city traffic congestion.”

Bruce Shaller

THE NEW AUTOMOBILITY: LYFT, UBER AND THE FUTURE OF AMERICAN CITIES
Key Challenges for AVs

- Transit – Still needed; significant expansion if auto ownership drops; leverage automation
- Infrastructure – Streets and curbs will need to change; Will cities have the resources and will?
FIGURE ES1: Each curve on this chart represents the span (in years) of technology adoption. The steeper the curve, the more rapid the adoption rate. In recent years, the curves have become steeper than in the past.
FIGURE ES1: Each curve on this chart represents the span (in years) of technology adoption. The steeper the curve, the more rapid the adoption rate. In recent years, the curves have become steeper than in the past.
