Deploying Automated Vehicles

An Overview

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HNTB

Issues Confronting Public Transit Agencies
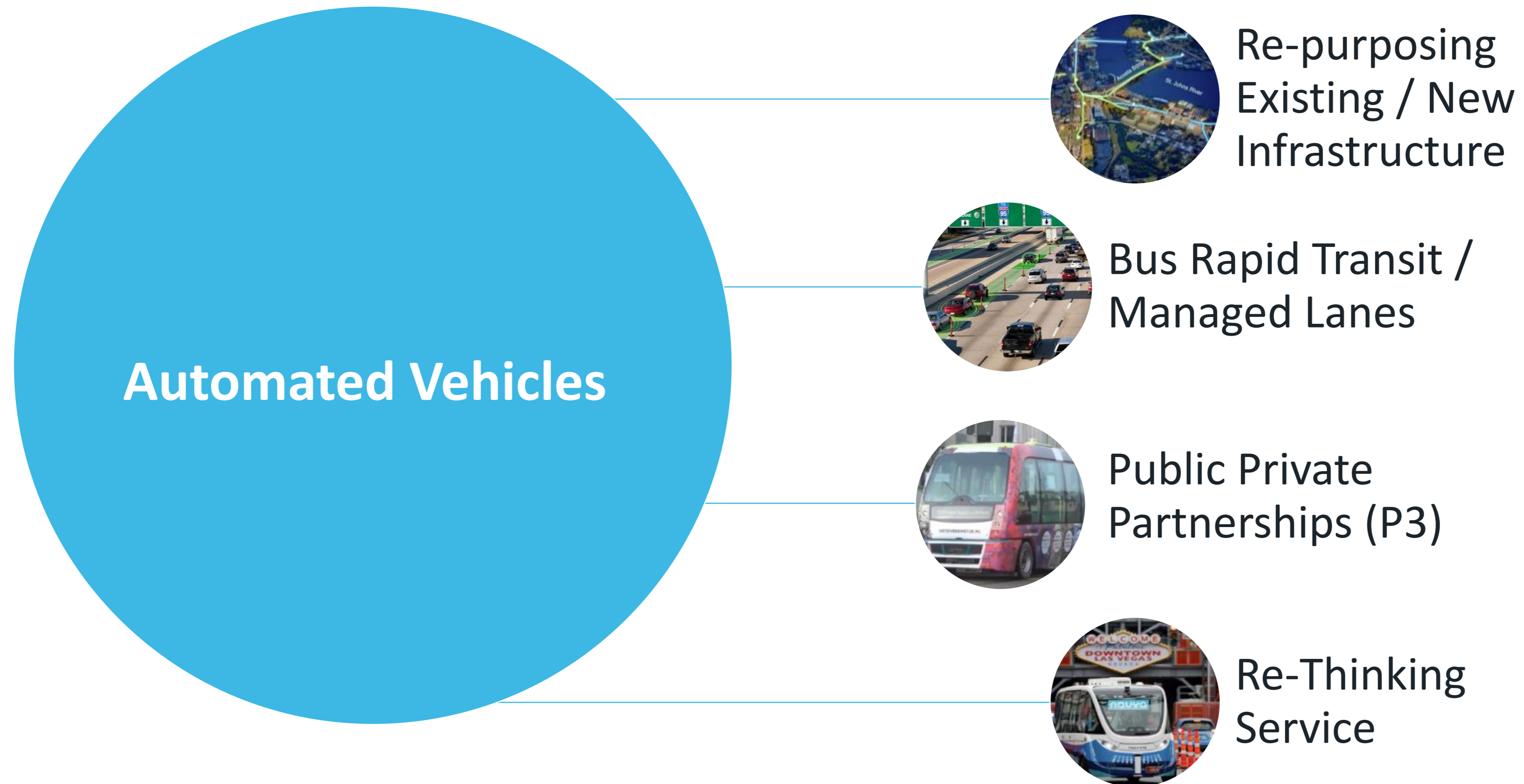
- Personnel

- Service Expectations

- Cost

- Sustainability

- Post-Covid World

HNTB

Changing the Current Transit Experience

- Personal Rapid Transit (PRT): 1-4 passengers

- Ground Rapid Transit (GRT): 4-24 passengers

- Bus Rapid Transit (BRT): 40+ passengers

Functionality	PRT	GRT	BRT
First Mile / Last Mile (FMLM)	x	x	
Tailored Services	x	x	
On-Demand Services	x	x	
Integrated Services	x	x	x

Business Cases

Automated Vehicles

Re-purposing Existing / New Infrastructure

Bus Rapid Transit / Managed Lanes

Public Private Partnerships (P3)

Re-Thinking Service

Re-purposing Existing Infrastructure

Source: Jacksonville Transportation Authority

Bus Rapid Transit / Managed Lanes
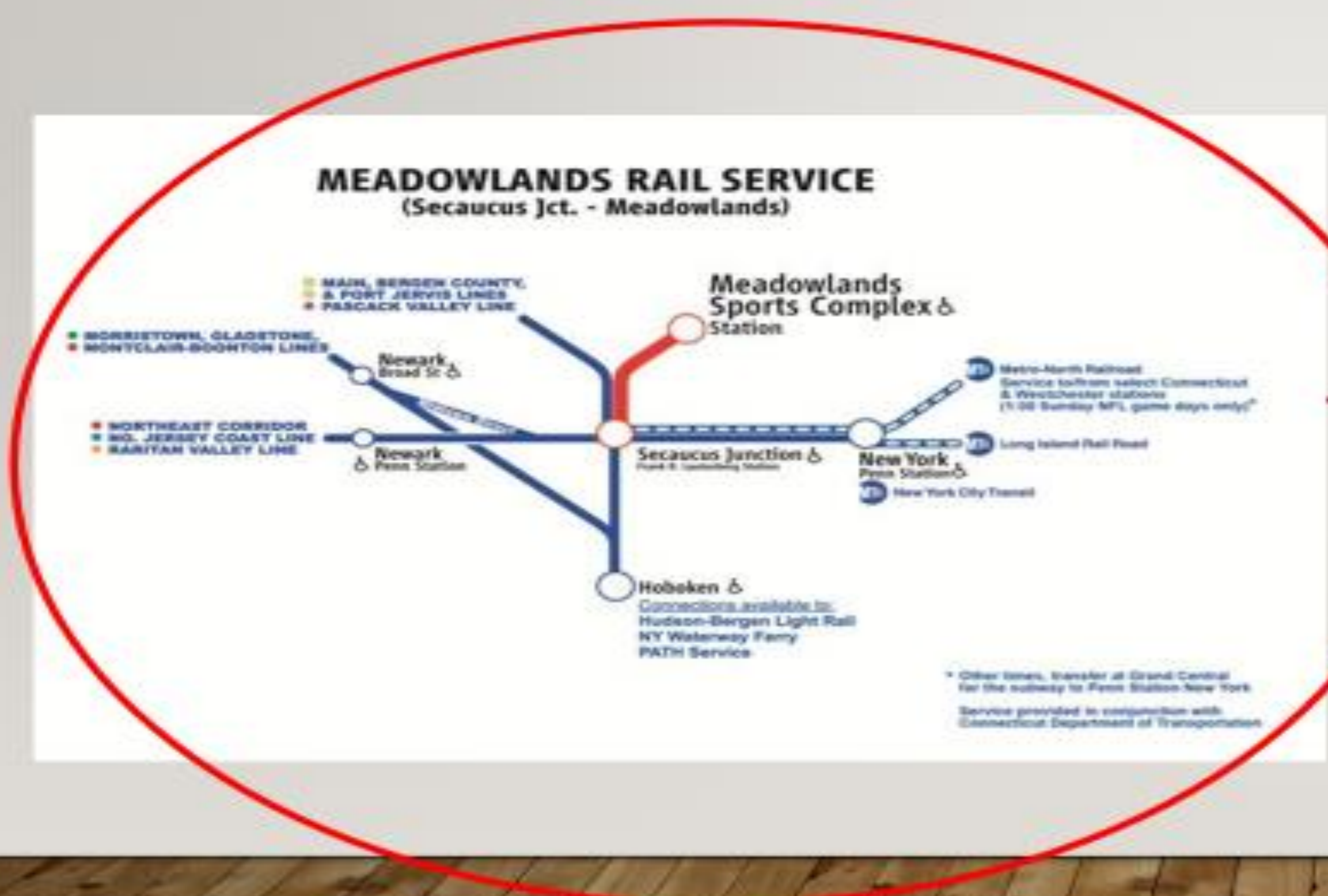

Photo Source: Thinkstock

Bus Rapid Transit / Managed Lanes

- Cooperative Adaptive Cruise Control

- Automated Merging

- Precision Docking

- Automated Bus Consortium

Re-thinking Service

Public Private Partnership Opportunities

FIGURE 6-4. **Cycling Network**

- —— Existing shared lane markings
- - - - Proposed shared lane markings
- ■ ■ ■ Proposed bike lane
- —— Existing path *
- - - - Proposed path *
- —— Recreational trail
- Ⓣ Proposed transit hub

* Including shared use paths and
separated pedestrian/cycling paths

Source: Princeton University

AVs Offer Much to Transit

Area of Comparison	AV	Traditional Transit Vehicles
Service Flexibility	Fixed Route Schedule and Point-to-Point / On-Demand	Fixed Route Schedule
Vehicle Fleet	Passenger AVs	Paired Rail Cars
Vehicle Size	2 – 24+ Passengers	57 – 103 passengers
Operating Headway	Shorter	Longer
Longitudinal / Lateral Control	Software and AV sensing systems	Tracks
Electrical Power Distribution	Opportunity / Battery Charging	Continuous external power source
Structural	Less Extensive	More Extensive
Maintenance Facility	Horizontal or Vertical	Horizontal
Vendor Options	Multiple	Multiple
Aligned with Future Mobility Trends	Yes	No
Scalability	More Scalable	Less Scalable
Resiliency	Easier	Less Easy
Proven Transit History	Limited	Widely deployed