Implementation & Equity 201:
The Path Forward to Complete Streets

Impact of Emerging Technologies on Complete Streets
Webinar begins at 1PM EDT
Impact of Emerging Technologies on Complete Streets

September 12, 2017
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@CompleteStreets
Technology has changed...

How we build and design roads

How we share and control our streets

How far and fast we travel
Rod Schebesch
Vice President
@Stantec
New Mobility & the Built Environment

How will emerging technology impact cities and streets?

Rod Schebesch
Vice President, Transportation
Stantec
Transportation Paradigm Shift

- Horse & Buggy → Model T
- Driven Vehicles → Driverless Vehicles
- Carbon Centric → Fully Sustainable
Automobile
- Cars parked 94% of the time
- 87% of daily trips in personal vehicle
- 38% of all trips are single occupancy
- Average cost to own new vehicle - $8,469/year

Land-Use
- Shift from dense, mixed-use to sprawl and single-use
- 3.4 parking spaces per car
- Loss of diversity and resilience
- 45% of errands are for personal shopping / groceries

Transit
- Low modal split
- Relatively high cost per passenger
- 70% of operating cost is the driver
- Minimal to no travel times savings
- System unchanged for decades

Historical Context
Vehicle Technology Redefined

- Automated Vehicles (AV)
- Connected Vehicles (CV)
- Shared Automated Vehicles (SAV)
Automated Vehicles

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Connected Vehicles - Vehicle to Everything

V2V, V2I, V2P
Shared Automated Vehicles
1. SAV can...
   - Replace 12 conventional vehicles
   - Serve 31-41 persons a day
   - Eliminate 11 parking spaces

SAV lifecycle = only 2 years

11% increase in passenger’s overall travel distance with pooling

Total Cost of a Conventional Vehicle (including time value) vs. SAVs
- $1.60/mi.
- $0.41/mi.


Emerging technologies impact how cities will:

- Operate
- Accommodate Growth
- Manage Congestion
- Improve the Economy
- Increase Safety
- Save Time
- Improve Quality of Life
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Profound Impact to our Cities

Soonest impact: SAVs in dense urban centers (1-5 years)
Translating impacts into benefits
Translating impacts into benefits

- Land Use
- Public Realm Design
- Transit
- Health and Safety
- Infrastructure
- Equity
Every development is a TOD

As SAVs extend transit’s reach beyond walkable radius, expand what you consider TOD
Parking demand will decline

- Eliminate parking minimums.
- Plan to phase out parking.
- Encourage high-tech parking systems.
- Explore district parking.
Parking demand will eventually vanish

- Encourage garages designed for future retrofit.
- Reimagine today’s surface parking as tomorrow’s development sites, green space.
Less parking lowers development costs

Translate savings into public benefits like affordable housing and open space.
Vehicles will need less space, lanes

- Update ROW design requirements.
- Repurpose extra roadway for people, bikes, drop-offs
Busy front doors and drop-off areas

- Anticipate heavy SAV and rideshare use in/around building lobbies and entrances.
- Streamline autonomous delivery protocols.
SAVs amplify accessibility to transit

- Integrate SAV into comprehensive mobility network
- Utilize SAV for first/last-mile connections
- Automate low-volume routes to improve viability
SAVs extend access

- Mobilize historically underserved populations
- Help reduce amount of subsidy needed for paratransit operation
- Improve accessibility to goods and services
SAVs promote healthier lifestyles, places

- Plan SAV networks to **reinforce walkability and biking**.
- Track **air quality** trends with shift to EV.
- Add trees and greenspace as road regulations ease.

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CAVs safely comingle with bikes, peds

- Soften divisions between modes.
- Route SAVs where cars aren’t traditionally welcome.
- Policies like a ‘Zombie Tax’ should be considered early.
CAVs require very little infrastructure

- Piggyback CAV tech with future infrastructure projects.
- Require CAV infrastructure as part of development delivery.
Summary of Benefits of Emerging Technologies

**Sustainable** – Less, smaller & safer cars
**Affordable** – Less capital construction
**Equitable** – Fair access to all
**Accommodating** – Provide capacity
**Influencing** – Enhances transit
**Disruptive** – Employment
**Diverse** – multimodal and mixed-use
What Should Cities Do?

• PARTICIPATE – DON’T WAIT
• Baby steps
• Gain Stakeholder & Public Confidence
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Tuesday, September 12, 2017

www.T4america.org
@t4america
Beyond Traffic: The Smart City Challenge

1,400 local officials, companies, academics and non-profits joined our webinars

800 people participated in our Smart City Forum

300 companies have expressed interest in partnering

78 applications received for the Smart City Challenge

7 Smart City Challenge Finalists to be announced in March at SXSW

1 Smart City Challenge Winner announced in June

#DOTSmartCity  www.transportation.gov/smartcity
SMART CITY CHALLENGE

• Too focused on the tech
• We need to be intentional about equity and accessibility
• The 20th century regulatory framework no longer applies
• Entrepreneurial cultural shift is necessary
• Departmental and regional collaboration is key

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SMART CITIES COLLABORATIVE
COLLABORATIVE OUTCOMES

• Tangible outcomes for each city
• Open sourcing their experience and processes
• Developing model policies
• Launching a pilot project
COLLABORATIVE CITIES

- Austin
- Centennial
- Chattanooga
- Denver
- Lone Tree
- Los Angeles
- Madison
- Miami-Dade County

- Minneapolis/St. Paul
- Nashville
- Portland
- Sacramento
- San Francisco
- San Jose
- Seattle
- Washington, DC
AUTOMATED VEHICLES

• San Francisco
  – Treasure Island Pilot

• San Jose
  – AV RFI
SHARED MOBILITY

• Los Angeles
  – On-demand microtransit

• Centennial, CO
  – Equity and access for seniors
DATA ANALYTICS

- Washington, DC
  - District Mobility
- Seattle
  - Trusted Data Collaborative
TRANSFORMATIONAL MOMENT
TRANSFORMATIONAL MOMENT
WHAT WE’VE LEARNED

- Interconnected nature of smart mobility projects
- We need to be intentional about equity and accessibility
- Departmental and regional collaboration is key
THANK YOU

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Questions?

Type your questions in the ReadyTalk chat box
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Join us for our next webinar on developers, public/private partnerships, & Complete Streets

October 18, 2017 1-2PM EDT
Upcoming AV Tweet Chat

#AVChat
Join a live Twitter discussion on challenges and opportunities related to automated vehicles, pedestrians, and bicyclists
Wed., Sept. 20
2 pm ET
@pedbikeinfo
Pedestrian and Bicycle Information Center pedbikeinfo.org

@CompleteStreets