Implementation & Equity 201:

The Path Forward to Complete Streets

Impact of Emerging Technologies on Complete Streets

Webinar begins at 1PM EDT

Smart Growth America
Improving lives by improving communities

National Complete Streets Coalition

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September 12, 2017

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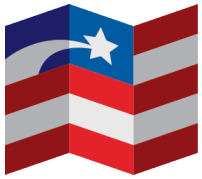

Transportation for America

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Smart Growth America
Improving lives by improving communities

National Complete Streets Coalition

Heather Zaccaro

Health Program Associate
@CompleteStreets

https://www.pinterest.co.uk/pin/74027987596001212/

Technology has changed…

http://nygeschichte.blogspot.com/2016/02/the-broadway-squares.html

How we build and design roads

http://www.detroitnews.com/story/news/local/michigan-history/2015/04/26/auto-traffic-history-detroit/26312107/

How we share and control our streets

http://journalstar.com/news/local/govt-and-politics/smarter-intersections-coming-to-lincoln/article_80ae18e5-5e97-57ac-bdb2-dd722f97c177.html

How far and fast we travel

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Rod Schebesch

Vice President

@Stantec

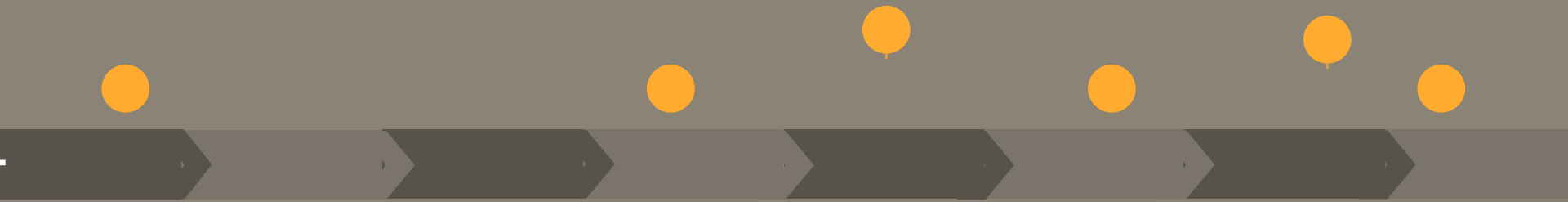
New Mobility & the Built Environment

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



Historical Context

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

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


Vehicle Technology Redefined
• Automated Vehicles (AV)
• Connected Vehicles (CV)
• Shared Automated Vehicles (SAV)
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Automated Vehicles


Connected Vehicles - Vehicle to *Everything*
V2V, V2I, V2P
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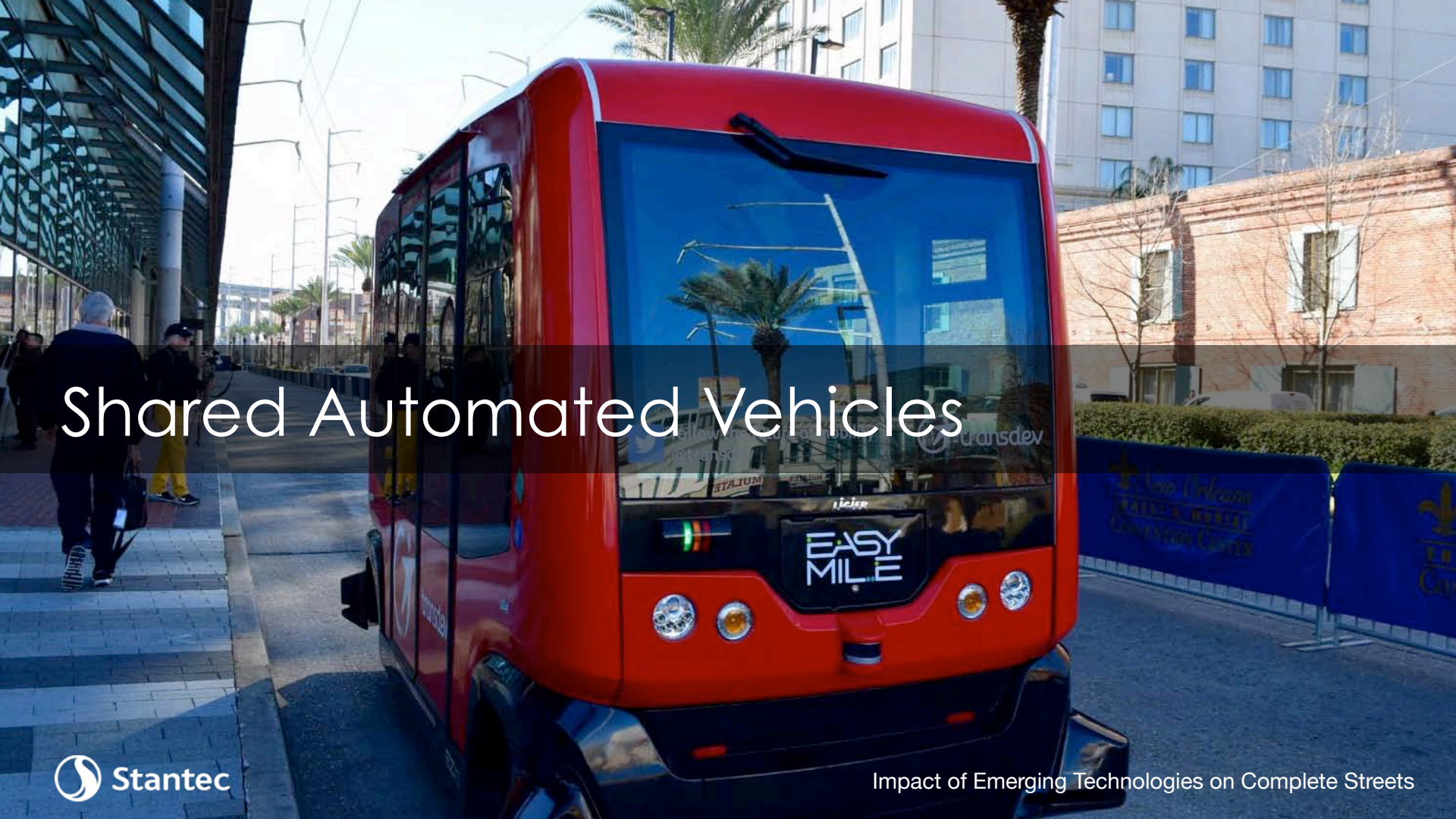
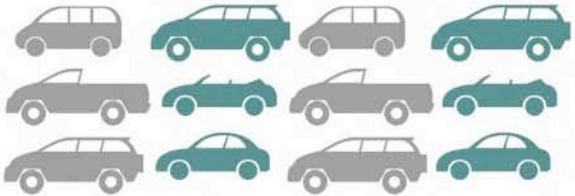


Shared Automated Vehicles

1 SAV can...

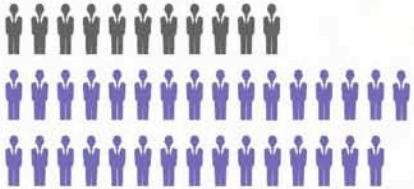
SAV lifecycle = only 2 years

Replace



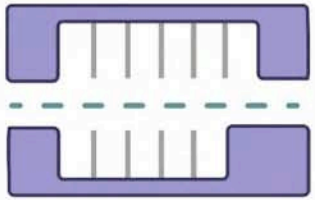
12 conventional vehicles

Serve



31-41 persons a day

Eliminate



11 parking spaces

11%

increase in passenger's overall travel distance with pooling

Source: D. J. Fagnant, K. M. Kockelman (2014), The travel and environmental implications of shared autonomous vehicles, using agent-based model scenarios , Transportation Research Part C: Emerging Technologies, 40, March 2014.

$1.60/mi.

Total Cost of a Conventional Vehicle (including time value) vs. SAVs

$0.41/mi.

Source: L.D. Burns, W.C. Jordon, B.A. Scarborough (2013), "Transforming personal mobility", Earth Island Institute, Columbia University, 2013.

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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)

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Translating impacts into benefits

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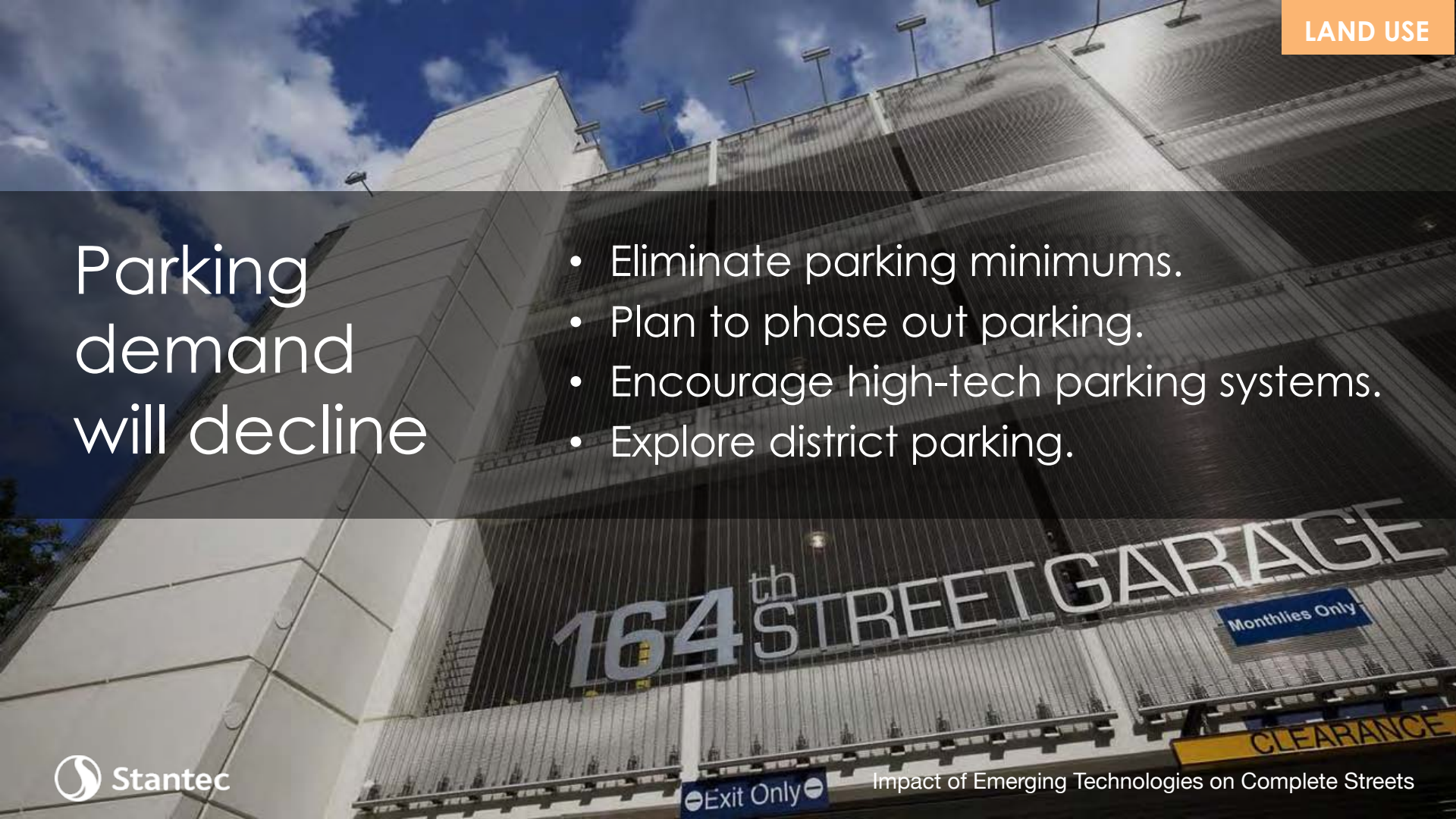
Translating impacts into benefits

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.

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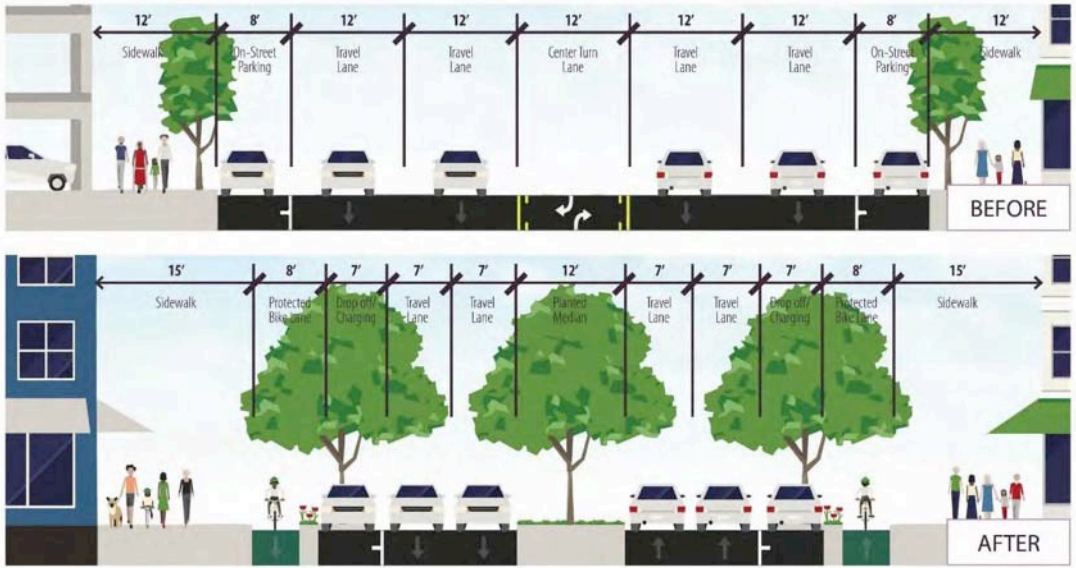
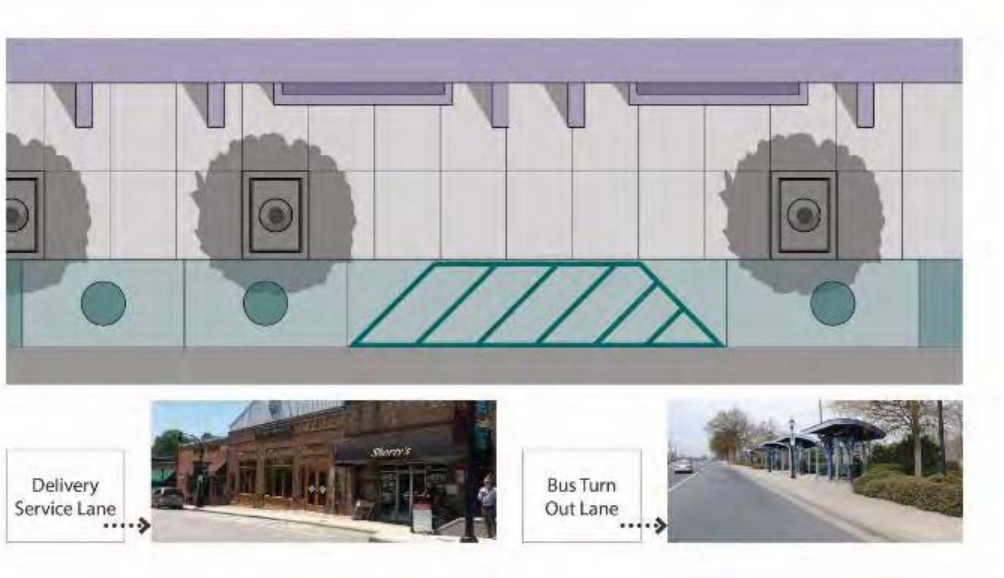
Vehicles will need less space, lanes

- 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.



TRANSIT

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

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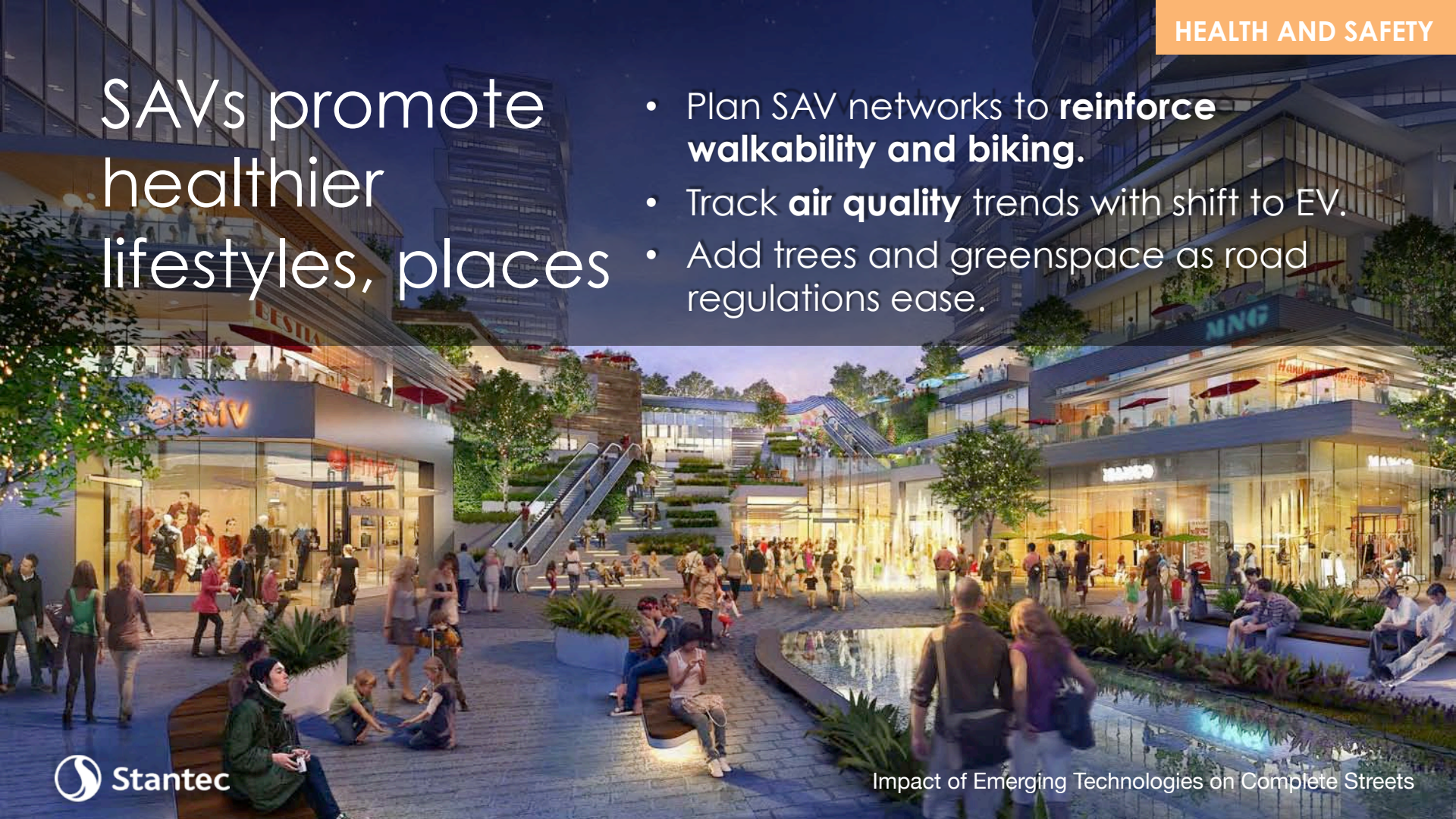
SAVs extend access

- 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.



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.

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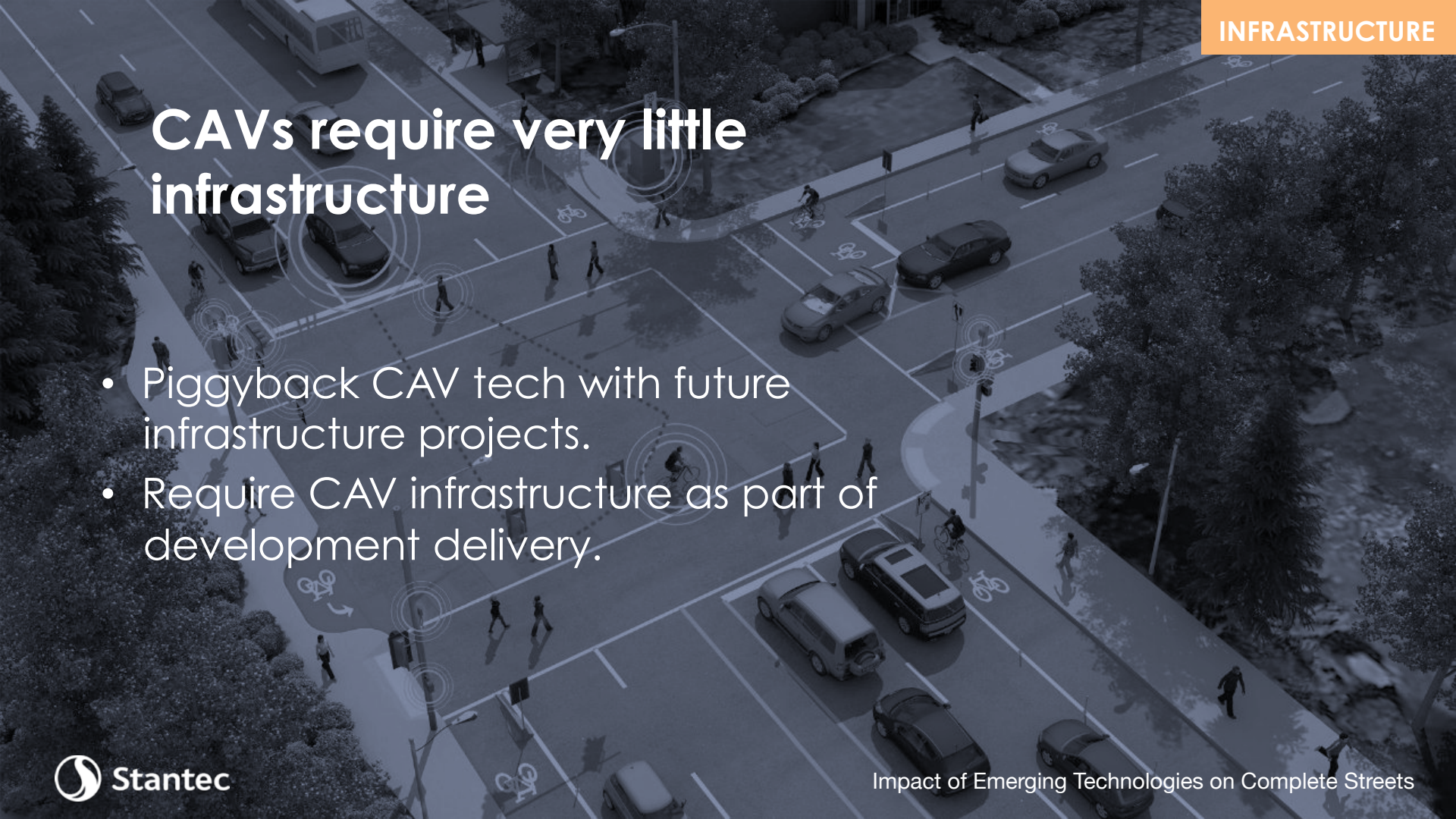
CAVs require very little infrastructure

- 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

Transportation for America

Russ Brooks

Director, Smart Cities

@T4America

Transportation for America

Impact of Emerging Technologies on Complete Streets

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

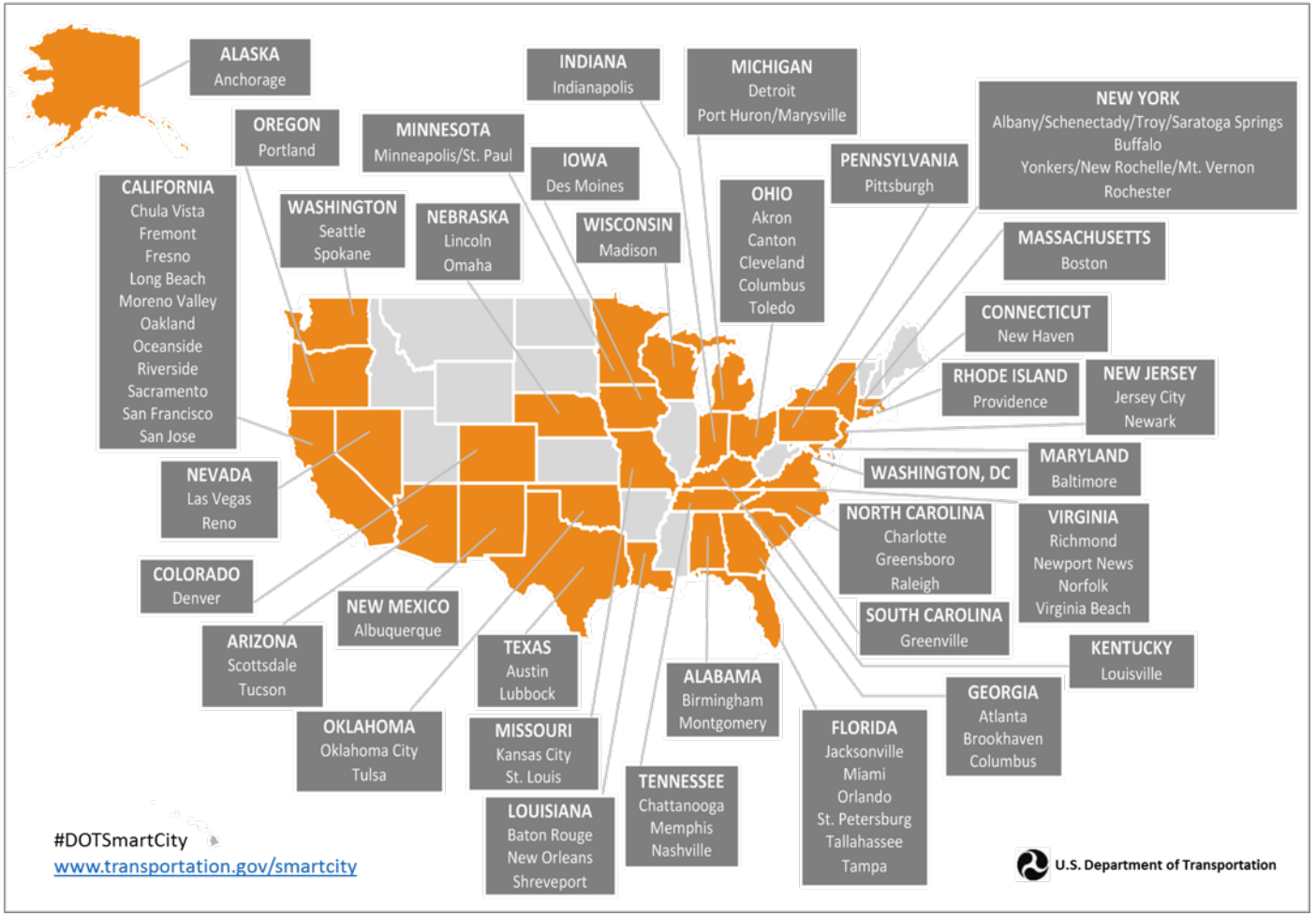
800 people participated in our Smart City Forum

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



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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

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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

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AUTOMATED VEHICLES

- San Francisco
  - Treasure Island Pilot
- San Jose
  - AV RFI

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SHARED MOBILITY

- Los Angeles
  - On-demand microtransit
- Centennial, CO
  - Equity and access for seniors

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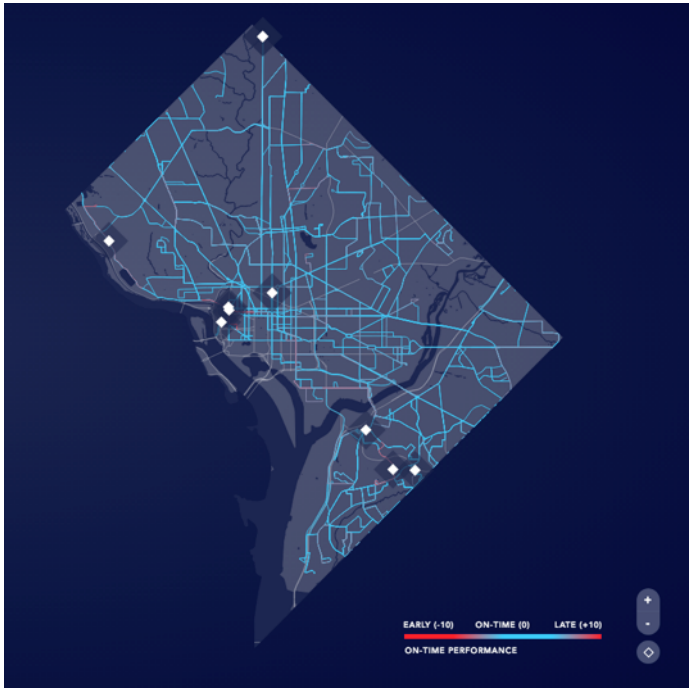
DATA ANALYTICS



- Washington, DC
  - District Mobility
- Seattle
  - Trusted Data Collaborative

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TRANSFORMATIONAL MOMENT

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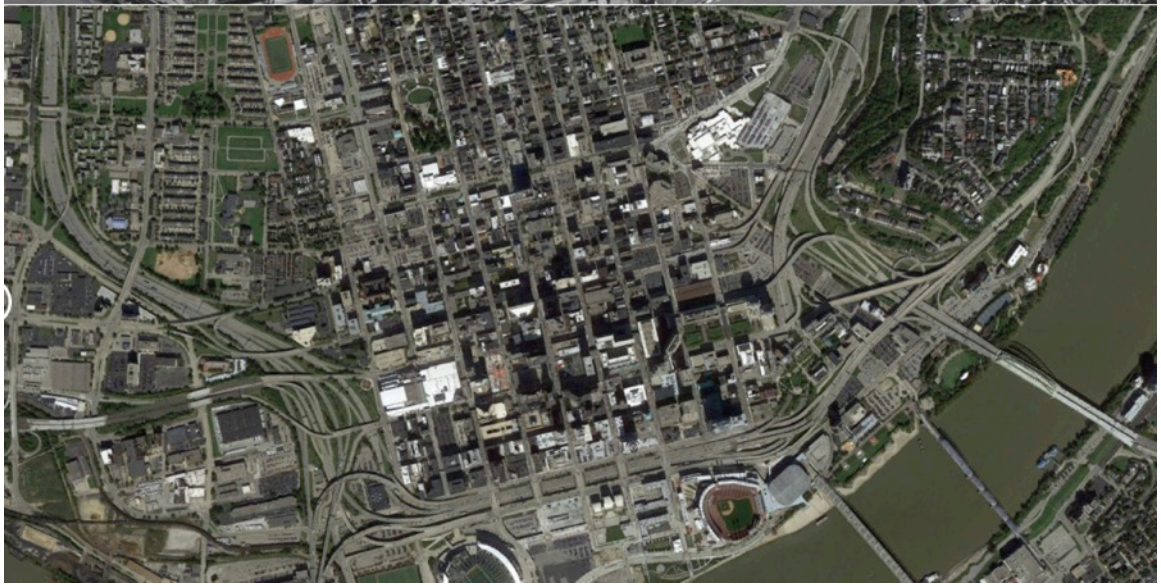

WHAT WE'VE LEARNED

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

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THANK YOU

Russ Brooks

Transportation for America

russ.brooks@t4america.org

@t4america

Robert Fox Benner

Transportation for America

robert.benner@t4america.org

@t4america

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Questions?

Type your questions in the ReadyTalk chat box

Implementation & Equity 201:

The Path Forward to Complete Streets

Join us for our next webinar on developers, public/private partnerships, & Complete Streets

October 18, 2017 1-2PM EDT

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Upcoming AV Tweet Chat