SETTING THE STAGE FOR CONNECTED & AUTONOMOUS VEHICLES

• Transit Playing a Bigger Role
• Government Role: Prioritizing Our Street Space
• Establish Goals that Move People, Think Beyond Technology
• Everyone at the Table: Partnerships & Programming
ON THE UP AND UP

- Transit Usage up 38% in past 20 years
- Larger systems, greater coverage
- 47% increase in passenger miles
- More ADA-accessible providers
- Ridership on pace with population
- Transit as proven economic generator
  - 3x - 4x boost in economic activity
  - Investments less costly than direct costs of congestion

Source: APTA 2017 Factbook

WHO’S INVESTING IN TRANSIT

• Seattle expanded light rail, bus
  • 70% downtown commuters non-auto
  • 30% solo driving since 2010
  • Added 45,000 jobs 2010-2016

• Downtown Denver Collaborative
  • 30% population growth
  • 70% of commutes <5 miles are non-auto
  • Bus and BRT investments downtown

Sources: Commute Seattle.com
DowntownDenver.com
BUT THERE’S MORE WORK TO BE DONE

• Economic Displacement
• Equity Issues around Mobility
• Costs are Up and Ridership Uncertain
• The Great Shift: Transit Riders attracted to TNCs
San Francisco

- Research led by MPO
- Majority of TNC trips occur downtown
- Average 170,000 daily TNC trips
- Over 550,000 VMT per weekday

Source: SFCTA TNCs Today

Boston

- About 96,000 daily trips made by TNCs
- 35 million trips made in 2017
- State experienced 65 million trips made in 2017
- Taxing TNCs about $0.20 per trip (5% to MA Transportation Fund)

Source: Boston Globe, May 1, 2018.
STAGE #1: PRIORITIZE OUR STREET SPACE

- Streets are Public Space
- Streets accommodate Public Needs
- Streets are about *Moving People*
- Curb-to-Curb Thinking
QUICK WINS: HIGH-OCCUPANCY TRAVEL LANES ON STATE ROADS

https://youtu.be/yBhvySmZjZk
**BUS LANES ON ARTERIALS**

- MBTA turns pilot into permanent bus lane
- Average 19,000 riders per day on bus route
- Bus travel times drop 20 - 25%
- 94% of transit riders and cyclists supported the project
- TRANSIT HAS COMPETITIVE TRAVEL TIMES!

Source: https://usa.streetsblog.org/2018/06/08/boston-makes-its-bus-lane-experiment-permanent/
STREAMLINE THE PROCESS FOR CONNECTED & AUTONOMY

• Dedicated Bus Lanes
• Curbside Management
• Enhanced Amenities
• Lane prioritization
• Good Urban Design

STAGE #2: ESTABLISH GOALS FOR PEOPLE AND TECHNOLOGY

• People First, not Technology
• Data Sharing is Key!
• Mobility as a Service (Maas)
• Benchmarking & Metrics
• Understanding Context & Transit Needs
  • Urban Goals
  • Suburb/Rural Goals
URBAN GOALS

• Safety
• Curbside Management
• Signal Timing/ITS
• Lane Prioritization
• Congestion Pricing
• Mobility Hubs & Sharing

SUBURBAN & RURAL GOALS

- Equity
- Blend of Fixed & On-Demand Service
- In-House Management is costly
- Leverage partnering with private companies
- High-Occupancy Lanes

Source: https://transitcenter.org/2018/05/15/adding-flexible-routes-improve-fixed-route-network/
STAGE #3: EVERYONE AT THE TABLE: PARTNERSHIPS & PROGRAMS

• Transit best utilizes our roadway capacity
  • Highest and Best Use
• Getting People to/from Transit is Key
• Age of Micro-Mobility
  • Adaptive Travel Choices
  • More is Better
• Building a Collective Business Model
TRANSIT + TNCS: AN INTERESTING RELATIONSHIP

- LA Metro
  - Ongoing testing to get people to transit
  - Partnership with TNCs & Taxis
  - Coordination with Via

- San Francisco
  - Uber partnership for Parkmerced
  - $100 Subsidy/month
TRANSIT + TNCS: AN INTERESTING RELATIONSHIP

- Oregon Health & Sciences (OHSU)
- Peak & Off-Peak Lyft Subsidized Rides to Transit
- Employee Program

Source: [https://www.ohsu.edu/xd/about/services/transportation-and-parking/transportation-options/upload/OHSU_TDM_Strategy_Dashboard.pdf](https://www.ohsu.edu/xd/about/services/transportation-and-parking/transportation-options/upload/OHSU_TDM_Strategy_Dashboard.pdf)
TRANSIT & MICRO-MOBILITY: FIRST-/LAST-MILE

- Focus on High-Quality Transit Nodes
- 47,000+ Bike Spaces at Stations in U.S.
- Bikeshare+Transit Opportunities
  - Easy Payment Process on One Card (e.g., Pittsburgh)
  - Easy Attachment to Card (e.g., Milwaukee)
  - Co-Branding Opportunities

Source: http://www.urbandesignla.com/resources/docs/MobilityHubsReadersGuide/lo/MobilityHubsReadersGuide.pdf
TECHNOLOGY AS A TOOL, NOT AN END GAME

• AV-only network not financially feasible

• Envisioning an AV car or shuttle at 100% occupancy 24/7 not possible in U.S.

• High-Occupancy CV/AV Infrastructure is Critical

• Adaptive Signalization

• Safety, safety, safety
  • AVs must be fully compliant

• Speed Controls
DOTs PLAYING A ROLE

• Tackling Congestion
  • Wiggle Room for More Space
  • Managed Lanes

• Financing more Mobility Options

• Coordination with Transit Agencies

• Understanding Business Model
  • Traditional Ownership
  • Subscription

• Taking a Position with Private Industry
  • Develop/Enact Strict Policies and Procedures
  • No One Left Behind (Equitable MaaS)