Planning and Mobility Impacts of AV/CVs in an Urban Setting

2017 Transportation Short Course

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Transportation Status Quo (DFW To 2040)

Public sector: $120+ billion investment
Vehicle Miles Traveled: Up 55%
Highway capacity: Up 18%
Vehicle hours in delay: Up 136%
Highway deaths: 15,000
Highway injuries: 1,000,000
Environment
Public health
City Transport System: Ripe for Renewal

- Limits from human vehicle operation:
  - Speeds
  - Capacity

- Inefficiencies:
  - Low load factors
  - Low vehicle utilization rate

- Performance:
  - Congestion
  - Safety

Consumer preferences
We can't keep building highways for one person in one car going to work to solve congestion.
Cities now asking

What if we never build another parking spot?

What if we never widen another roadway?

Fundamental Questions
Amount of space required to transport the same number of passengers by car, bus or bicycle.

Car?

Bus?

Bicycle?

(Poster in city of Muenster Planning Office, August 2001)
Credit: Press-Office City of Münster, Germany
City Reorientation of Transportation Priorities

1. Support short-distance trips equally as long-distance trips
2. Give people multiple mode choices
3. Make more efficient use of streets
4. Use price for demand management
5. AVs serve cities; cities not at service of AVs
How many people can this street serve per hour?

Up to 29,600

Source: NACTO Transit Street Design Guide
AVs and Cities

Robo-taxis
AV shuttles
Buses
Delivery
Personal
Metro Game Changer: Hyperloop
Questions and Comments
Contact Information

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