Planning for Autonomous Vehicles

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When CDTC first started talking about autonomous vehicles in 2013, the public hadn’t heard much about them yet.

There is still debate about when they will become common place.

CDTC has incorporated connected and autonomous vehicles into the New Visions 2040 Plan.
Easter morning 1900: 5th Ave, New York City. Spot the automobile.

Source: US National Archives.
Easter morning 1913: 5th Ave, New York City. Spot the horse.

Disruption can happen very fast...

Source: George Grantham Bain Collection.
Potential Benefits of Autonomous Vehicles:

• Potential for near zero crash fatalities, near zero crash injuries
• Reduction in incidents on the expressways, resulting in greatly reduced congestion
• Significantly higher capacity on existing pavement, reducing the need to widen roads
• Seniors could “drive” longer, people with disabilities could have greater mobility
Potential Issues with Autonomous Vehicles:

• Equitable access to AV mobility for lower income groups
• Increases in ride hailing, reduction in car ownership?
• Will streets need to be redesigned? Maintaining complete streets and walkability
• Transition period when only some cars are self driving
CDTC New Visions 2040: Autonomous Vehicles:

• Acknowledge uncertainty in planning:
  – Will AV’s increase suburban sprawl?
  – Will AV’s make the cities more attractive?

• **CDTC Recommendation**—continue to support smart growth and urban reinvestment
CDTC New Visions 2040:
Autonomous Vehicles:

- Acknowledge uncertainty in planning:
  - Will AV’s replace transit?
  - Will AV’s make transit more economical?

- CDTC Recommendation—continue to strongly support transit

Source: METRO Magazine
CDTC New Visions 2040:
Autonomous Vehicles:

- Acknowledge uncertainty in planning:
  - Will AV’s increase VMT while real capacity increases?
  - CDTC Recommendations—risk assessment in highway design—one more reason not to widen the Northway
  - Encourage electric vehicles
CDTC New Visions 2040: Autonomous Vehicles:

- Acknowledge uncertainty in planning:
  - Will AV’s create inequities where only affluent populations can afford AV’s?
  - CDTC Recommendation — support equity and environmental justice

- One principle could be equity of public investment that supports AV’s
CDTC New Visions 2040: Autonomous Vehicles:

• Acknowledge uncertainty in planning:
  – Will urban streets need to be retrofitted?

  – CDTC Recommendation — support complete streets

• MPOs could consider providing funding for city street retrofits
NACTO Blueprint for Autonomous Vehicles:

• “One century ago, as the automotive age swept across the nation, cities responded not by adapting cars and trucks to the varied uses of the street, but with a relentless clear-cutting of urban roads, removing all obstacles from curb to curb- including pedestrians- and all but eliminating street life.”

- Janette Sadik-Khan
Excerpt from the NACTO Blueprint for Autonomous Vehicles:

**Safety is the Top Priority**

Streets should be designed for the safety of all users, with special attention necessary for pedestrians and cyclists. Cities should require that highly automated vehicles be programmed for safe, slow speeds on city streets, with mandatory yielding to people outside of vehicles. Maximum vehicle operating speeds in city street environments should not exceed 20 mph, or 25 mph in very limited circumstances, with lower speeds in downtown and neighborhood zones.

**Provide Mobility for the Whole City**

The benefits of autonomous urbanism can only be realized if mobility is made more accessible, convenient, and affordable for the entire city. Cities and their partners should offer flexible and affordable mobility options tailored to the needs of different communities, from walking and biking to fixed transit and ridesharing.

**Rebalance the Right-of-Way**

With the right policies, autonomous vehicles can move more people in fewer vehicles on less congested streets. That means that cities can use space more wisely. Instead of planning for roadway expansion, reallocate street space to active, sustainable modes and use technology to manage the public realm dynamically.
Cities could seamlessly manage streets to mitigate the negative impacts of private motor vehicle traffic on city life. Vehicle infrastructure would be given significantly less space, giving streets back to people.

Travel lane and intersection size could greatly decrease—minimizing crossing distances and maximizing the pedestrian experience.

Fully separate bikeways and widened sidewalks could elevate the experience of the street as a public space. Low vehicle speeds make it safe to move in any mode.
Questions?