Title: Automated Vehicles and the Built Environment: An Interactive Workshop (NCST)

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Description: Automated vehicle technology holds the potential to revolutionize mobility as we know it today. How and when this revolution might take place, is subject to uncertainties related to technological feasibility, consumer perceptions, and institutional barriers. However, anticipating how automated vehicle technology might affect and interact with our physical, natural, and social systems may help transportation professionals develop strategies to integrate automated vehicle technology into our transportation systems to support broad social and community goals. This one-day workshop will draw on qualitative scenario planning methods. To ensure a common baseline of knowledge among workshop participants, the instructor will present an introduction to automated vehicles and three panelists will engage in in-depth discussions of automated vehicle related issues that California agencies are facing. Extension staff will email presentations with lecture notes (with references and bibliography) and recommended readings one week before the class to participants. Participants will also be provided with scenario planning exercises and material at this time as well as on the day of the class.

Course Outline

Lecture: Introduction to Automated Vehicle Systems (8:00 am to 9:30 am)
- Introduction to Automated Vehicle Technology
  - NHTSA’s Four Levels of Vehicle Automation
- Institutional Issues: Summary of Regulatory Activity to Date
  - California and US overview
  - Regulatory uncertainty (i.e., what hasn’t been decided and how could future decisions impact deployment)
- Potential Modal Applications and Attributes
  - Auto, Freight, Transit, Shared-use vehicles (or carsharing), Dynamic Ridesharing (e.g., UberPool and Lyft Line)
- Near and Long Term Impact on Land Use, Travel Behavior, and Traffic
  - What does travel and land use theory predict about the effects of automated vehicles?
  - What evidence is available (or not) to support (or counter) those predictions?
- Implications for Land Use and Transportation Planning
  - Key Questions and Potential Answers (e.g., increase in drop off and pick up traffic, interaction of automated and manual vehicles, interaction of automated vehicles with pedestrians and cyclists)
  - How are MPOs and DOTS addressing automated vehicles in their long-range plans?

Break (9:30 am to 9:45 am)

Expert Panel Discussion (9:45 to 11:15 am) (Caltrans will secure the panel)
- Greg Larson, Caltrans: Technology (20 minutes)
- Representative from California DMV: Regulatory Activities and Challenges (20 minutes)
- MPO representative TBD: Automated Vehicle and Regional Transportation Plans (20 minutes)
- Audience and moderator questions (10:45 am to 11:10 am)
• Instructor wrap-up (11:10 am to 11:15 am)

Presentation of Scenario Exercises (11:15 am to 12 pm)
• Scenarios will be based on near term applications of automated vehicle technology (NHTSA 1-4) in a specific geographic context and time horizon(s). The instructor will provide plausible demographic and economic forecasts for participants' consideration. The exercise will ask participants answer specific questions as they apply automated vehicle technology in specific contexts and locations.
• The following are the topics Caltrans chose to explore in the scenario planning exercises:
  o First/last mile transit access (maybe combined with freight delivery)
  o Complete Streets
  o Managed Lanes
  o Freight: Partial Truck Automation (Gateway Cities Technology Plan for Goods Movement)
• A sign-up sheet will be circulated that asks participants to rank their preference for the scenario topics. Participants will be assigned to groups during the lunch break.

LUNCH (12 pm to 1 pm)

Interactive Workshop (1 pm to 4:00 pm)
• Assign participants to group and table (8 to 10 participants at each table).
• Students provide with materials specific to the development of their scenario
• Students provided with tools for drawing and flip charts to develop their presentations.

Final Presentations (4:00 am to 4:30 pm)
• Each group presents their scenario (5-10 minutes) and their response to scenario exercise questions
• Audience questions invited (a few for each presentation)

Class Wrap-Up (4:30 pm to 5:00 pm)
• The instructor will summarize and highlight the most critical issues raised in the scenario presentation and relate these back to the technology, institutional barriers, travel and land use effects, and planning issues discussed in the first part of the day.