New Transportation Landscape

The rapid adoption of on-demand mobility services and the emergence of connected, automated vehicles are transforming how people and goods move across the globe. The evolving landscape of transportation options may provide opportunities for improved transportation access, mobility and safety as well as reductions in congestion, parking needs and emissions. But the rapid introduction of these services and technologies also poses many challenges as there is potential for them to become disruptive, and to exacerbate existing congestion and emissions problems. There is an urgent need for rigorous research and impartial policy analysis to ensure these emerging transportation innovations have positive long-term societal impacts, and to support the design of policies that will direct these services toward the public interest.

ITS-Davis Meets the Challenge

ITS-Davis has 20 years of pioneering research into new mobility services, world-leading expertise in consumer behavior, environmental and policy analysis, technology assessment, and a focus on practical, outcome-oriented, and engaged research. The Future Mobility Initiative at ITS-Davis will produce foundational knowledge for public and private decisions about future mobility services. We will focus on services, policies, and technologies that incentivize multimodal travel, higher vehicle occupancy, low-emissions vehicle adoption, and transportation equity; thus leading to reduced greenhouse gas emissions and improved access to jobs, education and services. Early projects of the Future Mobility Initiative will:

- Assess current use of future mobility services and resulting changes in individual travel behavior;
- Model possible future scenarios based on current trends to measure expected changes in energy/CO2 emissions and mobility/accessibility;
- Assist policymakers and community stakeholders in evaluating impacts of new mobility services and technologies on local and regional transportation;
- Analyze national, state, and local policies in terms of their impacts on environmental, transportation and social equity.

Research Team

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Three Revolutions Conference: November 15-16, 2016, Davis CA

Invitation-only, high-level conference on designing policies to direct shared mobility, vehicle electrification, and automation toward the public interest
Current Projects

Analysis of new mobility data surveys in 7 US cities and the State of California (G. Circella, L. Fulton, R. Clewlow)
• On-going analysis of survey data collected during 2014-2015 covering millennials and older travelers, with particular focus on the impacts of new mobility services in the covered data areas. Follow-on data collection efforts planned, including a panel data set over several years in California

Improving Mobility in Low Income, Rural Communities in San Joaquin Valley (C. Rodier)
• Investigation and pilot projects to test the viability and cost of providing shared mobility services in communities currently lacking good public transit options

Modeling future Mobility, and the potential impacts of new mobility services (C. Rodier)
• Simulation of System-Level Travel Effects Using Agent-Based Demand and Supply Models in the San Francisco Region

Analysis of State and Local level Policies (S. Pike)
• Assessment of current new-mobility related policies at the state and local level around the US.
• Development of guidelines for how policies can be designed so that TNC business models align with the public interest (e.g. increase load factors, increase accessibility to mobility disadvantaged, reduced environmental impacts)

Planned Future Projects

Improving Mobility and Access
• Creating synergies between new mobility service and public transit – how to let transit do what it does best, and have TNCs provide complementary (e.g. first/last mile) services
• Explore where new approaches to public transit can be developed in conjunction with shared mobility initiatives.
• Design and conduct demonstration projects for innovative services to the mobility disadvantaged

Environmental Impacts
• Analyze the potential for new mobility services to reduce VMT, GHG, and local emissions as a result of a greater set of mobility services and reduced car ownership.
• Assessment of the current impacts of new mobility services in major markets worldwide, and development of future scenarios that identify potential pathways to optimizing global mobility benefits and environmental benefits

Policy Templates
• Design local, state, and national policies to direct the evolution of these new services toward multiple riders per vehicle—thereby sharply reducing GHG emissions per passenger mile
• Design policies to encourage the provision of first- and last-mile services for public transit
• Design policies to provide better access for the mobility disadvantaged (low income, elderly, young, disabled, and others without driver licenses)—which would involve innovative public financing and public-private partnerships to provide the services

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