



Real-time Ridesharing Technology to Support Differential Tolling by Occupancy

The Texas A&M Transportation Institute (TTI) is partnering with the Central Texas Regional Mobility Authority (CTRMA) and Carma, a real-time ridesharing vendor to test the use of real-time ridesharing technology to verify the occupancy of a vehicle, and to evaluate the effects of toll discounts. If successful, this project will be the first time that high-occupancy toll discounts are electronically verified and executed. The “natural” pricing incentives of high-occupancy vehicle toll discounts and other benefits could provide a financial incentive for carpooling, in turn mitigating congestion and personal transportation costs.

What is real-time ridesharing?

Real-time ridesharing, (also called dynamic or instant ridesharing) matches carpool partners at the time the trip is needed, or scheduled for a specific time and place. New technologies such as smartphone applications working with GPS help advertise spare seats in cars to match drivers and potential riders. The technology seamlessly allows people to share the cost of their commutes, and potentially get to work faster when used with express lanes managed for high-occupancy vehicles.

How will this project operate?

CTRMA, Texas Transportation Institute (TTI), and Carma make up the team that will be implementing this project. Through sponsorship from the Federal Highway Administration and support of the Texas Department of Transportation, the project is anticipated to begin active recruitment in the winter of 2013/2014, and the project to be completed in spring 2015. There are four key activities in this project:

- **Planning and Preliminary Testing** – The team will test the use of the ridesharing technology on CTRMA’s tolled expressways to determine how well the system can match a number of carpoolers in a vehicle with a specific toll transaction. Rollout plans will be developed to optimize adoption of this system in the recruitment and implementation phases.
- **Recruitment** – Project partners will work with employers and other agencies to recruit participants, focusing on employment centers served by CTRMA’s tolled expressways. Local agency contacts, a project website and personal meetings will be used to recruit participation.
- **Implementation** – Active drivers and riders participating in this pilot will receive toll discounts, and TTI and the project team will be evaluating the incoming data stream of Carma rideshare trips and toll gantry transactions. The project team will continue outreach to participants to achieve and maintain a critical mass of users.
- **Analysis and Reporting** – TTI will lead evaluation of the project objectives and supporting data, including how accurate the system is in terms of actual vehicle occupancy, the sensitivity of participants to incentives, and broader transportation impacts of this system.

What does it mean to transportation?

The project will test a method for using real-time ridesharing to verify the occupancy of vehicles on tolled roadways. If this method works, it could make the management of high-occupancy vehicle discounts simpler and less expensive, potentially “sweetening the pot” for commuters as well. To the extent the technology can be used to encourage carpooling, congestion will be mitigated and personal transportation costs could decrease.

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