Helping Local Agencies Prepare for Connected and Autonomous Vehicles

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Connected vehicle technologies hold the potential to produce a number of safety, mobility and environmental benefits. The benefits of connected vehicle technologies are expected to be wide ranging and include reduced numbers and severity of crashes, improved mobility, and reduced emissions.

 Local transportation agencies, such as counties and cities, can be expected to be affected by the transition to connected vehicle technologies. These agencies can also expect to benefit from connected vehicle technologies, through aspects such as a reduced need to construct roadway infrastructure (fostered by mobility improvements), increased fleet safety (e.g., maintenance vehicles in plowing operations), and other benefits. However, transitioning highway infrastructure to be ready for connected and autonomous vehicles (CAVs) will ultimately require a significant investment in infrastructure upgrades, new technologies, and power and connectivity.

Agency staff are already grappling with how and where to invest scarce resources to meet existing needs, and addressing CAVs potentially adds an additional burden. As a result, there is a need for local agencies to not only understand what the potential benefits of connected vehicle technologies are, but also how they can be preparing for and potentially leveraging the transition to such technologies for the infrastructure and fleets that they manage.

A toolbox was developed to provide a summary of information that local agencies should be aware of to prepare for CAVs. Although autonomous vehicles (AVs) and connected vehicles (CVs) are distinct technologies, for simplicity, the term CAV is used throughout the toolbox. In general, AVs are able to conduct driving tasks either with or without human intervention and are also referred to as self-driving vehicles. However, AVs can also utilize connected vehicle (CV) technology to gather real-time information such as traffic conditions.

The main goal of this toolbox is to assist local agencies in preparing for CAVs in the short term — 5 to 10 years.

Since local agencies are not generally expected to have the resources to become test beds, this report provides information so that local agencies can leverage ongoing activities and resources to prepare for CAVs.