RESEARCH NEEDS FOR PLANNING TAG

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ISSUE

Connected and Autonomous Vehicles (CAVs) are expected to increasingly become an inevitable reality permeating into our streets at a faster pace than MPOs and local municipalities are prepared for. Our current infrastructure and policies would need to be prepared to safely support and deploy this technology; and more importantly, mitigate potential negative impacts of the technology on multimodal safety, mobility, accessibility, equity, and economic and environmental sustainability. While an increasing number of guiding documents are developed at the national level to help states with legislation, procedures, and conditions for automated driving systems, local planning agencies are struggling to understand the policy and design implications of the technology. MPOs need to anticipate and foresee a long-term vision to proactively accommodate these technologies and prepare adaptation/mitigation strategies for multiple scenarios to plan for an uncertain autonomous future.

SUMMARY OF PROBLEM

Considering the complexity of planning for an uncertain future, MPOs need to be proactive on directing urban regions toward a sustainable and equitable future by capitalizing on the benefits of CAVs and minimizing its detrimental impacts. CAV technologies and new mobility services are happening now and they’re challenging decades of standing policies, and the foundational assumptions with which MPOs carry out long-range planning. They are creating great uncertainty with regards to future travel demand, travel behavior, and transportation system capacity and safety. While the exact timeline, scope, and direction of these dramatic changes are still unfolding, traditional planning strategies, representing millions of dollars in long-term investments, can no longer ignore their implications. Through this research and policy development process a specific MPO region would be selected as an example, aiming to use it as a model MPO to establish methods to help local agencies proactively adopt policies for several scenarios representing various advanced technology futures. The intention is that the proposed policies and guidelines provide better guidance to local agencies on the development, configuration, and management of infrastructure assets to accommodate CAVs. The proposed policies and guidelines will assist in deploying emerging technologies while being mindful of performance tracking and management.

DESIRED RESULTS/OUTCOME

This proposed project aims to develop a policy and design framework for implementing CAVs in local communities. The project will include outreach to communities with on-going experience in order to identify and localize national and state level policies related to CAVs and lessons
learned based on the role and capacity of local stakeholders. This project aims to develop specific, localized, and relevant guidance on policies and design considerations related to the implementation of CAVs for a specific MPO region. Having a policy and design framework in place will help the region to get prepared for the uncertain future that CAVs will bring. A good example of this is negotiating partnerships for a pilot project or larger deployment with the private sector.

The goals of this project are:

- Synthesize the approaches and practices to formulate policy and design considerations for CAVs from communities with on-going experience or proactive preparations in accommodating CAVs.
- Using different possible scenarios as framework, create development strategies that can direct the region towards a favorable and preferred future scenario.
- As part of the development strategies, draft detailed policy recommendations and design guidelines for each of the scenarios to serve as a blueprint to address future issues or augment potential benefits of CAVs.
- Under each scenario, identify key corridors, linkages, potential hotspot areas in the region where CAVs could be integrated to meet regional goals of safety, multimodal connectivity, affordable and equitable access, sustainability and the fostering of a vibrant and healthy community. Use examples to illustrate how the development strategies could be applied.
- Formulate overarching development strategies for the short, medium, and long-term future.

Deliverables

A user-friendly document containing:

- A comprehensive policy and design guidelines with graphics and renderings.
- Case study sites and implementation strategies for projects categorized by scenario and priority.