



Connected and automated vehicles

Policy and planning

Connected and automated vehicles (C/AV) have the potential to greatly improve safety and mobility, which is in line with government agencies' existing goals, policies and plans. On the other hand, C/AVs are creating great uncertainty with regards to future travel demand and behavior, transportation system capacity and safety. While these dramatic changes are uncertain, government agencies must take these implications into account when planning for project-level and region-wide programs—which represent millions if not billions of dollars in long-term investments.

WSP USA is working with government agencies and providing thought leadership and advice on the following considerations:

- When should we expect C/AVs to operate on our roadways? What should we be doing now to prepare?
- How (if at all) should we continue investing in our public transit system?
- How should our local, regional and state policies be updated to incorporate C/AVs?
- What does C/AV technology mean for investments we're making today (e.g., parking structures, bus and rail system expansion, and express lanes)?

Our services

Through internal and external research and process development, we are establishing methods to help government agencies proactively develop policies and evaluate scenarios for various advanced technology futures. To achieve these business objectives, we provide the following services:

- State of the industry white papers on C/AV regulations, pilots, policies, other government activities, and private sector developments
- Regulation and policy guidance, including updating existing policies or creating new policies that incorporate C/AV
- Travel demand model scenario development for both corridor and regional modeling that incorporates C/AVs and considers implications to agency plans and policies
- Short- and long-range plan updates that incorporate C/AV into an agencies' strategies, projects and operations
- Financial plan updates that consider C/AV impacts to a government agencies' revenue streams and costs
- Transit agency advisory services, which incorporate C/AV into agencies' operations, fare policies, staffing plans, and capital and operating plans



Our experience

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As part of a major corridor study in the Twin Cities region, the Minnesota Department of Transportation (MnDOT) asked WSP how the project should consider the impact of C/AV technologies on the investment strategy for the corridor. To help answer this question, we developed a modeling framework for evaluating two future scenarios on opposite ends of the impact spectrum using the regional forecasting model. The process involved identifying critical variables to be impacted by technology—including freeway capacity, changes in travel behavior and trip length sensitivity, and trends towards shared mobility and others—and mapped each to a surrogate value or factor in the model to be adjusted. The process led to scenarios representing the outside edges of a range of impacts, in order to evaluate level of risk of the corridor investment based on resulting vehicle miles traveled and volume/capacity results.

MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) C/AV PROGRAM PLANNING SUPPORT

Through a master support contract, WSP USA has partnered with MDOT on a wide range of planning program support tasks, including development of a data management strategy and an investment plan for C/AV technologies. Most recently, we helped MDOT examine how data obtained from C/AV technologies may support or supplement travel

forecasting models in the future. This included identification of the range of potential data to be obtained from connected vehicles, the resolution of that data, and mapping that data to existing datasets used as part of the forecasting process to determine applicability. The process considered whether data would be supplementary to existing processes, supporting improved model resolution, and whether it could replace existing data collection functions, such as household surveys. Also evaluated was the different applicability between existing four-step models and activity-based models which MDOT is migrating towards.

C/AV LEGISLATIVE & POLICY ANALYSIS FOR MARYLAND STATE HIGHWAY ADMINISTRATION (SHA)

Through an on-call contract with SHA, WSP USA's team of experts has been regularly monitoring legislative and policy activities related to C/AV in the state. During the 2017 Maryland General Assembly session we studied proposed legislation, compared and contrasted with language contained in bills from other states, and provided facts to assist SHA staff. Outside of the session timeframe we are providing regular briefs with updates on legislation being considered (and passed/failed) in other states along with general feedback on how the automotive and technology industries are reacting. We are also helping SHA staff in their coordination with the Maryland Motor Vehicle Administration which is enacting policy in terms of testing procedures for highly automated vehicles in the state.

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