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# Autonomous Vehicle Traffic Impact Scenario Analysis: Central New Mexico Case Study

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# **Autonomous Vehicle Traffic Impact Scenario Analysis: Central New Mexico Case Study**

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## **Abstract**

Autonomous Vehicles (AVs) are on their way to becoming a significant part of our transportation systems and cities. Previous studies have mainly focused on how much AVs could improve traffic flow and reduce congestion or improve safety. Reducing congestion and the cost of travel time is also expected to increase travel demand, but by how much is not well understood. This study, located in Albuquerque, New Mexico, uses an integrated travel demand and land-use modeling system to evaluate how AVs may affect congestion, travel demand and land use. Our modeling system considers how traffic patterns, travel demand and land use evolve year-over-year, providing a more comprehensive picture of how AVs may affect the growth of a region and traffic. Considering scenarios with 100% market share of AVs, we find, as others have, large reductions in congestion but we also find a moderate increase in vehicle miles traveled and average trip length. We also find that AVs may shift population and employment growth to suburban and fringe areas, and along previously congested highway corridors, further decentralizing the Albuquerque region. The increase in VMT raises air quality and climate change concerns as vehicle air pollutant emissions may also increase. Our results demonstrate that AVs are likely to have an important effect on land use and that integrated land-use and travel demand models should be used to more fully understand the potential traffic impacts of AVs.