



Ensuring American Leadership in Automated Vehicle Technologies: Automated Vehicles 4.0

On January 8, 2020, Transportation Secretary Elaine Chao released the Trump Administration's third major policy document pertaining to automated vehicle policy, [Ensuring American Leadership in Automated Vehicle Technologies: Automated Vehicles 4.0](#) ("AV 4.0").

AV 4.0 provides an overview of the full range of activities that the entire U.S. government is undertaking to prepare for, and leverage the benefits of, automated vehicles (AVs). The document catalogs the efforts of 38 federal agencies to support the safe and expeditious deployment of AVs through research and development activities, exploration of appropriate and socially beneficial use cases, preparations to adjust regulatory frameworks, and interagency collaborations.

Unlike its predecessors, this document does not establish new policies. Instead, it builds upon prior efforts to provide industry and stakeholders with information about how the entire federal government is engaging with emerging AV technology.

In AV 2.0, the National Highway Traffic Safety Administration (NHTSA) outlined its approach to regulating the design, construction, and performance of AVs within its authorities—including safety, cybersecurity, and data privacy. The subsequent document, AV 3.0, expanded the scope of these efforts by launching a multimodal initiative across the U.S. Department of Transportation (USDOT) to prepare for the introduction of automation technology in passenger vehicles, transit, trucking, rail, and the infrastructure that supports all surface transportation.

SAFE's research found that AVs have the potential to unlock nearly [\\$800 billion](#) in annual social and economic benefits through reducing the toll of vehicle crashes, improving energy security by reducing our dependence on oil, and giving productive time back to commuters. AV 4.0 represents an important step forward in preparing the United States for AVs and maximizing these tremendous potential benefits.

Driving Innovation

AV 4.0 emphasizes the opportunity for the United States to maintain its position as the global leader in AV development, testing, and deployment. AV development is tied to multiple areas of technology and policy and depends on U.S. leadership in areas such as advanced manufacturing, artificial intelligence and machine learning, and STEM education and workforce development. As the Administration notes, it is critical for the U.S. government to continue enabling private-sector innovation in this nascent field.

Multiple federal agencies are researching—and in some cases already demonstrating—how AV technology can be implemented in a variety of fields. AV 4.0 describes multiple use cases that agencies are already exploring, including:

- The U.S. Department of Agriculture is researching into how automated farm equipment can contribute to advances in precision agriculture.

- The Department of Interior is evaluating how the National Park Service can implement automated shuttles to transport visitors at national parks.
- The U.S. Postal Service, which has the largest civil agency fleet at 200,000 vehicles, is exploring how AVs can help to facilitate the delivery of the nation's mail. This includes in rural areas through its Automated Rural Delivery Vehicle (Zippy) Program, as well as semi-automated trucks for transporting mail between major distribution centers.

Maximizing the Social and Economic Benefits of AVs

The release of AV 4.0 arrives at a critical time in the development of AVs, as companies are already beginning to transport people and goods in limited deployments across the United States. As AV technology matures, policymakers and stakeholders have the opportunity to collaborate on ensuring that the autonomous revolution fulfills its promises of making transportation safer, more efficient, and more accessible for all Americans. Accordingly, AV 4.0 will provide an opportunity for industry and other stakeholders to identify opportunities to work with federal agencies on a range of issues.

Preparing the Workforce for AVs

AV 4.0 references SAFE's 2018 report, [America's Workforce and the Self-Driving Future](#), which filled previous research gaps into the potential social and economic benefits of AVs. SAFE appreciates the wide range of research activities that have been undertaken by USDOT and other federal agencies to better understand and prepare for the impacts of AVs on the workforce and the economy writ-large.

Mobility Access for People with Disabilities

SAFE was encouraged to see the Administration's attention to the potential for AVs to enhance mobility access for people with disabilities. As SAFE concluded in a January 2017 [report](#), reducing transportation-related obstacles for people with disabilities could unlock employment opportunities for approximately 2 million individuals with disabilities.

USDOT is researching how to ensure that automated transit vehicles are accessible to people with disabilities through FTA's Strategic Transit Automation Research (STAR) Plan. Additionally, the Department of Health and Human Services (HHS) is researching automated securement systems for wheelchair users in transit and paratransit vehicles that may eventually be automated.

Reducing Oil Dependence

Finally, AVs present an opportunity to reduce America's oil dependence through facilitating a transition to electric drivetrains. SAFE's analysis found that the majority of AVs being tested in California are operated on battery electric or hybrid electric drivetrains, and that many of the leading companies intend to operate their AVs in shared, electric fleets. Since 92 percent of the transportation sector is dependent on oil, this presents a significant opportunity to end the monopoly of a single commodity over the movement of goods and people.

At a system-wide level, AVs also present an opportunity to reduce congestion—and the consequent wasting of fuel—by driving more efficiently and ensuring smoother acceleration and deceleration. As noted in AV 4.0, the Environmental Protection Agency (EPA) is evaluating how AVs and advanced driver assistance systems (ADAS) can contribute to improvements in fuel economy. This reflects SAFE's recommendations in a 2018 [report](#) for NHTSA and EPA to factor in the efficiency benefits of autonomous and connected vehicles in future rulemakings on fuel economy and greenhouse gas emissions standards for light-duty vehicles.