



ALLIANCE  
FOR AUTOMOTIVE  
INNOVATION

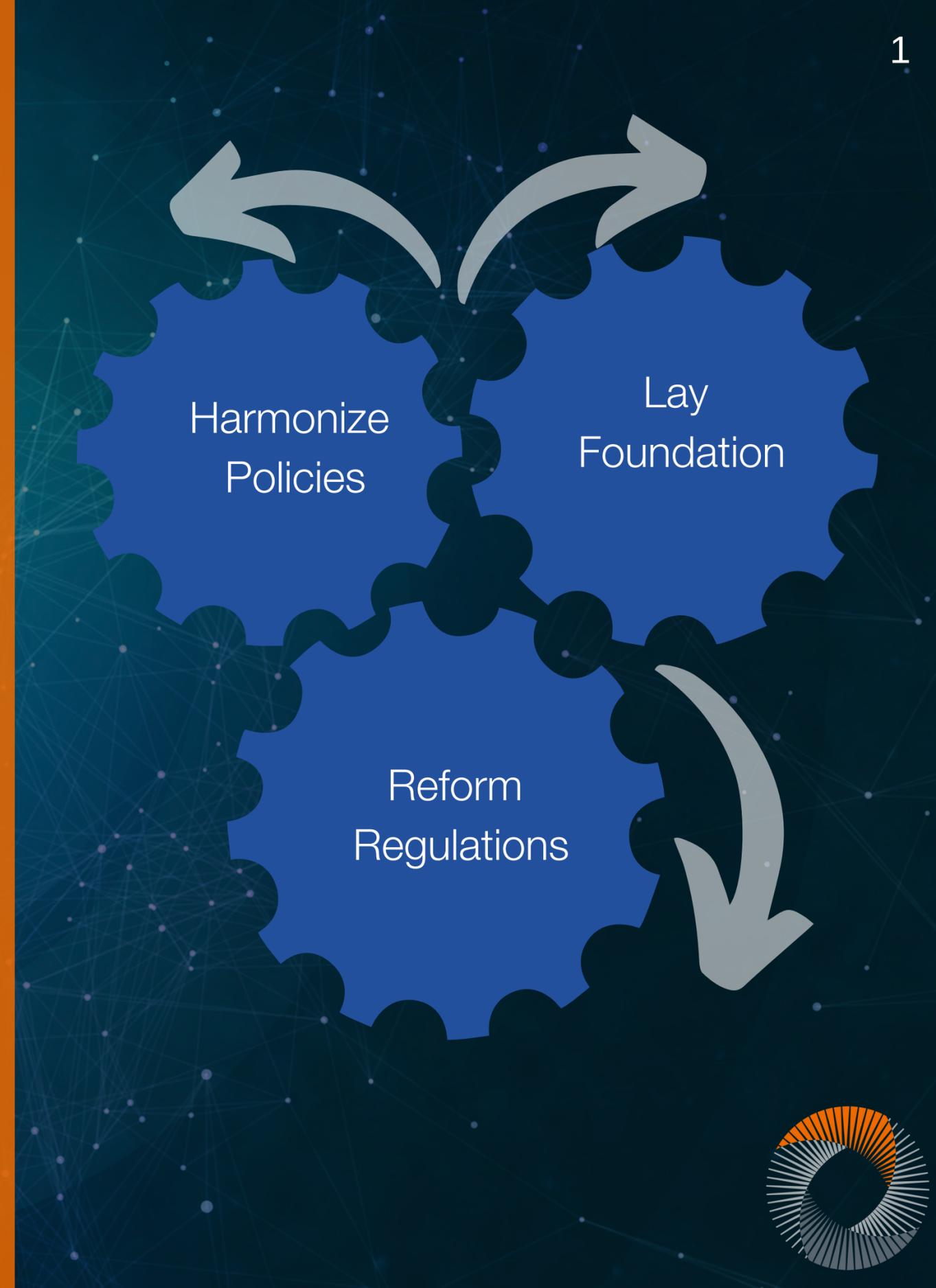
# POLICY ROADMAP TO ADVANCE AUTOMATED VEHICLE INNOVATION

A Four-Year Plan to Revolutionize Transportation

We are at a pivotal time on the pathway to a cleaner, safer, and smarter transportation future. There is no doubt that Level 3-5 automated vehicles (AVs) are an important component of this future.

Focused and sustained leadership from policymakers is required to ensure this technology and the benefits it can deliver are realized. To that end, the Alliance for Automotive Innovation puts forward this FOUR-YEAR ACTION PLAN for federal policymakers to significantly advance the testing and deployment of AV technologies in the United States.

The 14 specific recommendations contained within this plan fall within the following pillars: (1) Reform Regulations to Allow for AV Deployment at Scale; (2) Harmonize Federal, State, and International Policies; and (3) Lay the Foundation to Achieve Longer-Term Objectives.



**PILLAR 1**  
**REFORM REGULATIONS TO ALLOW**  
**FOR AV DEPLOYMENT AT SCALE**



## **RECOMMENDATION 1**

### **CREATE A NEW VEHICLE CLASS FOR AVs**

The U.S. Department of Transportation (DOT) should create a new vehicle class within the Federal Motor Vehicle Safety Standards for AVs. Since the current regulations were not written with AVs in mind, a number of existing standards assume the presence of a human driver and therefore present a barrier to the deployment of AVs without conventional driver controls. An AV class would enable the DOT to efficiently identify and categorize existing motor vehicle safety standards that should apply to AVs without impacting the applicability of those standards for conventionally driven vehicles. Although this approach would allow for AVs to be incorporated into the existing regulatory framework sooner, if a new vehicle class is not established, DOT should complete its efforts to update existing motor vehicle safety standards as expeditiously as possible.

## **RECOMMENDATION 2**

### **CLARIFY APPLICABILITY OF “MAKE INOPERATIVE” PROHIBITION**

Existing DOT regulations prohibit manufacturers from knowingly making inoperative any feature or system installed on or in a motor vehicle in compliance with an applicable motor vehicle safety standard. This prohibition could have unintended implications for “dual mode” vehicles that are equipped with selectable AV features that temporarily deactivate conventional driver controls while the vehicle is operating safely in “autonomous mode.” To address this, DOT should confirm that the deactivation of conventional driver controls in “dual mode” vehicles, when the vehicle is in AV mode, does not fall under the “make inoperative” prohibition if the vehicle is compliant with all applicable motor vehicle safety standards while in manual driving mode.



### **RECOMMENDATION 3**

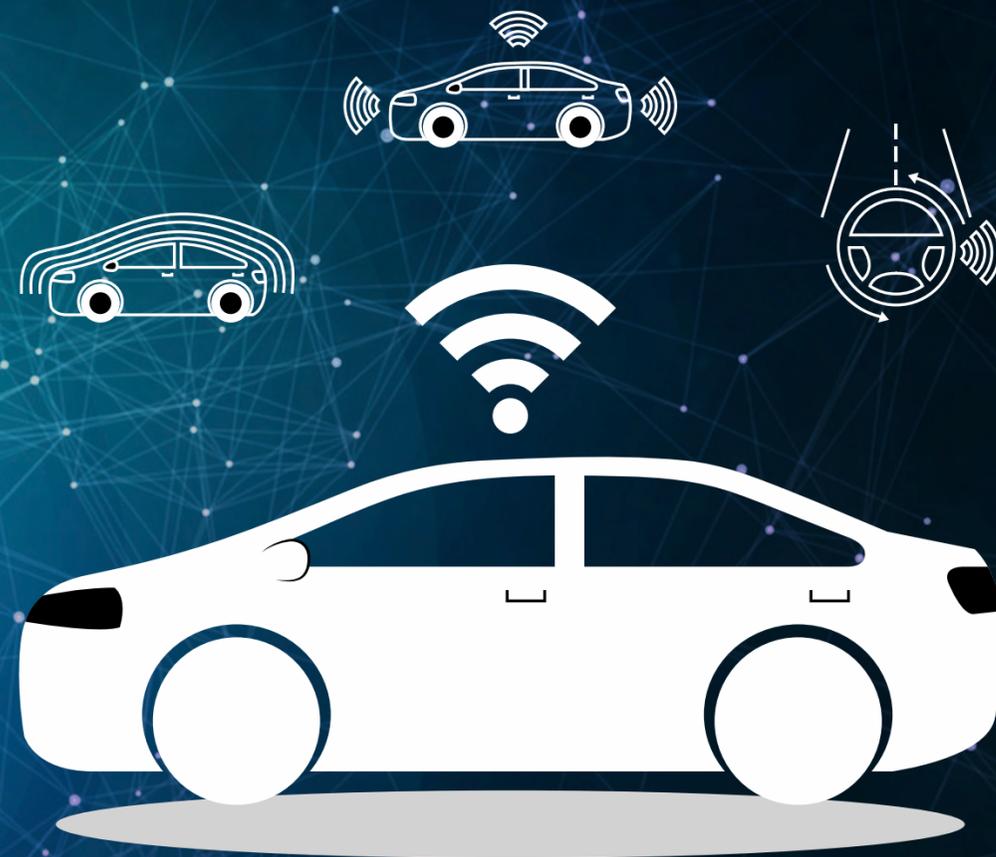
## **ESTABLISH A NATIONAL AV PILOT PROGRAM**

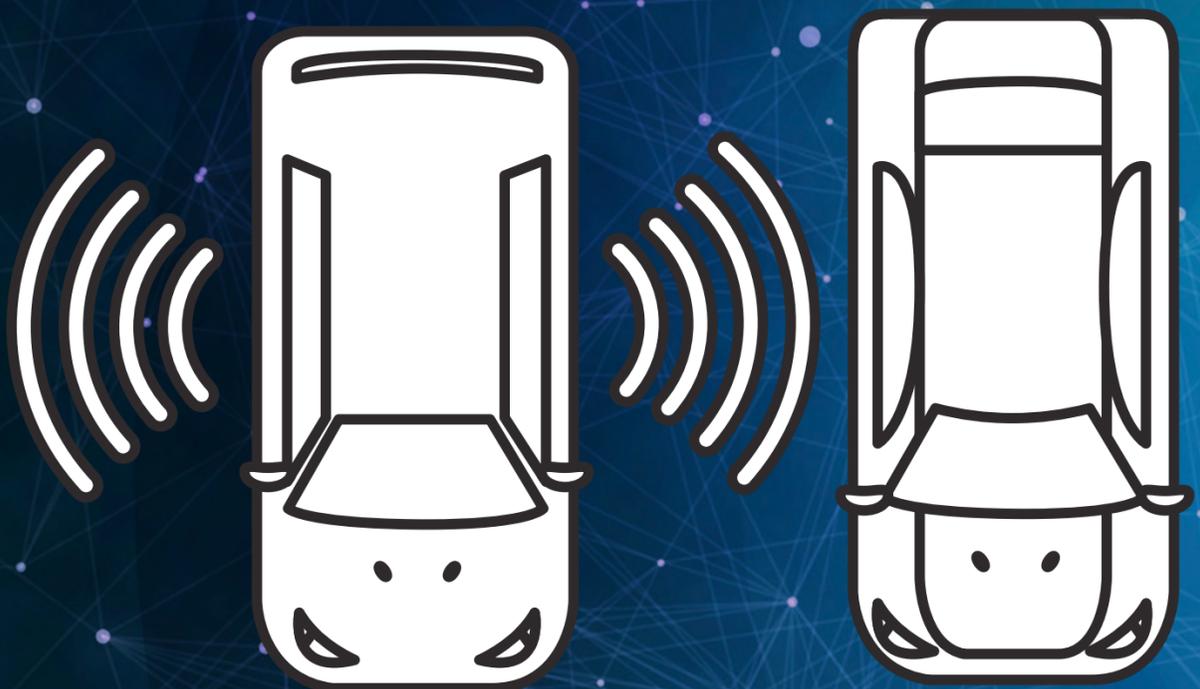
DOT should establish a robust national pilot program for AV testing and deployment. Such a program would not only provide a venue to advance DOT research objectives relating to AVs, but also provide AV developers that choose to participate with an alternative pathway to AV testing and deployment. A focused pilot program carried out under DOT's oversight could increase public exposure to the technology and provide the DOT with the data that it will need to create new safety regulations for AVs.

### **RECOMMENDATION 4**

## **IMPROVE THE EXEMPTION PETITION PROCESS**

Current law authorizes DOT to grant manufacturers exemptions from existing safety standards provided that vehicle safety is upheld. As the safety standards are being updated in line with RECOMMENDATION 1, DOT should simplify and streamline the existing exemption process for AVs to provide greater clarity to manufacturers. As part of this effort, DOT should issue guidance that specifies what data is required as part of the exemption application.





## **RECOMMENDATION 5**

### **RAISE THE CAP ON EXEMPTIONS FOR AVs**

To provide for meaningful AV deployments, the U.S. Congress should enact legislation to increase the existing cap on temporary exemptions that can be granted to AVs. Under existing law, exemptions are limited to 2,500 vehicles per manufacturer annually and valid for a two-year duration. Increasing this limit will promote continued development of this technology in the United States by providing certainty to AV developers that there is a near-term path to deploy AV technologies. Raising the cap will also lead to the generation of more real-world data to support any efforts by DOT to enact new AV-specific regulations.

## **RECOMMENDATION 6**

### **EMBRACE INNOVATIVE REGULATORY APPROACHES**

DOT should embrace innovative regulatory approaches that are appropriately matched to the current pace of technological advancement. As part of the federal motor vehicle safety regulatory compliance and the exemption petition process, DOT should permit manufacturers to submit vehicle-specific technical design and/or build documentation. This “technical documentation” approach would accommodate unique design solutions and would empower manufacturers to use innovative safety assurance techniques, such as virtual testing with validated simulators. In addition, DOT should allow for the use of a surrogate vehicle (i.e., a vehicle that shares the same platform as the AV but has conventional driver controls) to perform certain regulatory compliance tests.



**PILLAR 2**  
**HARMONIZE FEDERAL, STATE, AND INTERNATIONAL POLICIES**



## RECOMMENDATION 7

### MAINTAIN TRADITIONAL FEDERAL AND STATE ROLES

The U.S. Congress should enact legislation to clarify federal and state roles related to AVs. The federal government should maintain responsibility for the design, construction, and performance of motor vehicles, while states should continue to oversee licensing of human drivers, registration, insurance, and traffic laws.

## RECOMMENDATION 8

### COORDINATE STATE AV POLICIES

The current patchwork of AV laws and regulations at the state level presents challenges for manufacturers seeking to test and deploy AVs in multiple states. AV testing and deployment across state lines could be significantly improved if states coordinated with each other and sought to ensure consistency of AV laws and regulations. A federal grant program could be established to provide funding to states that agree to work together to harmonize policies that govern the testing and deployment of AVs. In addition, a unified approach to AV licensing and registration should be encouraged.

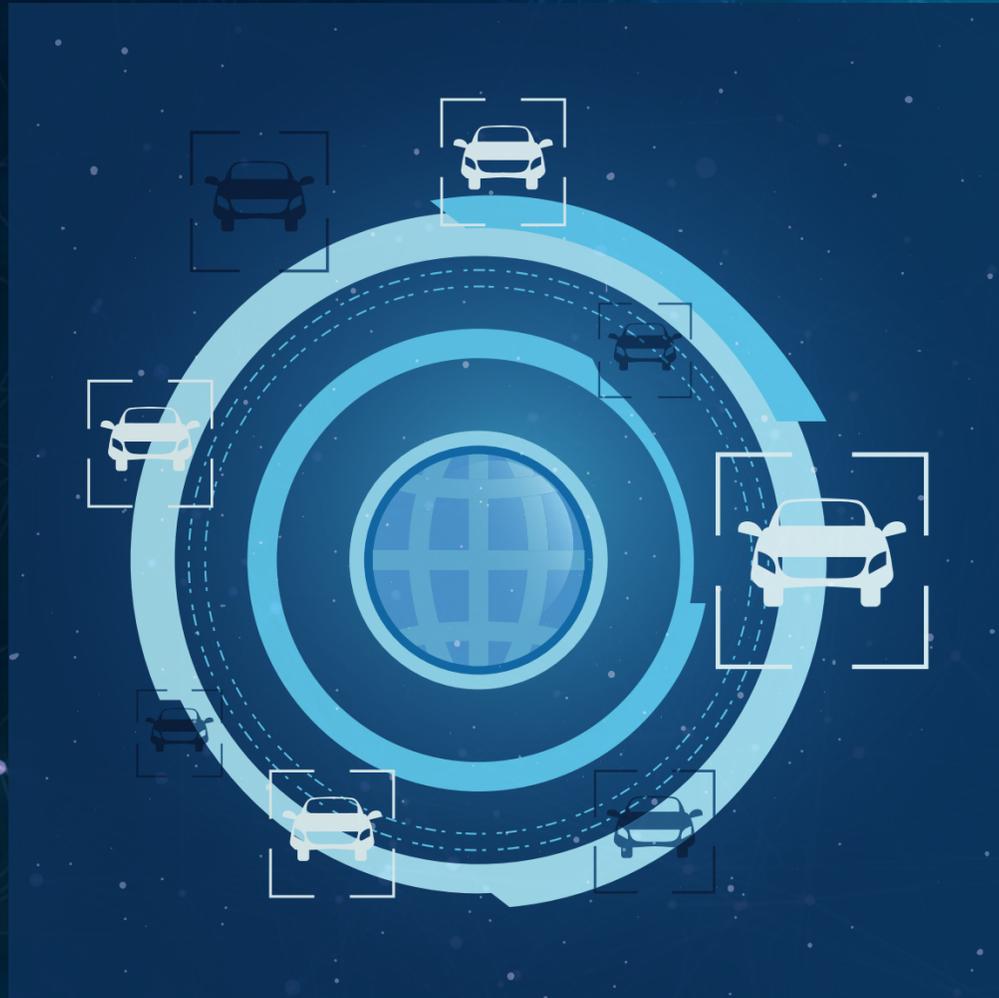


## **RECOMMENDATION 9 ALIGN STATE TRAFFIC LAWS**

Variation in state traffic laws creates additional challenges for AV developers. AV developers must translate each state's traffic laws into the system's programming and capture even the slightest differences, and then continuously monitor state laws for any updates or changes. To the extent possible, states should be encouraged to harmonize traffic laws and regulations, particularly those that apply to the operation of AVs on public roads. Uniformity of state traffic laws and regulations would provide benefits not only to AV developers, but also to any road user who crosses state lines. At a minimum, a single resource of state traffic laws and real-time updates to those laws that is accessible to AV developers should be created. In addition, states should review their existing laws and identify any provisions that would prevent the deployment of AVs.

## **RECOMMENDATION 10 LEAD IN INTERNATIONAL FORUMS**

Many AV companies, including those developing this technology in the United States, may deploy in global markets. For this reason, international alignment on AV testing and deployment regulations is helpful. DOT should actively participate in international forums, like the United Nations Economic Commission for Europe, where AV policy is being developed. DOT should also strive to implement a national AV policy framework that is reasonably aligned with international rules within the bounds of the U.S. self-certification regulatory regime.



**PILLAR 3**  
**LAY THE FOUNDATION TO ACHIEVE LONGER TERM GOALS**



## **RECOMMENDATION 11**

### **PROMOTE INDUSTRY STANDARDS**

Industry consensus standards play an important role in the deployment of new vehicle technologies. Standards Developing Organizations (such as ISO, IEEE, and SAE) provide a neutral forum for technical experts to reach consensus on foundational elements of AV design. This alignment around effective practices helps to advance safety and increase public trust in the technology. To that end, policymakers should support and appropriately leverage the development of these industry standards.

## **RECOMMENDATION 12**

### **BUILD KNOWLEDGE FOR A SAFETY ASSURANCE FRAMEWORK**

DOT should encourage research and seek input from industry stakeholders to inform the development of a national AV safety assurance framework. Above all, to provide the necessary leadership and to facilitate meaningful progress on the testing and deployment of AV technology in the United States, it is important that DOT stay abreast of the latest advancements in AV technology.



## RECOMMENDATION 13

### PREPARE ROADWAY INFRASTRUCTURE FOR AVs

Roadway infrastructure can help facilitate the deployment of AV technology. For example, AV performance will benefit from consistent and well-maintained lane markings, signage, and traffic control devices. DOT should revise the Manual on Uniform Traffic Control Devices (MUTCD) to include items that will support and facilitate AV deployment. States should be encouraged and even incentivized to update their infrastructure consistent with any AV-related MUTCD update.

## RECOMMENDATION 14

### SUPPORT U.S. LEADERSHIP ON AVs

In addition to creating a regulatory environment that allows for AV deployment in the United States (as described in the above recommendations), policymakers should explore additional policies to ensure that the United States maintains a leadership role in the development of AV technologies. This could include specific tax or other incentives that support the research, development, manufacturing, and deployment of AVs in the United States. In addition, policymakers should adopt policies that strengthen the AV workforce pipeline and create a pathway for qualified AV developers to safely test their vehicles on public roads with NHTSA oversight. Finally, restrictions on the ability of developers to commercialize AV technologies should be avoided or eliminated.



## BENEFITS OF THIS FOUR-YEAR ACTION PLAN

### **Includes two pathways to AV deployment, both with DOT oversight**

Since the current exemption process might not make sense for some AV developers, a new pilot program would create a second option, designed specifically for AVs and created with existing DOT authorities.

### **Defines federal and state roles**

With a clear alignment of state and federal roles, each are empowered to take actions that strengthen - rather than confuse - the policy landscape.

### **Paves the way for long-term national success**

The steps policymakers take today will have implications for years to come. If we work together to get it right, we will reap the benefits of a safer, cleaner, and smarter transportation system.

