



American Planning Association

Making Great Communities Happen

APA Policy Principles for Autonomous Vehicles

Autonomous vehicles (AVs) will be a disruptive, society-changing technology, not just for planning and placemaking, but for employment, social engagement, mobility, and a full range of physical, social, and economic factors. The AV has the potential to be the most transformative technology since the automobile. Mobility for all components of the nation's population can be improved.

Jobs will be lost even as other jobs are created; while the whole of society may break even, it is likely that the workers who lose jobs will be in different geographies and have different skill sets than the new jobs so there will be localized benefits or detriments which may exacerbate existing divides in the nation.

AVs are not only cars, but a wide range of applied technologies like smaller automated delivery vehicles that could use multi-use paths. As such, changes in the regulatory environment may be required as will a more complete understanding of the tort and liability issues surrounding ownership and use of autonomous vehicles. For planners and communities, it is important to note that AVs will impact land use, social structures, infrastructure and equity. The public policy developed in the near term around AVs has the potential to either reinforce or undermine local and regional planning goals.

The American Planning Association (APA) has developed this initial set of principles for integrating AVs within the fabric of our communities through planning, urban design, placemaking, and infrastructure investments. The mission of this paper is to provide a starting point for APA from which to enunciate some initial near-term policy recommendations.

Key Planning Principle

Principle 1: APA strongly encourages development of a shared mobility model instead of private ownership for AV travel to exploit the benefits of AV in a way that does not perpetuate existing conditions that have led to sprawl, inequitable access to mobility, excessive pavement with corresponding stormwater management challenges, energy waste, and environmental degradation. Regulatory and financial structures should be put into place that will facilitate shared mobility by not disadvantaging it as compared with private ownership.

Guiding Strategies

Mobility, Connectivity, Access

Principle 2: APA supports development and provision of mass transit or transportation utilizing automated and autonomous vehicle technologies, especially in managing first-mile and last-mile issues while improving safety, reliability and economic performance.

Principle 3: APA supports local planning efforts to reclaim public rights-of-way from the expected reduced space needed for AV travel (e.g., less parking, narrower lanes) for purposes within the public

realm to provide public benefits. Specific attention should be given to reintroducing bicycle and pedestrian-only public rights-of-way and spaces as a way of improving both placemaking opportunities and AV performance.

Principle 4: APA supports efforts to eliminate or sharply reduce municipal and off-street parking requirements with the growing incorporation of AVs into the national transportation system and permit the reuse of parking structures as active land uses.

Principle 5: APA calls on the professional design industry in concert with local communities to ensure the future built environment, including streetscapes, accounts for automated vehicles (less/reusable parking areas, more curb space for pickup/drop-off, self-activated charging stations, etc.).

Principle 6: APA supports the further use of ride-sharing, given the joint use of vehicles reduces environmental impacts including noise, emissions, impervious surfaces for streets and parking, etc.

Social and Environmental Equity

Principle 7: APA supports efforts to share autonomous mobility as a service rather than encourage ownership of each vehicle individually such that universal mobility is brought closer to reality and the potential for zero occupant vehicle miles is reduced.

Principle 8: APA supports the ongoing evolution and use of automated vehicle technology for passenger vehicles and freight, given the technology has the potential to improve economic welfare and safety and maintain or improve environmental conditions.

Principle 9: APA supports efforts to research and address equity issues created by AVs; equity concerns include the rural-urban divide and the increasing suburbanization of poverty and how these will be impacted or exacerbated by AV adoption.

Principle 10: APA supports the development of green technology (vehicle-to-infrastructure or V2I) for automated vehicle infrastructure, given the infrastructure is consistent with environmental protection and has minimal or no new impact on nearby development.

Principle 11: APA recognizes that significant adoption of automated and autonomous vehicles will occur over a time frame measured in decades and that adoption rate will be unevenly distributed geographically. However, the technologies and systems necessary to support such vehicles must be universally available as early as possible to support pioneers and early adopters.

Principle 12: APA recognizes that most urban transit agencies are operating in a failing—or failed—business model which needs to be dramatically revised because mass mobility remains the key to equity and access for substantial portions of the population, especially in urban and suburban areas.

Energy, Sustainability, and Research and Development

Principle 13: APA supports the development of automated and autonomous vehicles with a strong preference for using alternative energy and sustainable tire technology and materials such that there is an overall reduction in energy consumption even if projections positing an increase in Vehicle Miles Traveled are accurate.

Principle 14: APA supports the development of vehicle-to-infrastructure (V2I) technology for passenger and freight modes as well as the facilitated transfer of goods between modes for improved security, reduced costs, and other benefits.

Principle 15: APA supports research and development efforts focused on creating a more sustainable transportation network resulting from the possibility of more compact development, reduced pavement requirements, improved vehicle performance, modified roadway maintenance schedules and equipment, and any other factors that contribute to an overall more sustainable transportation system.

Safety and Security

Principle 16: APA supports the Vision Zero construct and encourages the development of policies and technologies, including Vehicle to Pedestrian (V2P) technologies, to reduce or eliminate fatal vehicle crashes for all users of the transportation systems, but especially pedestrians/cyclists.

Principle 17: APA supports efforts to secure infrastructure (technology and roadways) to ensure the safety of users as well as the reliability of systems. To this end, APA encourages the use of open source, non-proprietary technologies.

Principle 18: APA supports the further development of vehicle-to-vehicle and vehicle-to-infrastructure technology to improve safety; however, information technology for security of personal identification information (PII) must be prioritized within the data security of vehicle operating systems.

Data and Decision Making

Principle 19: APA is supportive of strategies that create a policy environment friendly to innovation while maintaining local control of public spaces and land use planning.

Principle 20: APA believes that having good and current data is crucial to decision making by federal, state, and local planning and transportation officials and encourages the development of a central data repository available to all.

Principle 21: APA supports a vibrant economy in part stimulated by research and technology and maintenance and operation of automated vehicle technology. Demand-responsive transportation networks are an example where “Big Data” can be used to promote personal mobility.

Principle 22: APA encourages the use of public-private partnerships (P3) for co-funding of technology and infrastructure to benefit the surface transportation system globally in ways that reduce or do not exacerbate the equity and affordability issues occasionally associated with P3.

Economics and Fiscal Planning

Principle 23: APA recommends a thorough analysis of the fiscal mechanisms used currently to finance vehicle-related infrastructure investments that may be impacted by widespread adoption of AVs—parking structures, high-occupancy toll lanes, congestion-pricing, gasoline taxes, and similar strategies—to ascertain both long-term effectiveness as well as whether changes will affect the ability to repay current revenue-based borrowing.

Principle 24: APA encourages governmental entities at all levels to consider the effect of loss of current revenues derived from vehicle sales, service, ownership, fines and forfeitures, fees, and similar sources will have on budgets and begin to plan now for that eventuality.

Principle 25: APA believes that AVs will create an ever-greater emphasis on the mobile economy where goods and services are delivered directly to the customer at the customer's place of choosing as well as while the customer is also mobile.

Principle 26: APA supports rethinking the role of public rights-of-way and considering them not so much as public space but as a public utility which is priced accordingly.

Policy Recommendations

APA recommends the following near-term actions:

1. Create a standards entity comprised of industry, technology, university and government partners to develop standards for interoperability and secure data communication.
2. Invest further in mass transportation and transit infrastructure to support a mobility sharing economy potentially centered on AV technology that provides access to all with respect to income, gender, race, and other unforeseen discriminators while reducing historically inequitable transportation decisions.
3. Adopt local ordinances that enable communities to be responsive to autonomous vehicles while providing flexibility to reclaim abandoned infrastructure for public use. APA, working with partners, should consider developing a model ordinance for states and localities.
4. Emphasis should be placed on creating model state enabling legislation to authorize localities to control public infrastructure for public benefits and fully implement sustainable land use policies that fully exploit the opportunities presented by the shared mobility model of AV adoption.
5. Actively advocate for maintaining local control over public spaces and planning processes, especially those public spaces that may no longer be dedicated to vehicular travel and parking.
6. Work with partner organizations to develop a common set of guidance for the design of future buildings, public spaces, facilities, roads, highways, bridges, and other infrastructure.
7. Develop flexible parking policies that can allow for the reduction or elimination of certain parking requirements as AV market penetration increases.
8. Continue as a profession to further policies that encourage ridesharing and shared mobility strategies which address first and last mile issues.
9. Engage with all stakeholders to develop for adoption legislative policies for AVs related to certification, licensing, training, and tort liability.
10. Support funding from public and private sectors as well as universities for ongoing research and analysis of the implications of AVs for urban placemaking and mobility planning.

11. Convene an expert panel to consider and promulgate standards applicable to AV systems and networks that protect the privacy of all AV users.
12. Study the fiscal implication to governments at all levels from the large-scale implementation of AV technology as it relates to the impacts on income streams currently derived from transportation taxes and fees, personal property taxation, parking fees and fines, and traffic violation fines, fees and forfeitures to ensure that the public services and infrastructure currently funded by such revenues can continue to be funded consistent with the needs and opportunities of AV mobility.
13. Support planning-focused research, professional development and education programs related to ongoing AV technology research and breakthroughs to help planners keep pace with the state of the practice in this rapidly evolving field.
14. Engage the architecture, real estate and residential building industries in discussions about the future of urban design and home construction when personal automobile ownership is no longer a major consideration for the arrangement and space utilization of residential dwellings.
15. Consider how the availability of AVs may encourage greater opportunity to age in place and develop long-term community plans accordingly.

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