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Report from the 2026 UCLA Arrowhead Symposium: New Mobility, Automated Vehicles and Cities

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Publication Date

2026-05-01

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About the UCLA Lake Arrowhead Symposium

Since 1991, the UCLA Lake Arrowhead Symposium has tackled the connections between transportation, land use, and the environment. Arrowhead's diverse and influential group of policymakers, private sector stakeholders, public sector analysts, consultants, advocates, and researchers dive into these pressing policy issues every day. The Symposium is presented by the UCLA Institute of Transportation Studies. www.uclaarrowheadsymposium.org

Land Acknowledgments

The UCLA Institute of Transportation Studies, which presents this UCLA Lake Arrowhead Symposium, acknowledges the UCLA campus presence on the traditional, ancestral and unceded territory of the peoples who today use the names Tongva, Gabrielino, and Kizh.

Furthermore, we acknowledge the UCLA Lake Arrowhead Lodge & Conference Center's presence on the traditional, ancestral and unceded territory of the Yuhaaviatam Indigenous people.

Report from the 2026 UCLA Arrowhead Symposium:

NEW MOBILITY, AUTOMATED VEHICLES AND CITIES

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May 2026

Executive Summary

Automated vehicles are no longer a “coming soon” technology; they are an operational reality reshaping the physical and digital real estate of our cities. The question is no longer if the technology will work, but how we will govern the complex ecosystem it inhabits. The 2026 UCLA Arrowhead Symposium on New Mobility, Automated Vehicles, and Cities shifted the focus beyond technological hype and market speculation to the urgent work of public stewardship.

On April 12-14, 130 speakers and attendees gathered to discuss opportunities, impacts, and public sector responses to automated vehicles, new mobility, and broader technological trends in the transportation sector. Speakers and attendees from the public and private sectors considered how these mobility changes could impact people’s lives, both positively and negatively — and the implications these impacts have for California’s state, local, and regional transportation policy goals.

Panelist and audience discussions revealed ideological tensions around how best to manage fast-paced innovation, alongside the need for public oversight. The majority emphasized the need for strict local curb control, ADA-capable vehicle mandates at the initiation of robotaxi services, and robust transit labor protections. Others, however, cautioned against bureaucratic paralysis, arguing that excessive municipal risk-aversion, taxation, and design mandates could suffocate innovation and jeopardize the financial fundamentals necessary to satisfy massive unmet travel demand.

Despite these tensions, one theme was clear: significant gaps exist between current regulatory frameworks and the operational realities of municipal governments and autonomous fleets.

To encourage open discussion, Symposium attendees agree to uphold Chatham House Rules. Under these rules, participants are free to use the information they learn at the convening but not to attribute what they learned or what was said to any one individual. This report adheres to Chatham House Rules while allowing for shared lessons learned and action items to inform both the future work of participants and to make high-level Symposium discussions available to those who did not attend the Symposium.

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Bridging the Gaps

To help address the tensions between innovation and regulation playing out in cities across the United States, the report details the following four core policy challenges raised by attendees and the considerations each paradigm offers for approaching new mobility governance. By acknowledging these tensions, the report provides a comprehensive overview and future research directions to inform policy debates.

- **Managing induced demand:** Making sense of the impacts of autonomous vehicle adoption on Vehicle Miles Traveled (VMT) — and managing localized congestion.
- **Reconciling state preemption:** Threading the needle of state oversight and local control.
- **Expanding safety metrics:** Moving beyond traditional performance metrics to incorporate other systemic factors and promote public trust.
- **Prioritizing universal design:** Meeting unmet mobility needs, without delaying deployment.

Four Core Policy Paradigms

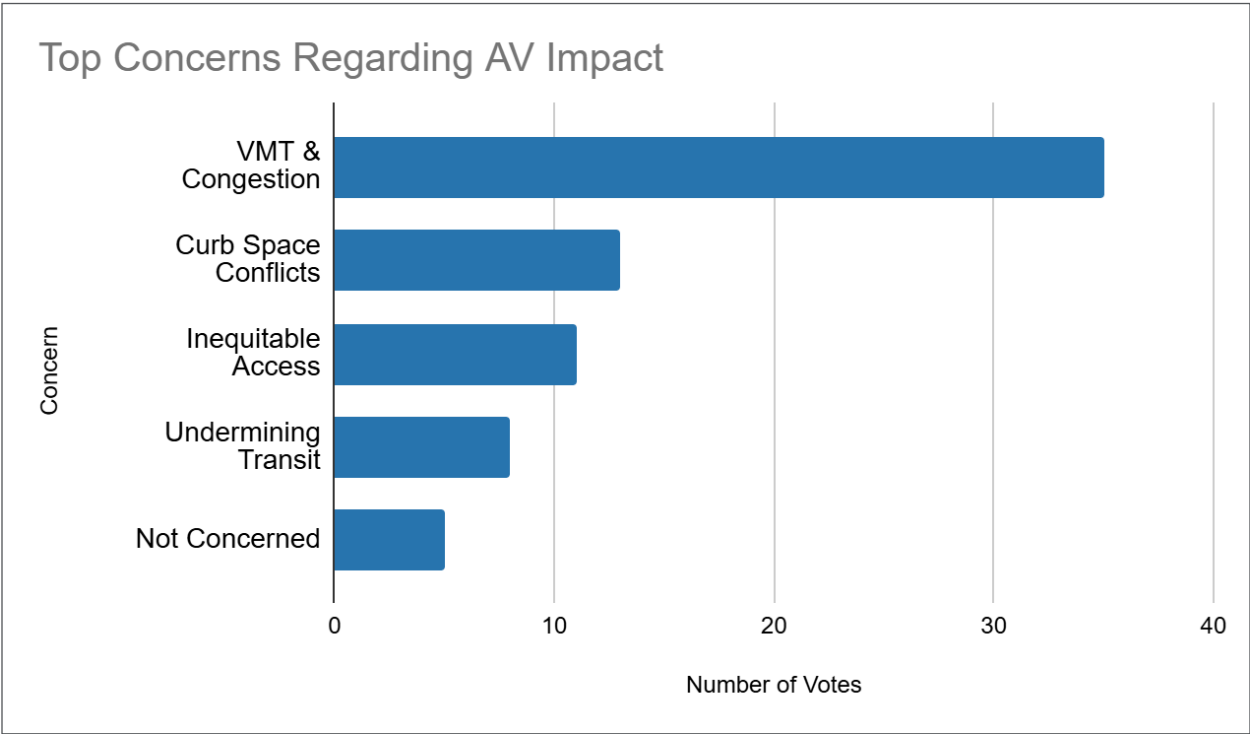
The integration of automated vehicles (AVs) onto public streets requires resolving distinct tensions between the operational models of private mobility providers — largely interested in scale, profit, and network efficiency — and the public mandate of transportation agencies to focus on safety, system reliability, and equity. During the Symposium, speakers and attendees identified and discussed four primary policy paradigms, detailed below.

Managing Induced Demand via Pricing and/or Curb Management

A central theme of the three-day Symposium was the implications of autonomous vehicle adoption on system-level Vehicle Miles Traveled (VMT) and localized and regional traffic congestion. In other words, do automated vehicles have the potential to increase or decrease driving overall? While some private sector participants emphasized improved mobility through lowered per-mile operational costs and scale, public sector and academic participants identified the proliferation of unpriced, zero-occupancy vehicle circulation and induced demand for mobility. Those skeptical of AV’s potential benefits to VMT pointed to the reduction in attention required for driving as catalysts for VMT increases, which many passengers might perceive as “getting time back” in their day, thereby creating a potential “rebound” effect in the demand for driving.

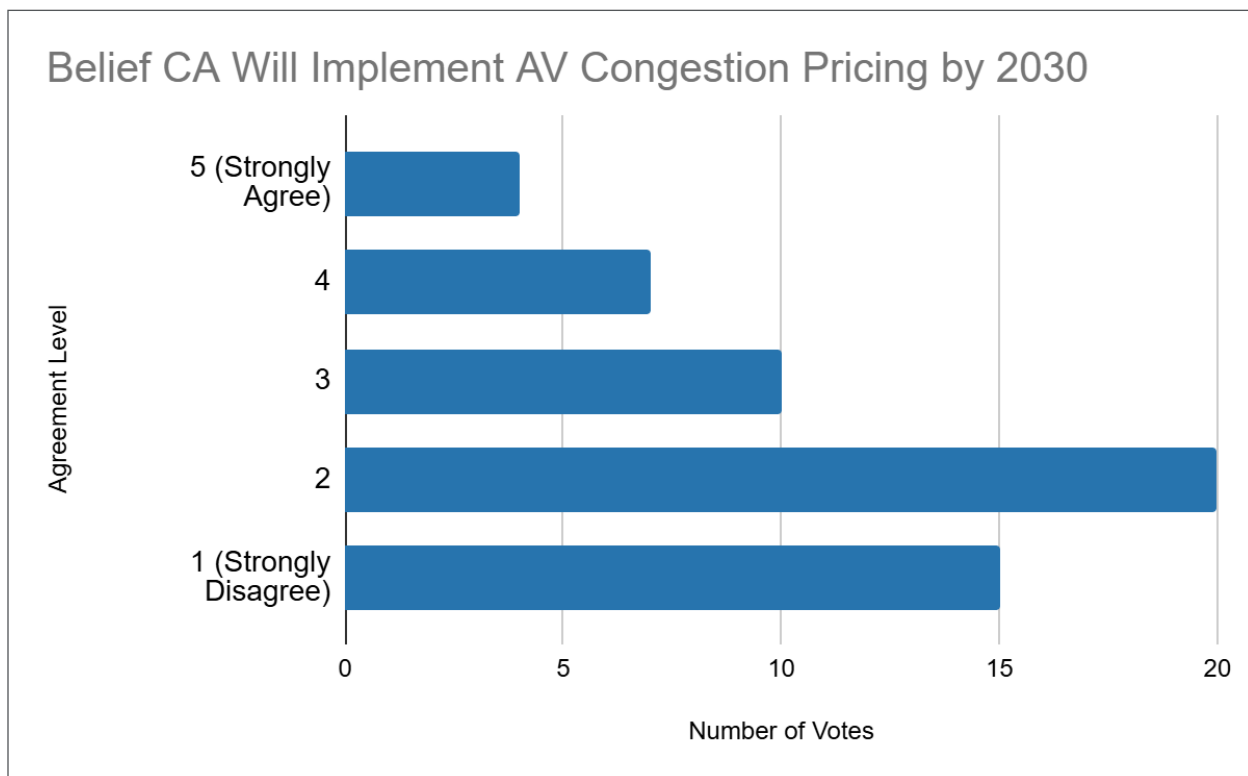
As shown in Figure 1 (below), participants saw an increase in vehicle miles traveled and traffic congestion as a top concern regarding the system impacts of automated vehicles.

Figure 1: Primary concerns regarding transportation system impacts



Attendees identified the necessity of variable demand-based pricing to manage localized congestion and generate revenue. However, as shown in Figure 2, attendees expressed reservations about the political feasibility of implementation. The fractured and pessimistic response regarding the likelihood of California enacting automated vehicle-specific congestion or empty-mile fees by 2030 indicates a stark awareness of the political complexities associated with market-based demand management over an entire fleet.

Figure 2: Anticipated implementation of AV-specific transportation pricing in California by 2030



Advantages of Interventions: In the absence of market-based pricing mechanisms, a commercial AV company is incentivized to circulate empty vehicles to avoid parking fees or “deadhead” (or relocate to a new area without directly serving a passenger) to areas of anticipated demand. Transportation planners agreed that current street networks in downtowns and mixed-use districts near transit cannot absorb this additional localized demand. Attendees identified congestion pricing, zero-occupancy vehicle fees, and dynamically-priced curb management as strategies to mitigate potential localized congestion.

Concerns with Interventions: Others challenged the premise of induced demand, framing increases in VMT as satisfying unmet travel demand, including by people currently unable to drive. One respondent argued explicitly: “Taxes on AVs should directly remediate externalities, not disincentivize use.” Additional apprehensions included a deep concern that dynamic curb pricing would operate as a regressive tax, with revenues used not for transportation and access but to backfill unrelated city budget deficits.

Reconciling Statutory Preemption with Municipal Capability

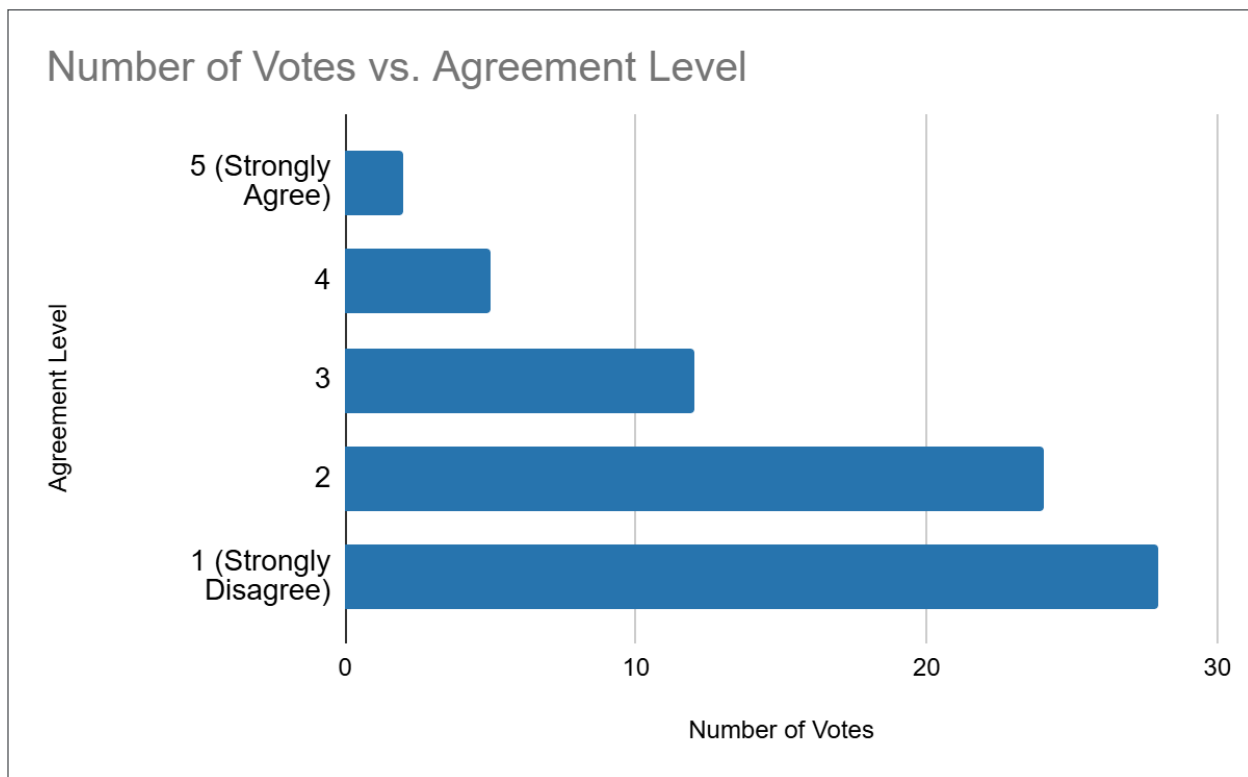
Symposium speakers and participants extensively discussed the structural disparity between the digital tools available to the transportation sector and the institutional capacity of local governments to procure and deploy them. These digital tools include data standards, sensor systems, and policy-enforcing algorithms that allow operators and jurisdictions to proactively manage the transportation system or to “see” and respond to conditions in real time. For example, “digital fences” can be created by a local jurisdiction that is shared with AV operators in emergency situations to keep the area clear for first responders. These discussions often highlighted the tensions between state-level automated vehicle permitting administered by the Department of Motor Vehicles (DMV) and the California Public Utilities Commission (CPUC) and localized transportation safety and operations needs.

Advantages of local control: Local control of the public right-of-way can help to maintain safe and efficient traffic operations, especially in congested areas, during emergencies, and for special events. Current regulatory models in California preempt local governments from establishing localized operational constraints for autonomous fleets that do not also apply to driver-operated vehicles. While some cities may possess the technical capacity, such as using the Curb Data Specification (CDS) to broadcast real-time curb conditions and restrictions and Mobility Data Specification (MDS) to issue operational procedures for special events or emergencies, automated vehicle fleet compliance with these scalable local control mechanisms is voluntary because compliance is not required by the CPUC or DMV.

Disadvantages of local control: Attendees concerned about regulatory fragmentation supported state preemption as a necessary feature to prevent innovation from being stifled by municipal bureaucracy. Participants overwhelmingly disagreed that the public sector possesses the agility to direct automated vehicles in real-time, which may be due to the fact that local governments are currently preempted from doing so (Figure 3). Furthermore, a panelist characterized public employees as “intensely risk averse,” suggesting that if automated vehicle companies were forced to navigate a fragmented landscape of different municipal regulations or seek per-locality approval to serve a jurisdiction, many new mobility technologies could never be introduced or scale to viability.

Institutional Capacity Constraints

While attendees expressed a perception that local authorities could mitigate the negative, localized impacts of automated vehicles, a poll about agility highlighted a critical concern regarding institutional readiness (Figure 3). The overwhelming disagreement (52 combined negative responses) highlights a ‘Capability-Maturity Gap,’ where broken processes (such as conventional procurement approaches) and a lack of dynamic digital infrastructure are prerequisites for the public sector to govern automated vehicles in real time. Speakers and attendees suggested that public agencies adopt agile ‘Unsolicited Proposal’ frameworks to overcome these current limitations.

Figure 3: Assessment of public sector procurement agility

Expanding Safety Metrics to Include Systemic Factors

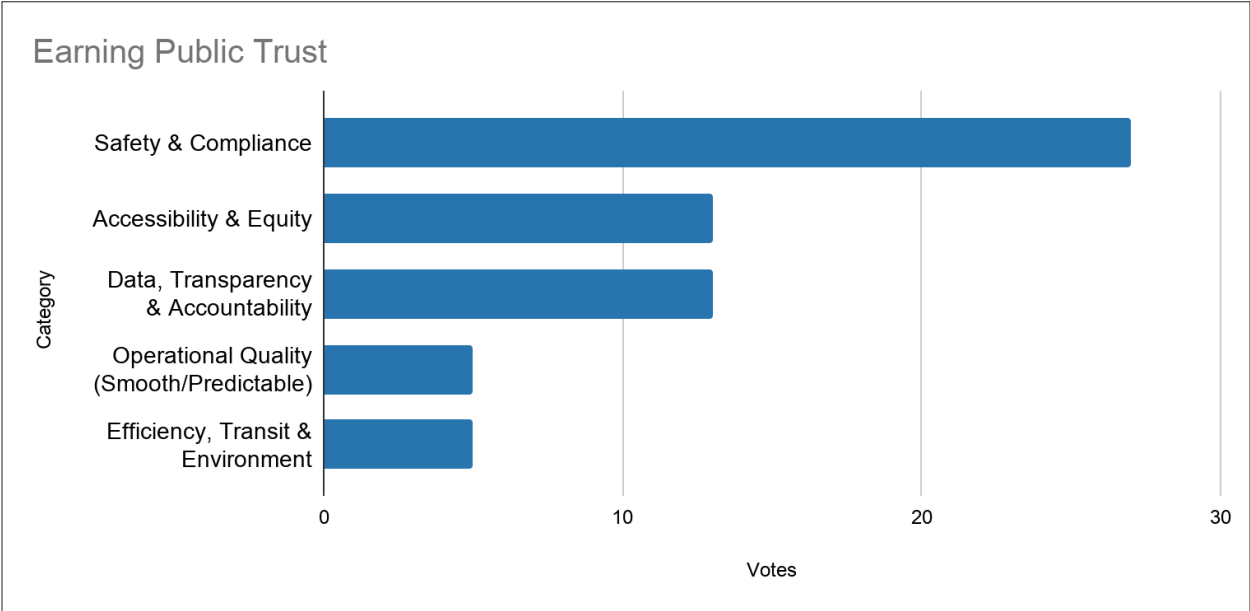
Participant discussions on commonly-utilized safety measures revealed a fundamental methodological divergence between the automated vehicle industry's vehicle-centric evaluation criteria and the public sector's system performance metrics, particularly concerning how each assesses common safety and operational impacts.

Limits of limited-scope metrics: Federal and state regulators, as well as private operators, predominantly evaluate safety by considering automated capability disengagements or collisions. However, municipal transportation network operators evaluate safety in terms of systemic operational continuity. Unplanned and unexpected operational halts (known as 'bricking') in active intersections or transit-only lanes create cascading delays and risk of collisions with other vehicles or vulnerable road users, degrading overall safety. The majority of attendees strongly demanded mandatory data reporting on these sudden halts to better evaluate the systemic impact of automated vehicle fleets on streets.

It's not just about safety: Most participants agreed on the need for more comprehensive safety measurements. However, some attendees expressed concerns around potential trade-offs, suggesting that municipal operators might weaponize the concept of "safety" for other purposes, such as labor protections. A minority of participants recognized that automated vehicles have the potential to be safer and argued that demanding companies halt deployment for any reason, including whether transit labor unions are satisfied, acts as rent-seeking behavior by a threatened transit monopoly.

Safety Compliance, Accessibility, Equity, and Transparency are Key to Public Trust

Figure 4: What must automated vehicles do to earn the public trust



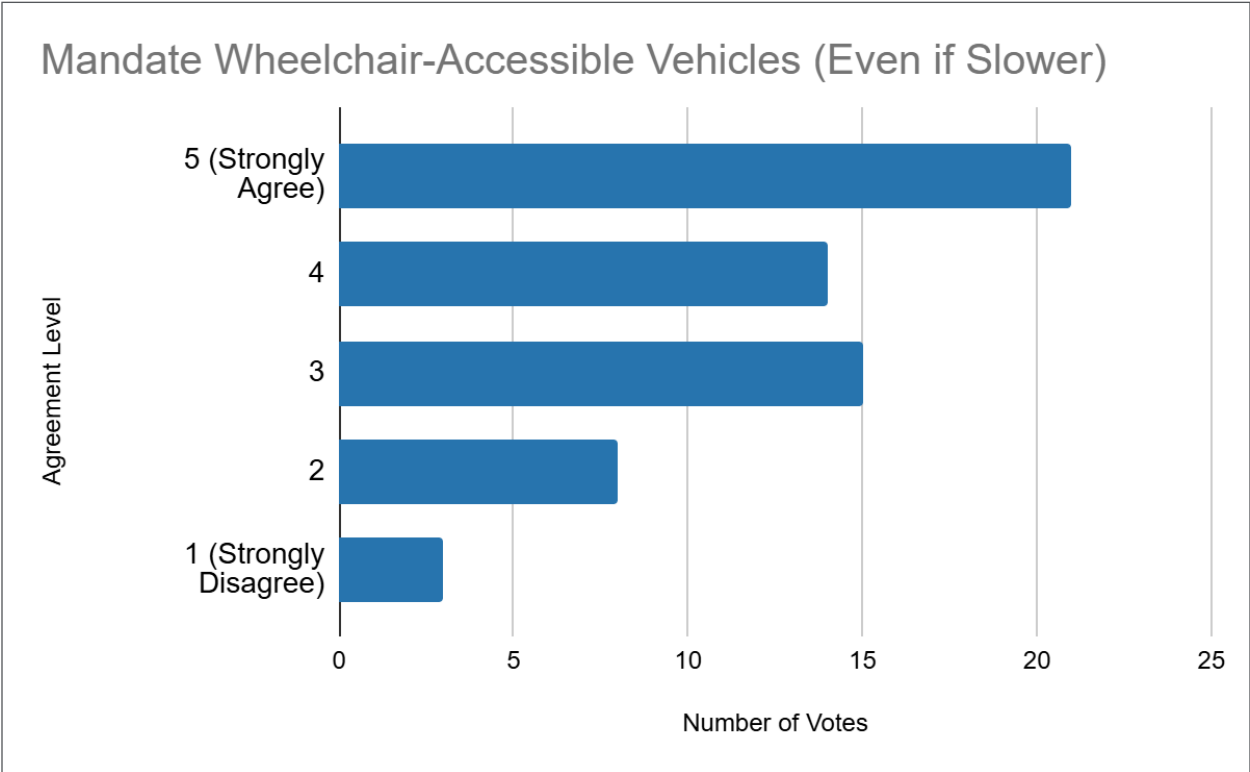
These themes were echoed in discussions over governance and safeguarding public stewardship. When asked how automated vehicle companies can earn the public’s trust, Symposium participants (Figure 4) prioritized themes of safety and compliance (27), accessibility and equity (13), and data, transparency, and accountability (13). Within a transportation planning context, this indicates a stringent demand from municipalities and other agencies involved in incident response and investigation to collect safety-related information for independent post-incident analyses and validation of network performance impacts.

Prioritizing Universal Design in Robotaxi Deployments

Symposium participants critically examined the equity implications of passenger-serving automated vehicle fleet deployments, noting a persistent spatial and operational mismatch between purpose-built commercial fleets and the travel needs of low-income people or people with disabilities.

As shown in Figure 5, the majority of attendees expressed support (35 combined positive responses) for establishing Americans with Disabilities Act-equivalent boarding capabilities (e.g., wheelchair access) as a strict precondition for robotaxi market entry.

Figure 5: Support for mandating wheelchair-accessible vehicles at market entry



Launch with accessible vehicles: Current generation commercial robotaxis deployed by automated vehicle companies are not accessible to those who use wheelchairs. These services also fail to meet paratransit-equivalent standards. The majority of symposium participants argued that Americans with Disabilities Act-compliant vehicles and boarding capabilities must be strict preconditions for robo taxi market entry.

Vehicle accessibility as a barrier to launch: Others, however, expressed concern that requiring universally-accessible vehicle platforms at launch would make deployments cost-prohibitive. This perspective was evident in audience polling and discussions, where one participant lamented, “What is with this focus on ‘forced’?! We are obsessed with compelling and requiring. Meanwhile, we can’t even deliver our own bike and transit plans!” In other words, some participants believed that scaling standard passenger platforms first drives down costs, generating the scale and investment necessary to develop and deploy fully-accessible vehicles in subsequent generations.

Future Research Questions

The discussions at the 2026 Arrowhead Symposium revealed significant gaps between current regulatory frameworks and the operational realities of municipal governments and autonomous fleets. Based on these discussions, the following research questions are critical to advancing future understandings of how to govern new mobility and automated vehicles in California.

- **State vs. Local Legal Authority:** How can municipalities legally structure and enforce dynamic curb pricing or micro-access fees under current state preemption frameworks (e.g., CPUC/DMV regulations)?
- **Systemic Safety Quantification:** What are the quantifiable, system-wide operational impacts of AVs frequently entering a “Minimal Risk Condition” (stopping in place) within congested, transit-rich corridors?
- **Equitable Hardware Viability:** What cross-subsidization models or market mandates are required to make universal design (wheelchair-accessible and assisted travel) financially viable for commercial robotaxi fleets?
- **Procurement Agility:** How can municipal agencies accurately measure and bridge the “Capability-Maturity Gap” to procure and maintain real-time digital infrastructure (like MDS/CDS) ahead of exponential scaling by private tech companies?

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