



October 11, 2024

The Honorable Steve Gordon, Director
California Department of Motor Vehicles
2415 First Avenue
Mail Station F10
Sacramento, CA 95818-2606

Dear Director Gordon:

On behalf of Chamber of Progress – a tech industry association supporting public policies to build a more inclusive society in which all people benefit from technological advancements – I write in response to the Department’s request for informal feedback on the proposed draft regulatory language for autonomous vehicles. We are strong supporters of autonomous vehicles because of their potential to drive economic growth while making our roads safer, greener, and more accessible.

While we applaud the DMV for opening the door to autonomous trucking in California, we are concerned that many of the draft rules would stunt the long-term development of all autonomous vehicles in the state. Limiting the potential of this technology would deny Californians its benefits and cede California’s leadership in innovation. We urge you not to move forward with the rules without addressing the concerns outlined below.

1. Autonomous vehicles enhance safety, environmental sustainability, economic growth, and equity.

Autonomous vehicles are critical for several key reasons, with safety being one of the most important. By minimizing human error, which accounts for the vast majority of road accidents, AVs have the potential to significantly reduce traffic fatalities and injuries. For example, in Los Angeles, between 2020 and 2022, AV deployment could have prevented 1,300 roadway fatalities, nearly 5,000 serious injuries, and 46,000 minor injuries over the last three years.¹

AVs also decrease greenhouse gas emissions. Most AVs are either electric or hybrid. Further, these vehicles can optimize routes and driving patterns to reduce energy consumption, making transportation more efficient and eco-friendly. In 2022, the California Air Resources Board (CARB) proposed achieving carbon neutrality by 2045,

¹ Study: *Autonomous Vehicles Could Have Saved 1,300 Lives in CA Over Last Three Years*, Chamber of Progress (Mar. 2024). <https://progresschamber.org/study-autonomous-vehicles-could-have-saved-1300-lives-in-ca-over-last-three-years/>

cutting air pollution by 71%, and reducing greenhouse gas emissions by 85%.² AVs can be an important tool in combating climate change and ensuring that California reaches its emissions goals.³

Economically, AVs will create new job opportunities and fill existing labor shortages. Our research found that over the next 15 years, over 450,000 jobs could be created to produce, distribute, and maintain autonomous vehicles.⁴ California is particularly well-positioned to attract these jobs thanks to its strength in both auto manufacturing and STEM fields.⁵ Currently strained by a lack of drivers,⁶ logistics and trucking industries can also benefit from AVs to fill labor gaps. Autonomous trucks can operate around the clock, ensuring products move faster from farms to markets, reducing delays and spoilage.⁷ AVs will help maintain the smooth operation of supply chains, especially for critical industries like farming, where timely transportation of goods is essential for food security.

Finally, AVs promote equity by providing greater accessibility, especially for those who are unable to drive due to disabilities or other limitations. Each year, 3.6 million people in the U.S. miss medical services due to transportation issues.⁸ Mobility challenges and inaccessible transit options also present significant obstacles for people with disabilities trying to reach jobs and education.⁹ When integrated with rideshare services, AVs can provide on-demand transportation for individuals who may not have access to personal vehicles or public transit options. These services bridge mobility gaps in underserved communities by connecting residents to transportation hubs or providing curbside service. AVs can ensure that everyone has access to reliable and independent mobility.

2. While the draft rules lift the prohibition against autonomous trucks, the restrictions imposed on their operations will stunt their long-term growth.

² California Releases World's First Plan to Achieve Net Zero Carbon Pollution, Governor Gavin Newsom (Nov. 2022). <https://www.gov.ca.gov/2022/11/16/california-releases-worlds-first-plan-to-achieve-net-zero-carbon-pollution/>

³ Issue Brief, *Autonomous Vehicles: State of the Technology and Potential Role as a Climate Solution*, Environmental and Energy Study Institute (June 2021).

<https://www.eesi.org/papers/view/issue-brief-autonomous-vehicles-state-of-the-technology-and-potential-role-as-a-climate-solution>

⁴ Report, *Opportunity AV: How Many and What Types of Jobs Will Be Created by Autonomous Vehicles?*, Chamber of Progress (Feb, 2024).

<https://progresschamber.org/wp-content/uploads/2024/03/Opportunity-AV-How-Many-and-What-Type-of-Jobs-Will-Be-Created-by-Autonomous-Vehicles.pdf>

⁵ Report, *Opportunity AV: How Many and What Types of Jobs Will Be Created by Autonomous Vehicles?*, Chamber of Progress (Feb, 2024).

<https://progresschamber.org/wp-content/uploads/2024/03/Opportunity-AV-How-Many-and-What-Type-of-Jobs-Will-Be-Created-by-Autonomous-Vehicles.pdf>

⁶ *Id.*

⁷ Podcast, *Episode 138 - How Smart Farming Can Feed a Growing Population*, Society of Automotive Engineers (SAE) International <https://www.sae.org/podcasts/tomorrow-today/episodes/DIN>

⁸ Issue Brief, *Increasing Mobility and Access with Autonomous Vehicles*, Center for Automated Transportation Technology (CATT) (Apr. 2023). (https://safe2020.wpenginepowered.com/wp-content/uploads/2023/04/CATT_Brief_2_v04.pdf)

⁹ *Economic Impacts of Removing Transportation Barriers to Employment for Individuals with Disabilities Through Autonomous Vehicle Adoption*, ICF and National Disability Institute (Dec. 2022).

<https://www.nationaldisabilityinstitute.org/wp-content/uploads/2023/02/ndi-economicimpactsofremovingtransportationbarriers.pdf>

We applaud the DMV for reversing the prohibition against testing autonomous trucks and for allowing commercial operations during the testing phase. Two dozen other states have already approved the use of autonomous trucks, including Nevada, Arizona, and Texas.¹⁰ Testing has already begun across the Sunbelt, giving California's neighbors a head start at unlocking the economic and environmental benefits.¹¹ The proposed changes eliminating the long-standing prohibition against testing in California, as well as the prohibition against operators receiving compensation for transporting property in trucks, will help California compete against neighboring states and bring the economic, environmental, and social benefits of autonomous trucks to residents and businesses in the state.

However, while the proposed regulations approve testing in theory, other rules would make it difficult to impossible in practice to realize the full potential of autonomous trucks. To harness this technology, we urge changes to the proposed regulations that would limit the long-term viability of autonomous trucks.

ODD restrictions will stunt the development of autonomous trucking

The proposed limits on the operational design domain (ODD) in which autonomous trucks can be tested and deployed would stunt the long-term growth of the industry. The proposed rule limits autonomous trucks to "frontage streets or roads and on roads where the posted speed limit is 50 miles per hour or higher". This restriction would block future applications of autonomous trucking technology and artificially cap potential fleet sizes.

The proposed ODD restrictions would restrict the use of autonomous trucking to limited hub-to-hub transit models. In hub-to-hub transit models, freight is transported between large depots before being disaggregated and transferred to different vehicles for last-mile delivery. Integration of autonomous technology has already begun in these models, with autonomous trucks completing the middle-mile transportation between hubs.¹² However, by restricting the ODD for autonomous trucks to frontage roads and roads with speed limits of at least 50 mph, the proposed rule would limit the use of autonomous trucks only to hubs located along those allowable roads.

Further, while middle-mile delivery in hub-to-hub models is a common application of autonomous trucking technology, it is not the only possible application. Capping the

¹⁰ Trisha Thadani, *Ready or not, self-driving trucks are coming to America's highways*, Washington Post (Mar. 2024). <https://www.washingtonpost.com/technology/2024/03/31/autonomous-semi-truck-jobs-regulation/>

¹¹ Seth Clevenger, *Autonomous Trucks Reshaping the Freight Industry*, Transport Topics News (Jan. 2024). <https://www.ttnews.com/articles/autonomous-trucks-reshaping-freight-industry>

¹² McGillis, Jordan, *Autonomous Now: Why We Need Self-Driving Technology and How We Can Get It Faster*, Manhattan Institute (July 2023). <https://manhattan.institute/article/why-we-need-self-driving-technology-and-how-we-can-get-it-faster>

operating environment for autonomous trucks at this stage would hinder innovation and leave some applications of the technology unexplored. For example, under the proposed rules, autonomous trucking operators would be prevented from expanding into first- and last-mile delivery or fully end-to-end automated transportation services.

ODD restrictions may also conflict with other requirements, undermining safety and efficiency

This rule also potentially conflicts with other requirements for operators. For example, the proposed rules require operators to place an avoidance zone for the entire fleet of at least two blocks around an emergency site after being notified by a public safety agency. Because the ODD for autonomous trucks is so limited, they may be prevented from finding alternative routes around the avoidance zones. In the case of an accident on the freeway, for example, an avoidance zone with a two-block radius could prevent an autonomous truck from moving at all, potentially blocking traffic and emergency response vehicles from arriving at the scene. This conflict could be resolved by easing the restrictions on ODDs in the case of emergencies and clarifying that autonomous vehicles would be allowed to follow the same path through avoidance zones as human-driven vehicles.

Similarly, the ODD restrictions would make it more difficult for operators to comply with the proposed requirements for retrieval events, putting their testing and deployment permits at risk. The draft rules require vehicles to revert to a minimal risk condition and clear the traffic lane within 60 seconds of executing a dynamic driving task fallback maneuver. The rules would also require manufacturers or their affiliates to complete all retrieval events within 30 minutes on roads with speed limits of 55 mph or less and 90 minutes on roads with speed limits greater than 55 mph. Manufacturers that fail to comply risk having their testing and deployment permits restricted.

The ODD restrictions may interfere with compliance in emergency situations, putting overall trucking operations at risk. Manufacturers and affiliates cannot control the road conditions or circumstances in emergency situations and may force operators to forego the safest or most efficient route because it would require them to exit the limited ODD. For example, there may be situations in which it would be safer and faster for a truck to exit a freeway and move to a slower, less-congested road with more space to stop rather than reverting to a minimal risk condition on the shoulder. However, the ODD restrictions would prevent them from doing so. Restricting operators' options when it comes to stopping and retrieving a vehicle in the case of an emergency could erode one of the most important benefits of autonomous vehicles: improved roadway safety.

Placing such strict limits on the operations of autonomous trucking while the technology is still developing would stunt the growth of the industry as a whole. It also risks denying California residents and businesses the full potential of this nascent technology.

3. The proposed rules would also stunt the growth of the wider autonomous vehicle industry and risk disrupting existing operations of popular services.

If enacted as drafted, these rules risk disrupting existing autonomous vehicle operations, including rideshare services in the San Francisco and Los Angeles area. Disrupting these operations would have an immediate negative impact for Californians, especially those who are underserved by existing transportation options. Since launching in San Francisco in August 2023, nearly 300,000 people have signed up for Waymo's rideshare service, and the fleet has driven over 3.8 million miles.¹³ According to Mark Riccobono, President of the National Federation of the Blind, "autonomous vehicles empower blind and low-vision individuals to travel fully independently, reducing dependence on others and fostering self-sufficiency".¹⁴ Disrupting existing operations of autonomous vehicles in the state would limit options for all consumers and reduce mobility for people living with disabilities.

As with trucking, many of the rules would also limit the long-term viability of autonomous technology in California by stifling competition and creating unnecessary barriers to entry in the state. We urge you to reconsider many of the proposed rules in order to avoid denying the benefits of autonomous vehicles to California residents.

Extensive data reporting requirements would stifle competition and hinder innovation

The draft rules would vastly increase the amount and frequency of data that operators are required to submit to the DMV. The amount of data reporting required under the draft rules would create high compliance burdens for AV operators, making it more difficult for new entrants in the market to compete with larger, more established companies. The reporting requirements would also increase costs for the DMV, as new systems would need to be developed to receive and process monthly reports. Further, the volume of data required and absence of equivalent reporting requirements for human-driven vehicles would make it difficult to analyze, risking future regulatory decisions built on inaccurate conclusions. All told, the data reporting rules risk stifling competition and innovation of autonomous technology.

The extent of the data reporting requirements would create high barriers to entry for operators looking to enter the California market. The new rules would require all permit holders – drivered testing, driverless testing, and deployment – to submit monthly reports to the DMV recording every disengagement and hard braking event. The broad definitions of these categories would result in a large volume of data that operators would be

¹³ Shaban, Bigad, *Waymo waitlist over in San Francisco; all can hail driverless cars*, NBC Bay Area, (June 2024). <https://www.nbcbayarea.com/news/local/san-francisco/waymo-waitlist-over-sf/3574655/>

¹⁴ Curtis, Terra, *Waymo Advice Letter - CPUC Driverless Deployment Service Area Expansion*, National Federation of the Blind (Feb. 2024). <https://nfb.org/programs-services/advocacy/policy-statements/waymo-advice-letter-cpuc-driverless-deployment-service>

required to record, store, and report to the DMV. The cadence of those reports would also drive up costs and compliance burdens.

High compliance costs would limit competition, to the detriment of technological innovation and California consumers. The compliance costs would fall hardest on new operators trying to enter the California market. Large companies or those with well-established operations in California may be able to develop systems over time to comply (although they would still face significant costs). However, because no other state requires such extensive data reporting, operators looking to enter the California market would be at a competitive disadvantage compared to already entrenched players. Increasing the barriers to entry in California would not only limit consumer choices but would also limit competitive innovation.

The data reporting requirements would also impose significant costs on the DMV itself. Similar requirements were proposed by the legislature in AB 3061, which was vetoed by Governor Newsom in September.¹⁵ AB 3061 would have required AV operators to submit reports of “vehicle immobilizations” and “disengagements”, although the reports were required annually (at minimum) rather than monthly. The bill also did not call for the same reporting of “braking events” as required in the draft rules. Still, the costs to implement AB 3061 were predicted to be significant. The Senate Appropriations Committee reported that it would cost the DMV \$16 million in the first year, \$7.6 million in the second year, and \$4.4 million annually thereafter to “develop, build, and maintain a new separate IT system to receive and manage the reports and post them on the department’s website”.¹⁶ Because the reporting requirements under the draft regulations are even more extensive than those required in AB 3061, the cost of implementing these requirements would likely be even higher.

The volume of data reported and absence of comparable data on human-driven vehicles risk creating a distorted picture of autonomous vehicles’ performance. For example, in the current draft, operators would have to maintain a database and report to the DMV every time a test driver disengaged the autonomous driving system in order to take a break or change shifts. Operators would also have to track and report all “braking events”, including, for example, whenever a human-driven vehicle came to a sudden stop ahead of an AV. The parameters for reporting braking events would include a massive number of instances where cars brake in a safe and necessary manner, creating a public narrative that “braking events” are necessarily dangerous or unsafe, where the opposite is often the case. Additionally, the California Public Utilities Commission (CPUC) has a rulemaking in progress that includes increased amounts of data reporting, including

¹⁵ Governor Gavin Newsom, AB 3061 Veto Letter, Office of the Governor - California (Sept. 2024). <https://www.gov.ca.gov/wp-content/uploads/2024/09/AB-3061-Veto-Message.pdf>

¹⁶ Senate Floor Analyses, California Legislative Information (Aug. 17, 2024). https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=202320240AB3061

reporting for “immobilizations.” The DMV’s proposed data reporting would create a patchwork of regulations if not harmonized with CPUC’s proposed decision.

Because similar metrics are not tracked for human-driven vehicles, the data reported by AV operators would be analyzed in a vacuum, and any analysis could not control for roadway conditions or difficulties experienced by all road users. As a result, any conclusions drawn from the data would be incomplete and would fail to meet the Department’s stated goal of “increas[ing] public transparency and enhanc[ing] conversations and coordination with local governments”.¹⁷

Requiring such extensive data reporting would divert resources from the DMV and AV operators’ other priorities. It would also entrench existing players in California’s market while erecting high barriers for new entrants, and it risks misinforming the public and future regulators when it comes to the performance of autonomous vehicles. We urge you to reconsider these requirements.

Licensing and training requirements for remote assistants are unnecessary and would undermine operations and limit economic benefits

The draft rules require that remote assistants and remote drivers hold the same licenses, receive the same training, and be located in the state of California during the testing phase. These requirements are technically unnecessary and ignore important differences between remote assistants and remote drivers. Further, they would artificially limit the potential workforce for AV operators and limit the scalability of AV operations.

As the draft rules acknowledge, remote assistants do not perform the same functions as remote drivers. Remote assistants are defined to be capable of communicating with passengers and providing “information or advice” to the automated driving system. Their roles are explicitly defined to “not include remote driving”.¹⁸ By contrast, remote drivers are defined to be capable of “perform[ing] the dynamic driving task” and “causing the vehicle to achieve a minimal risk condition”.¹⁹ Remote assistants do not take control of the vehicle at any point, and their roles are strictly limited to providing guidance, information, and non-operational support.²⁰ Because they have no direct influence over the vehicle’s movement or driving functions, remote assistants should not be subject to the same licensing and training requirements as remote drivers, who do assume active control of the vehicle’s operations.

¹⁷ California Department of Motor Vehicles, *Request for Informal Feedback on Proposed Draft Regulatory Language for Autonomous Vehicles* <https://www.dmv.ca.gov/portal/file/request-for-comments-on-av-draft-regulations-pdf/>

¹⁸ California Department of Motor Vehicles, *Article 3.7 Testing of Autonomous Vehicles, §227.02(aa)-(bb)*, (Sept. 2024). <https://www.dmv.ca.gov/portal/file/article-3-7-express-terms-pdf/>

¹⁹ California Department of Motor Vehicles, *Article 3.7 Testing of Autonomous Vehicles, §227.02(h)*, (Sept. 2024). <https://www.dmv.ca.gov/portal/file/article-3-7-express-terms-pdf/>

²⁰ Butron, Greg, *A Path Forward: Using AI to Improve Remote Vehicle Assistance for AVs*, Motional (Mar. 2022). <https://motional.com/news/path-forward-using-ai-improve-remote-vehicle-assistance-avs>

Additionally, restricting remote assistants to those physically located in California undermines the safety benefits of AVs. Requiring remote assistants to be physically located in the state would make it more difficult for operators to create redundancies in their systems, limiting access to critical support during emergencies. For example, if a California center experienced a power outage, remote assistants in other states could provide immediate assistance, ensuring that AVs continue to operate safely. By imposing such location-based restrictions, the regulations inadvertently create safety concerns, as they hinder the ability to leverage resources from other centers that would enhance overall operational reliability and responsiveness.

Imposing the same licensure and training requirements could disrupt existing operations and limit growth potential for all autonomous fleets. If enacted as drafted, operators with current testing or deployment permits would be forced to retrain and certify all of their personnel, even those with no responsibility for any part of the dynamic driving task. Further, the requirement that remote assistants and drivers be located in California would create an artificially small hiring pool, limiting the future scalability of AV operations.

For autonomous trucking, the licensure requirement would be particularly harmful. The draft rules would require remote drivers and remote assistants working with autonomous trucks to have held a Commercial Driver's License (CDL) for at least three years and be located in the state of California. While the requirement to hold a CDL makes sense for remote drivers, who may be tasked with taking control of the vehicle, it is unnecessary for a remote assistant whose role is simply to provide information to the vehicle or communicate with law enforcement. Requiring that remote assistants maintain CDLs and be located in the state of California would significantly limit the potential hiring pool, making it difficult for autonomous trucking operators to fill the jobs needed to maintain and expand their fleets.

It would also limit opportunities for job seekers. Our research suggests that the deployment of autonomous vehicles can create over 450,000 jobs over the next 15 years, including jobs for remote operators and other operational support positions. Placing unnecessary licensing requirements on these jobs will limit opportunities for Californians who would otherwise be qualified.

Lack of clarity in other requirements would similarly create high barriers to entry for new operators and disincentivize investments in California

If enacted as written, the draft regulations would leave a number of questions unresolved. The regulatory uncertainty would make it more difficult for existing operators to comply and new operators to enter the market, disincentivizing overall investments in California.

For example, the requirements to obtain a permit, either for testing or deployment, leave many questions unanswered. The rules do not clearly allow testing data from other states to be submitted in applications in California. Does the DMV intend to accept testing data from other states? If not, AV operators with well-developed fleets and strong safety records in other states would face high barriers to entry in the California market, as they would have to start testing from scratch. Furthermore, the rules do not clearly define “comparable ODDs”, making it difficult for operators within California to determine which data is sufficient for their applications.

Worse, the rules do not explicitly make clear that operators who have already received testing or deployment permits under the previous framework would be able to continue operations. Will permits that have already been issued be grandfathered into any new rules, or will existing operators need to submit new applications that comply with the new requirements?

Additionally, the rules should be updated for better protection of proprietary information and better explanations for how data from manufacturers and operators will be used. The draft rules would require operators to submit Safety Cases upon application for a testing or deployment permit, as well as an updated Safety Case within 10 days of any modifications. Given the proprietary nature of Safety Cases, how will the DMV ensure that confidential business information will be protected? Further, how does the DMV intend to use or analyze the information provided? Without clarity on these questions, operators may be disincentivized from entering the California market.

The draft rules also do not reflect the complexity of existing operations or future innovations. Inflexible testing requirements, including strict thresholds for miles traveled and months spent in testing, will block the use of more efficient and innovative testing models in the future. Further, the requirement that a driver-in testing phase risks locking out novel vehicle types or applications of the technology that do not allow for human drivers to be present.

The requirement that permits and licenses for remote assistants and drivers be electronically displayed do not reflect the complexity of current operations. How should operators display licenses for remote assistants when multiple assistants may be responsible for a vehicle, or when the remote driver or assistant responsible for the vehicle changes? How will the personal information of remote assistants and remote drivers be protected?

Additionally, the proposed permit rules could prevent AV companies from updating their software in urgent or unanticipated situations, such as a large event or natural disaster that might require a software update. If companies are required to seek prior approval to amend a permit before pushing an update, and the DMV has any backlog in approving

permits, this could have dire implications for road safety in California. These concerns should be addressed before moving forward with the proposed rules.

4. These concerns must be addressed before moving forward with any rulemaking.

Autonomous vehicles represent enormous potential benefits to Californians. Over 300,000 San Francisco residents have already seen the benefits of autonomous rideshare operations: reductions in injury-causing accidents, more efficient vehicles, and expanded mobility options for those underserved by traditional transit services. Residents in neighboring states have already seen the benefits of autonomous trucks: smoother supply chains and more sustainable freight transportation options. However, these benefits are just a glimpse of what autonomous vehicles can do for residents and businesses in California.

While the draft regulations make some positive progress toward embracing more uses of autonomous technology, the overall effect would be to stunt its long-term development and disrupt existing operations. We urge you to rethink rules restricting the operational design domain for autonomous trucks, expanding the scope and cadence of data reporting requirements for all AV operators, and requiring remote assistants and remote drivers to maintain the same licenses and certifications. We also urge you to clarify the many outstanding questions the draft regulations raise.

California is a leader in innovation and a pioneer in adopting autonomous vehicles. If enacted as written, the draft regulations would cede that leadership and deny the Californians of the full potential of this groundbreaking technology.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ruth Whittaker', with a large, stylized initial 'R'.

Ruth Whittaker
Director of Civic Innovation Policy
Chamber of Progress