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Jeffrey Tumlin, Director of Transportation

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Department of Motor Vehicles  
[AutonomousVehicles@dmv.ca.gov](mailto:AutonomousVehicles@dmv.ca.gov)

Dear DMV:

Thank you for the opportunity to provide feedback on the Department's Proposed Draft Regulatory Language for Autonomous Vehicles. I am writing to share limited initial comments. First, we appreciate many things about the draft, including:

- Provisions that increase the frequency of required reporting (shift from annual to monthly disengagement and vehicle miles traveled reporting), and adding reporting requirements previously omitted for deployment permittees; and
- Provisions providing that an applicant must hold a California permit to test automated driving with drivers present before they may apply for driverless testing or deployment; and
- the provisions establishing that permits are for a limited term and not an indefinite term.
- Clarification of the Department's authority to impose temporary restrictions on a permit short of suspension or revocation, including reductions in the size of a fleet, hours of operation or area of operation.
- Addition of licensing and hours-of-service requirements for remote advisors and remote drivers, as well as advisor-to-vehicle staffing ratios.

We also appreciate the expanded requirements related to driverless AV – first responder interactions and the Department's interest in further discussion about how law enforcement may cite autonomous vehicles for moving violations. The SFMTA's AV Team will work with the San Francisco Police Department and San Francisco Fire Department to develop additional comments on the draft and share those as soon as possible.

As an initial matter, I wanted to raise two related issues that are not addressed in the draft and that we suggest you consider for inclusion:


1. **Mapping Issues.** Some automated driving systems rely on mapping as a critical input for safe driving. (This may change over time.). The text only addresses mapping in two places. In article 3.7, Section 227.52(b)(3)(D)(i), a localization or mapping discrepancy is identified as a category for disengagement reporting. In Article 3.8, Section 228.12(a)(14)(B), an applicant is required to certify that it will continually update maps to address changes in the physical environment – an addition that we support. But there is no mention of any underlying obligation to map all public roads within a service territory.



We encourage you to consider the implications for public safety arising from the extent of a permittee's mapping. We suggest a few scenarios in which mapping that is not comprehensive may raise concerns with different degrees of potential severity:

- a. Urban streets: Maps supporting urban automated driving that do not include all roads may leave AVs unable to use some roads for detours or emergency evacuation purposes. Inability to operate on unmapped roads may lead an AV to block and prevent other vehicles from using those roadways for emergency evacuation. Failure to map public parking lots and driveways may also preclude use of these locations to pick up or drop off passengers, make deliveries or pull safely off the road when there is a system failure.
  - b. Limited access freeways: Maps supporting freeway driving by either light duty or heavy-duty vehicles that do not include all shoulder areas, exit ramps and nearby access roads may make AVs unable to use those areas when their use is essential to take detours required by road construction, collision response, and/or for evacuation in the event of a natural disaster. This may also lead to a situation in which a driverless AV becomes an obstacle and hazard for other vehicles seeking to evacuate from an area. As fleet sizes grow, this could lead to very significant problems in emergency situations.
2. **Emergency and Disaster Operations**: The Department may also want to consider a broader requirement for permittees to submit an emergency operations plan that establishes expectations for the performance of vehicles and remote operations staff in the event of a natural disaster, power outage or communications outage. Such a plan should address everything necessary to ensure appropriate evacuation by AVs – as well as expectations for how remote operations staff interact with public agency disaster operations. The Department may want to consider how fleet size should affect these requirements. It is reasonable to think that a fleet of 1000 vehicles should be subject to more rigorous disaster planning requirements than a fleet of 10 vehicles.

Thank you again for making this early draft document available for review and comment. We look forward to discussing the draft with the Department and to providing additional written comments.

Sincerely,  


Jeffrey Tumlin  
Director of Transportation

Cc: Deputy Chief Darius Luttrupp, SF Fire Department  
Commander Nicole Jones, SF Police Department