

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

Order Instituting Rulemaking on the
Commission's Own Motion to Adopt New
Safety and Reliability Regulations for Natural
Gas Transmission and Distribution Pipelines
and Related Ratemaking Mechanisms

R.12-12-011

**REPLY COMMENTS OF THE SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY AND SAN
FRANCISCO COUNTY TRANSPORTATION AUTHORITY ON ALJ RULING ORDERING PARTIES TO
COMMENT ON QUESTIONS REGARDING CPUC REGULATION OF AUTONOMOUS VEHICLES**

QUESTIONS 1-8

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I. INTRODUCTION

Pursuant to Rule 11.1(f) of the Rules of Practice and Procedure, Administrative Law Judge Robert Mason authorized this filing by email to all parties dated February 24, 2020.

In response to the December 19, 2019 Administrative Law Judge Ruling Ordering Parties to Comment on Questions Regarding the Commission's Regulation of Autonomous Vehicles (the "ALJ Ruling"), the San Francisco Municipal Transportation Agency ("SFMTA") and the San Francisco County Transportation Authority ("SFCTA") submit these joint Reply Comments on Questions One through Eight.

Industry members and organizations urge the Commission to expand the AV Passenger Service Pilot Test Program to allow for fare collection and urge the Commission to adopt regulations that provide for full deployment of AV Passenger Services. For reasons addressed at length in our opening comments, the SFMTA and SFCTA believe that the Commission has not yet established an appropriate foundation for authorizing commercial deployment of AV Passenger Services.

Nonetheless, as articulated in our opening comments, we identify below many areas of agreement between the SFMTA and SFCTA and the industry. We agree that the Commission should outline expectations for the industry and a path to commercial deployment. Most importantly to the industry, we do not oppose Commission authorization for fare collection during the Pilot Test Program, so long as it is authorized in connection with pilot testing that evaluates both the industry's commercial goals and public goals. We believe this will be most effective in collaboration with public agencies, and we have outlined a schematic proposal for voluntary collaboration that could demonstrate methods to achieve commercial success within guardrails that define key public interests.

We believe that collaborative AV Passenger Service sandbox pilot testing, or another model that may be agreed upon by the industry, public entities, and other stakeholders, would provide companies the opportunity to demonstrate their progress toward achieving public

goals. We strongly believe that compensation should only be authorized if AV Passenger Service is provided in partnership with a public agency.

In addition to the items specifically addressed below, the SFMTA and SFCTA believe there is opportunity for greater alignment among industry and other parties. We have begun direct conversations with the California Department of Motor Vehicles (DMV) and the California Public Utilities Commission (CPUC) permittees and industry organizations and will continue to seek common ground among stakeholders to reduce the disputed issues before the Commission. We encourage the Commission to support and, where appropriate, facilitate such discussions.

II. DISCUSSION

The Parties Opening Comments Demonstrate Many Areas of Agreement

The parties' opening comments in response to Question 1 and Questions 2-8 show several important areas where we see significant agreement between the SFMTA's and SFCTA's position and the position of industry members and organizations, as well as with other public entities.

- A. CPUC regulations should articulate The Commission's policy goals with respect to AV Passenger Service and identify the legitimate regulatory objectives to which they relate (Question 2)

Most parties, including public and non-profit entities, industry members and industry organizations, agree that the Commission should establish policy goals to guide the AV Passenger Service regulations.¹ With respect to environmental goals, Zoox urges the Commission to work closely with other state agencies who have jurisdiction to ensure that

¹ Waymo's Comments, Questions 2-8, p.3; The Bay Area Council's Comments Questions 2-8, p. 3; GM Cruise's Comments Questions 2-8, p. 14; Zoox's Comments Questions 2-8, p. 4; Aurora's Comments Questions 2-8, p. 2.

efforts are coordinated and not duplicative.² We wholeheartedly agree. Zoox further notes that SB 1014 already requires the Commission to partner with CARB and suggests that the Commission look to CARB Principles for SB 1014 implementation for guidance.³ We agree.

However, in some cases we differ as to *when* the Commission should set goals and evaluate performance or progress. Several companies contend that it is premature to establish goals to govern AV Passenger Service regulations before the Commission adopts deployment regulations and authorizes fare collection.⁴ Some industry voices suggest that establishing goals now could stifle industry development.⁵ The Bay Area Council urges the Commission to delay consideration of goals on the grounds that “commercial deployment will provide new information to assist in appropriately answering the goals-related questions over time.”⁶ Other commenters argue that it is premature to evaluate how the introduction of passenger service will impact congestion, traffic, curb use or public transit⁷ or note that “it is not realistic to approach climate change, accessibility, and equity of service issues with the expectation that they can be remedied by AV passenger carriers alone.”⁸

These comments seem to misunderstand the purpose of setting goals and mistake setting goals with measuring performance in relation to goals. AV Passenger Service has never been offered commercially in California. This is *precisely the time* to establish goals that should guide the industry toward delivering service in a manner that is consistent with California safety, environmental and equity goals. New information collected from delivery

² Zoox’s Comments, Questions 2-8, p. 13.

³ Zoox’s Comments, Questions 2-8, p. 14.

⁴ Zoox’s, Questions 2-8, p. 14; Aurora’s Comments, Questions 2-8, p. 2; Lyft’s Comments Questions 2-8, p. 7.

⁵ Aurora’s Comments, Questions 2-8, p. 2; Bay Area Council’s Comments, Questions 2-8, p.5.

⁶ Bay Area Council’s Comments, Questions 2-8, p. 5.

⁷ Lyft’s Comments Questions 2-8, p. 9; Uber’s Comments Questions 2-8, p. 4, 5, 8; Cruise’s Comments Questions 2-8, p. 12.

⁸ Waymo’s Comments, Questions 2-8, p 3.

of AV Passenger Service should not guide the goals themselves. The Commission’s goals should reflect and express California public policy.

The many and complex impacts of AV Passenger Services on California will indeed unfold and be measured over many years, and no one expects that AV Passenger Services *by themselves* should carry the full responsibility for achieving California goals. No one suggests that the Commission should continue the AV Passenger Pilot Program and delay developing deployment regulations until these problems are solved. However, if State policy makers do not direct the industry to use the pilot permitting period to consider, plan for, and demonstrate how services can support achieving California goals, they are not likely to do so.

Adopting goals will not “stifle innovation.” Rather, adopting goals will *guide* innovation in directions that serve rather than undermine existing state safety, environmental and equity goals. Goals should not prescribe technology or prescribe specific approaches to achieving the desired outcomes. The choice of technology and business approaches to meeting Commission goals should be left to each permit applicant – at least during the pilot program – and perhaps for many years thereafter.

The goals the SFMTA and SFCTA offered in our Opening Comments to Questions 2-8 – all founded in existing State and/or Commission policy -- are goals that could be in place for decades. During both pilot testing and deployment, different permittees could use dramatically different methods to meet the proposed goals. The proposed path to deployment offers each applicant the opportunity to explain its strategy for addressing each of the goals.⁹

⁹ The Commission did not adopt clear policy goals when adopting initial regulations for TNC service. After almost a decade of regulation, the research record only recently documents the ways in which the TNC business model has failed to support California goals and the Legislature has had to direct incorporation of accessibility and environmental goals through adoption of the TNCs for All Act and the Clean Miles Standard. The Commission should seize the opportunity to take a more proactive approach to regulation of AV Passenger Service.

In some cases, we also differ as to the scope of appropriate Commission goals. Some companies suggest that the Commission should limit its consideration of safety to *passenger* safety and urge the Commission to focus on *consumer* issues.¹⁰ In 2015, a speeding unpermitted tour bus injured 19 people in a crash in Union Square. The bus hit one cyclist, 12 motor vehicles, and four pedestrians. The majority of people injured in this tour bus crash were people outside of the vehicle.¹¹ The Commission must exercise its jurisdiction in AV Passenger Service regulations to protect both passengers *and other road users*. Indeed, to regulate for the public good, as to all goals, the Commission must consider the interests of both consumers of AV Passenger Services and the general public who may be significantly affected by those services

Zoox and Waymo both urge the Commission to take a gradual approach to regulation, learning and iterating the rules as service develops to promote certain policy goals.¹² We agree that the Commission should take an incremental approach to regulating AV Passenger Service in order to observe and analyze the service and any negative consequences that may emerge. Taking the time to learn more about the service through the pilot programs the Commission has already established will allow the Commission to modify regulations appropriately to ensure advancement towards the Commission's policy goals.

Some industry commenters urge the Commission to adopt goals that guide all Commission-regulated transportation services.¹³ In principle, we agree with this recommendation; however, there are substantial differences between AV Passenger Service and those offered by, for example, Passenger Stage Corporations or Private Carriers. As

¹⁰ Waymo's Comments, Questions 2-8, p. 4.

¹¹ Sara Gaiser, Driver error blamed in Union Square Bus Crash, Bay City News, March 23, 2016.,<https://sfbayca.com/2016/03/23/driver-error-blamed-in-union-square-bus-crash/>

¹² Zoox's Comments, Questions 2-8, page 3; Waymo's Comments, Questions 2-8, p. 3.

¹³ Bay Area Council's Comments, Questions 2-8, p. 4-5, 10.

Waymo notes in relation to environmental goals, “it may not be appropriate for the Commission to apply an ‘off the shelf’ set of rules developed for a different industry, or even another transportation model within the same industry” to AV Passenger Services.¹⁴ In the short term, to facilitate testing and deployment of AV Passenger Service, we urge the Commission to move forward now with setting goals for the AV Passenger Services and consider how California safety, environmental and equity goals should affect regulation of other transportation providers in a separate proceeding.

- B. The Commission should measure permittee progress toward achieving Commission goals. (Question 2.13)

Cruise agrees that the Commission should track the progress of the AV industry to ensure the Commission’s objectives are met and identifies a number of different approaches to measuring progress.¹⁵ Zoox agrees that the Commission should measure progress towards these goals, but urges the Commission to wait until the AV industry has been able to operate commercial service.¹⁶

For all the reasons discussed above, we disagree with the suggestion that the Commission should authorize fare collection during the pilot stage but delay articulation of policy goals and consideration of pilot permittee performance in relation to such goals until the deployment stage. Testing service without consideration of public goals and interests will lead to delivery of service without consideration of public goals and interests.

¹⁴ Waymo’s Comments, Questions 2-8, p. 8. Waymo notes that differences between TNC and AV fleets should be considered before Clean Miles Standard Rules “are applied categorically in the AV context.”

¹⁵ Cruise’s Comments, Questions 2-8, p. 15.

¹⁶ Zoox’s Comments, Questions 2-8, p. 15.

- C. The Commission should change its approach to protecting personal safety and authorize testing of “shared rides” or “fare-splitting” by driverless pilot permittees.¹⁷ (Question 1.1.2)

Most parties, including public and non-profit entities, industry members and industry organizations, agree that the Commission should authorize shared rides or fare-splitting by driverless pilot permittees.¹⁸ We agree with industry members and organizations that the personal safety concerns that gave rise to the Commission’s existing prohibition on shared rides in driverless AVs should be addressed by requiring submission of a Passenger Safety Plan rather than through a categorical prohibition.¹⁹ As many industry commenters note, offering shared rides *may* help AV Passenger Service providers address both environmental goals and equity goals and may also reduce traffic congestion.²⁰ Consistent with the California environmental goals discussed in the SFMTA/SFCTA opening comments, providing the opportunity to test how shared rides can contribute to reducing greenhouse gases and vehicle miles traveled is an essential opportunity to be explored in the pilot testing phase.

As to environmental goals, delivering shared rides in AV Passenger Service could reduce vehicle miles traveled in relation to passenger miles traveled (VMT and PMT), but only if people using shared AV Passenger Services are not moving from a more efficient mode such as transit, cycling or walking. As to congestion, delivering shared AV Passenger Service rides could reduce traffic congestion, but only if they do not increase overall vehicle miles traveled through a combination of deadhead miles that provide no transportation at all and/or

¹⁷ See Cruise’s Comments, Question 1, p. 9 (“The Commission should avoid a prescriptive blanket ban on share rides and instead request participants submit a general overview and plan of how the participant would address passenger safety in driverless rides”); *also*, p 13 (“Without shared rides during pilot, participants will be hindered in properly testing shared ride tech.”); See *also* Bay Area Council’s Comments, Question 1, p. 4; Waymo’s Comments, Question 1, p 12.

¹⁸ Cruise’s Comments, Questions 2-8, p. 13; Zoox’s Comments Questions 2-8 p. 7, 21; Uber’s Comments, Questions 2-8, p. 11; Lyft’s Comments, Questions 2-8, p. 7.

¹⁹ See Cruise’s Comments, Questions 2-8, p. 22.

²⁰ Cruise’s Comments, Questions 2-8, p. 13; Zoox’s Comments, Questions 2-8, p. 7, 12; Uber’s Comments, Questions 2-8, p. 8; Lyft’s Comments, Questions 2-8, p. 9.

displacement of more efficient modes of transportation. In other words, AV Passenger Service providers should be given the opportunity to test how offering shared rides can deliver a commercially viable service that supports California environmental goals.

Similarly, as to equity goals, shared rides *may* improve transportation equity if they offer a transportation option that is otherwise unavailable to people in disadvantaged communities or offer a net increase in access to transit. If AV passenger services are not provided in disadvantaged communities at all or are offered only at prices that make even shared rides unaffordable, they will have no impact on transportation equity and could in fact reduce transportation equity by interfering with or reducing the speed of transit services on which disadvantaged communities may disproportionately rely. In other words, AV Passenger Service providers should be given the opportunity to test how offering shared rides can deliver a commercially viable service that supports California equity goals.

Indeed, it is precisely because the *potential environmental and equity benefits* of shared AV Passenger Services are unknown that the Commission should authorize companies to *test shared rides in collaboration with public entities*. Collaborative testing will help maximize the environmental and equity benefits of AV Passenger Service, build a record of the effectiveness of different approaches, and may help identify appropriate longer term data collection and performance metrics.

- D. The Commission should not apply definitions and evaluation methods from Rulemaking 19-02-012 to AV Passenger Service but should modify data collection requirements regarding “accessible rides.” (Question 2.6 et al)

Most parties recognize that AV Passenger Service has the potential to transform transportation options for people with disabilities. There is also broad agreement that accessibility, meaning equal *access* for people with disabilities, is a goal within the Commission’s regulatory purview, deserves continued focus in the rulemaking process, and should be encouraged in both testing and deployment. The California Council for the Blind

offers that “the ultimate definition and measure of accessibility will be the comparability of rider experience between people with and people without disabilities.”²¹ This is consistent with the equity goal the SFMTA and SFCTA proposed:

AV Passenger Service should provide equivalent service to people with disabilities, including wheelchair users.

There is also widespread agreement between industry and public commenters that the Commission should not simply apply the definitions and evaluation tools under consideration in Proceeding Rulemaking 19-02-012 to AV Passenger Services. Cruise noted that the approach “may not reflect the approach needed for the AV industry. . . and may inadvertently limit industry’s ability to find new and innovative ways to address the variety of challenges members of the accessibility community face in regard to travel and mobility.”²² We agree with Lyft that while rules implemented in Rulemaking 19-02-012 may ultimately inform approaches to accessibility for AV Passenger Service, the Commission should take a broader view of accessibility in this proceeding.²³

Several parties believe the Commission should modify the initial data collection requirements adopted in Decision 18-05-043 regarding accessible rides. Waymo offered specific suggestions for modifying existing data collection requirements regarding accessibility. We agree with Waymo that “[c]larifying [accessibility] data reporting metrics will allow the Commission to better understand the full scope of benefits that AV transportation may unlock for passengers with disabilities and better serve the community.”²⁴

²¹ California Council for the Blind’s Comments, Questions 2-8, p. 5.

²² Cruise’s Comments, Questions 2-8, pp. 8-9; *see also* Zoos’s Comments, Questions 2-8, p. 5; Lyft’s Comments, Questions 2-8, p. 7.

²³ Lyft’s Comments, Questions 2-8, p. 7.

²⁴ Waymo’s Comments, Question 1 p. 10; SFMTA/TA’s Comments, Questions 2-8, p. 48 (“To more objectively gather information on AV company efforts to successfully test and incorporate accessibility into their services, the Commission needs to establish guidance for companies on how to

We also support Waymo’s suggestion that “the Commission revise its existing accessibility reporting requirements . . . by requiring a narrative explanation of the accessible rides reported.”²⁵ The Commission will need to continue to clarify data reporting metrics as it learns more about identified barriers and solutions that need to be tested. In the meantime, a qualitative report will help the Commission and the public to understand AV company efforts.

We do not agree with Waymo’s proposal to eliminate the Commission’s requirement to report ‘accessible rides requested per quarter that are declined by the driver’. Waymo argues that this measure “is not relevant to existing AV pilot services – whether drivered or driverless.”²⁶ The Commission needs to measure where AV Passenger Service is unavailable to people with disabilities. To the extent that AV Passenger Services are offered in vehicles that are not accessible to wheelchair users or to other people with disabilities, the Commission should expect AV Passenger Pilot Program permittees to test how they will provide comparable service in other vehicles and should require reporting to document this performance.

In our Opening Comments to Questions 2 through 8, we propose that companies submit an Accessibility Chapter in their passenger service plans that demonstrates how they plan to provide equivalent service to people with disabilities and test these approaches in collaboration with public agencies. Through this pilot process, the Commission will be able to develop both qualitative and quantitative methods for defining and collecting Key Performance Indicators (KPIs) related to accessibility. This process, and the reporting metrics, should be informed by and with people with disabilities. We continue to urge the Commission

submit qualitative and quantitative reports that clearly describe their progress towards implementing solutions and their efficacy once implemented.”)

²⁵ Waymo’s Comments, Question 1 p. 10.

²⁶ Id.

to engage its AV Accessibility Working Group, many members of which are not parties to this proceeding, and provide compensation to enable their participation. Questions identified by the AV Accessibility Working Group during its previous meetings will be helpful to more clearly define barriers to equivalent service and develop KPIs for deployment.

The Commission should modify AV Pilot Test Program requirements and develop goals to support both the Pilot Test Program and deployment regulations before further developing deployment regulations.

Industry members and organizations urge the Commission to move forward expeditiously to develop deployment regulations so that permittees can move beyond pilot permits and toward deployment permits. To the extent their arguments are motivated by a desire to charge passengers for service, the SFMTA and SFCTA have offered an alternative approach to authorizing limited fare collection in the context of pilot testing that addresses both commercial goals and public goals in collaboration with public entities whose participation is likely to enhance the opportunities for success in meeting public goals. To the extent their arguments are motivated by a desire to know and be able to plan for the Commission's expectations for the industry, we agree that the Commission should move quickly to articulate expectations.

However, at this time, the most important action for the Commission is to identify the public goals AV Passenger Service permittees will be expected to eventually meet. Focusing first on articulating public expectations is consistent with the industry arguments urging the Commission to take an iterative approach to AV Passenger Service regulations. Detailed expectations can follow after permit applicants have submitted Passenger Service Plans that address those goals.

- E. Contrary to industry arguments, AV Passenger Service regulations should not establish a “level playing field” in which performance on California safety, environmental and equity goals, is measured in relation to existing service providers.

The Bay Area Council and other industry parties urge the Commission not to “treat the AV industry differently from other passenger carriers or place undue (sic) burdens on one industry.”²⁷ These comments suggest that the Commission should not hold AV Passenger Services to higher standards than, for example, Transportation Network Companies (TNC). AV industry leaders, industry comments to the Commission, and industry marketing materials promise that AV Passenger Services will dramatically improve safety, reduce congestion and GHG emissions, and improve mobility for everyone. Yet the industry urges the Commission to regulate their services to meet the performance levels of a broken status quo where we tolerate more than 35,000 deaths on our nation’s roads every year, where GHG emissions from the transportation sector are steadily rising despite California’s historic leadership in addressing the global climate crisis, and where California’s housing, land use and transportation systems disproportionately challenge and burden people with disabilities and people in disadvantaged communities in terms of health, time, and cost.

AV Passenger Services will not improve the status quo if the Commission regulations aim to “level the playing field” at today’s status quo. AV Passenger Services offer tremendous opportunities for reducing the negative impacts of poor human driving and the negative effects of the TNC business model. For example:

- The system of licensing human drivers sets an extremely low bar for driving performance, and human drivers make legions of poor driving decisions that endanger others. AVs offer the potential for fleets of vehicles that comply with all traffic laws.
- Education efforts directed to human drivers are costly and have limited impacts. By

²⁷ Bay Area Council’s Comments, Questions 2-8; Cruise’s Comments, Questions 2-8, p. 12; Aurora’s Comments, Questions 2-8, p. 3.

contrast, driving performance lessons learned in one AV can be quickly transferred to other vehicles.

- The TNC business model creates incentives for poor human driving, including, for example, pick-ups and drop-offs in dangerous locations that cause injuries to other road users and create congestion that interferes with more efficient modes of travel. Again, where AVs are programmed to comply with state and local traffic laws, AV Passenger Services offer the potential for passenger pick up and drop off driving behavior that improves road safety and minimizes congestion and delays.
- The TNC business model encourages drivers to log a huge volume of deadhead miles by building customer expectations for near immediate service. The CARB baseline report has demonstrated that notwithstanding industry expectations, TNC driving increases GHG emissions by fifty percent when compared to passenger miles travelled in private automobiles.²⁸ Again, consolidated fleet management of AV Passenger Services has the potential to improve on the TNC GHG record.

While the Commission should avoid unnecessarily prescriptive regulations that favor any one AV Passenger Service provider over another in ways that do not support an important public purpose, the Commission must set safety, environmental and equity goals that are aligned with the promise of the AV Passenger Services industry. It is acceptable, and even expected, that permittees may not be able to meet these goals while the technology is still in the developmental stage. The Commission should solicit plans that demonstrate how permit applicants propose to try and should seek public comment on those plans. The pilot permit program is precisely the time in which the industry can test and validate such efforts.

To put it simply, the AV Passenger Service industry promises *more and better*. Commission regulations should expect *more and better* while allowing appropriate ramp up time during the early days of industry development.

²⁸ [SB 1014 Clean Miles Standard 2018 Base-yea Emissions Inventory Report](#) at p. 42, California Air Resources Board, December 2019.

- F. The existing regulatory framework established by the National Highway Traffic Safety Administration (NHTSA) and the California DMV does not provide the foundation for safety suggested by industry commenters (Questions 1.2.3, 2.1)

Several industry commenters assert or suggest that it is unnecessary for the Commission to consider street safety issues because existing state DMV and federal regulations provide extensive safety standards.²⁹ They urge the Commission “to rely on NHTSA’s over 50 years of experience overseeing the introduction of new vehicle safety technologies and features on America’s roads.³⁰ These comments suggest that NHTSA has adopted safety standards to govern automated driving systems and urge the Commission to avoid creating duplicative regulations.³¹

In fact, while NHTSA certainly has jurisdiction to do so, to date *NHTSA has not established any testing protocols, rating systems or safety standards that provide thresholds for minimum safety performance of automated driving systems (ADS).*³² Indeed, it may take as many as 8-10 years for any safety metrics, standards or requirements to be adopted. As noted in the SFMTA and SFCTA opening comments, there is no industry, academic or regulator agreement as to how the safety performance of automated driving systems should even be assessed. In the meantime, NHTSA has encouraged automated driving companies to file “Voluntary Safety Self Assessments (VSSAs). Many DMV and CPUC permittees have done so, and these reports are available on the NHTSA website.³³

²⁹ Cruise’s Comments, Questions 2-8, p. 4-6; Zoox’s Comments, Questions 2-8, p. 5; Waymo’s Comments Questions 2-8, p. 4; Silicon Valley Leadership Group’s Comments, Questions 2-8, p. 4; UATG’s Comments, Questions 2-8, p. 10; Aurora’s Comments Questions 2-8, p. 8; The Technology Network’s Comments, Questions 2-8, p. 4.

³⁰ Cruise’s Comments, Questions 2-8, p. 4

³¹ Aurora’s Comments, Questions 2-8, p. 8, Waymo’s Comments, Questions 2-8, p. 4.

³² One view on the scope of federal regulations that have not been developed and are still urgently needed can be found in the recent Congressional testimony of Cathy Chase, President, Advocates for Highway and Auto Safety. See “New Rulemakings to Set Performance Standards are Essential” starting at page 8. <https://docs.house.gov/meetings/IF/IF17/20200211/110513/HHRG-116-IF17-Wstate-ChaseC-20200211.pdf>

³³ <https://www.nhtsa.gov/automated-driving-systems/voluntary-safety-self-assessment>

The National Transportation Safety Board (NTSB) has advised that these voluntary reports are not sufficient. The NTSB investigation report of the Uber fatality in Tempe, Arizona recommended that NHTSA should “establish a process for the ongoing evaluation of the safety self-assessment reports and determine whether the plans include appropriate safeguards for testing a developmental ADS on public roads.”³⁴ We understand that NHTSA has not yet implemented this recommendation.³⁵

This NTSB recommendation underscores the fact that there is no existing NHTSA regulatory framework guiding the safety performance of automated driving systems. The NTSB recommends that states improve safety through their testing permit process:

“Considering the lack of federal safety standards and assessment protocols for automated driving systems, as well as the National Highway Traffic Safety Administration’s inadequate safety self-assessment process, states that have no, or only minimal, requirements related to automated vehicle testing can improve the safety of such testing by implementing a thorough application and review process before granting testing permits.”

In other words, NTSB, encourages states to fill critical safety regulatory gaps through their application and permit process. While the DMV requires certain levels of insurance coverage, a law enforcement interaction plan, a two-way communication device and standards for human safety drivers, and while industry executives make public statements to the effect that the industry must demonstrate that automated drivers are safer than human drivers, there is currently no requirement that companies offering AV Passenger Service do so before receiving a permit to test without safety drivers on California roads.

³⁴ NTSB, “Collision Between Vehicle Controlled by Developmental Automated Driving System and Pedestrian, Tempe, Arizona, March 18, 2018.” Page 51.
<https://www.nts.gov/investigations/AccidentReports/Reports/HAR1903.pdf>

³⁵ See NTSB Safety Recommendation H-19-047.
https://www.nts.gov/investigations/AccidentReports/_layouts/nts.recsearch/Recommendation.aspx?Rec=H-19-047

As the SFMTA and SFCTA recommend in our Opening Comments, the Commission should exercise its broad jurisdiction to ensure and improve safety by requiring AV companies to demonstrate that the automated driving system is safer than a human driver before authorizing a permittee to provide AV Passenger Service on California roads without a safety driver – whether under a pilot permit or a deployment permit.

- G. The Commission should authorize AV Passenger Service for compensation only on limited terms in collaborative pilots that address both commercial and public purpose goals.

Many parties agree that collaboration between AV Passenger Service providers and public entities is valuable and may improve performance in relation to public goals.³⁶ Waymo credits its Arizona partnerships with local public sector entities and nonprofits with helping them learn how to offer service that improves mobility gaps.³⁷ Lyft argues that the Commission should encourage but not mandate such collaboration.³⁸ This is consistent with the SFMTA and SFCTA’s proposed sandbox pilot testing and path to deployment.

While industry members and organizations universally urge the Commission to lift the prohibition on monetary compensation for AV Passenger Service permittees, collaboration between public agencies and AV Passenger Service permittees is so important to permittee success in meeting California safety, environmental and equity goals that permittees should only be authorized to collect fares under the Pilot Test Program if they are working with a public agency collaborator.³⁹

The SFMTA and SFCTA’s proposed sandbox pilot testing and path to deployment offer a model for authorizing such collaboration and compensation. We believe Commission

³⁶ Lyft, Q 2-8, p. 8

³⁷ Waymo’s Comments, Questions 2-8, p. 6.

³⁸ Lyft’s Comments, Questions 2-8, p. 8.

³⁹ Metropolitan Transportation Commission’s Comments, Questions 2-8, p. 8.

approval of such a model would improve the AV Passenger Service Pilot Test Program. We are open to other methods for authorizing compensation in a context that addresses public purpose goals, and we urge the Commission to consider hosting a workshop to further discuss and develop this potential for compromise between public and industry parties.

III. DATA-RELATED QUESTIONS

We continue to support the Commission’s recognition in Decision 18-05-043 of the value of data to the public and mandating public reporting by posting reports on the Commission’s website.

- A. Detailed data requirements should be guided by Commission goals (Questions 3.1 & 3.2)

We agree with Aurora that “[a]ny requirements to submit data should be directly grounded in real, proven policy goals”.⁴⁰ However, we do not agree with Cruise, Waymo and Zoox that the Commission should continue to require the existing data without significant modifications.⁴¹

We recommend that the data the Commission requires pilot participants to submit be informed by program goals. Without establishing goals first, it is challenging, if not impossible, to determine what data should be collected to measure progress and achievement of the goals. There may be other data points that we learn of through sandbox pilot testing that should be incorporated into data requirements at a later date.

As more companies are granted AV Passenger Pilot permits and the number of vehicles and trips increase, the volume of data will grow significantly. Given this eventuality, we urge the Commission to work with technical experts to build a system for collecting,

⁴⁰ Aurora’s Comments, Questions 2-8, p. 4.

⁴¹ Cruise’s Comments, Questions 2-8, p. 15; Waymo’s Comments, Questions 2-8, p. 9; Zoox’s Comments, Questions 2-8, p. 5.

storing, managing and creating reports from AV Passenger Service data. The Commission should strive to build a data architecture that provides for flexible analysis of current and future AV Passenger Service data so that it can be used over time to assess impacts on the State. The architecture should avoid duplicative data collection and minimize costs to AV Passenger Service providers. The data architecture should be designed to support public disclosure on the Commission's website in accordance with Decision 18-05-043, Section 3.B.8 in a format that is easy to analyze and digest.

Ideally, this system should support

- centralized management of AV Passenger Service and related data
 - data specifications which must be adhered to by all vendors
 - robust analysis along multiple predefined dimensions
 - APIs for ingesting data from vendors
 - APIs for sharing data with requestors
 - Integration of data from other relevant State databases, including especially those developed by the DMV for collision and disengagement data
 - A data catalog describing information required to utilize the system along with key metadata including datasets, attributes, quality codes
- B. The Commission should plan for independent data gathering to incorporate qualitative feedback from pilot permit customers and from other right of way users (Question 3.3)

Both Cruise and Waymo advise against requiring AVs companies to solicit feedback from riders and disclose it to the Commission. Zoox cautions against duplicating the work of AV companies. However, each of these companies agree that the Commission should retain the right to independently gather and incorporate qualitative feedback. They suggest seeking feedback through the Commission's own forums or workshops or use existing processes or institutions in a manner that protects privacy.⁴²

⁴² Cruise's Comments, Questions 2-8, p. 19; Waymo's Comments, Questions 2-8, p. 9-10; Zoox's Comments, Questions 2-8, p. 16.

We disagree with suggestions that Commission collection of passenger and other feedback duplicates industry efforts. Commission collection of data and qualitative feedback with respect to the Street Safety, Passenger Safety, Accessibility and Equity Goals we proposed in our comments on Questions 2 through 8 should focus on public expectations – not commercial interests. We suggest that the Commission create a method for collecting feedback from pilot passengers that informs progress towards the Commission’s goals. In addition, we also suggest collecting feedback from other streets users that will share the road with AV Passenger Service providers to inform the Street Safety goal.

- C. The Commission will need to collect trip data to evaluate AV Passenger Service in relation to safety, environmental and equity goals. (Question 1.1.2)

Most, parties acknowledge the sensitive nature of trip data. This does not mean that trip data cannot and should not be collected and/or reported publicly in order to evaluate performance in relation to Commission safety, environmental and equity goals.

In the SFMTA and SFCTA’s Opening and Reply Comments to the Commission’s Phase 3 Scoping Memo on Track 3 – TNC data, we propose several tables of specific data points and descriptions that would help facilitate analysis of whether TNCs are contributing to or undermining the Commission’s statutory duties under SB 1014 and SB 1376. As a starting point we suggest adding data fields for census tract level information wherever location information is needed. While we believe data requirements should be guided by goals, we suggest looking to our Opening and Reply Comments to Track 3 as an example of what the Commission could collect and how, after setting goals.

However, census tract location information is insufficient to understand impacts at the street level. Lyft describes the SharedStreets initiative as a method to provide data in a manner that avoids potentially sharing personally identifiable information.⁴³ If the

⁴³ Lyft’s Comments, Questions 2-8, p. 8.

Commission were to articulate a goal related to street level impacts, it could look to examples like SharedStreets as an approach to collecting and sharing data in a manner that protects personal privacy. After adopting clear goals for AV Passenger Services, we urge the Commission to evaluate how trip data can be collected and disclosed.

VI. CONCLUSION

The SFMTA and SFCTA's Proposed Path to Deployment Appropriately Balances Industry Commercial Interests with the Public Interest.

The SFMTA and the SFCTA appreciate the opportunity to participate in the Commission's consideration of how to foster a fair and competitive market for AV Passenger Service that offers the potential for commercial success while protecting critical public interests. After reviewing the opening comments filed on January 21st and February 10th, we continue to believe that the schematic path to deployment we outlined in our response to Questions 2 through 8 offers a promising opportunity to incorporate public goals into the Commission's AV Passenger Pilot programs without delay to the industry. This approach would consider the many broader public interests at stake in AV Passenger service – not just the interests of permittee passengers or the permittees themselves -- while allowing the industry to move forward towards achieving the Commission goals. We encourage the Commission to give further consideration to our proposal to allow the industry, in collaboration with public entities, to inform the Commission's consideration of deployment permits based on data gathered through pilot projects.

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Respectfully submitted,

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