

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

Order Instituting Rulemaking on Regulations
Relating to Passenger Carriers, Ridesharing, And
New On-Line-Enabled Transportation Services

R.12-12-011
(Filed June 15, 2023)

**JOINT OPENING COMMENTS THE SAN FRANCISCO MUNICIPAL TRANSPORTATION
AGENCY AND THE SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY TO
THE ASSIGNED COMMISSIONER'S RULING ON DEVELOPMENT OF NEW DATA
REPORTING REQUIREMENTS FOR AUTONOMOUS VEHICLE DRIVERLESS
DEPLOYMENT PROGRAM**

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Pursuant to California Public Utilities Commission Rule of Practice and Procedure 14.3(a), the San Francisco Municipal Transportation Agency (“SFMTA”) and the San Francisco County Transportation Authority (“SFCTA”) (collectively, “San Francisco”) submit these joint comments to the Assigned Commissioner’s Ruling on Development of New Data Reporting Requirements for Autonomous Vehicles (“AVs”) Driverless Deployment Program (the “New AV Data Ruling”) filed by the California Public Utilities Commission (“Commission” or “CPUC”) on May 25, 2023.

I. INTRODUCTION AND EXECUTIVE SUMMARY

The New AV Data Ruling identifies the need for a proactive and flexible approach to regulation of AV Passenger Services (“AVPS”) because of concerns about driverless AV operations that have come to light since the Commission adopted Decision (D.) 20-11-046 (as amended by Decision 21-05-017) (“Deployment Decision”).¹

San Francisco appreciates the New AV Data Ruling’s call for prompt action. While San Francisco shares the California Public Utilities Commission hope that automated driving may at some point improve street safety and offer other benefits to San Francisco travelers, the Deployment Decision did not consider the new hazards we have observed on San Francisco streets since Cruise LLC (“Cruise”) and Waymo LLC (“Waymo”) started driverless operations in 2022. Those new hazards continue to escalate in frequency and severity – even since San Francisco filed comments on May 31, 2023a mere 15 days ago – on draft resolutions TL-19144 and TL-19145 (the “Draft Resolutions”). San Francisco urges the Commission to adopt and implement new data reporting requirements to capture the new hazards posed by driverless operations before taking action on the Draft Resolutions.

¹ San Francisco notes that the Consumer Protection and Enforcement Division (“CPED”) Staff Proposal: New AV Program Data Reporting (“CPED Staff Proposal”), filed with the New AV Data Ruling as Attachment 1, suggests conforming the data reporting required under CPUC AV Pilot permits with those required under the AV Deployment program. San Francisco supports this recommendation and thus recommends that the title of the Assigned Commissioner Ruling be restated to omit the limitation, i.e. Assigned Commissioner’s Ruling on Development of New Data Reporting Requirements for Autonomous Vehicle Program.

San Francisco looks forward to participating in the upcoming AV data reporting workshop and engaging with Commission staff and other parties and stakeholders in this important endeavor. San Francisco believes that the CPED Staff Proposal: New Autonomous Vehicle Program Data Reporting (the “CPED Proposal”) is a robust starting point upon which to expand. It specifies a more comprehensive and useful set of AV data reporting requirements that are grounded in the real-world events that have occurred in San Francisco since driverless AVs have begun operating on our streets.

The CPED Staff Proposal includes many attributes that we strongly support, specifically:

- making data reporting consistent across CPUC Pilot and Deployment permits,
- creating a more detailed, disaggregate collision report, and
- adding monthly reporting of unplanned stops, including minimal risk condition events.

While we believe the CPED Staff Proposal represents a solid foundation, we also propose revisions and additions to refine the staff proposal based on the following principles:

- Data collection should address public safety, environmental, equity and accessibility goals, not just the interests of users of AV services;
- Data collection should facilitate evaluation according to specific metrics that track progress towards these goals;
- To the greatest degree possible, CPED should strive to ensure that data is comprehensive while eliminating redundant and/or unnecessary reports;
- Because the Commission has adopted quarters that do not correspond to either calendar quarters or conventional fiscal year quarters, in order to facilitate analysis using data that comes from other sources, to the greatest extent possible, the Commission should shift from quarterly reporting to monthly reporting;
- Data fields the Commission has previously deemed public under the California Public Records Act after considering claims related to personal privacy and trade secrets, should be presumed public in AVPS data reporting and should be incorporated into a confidentiality matrix as part of this rulemaking;

- The confidentiality matrix arising from this rulemaking should also address fields in AVPS reporting not previously addressed for TNC permittees with due consideration of privacy and trade secret concerns, and;
- The Commission should consider requiring driverless permittees to submit reports of unplanned stops (including, but not limited to minimal risk condition events) back to the initial date of operations under a driverless permit to facilitate prompt evaluation of improvement by AVPS permittees going forward.

In addition, in light of the need for agility in responding to the opportunities and unexpected impacts presented by driverless AV operations, the Commission should continue to delegate authority to CPED staff to add and modify data reporting requirements to support data completeness, integrity, quality and analysis, but should require CPED to consult all stakeholders – not just permittees – before exercising that delegated authority.

Finally, the CPED Proposal notes that municipalities have unique access to data on what is occurring on streets in their jurisdiction. While the Commission cannot effectively regulate driverless AVPS without obtaining data from local authorities, San Francisco urges the Commission to avoid creating unfunded responsibility for affected cities and should thus work with affected cities to adopt new methods for state and local collaboration that do not unduly burden local taxpayers.

In light of these key points, Section II to these opening comments responds to the CPED proposals to align Pilot and Deployment reporting, enhance collision reporting, and require new monthly reporting to address the concerns of scale and new hazards raised in previous San Francisco filings and the specific questions posed in the New AV Data Ruling. San Francisco adds Section III to provide broader answers to the Ruling's questions about data that is not currently reported across the full range of Commission goals for AVPS..²

² Adopting San Francisco's recommendations in Sections II and III would also be helpful to the Commission in assessing the environmental impacts of AV deployment, which, as San Francisco stated in our May 31, 2023 comments on the Draft Resolutions on Cruise and Waymo Advice Letters, must be completed before the Commission authorizes further deployment.

II. THE COMMISSION SHOULD ADOPT NEW AV DATA REPORTING REQUIREMENTS TO ADDRESS DRIVERLESS SAFETY ISSUES BEFORE APPROVING ANY EXPANSION OF DRIVERLESS AV PASSENGER SERVICE

The New AV Data Ruling asks what data that is not currently being collected is needed to monitor and evaluate the impacts of AV operations in the near term, especially as it pertains to public safety. In the immediate short term, San Francisco agrees with CPED that the Commission should expand collision reporting and require new monthly reports addressing the scale of permittee operations, incidents and unplanned stops. Before turning to these specifics, we recommend an overall approach to reporting that should support evaluation of AVPS operations in relation to all Commission goals going forward.

A. San Francisco Urges the Commission to Consider the following “Report Consolidation” Proposals to Support the Specific Issues Addressed in the CPED Proposal, as well as other issues.

In many cases, understanding the impact of a particular problem or demonstrated strength of driverless operation calls for consideration of the frequency of an event. For example, a metric evaluating the number of minimal risk condition events within a certain volume of AV operation would correspond to a metric commonly used in the transit industry – mean distance between failures (or failure incidents per volume of driving). The current reporting structure – in which the California Department of Motor Vehicles (“DMV”) and CPUC have different reporting periods and in which any given vehicle may be operated under different CPUC permits from day to day, confounds transparency and effective analysis of the frequency of both positive and negative events because it is extremely challenging to identify data for selection of an appropriate denominator.

Further, the overall impacts of driverless operations are not captured where some driving occurs under only DMV permits and some driving occurs under both a DMV permit and a corresponding CPUC permit. It is possible that driving for mapping and response to minimal risk condition events may continue with very significant vehicle miles traveled (“VMT”) even when commercial service has become widespread. California agencies should work together – and with affected local jurisdictions – to understand the overall impacts of AV operations, including driverless operations. Reporting requirements should facilitate evaluation of a particular kind of event in relation to different denominators of VMT (i.e., analysis of incident rates). For example, metrics evaluating

the rate of injury collisions may yield significantly different results depending on what denominator is used:

- Injury collisions / driverless VMT under any permit
- Injury collisions / VMT in automated mode under any permit, including driving with or without a safety operator

In considering requests for expanded commercial service authorization, the Commission – and the public – should have the information necessary to assess each of these rates. San Francisco recommends two approaches to data requirements that can facilitate flexible analysis for policy making:

- All carriers, regardless of permit(s), submit a single set of periodic reports conforming to a unified standard. Those reports should distinguish between permits by including fields (as described in the following section) to identify which record is associated with which permit.
- To facilitate this, a new “Period 0” should be defined and included to capture all driving for testing, mapping, or other purposes when the vehicle is not available for passenger service.

A new trip record may be generated by a new passenger trip, by the beginning or end of service, or by the beginning or end of a “Period 0” testing or mapping session. Unifying reporting using these two approaches will ensure that activity taking place under any permit is documented, that activity is clearly and uniquely associated with a single permit to avoid double counting, that activity can be directly compared among permits, and that activity can be aggregated across permits.

The Commission has previously specified a data schema for reporting trip-level activity under Commission-issued AV deployment permits. By adding the following fields to the Commission’s existing Trip Level Report, the Commission can facilitate more effective analysis of performance across safety performance measures – as well as across other important Commission goals:

Field	Field Description
DMV and CPUC Permit Number(s)	The permit number(s) associated with the activity

Fare	The total passenger-paid fare, excluding tip
Period 0 Start Timestamp	The timestamp that the Period 0 session begins. (blank if no Period 0 is associated with the trip)
Period 0 End Timestamp	The timestamp that the Period 0 session ends. (blank if no Period 0 is associated with the trip)
VMT Period 0	Vehicle miles traveled when the vehicle is not available for passenger service
Charging Session	Whether a charging session occurred during the trip
Charging Location	Location (census tract) of the charging session
Charging Timestamp	Start time of the charging session
Charging Duration	Duration of the charging session
Safety Drivers	Indicator of whether a safety driver is present in the vehicle
Attendant present	Indicator of whether an employee not responsible for control of the vehicle is present for passenger assistance
ADS Duration	The duration (in minutes) that the ADS is engaged
ADS VMT	Vehicle miles traveled while the ADS is engaged
Distance from Curb, Start Period 3	The distance (in inches) from the curb when picking up passenger(s)
Distance from Curb, End Period 3	The distance (in inches) from the curb when dropping off passenger(s)

B. San Francisco Urges the Commission to Consider the Following Additional Information in its Expansion of Collision Reporting.

Section 2 of the CPED Staff Proposal calls for collision reporting modeled on the DMV form OL-316. AV collisions are currently reported under numerous different reporting regimes including those specified by the National Highway Transportation Safety Administration (“NHTSA”), the DMV, and the California Highway Patrol (“CHP”). While some required data fields are consistent and shared across these different reporting regimes, many other data fields are unique to each individual reporting regime. To achieve greater consistency in data reporting across these different reporting

regimes, and to ultimately reduce the complexity of data reporting, San Francisco suggests that the CPED staff extend their proposal to include data fields found in CHP Form 555 and NHTSA Standing General Order on Crash Reporting template. Specifying an inclusive set of required data fields for collision reporting to the Commission will facilitate consistent reporting across all these reporting regimes, and may ultimately reduce the reporting burden on regulated entities by harmonizing reporting across these different reporting requirements.

The CPED Staff Proposal includes a thoughtful inventory of relevant collision information to require, including information about the date, time, and location, vehicle and party information, weather and other conditions and circumstances, and a narrative description. San Francisco suggests, in addition to the data items identified in the CPED Staff Proposal, inclusion of detailed information found in the DMV, CHP, and NHTSA reports or related to other Commission-mandated AV data reporting such as:

Field	Field Description
VIN	Vehicle Identification Number
License Plate number ³	Vehicle license plate number
RideID	The RideID of the trip, if any
Permit number	The permit the vehicle was operating under
Period	The period of service / testing (0, 1, 2, 3) the vehicle was in
ADS Engagement	Whether the ADS was engaged at any time within the 30-seconds preceding the collision
ADS Version	The Version of the ADS the vehicle is operating under
Safety Driver	Whether a safety driver is present
Pre-collision Speed	The speed the vehicle was traveling at immediately prior to the collision

³ The CPED Staff Proposal calls for license plate number, but not VIN. The existing CHP 555, SR-1 and OL 316 reports all include both VIN and license plate number, and San Francisco recommends inclusion of both identifiers to support verification of reported crashes against other sources.

Contact Area / Damage Area	Where vehicle made contact with or was damaged by collision with other party or object (Rear Left, Right, Front, etc.)
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San Francisco appreciates that the CPED Staff Proposal would close an existing gap in public collision reporting to the DMV. We appreciate that the DMV has consistently redacted personally identifying information about other (human) drivers in its public collision reports. The Commission should clarify in a proposed confidentiality matrix that information about an automated driver should not be protected by the confidentiality provisions that currently govern CHP 555 reports.

C. San Francisco Urges the Commission to Consider Additional Information on Unplanned Stops Beyond that Called for in CPED’s Monthly Reporting proposal.

San Francisco is encouraged by the Commission’s recognition that AVs may impact public safety and other Commission goal areas through incidents that are not collisions with other parties or property, and strongly supports the identification and specification of unplanned stops, including reporting of “minimal risk condition” (“MRC”) events. San Francisco agrees with the CPED Staff Proposal calling for a monthly operations summary – including especially the requirement that operators identify the number of unique vehicles operating by month and the maximum number of vehicles operating daily within the month. San Francisco urges the Commission to go farther and cap the size of AV fleets by county until the reporting, as updated through this rulemaking, demonstrates safe operations according to identified metrics.⁴ In addition to the crosscutting additions suggested in Section A above, San Francisco suggests the following additions related to MRC reporting.

There are two primary challenges in developing new reporting requirements for these types of incidents: (1) establishing a definition for identifying these incidents that can be applied consistently across multiple regulated entities; and (2) identifying the data and information that characterizes these events and their resolution. Establishing a consistent definition for these incidents will require CPED to work closely both with regulated entities and affected stakeholders to ensure that all relevant types of incidents will be captured. For example, San Francisco suggests that the reporting should not be limited to MRC events as permittees may define them but should capture all unplanned stops in which

⁴ Also environmental review pursuant to CEQA is completed.

a vehicle comes to an unplanned stop for at least 30-seconds and requires remote or in-person intervention to resume operations, or if operations are not resumed and the vehicle is cleared from the scene. There should be one record for each incident on a per vehicle basis (i.e., documenting multi-vehicle incidents).

The CPED Staff Proposal in Attachment 1 to the New AV Data Ruling identifies many of the information items that are needed to describe these incidents, such as the vehicle identification number (VIN), the date and time of the incident, the precise geographic location, the presence of passengers, the response time, the resolution type, and a narrative description. San Francisco suggests that, in addition to the data items identified in the CPED Staff Proposal, additional MRC / Unplanned stop incident information should also include, at least:

Field	Field Description
Incident ID	Identifies a unique incident, common if multiple vehicles are involved
RideID	The RideID of the trip, if any
Permit Number	The DMV and CPUC permits the vehicle was operating under
License Plate number	Vehicle license plate number ⁵
Period	The period of service / testing (0, 1, 2, 3) the vehicle was in
Start time	Timestamp for beginning of incident
End time	Timestamp for end of incident
Duration	Duration of incident
Street name	Street name where the incident occurred
Cross street	Nearest cross-street

⁵ The CPED Staff Proposal calls for “License plate, VIN or other unique identifier for AV involved. For purposes of traffic enforcement and incident documentation, it is important to have both VIN and license plate number. The Commission should require both identifiers rather than an option.

Intersection	Indicates whether the incident occurred in an intersection
Rail crossing	Indicates whether the vehicle blocked or partially blocked rail tracks or rail vehicle
Safety Driver	Identifies whether or not a safety driver is present
ADS Engaged	Whether the ADS was engaged at any time within the 30-seconds preceding the incident

D. San Francisco Urges the Commission to Incorporate Information from Local Jurisdictions Without Creating an Unfunded Responsibility.

The CPED Staff Proposal notes that municipalities have unique access to data on what is occurring on streets in their jurisdiction. It is correct that members of the public have made frequent and increasing calls to the City’s 9-1-1 dispatch center to report concerns about driverless AV operations and that employees of numerous city departments have reported interruptions to their work and hazards to street-based workers. These include, but are not limited to, concerns raised by San Francisco firefighters and police officers, as well as transit operators and workers who maintain and build underground public infrastructure, such as water and sewer lines, and contractors who operate essential services like garbage collection. In addition, the ability of driverless AVs to understand and immediately follow instructions given to them by SFMTA Parking Control Officers and school crossing guards is an essential component of basic driving competency as well as an essential skill in their ability to comply with the rules of the road under the California Vehicle Code.

San Francisco has made an effort to assemble information from these many and varied sources, as well as from media and social media reports. However, virtually all of these reports and reporting sources were developed to serve other municipal purposes, such as: to facilitate rapid response to fires and medical emergencies, clear road blockages and transit blockages, identify and address hazards affecting roadway workers, report ‘unusual occurrences’ that have become far too usual, etc., and not to regulate AVPS. It takes considerable review of initial reports to assess whether a complaint reflects a true hazard and driving competency concern or whether it reflects public anxiety about new technology that is not creating a hazard. This classification is essential in order to properly regulate automated driving. In many cases, city staff cannot identify the difference without considerable staff

time, and even with that staff time, CPUC permittees hold key information, such as audio and video recordings of events that they have generally been unwilling to provide to San Francisco. As of now, city staff time is entirely unfunded or is funded by local taxpayers. San Francisco is eager and happy to work with the CPUC to understand the new safety hazards associated with driverless operations on our streets, but this should not come at the expense of other essential city functions. We encourage the Commission to work with affected cities to identify approaches to state and local collaboration that do not unduly burden local taxpayers.

E. Responses To Specific Questions Posted in The New Av Data Ruling.

1. What data, if any, that is not currently being collected by CPED is needed to monitor and evaluate the impacts of AV operations in the near term, especially as it pertains to passenger and public safety?

The CPUC should be collecting data at the event-level, as proposed above, for trips, collisions, MRC / unplanned stops, incursions into work zones and right of way designated for use by others, and passenger assaults, harassments, and complaints. There should be one record for each such event with sufficient relevant detail to the incident that allows the data to be aggregated to derive key performance metrics. In the preceding discussion, and in Section III below, San Francisco identifies some proposed extensions and revisions to the CPED staff proposed reporting structure for collisions, incidents, hazards and passenger assaults, harassments, and complaints that meets these needs.

a. How should CPED define specific metrics (including unplanned stops, law enforcement or first responder interactions, in-lane pickup and drop-off, other metrics included in CPED's proposal or as may be proposed by parties) for the purposes of data reporting?

As discussed above, San Francisco proposes that the Commission seek data more broadly related to “unplanned stops” – not just data related to minimal risk condition incidents. Unplanned stops should include stops other than those required by traffic control devices that last for at least 30-seconds and requires remote or in-person intervention to resume operations, or if operations are not resumed and the vehicle is cleared from the scene.

2. What data, if any, is technically and operationally feasible to collect and report? What constraints, if any, are there (technical, operational, or otherwise) that might limit data collection and/or reporting for particular metrics?

The San Francisco proposed trip report contains information that is routinely and automatically collected, and much of which is already reported to the CPUC. The proposed collision, MRC / unplanned stop report contain some data that should be automatically generated, and other data that may need to be generated by human review. It is appropriate to manually collect information given the actual and potential serious impacts of these types of events. There also may be technology available that would support city and state data collection.

The Commission should consider how use of a streamlined and nationally replicable format for data collection and reporting could address some feasibility concerns. For example, the Mobility Data Specification (MDS) 2.0. MDS is an internationally adopted open data specification developed through a public forum by both industry and public sector contributors. MDS 2.0 expands upon the effective MDS 1.0 to include ride hail, taxi and other passenger services - including those with automated driving systems. The data specification includes an array of specific data points that provide transparency into performance related to routes, unplanned stops, roadway geospatial specificity, hours, and other data reports valuable to understand safety, performance, and equity. MDS 2.0 was released earlier this year after endorsement by the public and private members and adoption by the Board of Directors, comprised entirely of public sector agencies.

3. What cadence is appropriate for data reporting?

a. Should certain data be submitted at different cadences (e.g., collision reports submitted on a weekly basis versus VMT on a monthly basis)?

San Francisco supports monthly data reporting. San Francisco proposes that all reports, other than collision reports, be submitted at the same time and frequency. As to collision reports, San Francisco suggests that the CPUC consider requiring immediate (within 24 hour) notice from AV companies of collisions resulting in injury and for all other collision to be submitted on the same time frame as provided for the OL 316 reports – within 10 days of an incident.

4. Is it reasonable to require data collection and reporting to begin immediately upon publishing of the new data reporting requirements?

As we have stated above, the Commission should allow expansion of current service authorizations only after data reporting has been adopted and implemented (as well as environmental review). San Francisco believes that not only is it reasonable for the Commission to require data collection to begin immediately upon adoption of the new data reporting requirements, it is imperative for the Commission to do so. The Commission has acknowledged the need for expedited action in light of ongoing issues with operation and the need for additional data to monitor and evaluate AV operations. This data is not only critical to inform changes to the Commission’s regulatory approach to inform future changes to the AV regulations; it is needed so the Commission can ensure that the deployment it authorizes is safe for passengers and the public at large.

For these same reasons, San Francisco recommends that the Commission require collection of data on unplanned stops back to the date of first driverless operations. If this is not feasible for the industry, San Francisco proposes that data should be collected per the new requirements no more than 90-days following the adoption of new rules, subject to San Francisco’s position that expansion should proceed incrementally following demonstrated performance improvements.

5. Should this data be shared with stakeholders? What constraints are there that might limit sharing with stakeholders?

In general, San Francisco proposes that the Commission follow the precedent it has established in its TNC data disclosure proceedings since 2019 – all data should be presumed public to facilitate effective oversight and evaluation with limited exceptions only where necessary to protect personal privacy or trade secrets. As part of this rulemaking, the Commission should incorporate those principles in a confidentiality matrix that settles these questions going forward and does not allow permittees to relitigate the matter with every filing. The confidentiality matrix should also address fields in AVPS reporting not previously addressed in the Commission’s TNC rulings. There are some areas where data required to be reported by AV permittees operating large commercial fleets for profit should not be protected from disclosure in the way the Commission has provided for TNC drivers. For example, license plates of AVPS permittee vehicles should not be protected from disclosure. License plates are critical to local traffic enforcement, and do not raise the kind of privacy issues that

led the Commission to allow redaction of this information for TNC drivers operating their personally owned vehicles. Similarly, specific location information associated with collisions involving AVs in commercial fleets and detailed location information for unplanned stop incidents should be disclosed to the public. Information about unplanned AV stops is not meaningful without precise location information. There may be other data fields for which the Commission should allow public release, even if corresponding information for TNC incidents is allowed to be redacted.

III. THE COMMISSION SHOULD TAKE THIS OPPORTUNITY TO REVISE AND UPDATE COMMISSION REPORTING REQUIREMENTS TO ADDRESS THE FULL RANGE OF COMMISSION GOALS

San Francisco believes the problems we have observed since the launch of driverless operations call for prompt consideration of revising and/or expanding the data collection to reflect the goals for AVPS adopted in the Deployment Decision. For example, reporting must address the increased *hazards and problems* associated with automated driving – not just fair distribution of the benefits of automated driving.

Goals and Metrics

The Deployment Decision identifies safety, equity, accessibility, and environmental goals. San Francisco proposes that the Commission identify specific metrics to monitor performance of AV companies individually and as a sector. In addition, data should be collected in a way that makes it feasible to calculate metrics. Data metrics alone may not always generate useful information for safety analysis and performance assessment; frequently, they need to be accompanied by narrative descriptions.

Goals and metrics for the Commission’s consideration may include, but are not limited to:

- Public Safety
 - Number of collisions and number of injury collisions
 - Number of fatalities, number of serious injuries, and number of injuries
 - Number of collisions and number of injury collisions per 100 million vehicle miles traveled (VMT)

- Number of fatalities, number of serious injuries, and number of injuries per 100 million vehicle miles traveled (VMT)
- Passenger miles traveled (PMT) / VMT
- Number of incidents (e.g. “minimal risk conditions” or “unplanned stops”)
- Total duration of incidents (hours), including in relation to transit service, emergency responder and roadway worker impacts
- Incidents per VMT
- Number of assaults and number of harassments
- Number of assaults and number of harassments per VMT
- Equity
 - % of trips completed (out of total requests) originating in Equity Priority Communities (EPCs)
 - % of trips completed (out of total requests) ending in Equity Priority Communities (EPCs)
 - Average response times segmented by trips originating in EPCs and trips originating in non-EPCs
- Disability Access
 - Percentage of WAV trip requests completed compared to non-WAV trip requests completed
 - Comparison of WAV response time non-WAV trip response time
 - Availability and testing of WAV service: VMT of standard WAVs, drivered autonomous WAVs, and driverless WAVs
 - Number of accessibility complaints
 - Accessibility complaints per VMT
- Environment
 - Total greenhouse gas (GHG) emissions and total PM 2.5 emissions
 - Greenhouse gas (GHG) emissions and PM 2.5 emissions per passenger mile and per VMT

- Charging events per passenger mile and per VMT

We offer further discussion as to disability access and passenger safety. Rather than waiting for some future proceeding specific to disability access issues, San Francisco recommends the Commission improve reporting needed to evaluate the impacts of AV operations on accessibility and equity. In response to Waymo's request to participate in the AV Driverless Deployment program and Cruise's request to expand their operations, the Commission heard from numerous disability organizations about the disability community's hopes for the future of AV service. San Francisco shares these hopes and is closely following the development of autonomous WAVs alongside many Californians who currently lack access to accessible and reliable on-demand transportation. At this point, however, accessible AVs are neither in testing or deployment for AVPS and none of the Commission's permitted AVPS operators have made clear what their timelines are for doing so. In the meantime, we have been pleased that at least one permittee, Waymo, is offering passenger service to wheelchair users in standard, non-autonomous WAVs. This is an important intermediary step to ensure that wheelchair users are not left behind in the testing and deployment of AVs.

To address the Commission's goal of ensuring that AV service is safe, equitable, and accessible to the widest range of potential riders, San Francisco recommends the Commission require improved data reporting to assess whether the WAV services being provided by AVPS permittees are equivalent to the services delivered in non-accessible AVs. To evaluate this progress, the Commission must understand how many rides are provided to WAV users versus non-WAV users, what percentage of WAV requests are fulfilled versus non-WAV requests, and the wait times for WAV rides versus non-WAV rides. The current AV Deployment program templates capture the necessary data to make these calculations, and we appreciate the CPED proposal to extend the use of AV Deployment program templates to AV Pilot program participants. Specifically, the WAV Req and TripFulfilled data fields capture whether a trip took place in a WAV and whether it was accepted, and the fields TripStartDate, TripAcceptDate, and TripPickupDate—which crucially include timestamp data—allow for the wait time comparison. San Francisco supports CPED's proposal and in the interest of efficiency, also recommends adding a field to indicate whether a WAV is drivered, autonomous, or

autonomous with an on-board attendant. Making this modification now will allow for the most consistency in data reporting as the state of accessible service provided by AVPS evolves.

Given the Commission’s emphasis on passenger safety, and as commercial, shared AVPS becomes more prevalent, San Francisco suggests that the Commission build upon the reporting regime it established for Transportation Network Companies (TNCs) to include reporting of passenger assaults, harassment, and complaints. This report would include, but not be limited to information such as:

Field	Field Description
Incident ID	Unique identifier of incident
Carrier Name	Name of regulated entity providing service
Permit number	Permit number
VIN	Vehicle Identification Number
RideID	The RideID of the trip, if any
Datetime	Date and time of the incident
Safety Driver	Identify whether safety driver is present
Complaint type	Service issue identified from a discrete list of issue types identified by the Commission including but not limited to: <ul style="list-style-type: none"> - Physical assault - Sexual assault - Harassment - Sexual Harassment - WAV accessibility - Other accessibility
Description (not to be publicly disclosed)	A narrative description of incident
Resolution (not to be publicly disclosed)	A narrative description of how the complaint was resolved

IV. CONCLUSION

San Francisco strongly supports the Commission’s recognition of its evolving regulatory oversight role with respect the AVs, and the importance of robust data reporting to fulfilling the Commission’s responsibilities. San Francisco believes that the CPED Staff Proposal in Attachment 1 is a good starting point upon which to expand and specify a more comprehensive and useful set of AV data reporting requirements, and that the CPED Staff Proposal includes many compelling features such as making data reporting consistent across permits, creating a much more detailed, disaggregate collision report, adding a “minimal risk condition report”, and increasing the frequency from quarterly to monthly reporting. However, we also believe that the extension and refinement of AV data reporting requirements should be guided and informed by the Commission’s goals. We look forward to collaborating with the Commission and other interested parties and stakeholders in developing data reporting requirements that will help the Commission assess progress towards its identified goals, as well as serve the evolving analytic needs in the dynamic AV sector.

Most importantly, San Francisco opposes Commission action on Draft Resolutions TL-19144 and TL-19145 until the Commission has adopted new, comprehensive AV data reporting requirements and until sufficient data has been collected under these new reporting requirements to allow the Commission to assess AV performance relative to the Commission’s stated goals.

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