BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

STATE OF CALIFORNIA

SAN FRANCISCO'S COMMENTS ON THE DRAFT RESOLUTION APPROVING CRUISE LLC'S APPLICATION FOR AUTONOMOUS VEHICLE PASSENGER SERVICE PHASE I DRIVERLESS DEPLOYMENT PROGRAM

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Pursuant to Rule 14.5 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission" or "CPUC") the San Francisco Municipal Transportation Agency ("SFMTA"), the San Francisco County Transportation Authority ("SFCTA"), the San Francisco Fire Department ("SFFD"), and the San Francisco Mayor's Office on Disability (collectively "San Francisco" or the "City"), submit these comments on the Draft Resolution approving Cruise LLC's application for Autonomous Vehicle ("AV") Passenger Service Phase I Driverless Deployment program.

I. INTRODUCTION

Cruise LLC ("Cruise") automated driving reflects fantastic technical achievement and offers an exciting future transportation option. The City welcomes this addition to San Francisco streets. Yet, the City has serious concerns that the ("DR") does not adequately address important issues related to safety, accessibility, public accountability and data collection. The DR emphasizes the limited nature of the authorization being granted: to permit up to 30 all-electric vehicles [1]), operating late at night[2], in a limited area (for which no map is provided).[3] At the same time, the Commission acknowledges that the technology, policies, and procedures of Cruise's passenger safety plan "may be insufficient if its deployment scale and scope change."[4] But taken together with the Commission's Deployment Decision ("D.") (D.20-11-046, as modified by D.21-050017) ("Deployment Decision"), approving the DR as proposed would allow an unlimited number of driverless Cruise AVs on San Francisco streets with no further Commission action. Expansion to the full downtown core and to the City's peak travel hours could be approved with further action by only Commission staff.

[1] DR, at 2. The DR contains no page numbers. All page numbers are hand-entered.

[2] *Id.,*at 1,2)

[3] Neither the California Department of Motor Vehicles ("DMV") nor the CPUC have made any accessible public record showing the area within which driverless testing or deployment are authorized at any given time. The Cruise Advice Letter (which is not readily accessible to the public) identifies two different proposed areas—one that reflects approximately 20% of City roads and another that reflects the full City. Cruise's CEO recently tweeted another map purporting to show where Cruise now operates—a map showing an area larger than the first and smaller than the second. Between these conflicting maps, a member of the public cannot determine whether testing or deployment they observe is conducted within an approved area.

[4] DR, at 10.

The DR applies the same "wait and see" approach that the Commission used in regulating Transportation Network Companies (TNCs).[5] That approach undermined San Francisco's climate goals, reduced transportation options for people who use wheelchairs, and significantly increased congestion and travel time delays on San Francisco streets used for robust public transit services.[6] These outcomes are likely to be repeated unless the issues identified in these comments are addressed. Cruise's current approach to passenger pickup and drop-off, stopping exclusively in the travel lane even when curb space is available, is below the level expected for human drivers. In recent years, authorities issued more than 80,000 parking citations in San Francisco to human drivers who made stops like those Cruise currently depends on for its passenger operations. Tolerating this level of performance will generate a customer base accustomed to business operations that, upon expansion, will increase hazards for vulnerable road users and travel time for all residents and visitors to San Francisco, including emergency responders. Further, these standard business operations will generate a customer base not only accustomed to a level of service known to increase risk to other road users, but also exclusive of passengers most at risk from the dangerous externalities of Cruise's pickup and drop-off approach, including and especially persons with disabilities and older adults who should be accommodated safely at designated curb space. Acquiescing to passenger pickup and drop-off in the travel lane is also likely to discourage industry investment in engineering for safe, courteous and lawful driving by communicating that driving below the level expected of human drivers is sufficient for AVs.[7] The impact of this is even stronger because, unlike the stiff penalties human drivers may pay, a regulatory gap prevents AVs from being cited for most moving violations of state and local traffic codes.

This approval would be the first of its kind in the state and it is of paramount importance that it be done correctly. New information the City has received since filing our November 2021 comments has only increased our level of concern. While there may come a time when AVPS advice letter

[5] In 2013, the Commission adopted a similar approach in D. 13-09-045 on accessibility for persons with disabilities, choosing to monitor TNC-provided reports and then set any applicable requirements as needed.

[6] The rapid growth of TNCs in San Francisco, and in cities across the country, has reduced the market for taxi ridership, and has impacted the taxi industry in ways that are especially harmful to riders with disabilities by leading to a significant reduction in the number of ramp taxis in operation. The SFMTA has long provided financial incentives to encourage ramp taxi operation. At its peak, the city had issued 100 ramp taxi permits. Currently only about 48 of the 100 ramp taxi permits are assigned with only 21 in active service.

[7] Three other companies have declared an intention to provide automated vehicle passenger service (AVPS) in San Francisco. Some of those companies appear to be making substantially greater investment in engineering for safe and lawful pickup and drop-offs. Approval of the Commission's DR may have the unintended consequence of creating great pressure to reduce those investments.

approvals require less scrutiny, under the current circumstances, the Commission should return the DR to staff to incorporate substantial amendments that address these and other issues discussed below and reflected in line edits to the findings and order proposed in Exhibit 1.

II. THE DRAFT RESOLUTION APPROVING CRUISE'S APPLICATION

A. City / Cruise / CPUC Alignment

The City endorses key elements of Cruise's approach to transitioning from testing to commercial deployment, including the choice to launch initial service in the late evening and early morning hours. This time period exposes fewer people to the hazards that have not yet been engineered out of Cruise AV driving and it provides a new transportation option when transit service in San Francisco is most limited. With some conspicuous exceptions, the driverless Cruise AV appears to generally operate as a cautious and compliant defensive driver. Finally, the City appreciates Cruise selecting a zero emission vehicle to test and launch service.

San Francisco also appreciates the Commission's recognition of the complexities and significant safety concerns associated with Cruise's Driverless Deployment, especially its pickup/drop-off operations. In particular, we agree with the Draft Resolution:

- confirming that changes to the hours, geography, roadway type, speed range, or weather conditions in which Cruise operates require Cruise to submit a Tier 2 advice letter;
- acknowledging that deployment scale can impact public safety;
- observing that "passenger pickup and drop-off in a travel lane introduces safety risks for passengers and other road users into AV Operations" (*See* DR, Finding 12, at17);
- acknowledging that more data is needed regarding pickup/drop-off operations;
- stating that the Commission would support measures to expand access to persons with disabilities, such as providing wheelchair accessible vehicles ("WAV"), additional auxiliary aids, and disability competence training for staff, as efforts that would expand the benefits of AV technologies to all Californians; and

- encouraging Cruise to work cooperatively with the City, enforcement agencies, and other stakeholders.

However, the City remains concerned that the DR does not do enough to address imminent safety risks posed by Cruise's deployment or provide a pathway to sufficiently address these risks in the future.

B. Emergency, incident response, and enforcement issues

1. Recent incidents involving road workers and first responders

Since the City filed its November 29, 2021 comments on the Commission's Deployment Decision, driverless Cruise AVs have had three encounters with San Francisco employees that illustrate the safety issues that these vehicles create.

1. On April 30, 2022, at approximately 1:35 a.m., a driverless Cruise AV stopped in the intersection of Third Street and 25th Street—two streets that both have light rail tracks—while employees of the SFMTA Traffic Signal Shop were working to repair rail signal lights in a safe work zone demarcated by cones.[8] SFMTA employees report that the vehicle stopped within the crosswalk in the immediately adjacent lane and blocked the intersection for a period of approximately 5 minutes. The driverless Cruise AV occupied the only through lane open at the time and the employees had no method for communicating with anyone at Cruise about the unsafe situation. The vehicle both interfered with traffic and ongoing work.
2. At approximately 4:00 a.m., on April 5, 2022, a SFFD vehicle responding to a three-alarm fire with lights and sirens needed to pass a working garbage truck using the opposing lane. As it did so, a driverless Cruise AV came to a stop immediately adjacent to the garbage truck, blocking the only available travel lane. The driverless Cruise AV did not reverse as any human driver would be expected to do, and the engine could not proceed until the Recology driver ran from their work to move the garbage

[8] This incident illustrates driving that is not consistent with the DR's Finding 14. In addition, the City believes Finding 15 to be improperly framed and offers alternative language in Exhibit 1.

truck. This incident slowed SFFD response to a fire that resulted in property damage and personal injuries. Stopping in a travel lane—apparently without the ability or supervision to reverse course—creates hazards and slows emergency response and shows that stopping is not always the appropriate way to "assume a minimal risk condition." SFFD has requested a meeting to discuss this incident with Cruise; that meeting has not taken place. SFFD is extremely concerned about vehicles stopping in travel lanes and the potential negative impact of this driving behavior on fire department response times.

3. On April 1, 2022, San Francisco Police Department ("SFPD") officers observed a driverless Cruise AV driving on Clement Street without headlights. SFPD officers made a traffic stop and the situation was corrected. A video of this event was posted on YouTube by a member of the public.[9] SFMTA and SFPD representatives met with Cruise to discuss this incident and Cruise gave the City the opportunity to review video of the incident collected by the driverless Cruise AV. This was extremely valuable, and the City will continue discussion with Cruise about lessons learned from this incident.

While the consequences of each of these events varies in severity, deployment of driverless AVs on a much larger scale would increase the likelihood that unusual AV behavior could lead to serious injury or death. This problem is made worse by the fact that the City's law enforcement is unable to cite AVs for moving violations due to an extraordinary gap in California Law.

2. Law Enforcement Regulatory Gap

Contrary to the suggestion in San Francisco's November 29, 2021 Comments on Cruise Application for Driverless Deployment Permit ("San Francisco Comments")[10], and contrary to statements in Cruise's December 6, 2021 Reply to Protest and Comments to Cruise's Application for Driverless Deployment Permit – Tier 3 Advice Letter ("Cruise Reply Comments") [11], the April 1, 2022 incident described above has focused the City's attention on the fact that law enforcement

[9] Available at: https://www.youtube.com/watch?v=9w66NvmrlJ0

[10] San Francisco Comments, at 5.

[11] Cruise Reply Comments, at 3.

officers throughout the state are not able to cite any driverless autonomous vehicle for any moving violation. California Vehicle Code Section 40500(a) governs procedures for the issuance citations for moving violations. Under this section, when a driver is stopped for most moving violations, the law enforcement officer must prepare a written notice to appear in court (the "citation"). The citation must contain, among other things, the name and address of the person and the time and place the driver shall appear in court. If the driver does not have a driver's license or other satisfactory evidence of identity in their possession, the officer may require the driver to place a thumbprint on the notice to appear. After the citation is signed by the driver and issued, Section 40504 requires the officer to release the driver. These statutory requirements all assume that a human driver is present. In an AV, however, there is no human driver, and thus no mechanism to utilize the citation process—there is no name and address to provide, there is no one to appear in court, there is no driver's license or thumbprint to prove identity, and there is no person to sign the citation.

Thus, there are a limited number of citations that may be able to be issued to driverless AV. For example, "fix-it" tickets for vehicles may be mailed to the owner of a vehicle without the signature of the driver under Vehicle Code Sections 40001 and 40002. Similarly, citations for red light camera tickets are mailed under Vehicle Code Section 40518. Vehicle Code Section 40202 allows for unattended vehicles to be ticketed for parking violations by securely attaching to the vehicle a notice of parking violation. Section 40202 also allows for issuance of the citation by mail if the vehicle is driven away while the citation is being issued. Thus, although the California Vehicle Code ("CVC") currently allows for a few violations to be served without the presence of the driver, it does not allow such service for most other moving violations for noncompliance with basic rules of the road. As a result, law enforcement is currently unable to cite driverless AVs for penalties for the majority of moving violations under the CVC including but not limited to the following:

Violation	SF Penalty for human driver	Points on human driver's license	Penalty for AV	Impact on AV authorization
CVC 21453(a): Red Light-Violation (not in	$490	1	$0	None

red-light camera context)				
CVC 22350: Unsafe Speed 1–15 MPH Over Limit	$238	1	$0	None
CVC 22400: Minimum Speed Law–Impeding Traffic Flow	$238	1	$0	None
CVC 22107: Unsafe Turn or Lane Change Prohibited	$238	1	$0	None

3. Thus, San Francisco is now unable to enforce these important provisions to regulate the safe movement of AVs on California highways and streets. The State Legislature has adopted myriad provisions to prevent unsafe driving behaviors such as speeding, driving through red lights and stop signs, and obstruction of traffic in a travel lane, among other critical rules of the road. Compliance with these laws is essential to the safety of drivers, passengers, pedestrians, and cyclists, and violators of these rules face stiff penalties. Serious safety risks are not addressed.

The City believes that the inability to enforce traffic laws and the recent performance of driverless Cruise AVs in their interactions with local authorities in both emergency and non-emergency situations creates a serious risk to public safety. The City also urges the Commission to exercise caution before taking an action that will incentivize further deployment and encourage more passenger trips. Until California's generally applicable traffic laws can be effectively enforced against AVs and state and local officials have the same power to enforce violations against human drivers and AVs, the City believes that it would be imprudent to allow the proliferation of AVs in passenger service on our streets. Not only does the gap create a serious risk to public safety, but the inability of state and local authorities to cite for moving violations also prevents authorities from collecting accurate statewide data on the frequency and nature of AV moving violations. The City encourages the Commission to work with its sister agencies to address this issue and to use its authority to help limit these serious safety risks.

C. Pickup and Drop-off Operations

The City appreciates the DR's attention to the pickup/drop-off operations of AVs. The DR acknowledges that pickup/drop-off is a "critical nexus of many of the safety and accessibility issues applicable to AV operations,"[12] and recognizes "the broader safety concerns inherent to in-lane pickup and drop-off operations."[13] The DR also observes that when pickup/drop-off operations occur in a travel lane (versus a regular or white loading curb i.e., "double parking"), it "introduces safety risks . . . by increasing the physical distance between safe pedestrian space and the AV, and reducing the physical barriers. . . between boarding or alighting AV passengers and other road users."[14] But the DR fails to recognize the importance of local roadway regulations in reducing these safety and accessibility concerns.

The CVC creates uniform procedures for the safe and efficient movement of vehicles on California streets. Particularly in busy urban areas such as San Francisco, adherence to basic traffic rules is essential. More importantly, being able to recognize the various signs and curb markings necessary to comply with these rules must be required for both drivered and driverless vehicles. This is particularly true for the safe and efficient loading and unloading of passengers in the commercial context Cruise is applying to operate in.

Despite Cruise's arguments to the contrary,[15] there is no doubt that it is not safe and not reasonable to put a vehicle in passenger service that: (1) fails to recognize lawful curb zones specifically designed for loading and unloading as well as other legal places where loading at the curb is safe and legal, and (2) appears technologically unable to maneuver into such spaces. The CVC authorizes local governments to create specific zones where passenger loading is allowed: white zones, green zones, and yellow zones. [16] All legal parking places may also be used for passenger loading, as can many residential driveways at passenger homes. The curb, not the travel lane, is the primary designated safe area for passenger loading and unloading. Despite this default position,

[12] DR, at 11.

[13] *Id.,* at 12.

[14] *Id.,* at 11.

[15] *Id.,* at 7.

[16] CVC Section 21458.

Cruise has made stopping in the travel lane its business model. But, stopping in the travel lane—particularly on the roadway side of a vehicle parked at the curb—in addition to being unsafe is not lawful and, the CVC makes it clear it is not meant to be the norm.[17] And, vehicles stopping or parking are required to do so no more than 18 inches from the curb with a very limited exception for loading and unloading. Cruise's Reply Comments nonetheless take an extraordinary legal position with respect to the "reasonably necessary" standard for stopping more than 18 inches from the curb that Cruise asserts authorizes unlimited pickup and drop-off in a travel lane.[18] Cruise asserts that it is 'reasonably necessary' to stop in a travel lane to pick up a passenger *even when the passenger is standing in a white curb zone established precisely for the purpose of facilitating passenger pickup and delivery.* [19]. This is absurd, and it illustrates that Cruise has simply not engineered its automated driving system to recognize lawful curb zones and maneuver the driverless Cruise AV as required to use them. It also suggests that Cruise has no intention of doing so.

These conclusions are reinforced by continuing Cruise's practice since the City's last filing. Cruise has posted numerous additional videos of its AVs operating in San Francisco. Videos of test rides offered to General Motors CEO Mary Barra and former San Francisco Mayor Willie Brown both show driverless Cruise AVs that pickup and drop-off passengers in the travel lane. This is also true of numerous other videos from the Cruise pilot testing program, including many videos posted by Cruise employees. ***After reviewing dozens of such videos, San Francisco has not identified a single instance of a passenger being picked up at the curb—even where curb space is readily available.***[20] If all vehicles operated in the way Cruise argues it is entitled to, roadways would become both

[17] CVC Section 22500(h); *see* also CVC Section 22400(a).

[18] *See* CVC Section 22502)

[19] Cruise Reply Comments, at 6)

[20] The City conducted a diligent search for video on the Cruise website, Twitter, YouTube and LinkedIn and reviewed a total of 75 videos documenting at least 85 stops for passenger pickup and drop-off.

unworkable in terms of flow and significantly more unsafe.[21] As recognized by the Draft Resolution, there are safety risks inherent[22] to in-lane pickup/drop-off, and Cruise's approach is unsustainable.

III. RECOMMENDATIONS

A. The Commission should clarify that increases in fleet size and vehicle model require Cruise to submit an Advice Letter.

The DR provides important limitations on the permit by clarifying that certain changes "materially affect" the approaches outlined in its Passenger Safety Plan (PSP) and require Cruise to submit an updated PSP to the Consumer Protection and Enforcement Division ("CPED") as a Tier 2 Advice Letter. Specifically, "any changes to the hours, geography, roadway type, speed range, or weather conditions of permitted operations" require Cruise to submit a Tier 2 Advice Letter. The City appreciates these clarifications but recommends that the Commission clarify that a change in the number of vehicles can "materially affect" the PSP approaches and should also require submission of a Tier 2 Advice Letter.

Cruise's application proposed a fleet of up to 30 driverless AVs. But the resolution does not discuss whether an increase in the fleet size would require Cruise to submit a Tier 2 Advice Letter or otherwise notify the Commission of any change in the number of vehicles authorized.

Changes to the scale and scope of deployment with Cruise's current approach to passenger loading will increase the negative impacts of driverless Cruise AV deployment. Cruise has indicated that it has ambitions for exponential growth of its services in San Francisco and in other cities. These ambitions were reported to GM investors by Cruise's then CEO, Dan Ammann in October 2021 using the graphic shown in Figure 1.[23] Given the heavy concentration of Cruise testing in San Francisco,

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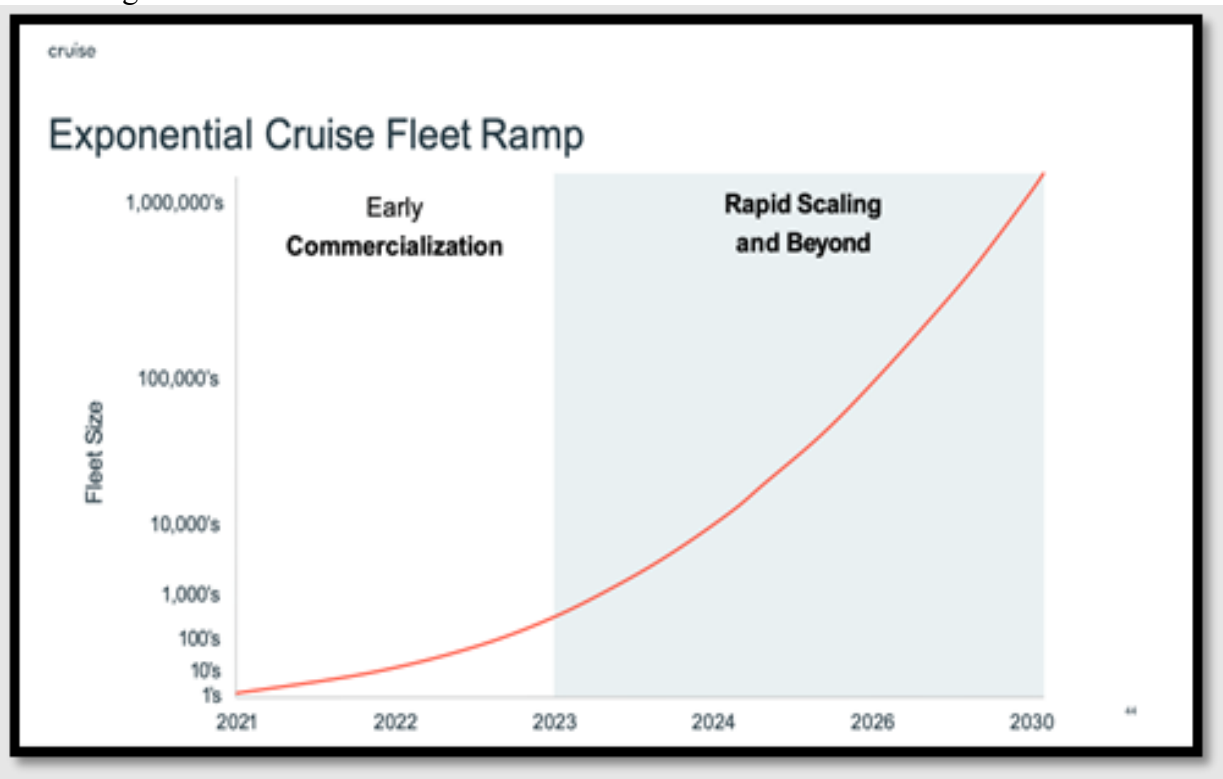
[21] In 2020, twelve pedestrians and 2 cyclists were killed in San Francisco alone. *See* Vision Zero Traffic Fatalities: 2020 End of Year Report available at: www.visionzerosf.org%2Fwp-content%2Fuploads%2F2021%2F03%2FVision-Zero-2020-End-of-Year-Traffic-Fatality-Report_1.0.pdf&usg=AOvVaw1GV2uY_fWoFvOSpHQGjj9G

[22] DR, at 12, 13.

[23] Cruise's Dan Ammann at GM Investor Day (accessed May 15, 2022) https://www.youtube.com/watch?v=nHfxmt2x9GE&feature=youtu.be

the graphic suggests that Cruise hopes to operate hundreds (or possibly even thousands) of vehicles in San Francisco within the next 18 months.

Figure 1



At this scale, a Cruise business model that depends on routine stops in travel lanes could have major impacts on road safety and the flow of traffic. These stops can cause other drivers to make sudden stops or lane changes to avoid collision, increasing the risk of collisions involving those *other* motor vehicles, pedestrians, and cyclists. When stops in the travel lane are made near intersections, they may limit both the visibility of other drivers and the movements of drivers in multiple directions. When they are made on streets without protected bike facilities, they increase the risk of conflicts between driverless Cruise AVs and bicycle and scooter users. This also creates obstacles and challenges to pedestrians and transit riders, and creates barriers to throughput for the duration of boarding/alighting activity on multi-lane streets. All of these scenarios create a disproportionate risk to older adults and wheelchair users.[24] On single lane two-way streets, stops in the travel lane may

[24] Older adults account for 25% of pedestrian deaths in San Francisco, but are only 15% of SF's population. (2021 Vision Zero SF Action Strategy https://www.visionzerosf.org/wp-content/uploads/2021/11/VZSF_AS_111021_spreads-FINAL.pdf). Wheelchair users are 36% more likely to

either result in a complete stoppage of traffic or encourage other drivers to cross yellow lines into oncoming traffic, increasing risk of vehicle collisions. While these problems may exist with 30 AVs operating at night, the cumulative effect of these sorts of problems with hundreds or thousands of AVs operating during daylight hours will be significant.

As the number of Cruise vehicles on the road at a given time increase, it is likely that there will be increased use of the travel lanes, and increasing likelihood that many AVs will be conducting pickup/drop-off at the same time and location. In such situations, the PSP should consider vehicle to vehicle interactions, queuing, and how to differentiate vehicles for ease of passenger pickup. Furthermore, it is not clear whether Cruise would need to return to the Commission to offer service in its Origin vehicle—a vehicle that has no human controls.

Given the Cruise position on use of appropriate curb space, the City believes that changes to Cruise's fleet size and vehicle model require Cruise to submit an additional Tier 2 advice letter to update their PSP. The DR acknowledges that "Cruise's strategies to protect public safety may be insufficient if its deployment scale and scope change."[25] We agree, and urge the Commission to clarify that changes to the scale of deployment require submitting a Tier 2 Advice Letter. In evaluating an advice letter proposing an increase in the driverless Cruise AV fleet size, Commission staff should evaluate whether Cruise has improved its driving performance related to passenger pickup and drop-off and addressed safety risks posed by its interactions with first responder vehicles and street-based workers based on review and analysis discussed in Section C below.

B. The DR should require Commission staff to post on its website the geographic area in which operation of driverless Cruise AVs is authorized.

The Commission should also provide greater transparency regarding the approved operations for Driverless Deployment. The Cruise Advice Letter identifies two geographic areas—an "Initial" Operational Design Domain (ODD) and a Citywide ODD. The Deployment Decision links the geographic area of CPUC permits to the ODD approved by the California DMV; however, the DMV

die in collisions with vehicles than other pedestrians. (Disparities in road crash mortality among pedestrians using wheelchairs in the USA: results of a capture–recapture analysis https://bmjopen.bmj.com/content/5/11/e008396)

[25] DR, at 10.

has not made the area of the *approved* ODD available to the public. Neither the City nor the public knows whether the DMV has approved only the Initial ODD or a broader area. Cruise's CEO, Kyle Vogt, recently tweeted another map purporting to show where Cruise now operates—a map showing a different operating area.[26] The DR makes factual statements about the "Initial Operational Design Domain" (ODD) in Findings 14 and 15, but the DR does not limit Cruise operations to that geographic area.[27]

The City therefore recommends the DR require CPED to post on the Commission's website up-to-date and clear information about the geographic area in which it has authorized driverless testing and driverless deployment, as well as any other limitations on authorized driving for AV Passenger Service Delivery.

C. The DR should call on CPED to convene a regular working group to immediately address data collection and retention requirements, addressing pickup and drop-off and AV interactions with first responder and street-based workers in San Francisco.

The DR acknowledges the significant safety concerns associated with pickup/drop-off operations and the risks for incidents and near misses. The DR also acknowledges that data specifically related to pickup/drop-off operations is needed.[28] This is consistent with D.20-11-046, which anticipated further workshops to consider whether and how to revise data collection requirements.[29]

The DR "encourage[s] Cruise to maintain open and active dialogue with San Francisco, local law enforcement, and other stakeholders as appropriate throughout operation of its Driverless Deployment service."[30] The City agrees with this sentiment but encourages the Commission to do

[26] https://twitter.com/kvogt/status/1521554237037023232?cxt=HHwWgMCo0Yvh0p0qAAAA

[27] The incident described in Section II.B.1 above describes driverless Cruise AV driving that appears to violate the statements of fact in paragraph 14. The restriction in the text of paragraph 15 is unclear and does not accurately capture risks related to driverless AV conflicts with SFMTA rail vehicles. Changes to this paragraph are intent ended to clarify the appropriate safety protections in relation to SFMTA rail right of way.

[28] "[S]taff and stakeholders should discuss the inclusion of data related to pickup and drop-off. This data would allow us to understand how frequently these incidents occur and make more detailed inquiries into safety risks as applicable." DR, at 14.

[29] Deployment Decision, at 75.

[30] DR, at 14-15.

more to facilitate Cruise's stakeholder engagement. The City has been sharing its concerns with Cruise about a number of topics for four years, and despite the CPUC's encouragement, Cruise has engaged with the City to share and seek information that supports their operations but has failed to engineer the driverless Cruise AV and its passenger service platform to address City concerns.

The City encourages the Commission to add language to the DR calling on CPED to facilitate a working group to meet regularly to address the data collection and retention requirements that are necessary to review driverless Cruise AV pickup and drop-off stops and, where requested by the City, to review interactions between driverless Cruise AVs and City first responders, transit vehicles, parking and traffic control officers and other roadway workers. CPED presence at these meetings would provide the Commission a valuable source of information on AV safety. The City further encourages CPED to use the working group to develop a plan for analysis of the data collected and/or retained and inform staff recommendations on how to evaluate and share data in a manner that appropriately protects any personal privacy interests. The working group should seek agreement on how information and analysis from this working group may be shared with other stakeholders in industry workshops addressed in Section D below.

D. The Commission should clarify that workshops should address a broader range of issues and encourage CPED to allow a broad set of stakeholders to present at the workshops.

The City recommends that the DR make several changes regarding public workshops. The DR contemplates a workshop at which Cruise would be required to update stakeholders "on how the strategies described in its Passenger Safety Plan have been realized in operations, including pickup and drop-off, and the effectiveness of these strategies."[31] While such a report may be helpful, the Commission should solicit a broader range of views from multiple stakeholders.

Further, this narrow framing is inconsistent with the Deployment Decision. The Deployment Decision provides that "The objectives of the workshop will include but are not limited to: the quality and quantity of data gathered to date; progress toward the Commission's goals for AV operations in passenger service; whether and how to revise the data collection requirements; whether to revise the

[31] DR, at 18.

program goals and establish targets; and whether there is need for any other changes to the AV pilot and the Phase I deployment programs." The Resolution may be read to imply that only one workshop is authorized. The City recommends the Commission clarify that CPED should hold a series of workshops.

In addition, the Commission's Decision 20-11-046 stated that CPED would plan to hold a workshop to evaluate the status of the Phase I AV deployment operations in passenger service within a year of the issuance of this Decision.[32] That Decision was effective on November 19, 2020 and modified on May 5, 2022. From either date, the workshop described in the Deployment Decision is now overdue. The City believes that further work on data collection and reporting is essential and urgent. Phase 1 of Driverless Deployment is premised on collecting data that can be evaluated to inform revisions to the program to be implemented in Phase 2. If detailed direction about how to collect data is not provided, the Commission will not receive data that enables it to effectively analyze AVPS performance and impacts. This will allow safety hazards and other operational concerns, particularly disability access, to go unaddressed for years.

Further, the Commission should also hold a workshop that reconvenes the AV Accessibility Working group that has not met since December, 2018. The workshop should lead to development of an agenda for further focused meetings of the Accessibility Working group. The Commission should ensure that one or more workshops addressing a broader scope be scheduled within 6 months of the date of the Resolution.

E. Evaluate the concept of "net safety impacts" at a workshop before using it in the Resolution.

The DR introduces the concept of "net safety impacts" and "net safety benefits." Specifically, Ordering Paragraph 17 of the DR requires the Commission to continue monitoring "the net safety benefits of AV passenger service." Elsewhere the DR states that "[w]hat is clear is that CPED cannot describe the net safety impact of AVs" and the "the Commission may modify the requirements of its AV program in the future to increase the net positive safety impact of this transportation

[32] Deployment Decision, at p.75.

technology."[33] The City is not aware of either of these concepts being discussed in the Deployment Decision.

The City appreciates the challenges of adopting safety metrics and goals, but has concerns about these concepts, especially since they do not appear to be based on the Deployment Decision requirements and the DR does not specify where these concepts arise or what they mean. The City's primary concern is that the term "net" implies that some safety improvements may be used to offset increases in safety risks in other areas. It is not clear how different safety risks would be weighed and whether it's appropriate to offset risks in all circumstances. Characterization of risks becomes more complicated when considering the needs of the disabled community and how they might differ from others, especially when a subset of this population, wheelchair users requiring WAV, are by design unable to tangibly or immediately benefit from the service. Unless both positive and negative impacts to safety from AVs can be appropriately quantified and considered for all population groups, including people with disabilities, older adults, and other vulnerable road users and there are defined standards to apply when calculating what the net safety impacts of AVs are, the result will essentially be arbitrary and of no probative value.

The City recommends modifying finding 17 that includes the concept of "net safety benefits" and evaluating whether and how this concept is useful in monitoring, assessing and regulating the safety of AV passenger services.

F. Data collection on wheelchair accessibility

Finally, the Commission's Deployment Decision requires Cruise to collect certain data related to accessibility, and it is unclear whether the DR is appropriately effectuating these requirements. Namely, the Decision requires Cruise to transmit to the Commission quarterly reports of data for every trip as to whether the vehicle is a WAV and whether the passenger requested a WAV.[34] Similarly, for each month in the reporting period, Cruise must report the total number of WAVs in service, total number of WAV rides requested, the total number of WAV rides requested but unfulfilled because no WAV was available, and the total number of WAV rides accepted and fulfilled.[35] As the City understands it, Cruise does not currently operate any WAVs and none of the 30 Cruise AVs that are the subject of the DR are WAVs. Although the Deployment Decision does not require Cruise to operate WAVs at this time, this does not relieve Cruise of its obligation to allow passengers to request

[33] DR, at 13.

[34] Deployment Decision, at Ordering Paragraph 7(m)(i)(7), (21).

[35] *Id.,* at Ordering Paragraph 7(m)(ii)(10)-(13).

WAVs in order to collect the data required by the Commission's Decision. Without the ability for customers to request a WAV, Cruise is incapable of reporting the total number of WAV rides requested and the total number or WAV rides requested and unfulfilled because no WAV was available. In order to implement the ordering paragraphs of the Deployment Decision, the Commission should clarify that the Cruise ride-hailing application must enable passengers to request WAV service. Further, as supported by the record in the Commission's TNC Access for All proceeding, this feature should not be hidden within the application's user preferences or settings and should be obviously visible to all passengers without special instruction.

Dated: May 19, 2022

Respectfully submitted,

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EXHIBIT 1

FINDINGS

1. On November 5, 2021, Cruise LLC (Cruise) submitted advice letter Cruise-0001 applying for a permit to participate in the California Public Utilities Commission's (Commission) Phase I Autonomous Vehicles (AV) Passenger Service Driverless Deployment program seeking authority to operate 30 "Cruise AV" (Chevrolet Bolt) vehicles on San Francisco streets between the hours of 10 p.m. and 6 a.m.

2. Cruise's advice letter received 1 timely response denoted as a protest, 1 timely response providing comments and urging further investigation before Commission approval, and 20 timely responses in support.

3. Disability Rights California protested Cruise's advice letter on the grounds that Cruise's service fails to meet the standards set by the Americans with Disabilities Act for nondiscrimination by Title III entities. We find this not to be proper ground for a protest.

4. The San Francisco Municipal Transportation Agency, San Francisco County Transportation Authority, and the Mayor's Office of Disability submitted a response expressing concerns regarding Cruise vehicles stopping in a travel lane for passenger pickup and drop-off, the equity of Cruise's service, and potential discrimination in Cruise's service against wheelchair users.

5. Responses in support were submitted by City of Sunnyvale, Assemblymember Autumn Burke, Senator Lena Gonzalez, Senator Dave Min, Coalition of California Utility Employees, Chamber of Progress, Streets Are For Everyone, Professor William Riggs, American Council of the Blind, California Council of the Blind, NorCal Spinal Cord Injury Foundation, United Spinal Association, Golden Gate Restaurant Association, Hispanic Chambers of Commerce of San Francisco, San Francisco Chamber of Commerce, TechNet, Self-Help for the Elderly, SAFE, San Jose Chamber of Commerce, and EV Charging Association.

6. Support letters highlighted the potential safety, environmental, energy, and economic benefits of Cruise's proposed service.

7. Cruise's application is complete relative to the requirements of Ordering Paragraphs 7 through 11 of Decision (D.)20-11-046, as modified by D.21-05-017 (Deployment Decision).

8. The Deployment Decision does not prescribe specific targets relative to the Commission's goals for its AV programs.

9. Cruise has no specific obligation to serve certain geographic areas.

10. Cruise has submitted a Passenger Safety Plan that meets the minimum requirements of Ordering Paragraph 8 of the Deployment Decision.

11. The Deployment Decision does not define "accessibility" or require specific accessibility measures for participation in the AV Deployment program; however, nothing in the Deployment Decision or this Resolution affects Cruise's legal obligations under California and U.S. laws governing disability access.

12. Passenger pickup and drop-off in a travel lane introduces safety risks for passengers and other road users into AV operations.

13. Cruise's Passenger Safety Plan includes policies and procedures intended to ensure passengers can safely identify, enter, and exit the AV; but the Commission recognizes the broader safety concerns inherent to in-lane pickup and drop-off operations. The inherent safety concerns associated with in-lane pickup and drop-off will increase as the scale of deployment increases. The effects of this potential increase have not been effectively analyzed.

14. In light of recent incidents involving driverless Cruise AVs operating in San Francisco, it is reasonable for the Commission to create a Cruise AV San Francisco street operations working group that includes representatives of Cruise, Commission Staff, and the City and County of San Francisco, to 1) develop data collection and retention requirements necessary to provide for collaborative review of pickup and drop-off stops in a manner that protects the privacy of users; 2) to develop data collection and retention requirements necessary to provide for collaborative review of Cruise driverless AV interactions with first responder and street-based workers in San Francisco, and 3) to develop a plan for analysis of the data collected and/or retained.

15. ~~14.~~ Cruise's initial Operational Design Domain does not include any highway-rail crossings, and streets with light rail are excluded from AV routable streets.

16. ~~15.~~ Cruise's initial Operational Design Domain allows operations when necessary at crossings with cable cars, streetcars, or light rail vehicles that are controlled by stop signs or traffic signals. The Cruise AV will follow the control directive directed towards its direction and yield the right-of-way to crossing traffic when applicable and safe. The Cruise AV shall ~~will~~ not traverse passive crossings where a light rail vehicle, cable car or street car does not have a rail signal or sign requiring it to yield and may not operate on exclusive or semi-exclusive right of way designated for rail vehicles, cable cars or streetcars in the direction of travel of such vehicles.

17. ~~16.~~ The Commission has a broad mandate to promote ~~passenger~~ carrier and public safety in its regulation of passenger carriers, including AVs, per Public Utilities Code Section 5352(a) ~~5253(a)~~.

18. ~~17.~~ The Commission will continue monitoring both the ~~net~~ safety benefits of AV passenger service and the new hazards that may be created by driverless AV passenger service.

19. ~~18.~~ Cruise's Passenger Safety Plan is reasonable in the context of its proposed service: 30 Cruise driverless AVs operating between the hours of 10 p.m. and 6 a.m. operating in a limited geographic area.

20. ~~19.~~ Operational changes involving modified hours, changes to the vehicle model or number of vehicles deployed, geography, roadway types, speed range, or weather conditions would raise new safety risks that would require material changes to Cruise's Passenger Safety Plan to sufficiently address.

21. ~~20.~~ It is reasonable for Cruise, along with any other Driverless Deployment Program participants, to update stakeholders on its Driverless Deployment operations in a workshop on AV Deployment passenger service to be held by the Consumer Protection and Enforcement Division.

22. ~~21.~~ It is reasonable to consolidate Cruise's existing Transportation Charter Party carrier authorities into a single P permit that reflects participation in multiple AV programs. This consolidation does not affect Cruise's data reporting obligations or duties to comply with state and local traffic laws.

23. ~~22.~~ No evidence has been presented that operations using vehicles owned or leased by a carrier's parent company are functionally different than operations using vehicles owned or leased by the carrier.

24. There is currently a regulatory gap that prevents law enforcement officers from issuing citations for moving violations to driverless AVs. This regulatory gap prevents law enforcement officers from enforcing compliance with state and local traffic laws by driverless AVs.

25. Commission Decision 20-11-046, as modified by 21-05-017 requires Cruise to collect data on the number of requests for wheelchair accessible vehicles (WAV), how many of those requests were unfulfilled because no WAV was available, and the total number of WAV rides accepted and fulfilled.

THEREFORE, IT IS ORDERED THAT:

1. Cruise LLC's application for a Phase I Driverless Autonomous Vehicles Passenger Service Deployment permit is approved. The Consumer Protection and Enforcement Division shall issue Cruise LLC's permit to operate 30 driverless Cruise AVs operating between the hours of 10 p.m. and 6 a.m. in a limited geographic area.

2. Cruise LLC's permit shall be a P permit that reflects its participation in the Driverless Pilot, Drivered Deployment, and Driverless Deployment programs. This consolidated permit supersedes and replaces all other Autonomous Vehicles Passenger Service authorities held by Cruise LLC. Nothing in this consolidation relieves Cruise of its obligations established by any of the Commission's Decisions governing AV Passenger Services.

3. Cruise LLC's permit shall maintain each program's exemptions to the provisions of General Order 157-E.

4. Cruise LLC's request for an exemption to Part 4.01 of General Order 157-E for its Driverless Deployment program is approved.

5. If Cruise LLC intends to expand the hours, geography, roadway types, speed, range, vehicle model, number of vehicles, or weather conditions of its driverless deployment operations, it must provide the Director of the Consumer Protection and Enforcement Division with an updated Passenger Safety Plan by way of a Tier 2 Advice Letter.

6. Cruise LLC may not expand the hours, geography, roadway types, speed, range, vehicle model, number of vehicles, or weather conditions of its driverless deployment operations until this Tier 2 Advice Letter has been approved by the Consumer Protection and Enforcement Division.

7. CPED staff shall create a driverless Cruise AV San Francisco street operations working group that includes representatives of Cruise, Commission Staff, and the City and County of San Francisco, to 1) develop data collection and retention requirements necessary to provide for collaborative review of pick up and drop off stops in a manner that protects the privacy of users; 2) to develop data collection and retention requirements necessary to provide for collaborative review of Cruise AV interactions with first responder and street-based workers in San Francisco and 3) to develop a plan for analysis of the data collected and/or retained. CPED shall facilitate meetings and should convene meetings as soon as possible.

8.-As part of ~~the~~ a workshop authorized in Decision 20-11-046, as modified by Decision 21-05-017, Cruise LLC, along with any other Driverless Deployment Program participants will prepare a report and presentation updating stakeholders on how the strategies described in its Passenger Safety Plan have been realized in operations, including pickup and drop-off, and the effectiveness of these strategies. CPED shall invite other stakeholders to make presentations, including cities affected by the Commission's AV Passenger Services decisions. Once the workshop or workshops have ~~has~~ been scheduled, the report shall be served on the Rulemaking 12-12-011 and Rulemaking 19-02-012 service lists no later than 4 weeks prior to the workshop or workshops. Within 6 months of the date of this Resolution CPED shall convene additional workshops to address the quality and quantity of data gathered to date, whether and how to revise data collection requirements, whether to revise program goals and establish targets and whether there is need for other changes to the Phase 1 deployment programs. Within this time frame, CPED should hold a workshop that reconvenes the AV Accessibility Working Group, which should lead to development of an agenda for further focused meetings of the Working Group.

9. The geographic area that reflects Cruise's approved operational design domain shall be posted to the Commission's website so that, at a minimum, the public has notice of where driverless Cruise AVs have authority to operate in San Francisco.

10. Cruise shall have an option in its ride hailing application to allow riders to request a Wheelchair Accessible Vehicle (WAV), even if it does not have any such vehicles in its fleet at the time of the request. As required by the Deployment Decision, Cruise shall track the number of requests for WAVs it receives, how many of those requests are not fulfilled because a WAV is not available, and how many requests for WAVs it receives and accepts.