

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

**Consumer Protection and Enforcement Division
Transportation Licensing and Analysis Branch**

**RESOLUTION TL-19144
August 10, 2023**

RESOLUTION

**RESOLUTION APPROVING WAYMO LLC'S APPLICATION FOR PHASE I
DRIVERLESS AUTONOMOUS VEHICLE PASSENGER SERVICE DEPLOYMENT
PROGRAM**

SUMMARY

This Resolution approves Waymo LLC's (Waymo) application for a Phase I Driverless Autonomous Vehicle Passenger Service Deployment permit. Waymo has satisfied the requirements of Decision 20-11-046 (as modified by Decision 21-05-017) and has submitted a complete application, including a complete Passenger Safety Plan that reasonably addresses its proposed service. With this authorization, Waymo may offer passenger service in its autonomous vehicles without a safety driver present throughout the city of San Francisco, at all hours of day or night, among other conditions specified in its Operational Design Domain. Waymo is authorized to collect fares for these rides.

The Resolution also acknowledges continued and emerging challenges relating to passenger and public safety and data reporting. The Commission will engage with stakeholders on these issues through its rulemaking process. The Commission will continue to evolve regulatory policy to ensure passenger and public safety and support achievement of the AV program's safety, equity, accessibility, and environmental goals.

BACKGROUND

On December 12, 2022, Waymo LLC (Waymo) submitted Waymo-0001, a Tier 3 advice letter applying for authorization to participate in the California Public Utilities Commission's (Commission) Phase I Autonomous Vehicles Passenger Service Driverless Deployment program. In alignment with the Operational Design Domain (ODD) approved by the California Department of Motor Vehicles (DMV), Waymo proposes to offer fared driverless passenger service using a fleet of autonomous vehicles (AVs) in San Francisco and a portion of San Mateo County. Per its DMV-approved ODD, Waymo AVs may operate

on roadways with speed limits up to 65 miles per hour, at any time of day or night, and in inclement weather situations including rain and fog. Waymo does not currently propose to offer shared rides (“fare-splitting”) between passengers from different parties.

Decision (D.)20-11-046 (as modified by D.21-05-017) (Deployment Decision) created the Commission’s Phase I Autonomous Vehicle Passenger Service Deployment programs.¹ In Deployment, carriers are authorized to collect fares for AV passenger service either with safety driver present in the vehicle for Drivered Deployment service or without a safety driver for Driverless Deployment service. Carriers may also offer shared rides. This expands on the Commission’s AV Pilot programs established by D.18-05-043, in which carriers may neither charge fares nor offer shared rides, among other restrictions.² Currently, Waymo is authorized to participate in 3 AV program permits: Drivered Deployment, Driverless Pilot, and Drivered Pilot. With these authorizations, Waymo may currently offer fared passenger service throughout San Francisco with a safety driver present, non-fared passenger service throughout San Francisco without a safety driver present, and non-fared passenger service in parts of Los Angeles and in and around the City of Mountain View with a safety driver present. All of these authorizations allow operations at any time of day.

In the Deployment Decision, the Commission established four goals for its AV programs: 1) Protect passenger safety; 2) Expand the benefits of AV technologies to all Californians, including people with disabilities; 3) Improve transportation options for all, particularly for disadvantaged communities and low-income communities; and 4) Reduce greenhouse gas emissions, criteria air pollutants, and toxic air contaminants, particularly in disadvantaged communities.³ The Commission will collect data throughout the Deployment program to monitor permit holders’ progress toward these goals.

The Deployment Decision sets forth the requirements for participation in the Phase I Driverless Deployment program. The AV carrier must submit an application for the program in the form of a Tier 3 advice letter, which is subject to public review and disposition by the Commission through a resolution. The permit application must demonstrate compliance with Commission General Order (GO) 157-E,⁴ which governs the

¹ Decision 20-11-046 is available at <https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=352185092>.

Decision 21-05-017 is available at <https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=401288191>.

² Decision 18-05-043 is available at <https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=215279920>.

³ Decision (D.)20-11-046 (as modified by D.21-05-017) (Deployment Decision) at 2.

⁴ See <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M322/K150/322150628.pdf>.

Commission's Transportation Charter Party (TCP) carriers, and must include all information required by the Deployment Decision. Notable requirements include holding an active AV Deployment permit from the DMV,⁵ which authorizes the deployment of AVs on public roads in California, and submitting a Passenger Safety Plan (PSP) to the Commission.

In its PSP, the carrier must describe its policies and procedures to minimize risk for all passengers in its driverless vehicles. This includes, at a minimum, how the carrier will minimize safety risks to passengers traveling in a ride operated without a driver in the vehicle; minimize safety risks to passengers traveling in a shared, driverless ride, including prevention and response to assaults and harassments (only for carriers applying to offer shared rides); respond to unsafe scenarios outside and within the vehicle, such as hostile individuals; educate and orient passengers about the technology, experience, and safety procedures; ensure customers can safely identify, enter, and exit the AV they requested; enable passengers to contact the AV service provider during the ride and ensure the passengers receive a timely and complete response; collect, respond to, and retain any passenger comments and complaints; and ensure the safety measures described above are accessible to and apply to all passengers, including those with limited mobility, vision impairments, or other disabilities.

NOTICE

Ordering Paragraph 18 of the Deployment Decision requires the Driverless Deployment application to "be in conformance with all service requirements in GO 96-B using all of the Transportation Network Company rulemakings service lists..." Waymo properly served advice letter Waymo-0001 to the Rulemaking (R.)12-12-011, R.19-02-012, and R.21-11-014 service lists. Notice was also given by publication in the Commission's Daily Calendar.

PROTESTS AND RESPONSES

GO 96-B provides the framework for the Commission's advice letter process. Per General Rule 7.4.1, any person (including individuals, groups, or organizations) may protest or respond to an advice letter within 20 days of the submittal of the advice letter. Protests and responses are submitted to CPED and to the applicant.

The 20-day protest and response period ended on January 2, 2023. General Rule 7.4.4 provides CPED discretion in accepting late-submitted protests or responses. In light of end-of-year holidays, CPED extended the protest and response period by one week to January 10. On December 22, 2022, CPED received a joint request from the San Francisco Municipal

⁵ 13 California Code of Regulations (CCR) § 228.

Transportation Agency and the San Francisco County Transportation Authority for additional time to prepare a protest or response. In response to this request, CPED further extended the protest and response period to January 30, 2023.

Waymo's advice letter received 1 timely protest, 2 timely responses providing comments and expressing concerns, and 38 timely responses in support.⁶

Protest

The San Francisco Municipal Transportation Agency (SFMTA), San Francisco County Transportation Authority (SFCTA), and the Mayor's Office of Disability (collectively, San Francisco) protests Waymo's advice letter on the grounds that the deployment authorization sought is unreasonable due to lack of incrementalism, data transparency, sufficient driverless testing, and adequate reporting and monitoring. San Francisco further protests on the grounds that the relief sought in Waymo's advice letter is inappropriate for the advice letter process because it requires approval based on issues not contemplated in the Deployment Decision, arguing that the Commission should instead move to workshops and further rulemaking to address changes in industry conditions prior to approving Waymo's application.

San Francisco identifies several challenging circumstances that it argues make Waymo's permit application unreasonable. San Francisco advocates for an incremental approach to expansion of Driverless Deployment, arguing that prior to widespread deployment driverless AV permittees should demonstrate they can operate in "the most demanding circumstances without compromising safety, equity, accessibility, and street capacity." In particular, San Francisco highlights incidents it has documented where AVs have blocked traffic. San Francisco notes that most of these documented incidents did not involve Waymo vehicles, but that it lacks the data to determine whether the lower incidence of Waymo-related complaints is related to lower mileage or superior performance. San Francisco also takes issue with the lack of transparency of AV operational data, which have been submitted to the Commission with confidentiality claims and thus been made available to the public only in redacted form. Further, San Francisco highlights the lack of reporting on unplanned stops and asserts that the Commission should seek and require public disclosure of the frequency and impact of such events.

Given the issues described in its protest, San Francisco argues that the Commission should take several actions prior to approving Waymo's Driverless Deployment permit. It

⁶ Protest and responses are available at <https://www.cpuc.ca.gov/regulatory-services/licensing/transportation-licensing-and-analysis-branch/autonomous-vehicle-programs/phase-i-driverless-autonomous-vehicle-deployment-program-advice-letter-status>.

recommends that the Commission create new driverless readiness metrics and then require that this data be available for at least 30 days of public review prior to any new or expanded Driverless Deployment service. Further, San Francisco states the Commission should not approve Waymo's ODD as requested and instead should disallow AV deployment downtown and during peak hours and limit expansion of fleet size to specified increments. Lastly, San Francisco states the Commission should direct CPED to convene a workshop to discuss industry developments, consider further data collection and disclosure, and address disability access issues.

Commission staff have determined that San Francisco's arguments are not within the grounds for a proper protest, so will be treated as a response. Per GO 96-B Rule 7.4.2(6), a protest may not be made where it would require relitigating a prior order of the Commission. Further, a protest may not rely purely on policy objections.

Responses

Waymo's advice letter received 2 responses expressing concern.

The Los Angeles Department of Transportation (LADOT) expresses concerns that unimpeded expansion of driverless AVs will harm cities and is not aligned with the Commission's goals for the AV program. LADOT asserts that AVs double parking or blocking traffic lanes for passenger pickup and drop-off is unsafe and illegal; LADOT notes that it is unclear if Waymo vehicles have been engaging in this behavior in their operations. LADOT takes issue with AV data, arguing that the Commission's AV data reporting is not transparent and is unusable for cities. LADOT further argues that all AV providers must participate in a platform like the Mobility Data Specification (MDS) to facilitate data-sharing with localities and thereby facilitate planning, operation, and curb management on city streets. Finally, LADOT argues that expansion should be allowed only after the establishment of uniform metrics and performance standards for AVs and demonstration that Waymo has met those standards.

The California Transit Association (CTA) urges the Commission to limit the scale at which Waymo may operate, citing "documented incidents where driverless AVs have blocked light rail vehicles and buses, [and] encroached upon transit only lanes, impacting hundreds of transit riders in San Francisco." CTA advocates for incremental approvals in terms of geographic area, hours of operation, and fleet size, and that the Commission should require new data reporting to document travel lane obstructions.

Waymo's advice letter received supportive responses from 38 stakeholders spanning elected officials, local groups, accessibility advocates, business and economic development organizations, technology industry groups, and transportation advocates. Supportive

responses were submitted by the following organizations and individuals, listed in alphabetical order:

- American Council of the Blind
- Arc San Francisco
- Autonomous Vehicles Industry Association
- Bay Area Council
- Best Buddies
- Blinded Veterans Association
- California Assemblymember Marc Berman
- California Assemblymember Vince Fong
- California Chamber of Commerce
- California Senator Josh Newman
- California Senator Steve Glazer
- Chamber of Progress
- Consumer Technology Association
- Curry Senior Center
- Epilepsy Foundation of Northern California
- Golden Gate Restaurant Association
- Greenbelt Alliance
- Independent Resource Living Center San Francisco
- Local 798 San Francisco Firefighters Toy Program
- Mothers Against Drunk Driving
- National Multiple Sclerosis Society
- NorCal Spinal Cord Injury Foundation
- Openhouse
- Richmond Neighborhood Center
- Safe Kids Worldwide
- San Francisco Chamber of Commerce
- San Francisco LGBT Community Center
- San Jose Chamber of Commerce
- Self-Help for the Elderly
- sf.citi
- Silicon Valley Leadership Group
- Students Against Destructive Decisions
- Support for Families of Children with Disabilities
- TechNet
- TransForm

- United Cerebral Palsy Association
- United Spinal Association
- United Way Bay Area

These support letters highlighted a broad range of potential benefits of AVs in improving mobility in local communities and for underserved populations including seniors and people with disabilities, enhancing traffic safety, improving transportation equity and affordability, improving environmental quality, contributing to economic development, and other benefits.

Waymo's Reply

Waymo replied to the protest and responses on January 30, 2023. In its reply, Waymo asserts that it meets the Commission's requirements for a Driverless Deployment permit and that the arguments to the contrary raised by San Francisco, LADOT, and CTA are without merit. Waymo argues that the protest and responses fail to state valid grounds for protest, instead improperly relying on policy-based objections and attempts to relitigate issues already considered by the Commission. Waymo argues that concerns regarding incrementalism, data confidentiality, operational sufficiency, and data reporting are not a proper basis to deny Waymo's application, and further notes that concerns related to new facts such as unplanned stops are not appropriate matters for the advice letter process.

In response to requests for the Commission to limit Waymo's Driverless Deployment ODD, Waymo notes that ODDs are evaluated and approved by the DMV as the agency responsible for vehicle safety. Waymo argues that its Driverless Deployment authorization should allow for operations within the full scope of its DMV-approved ODD, and that Cruise LLC's initial limited Driverless Deployment ODD (which allows operations only in certain portions of San Francisco, during late evening hours only) is irrelevant to Waymo's authorization and should not result in similar parameters being imposed on Waymo.

Waymo disputes San Francisco's characterization that approval of its application would grant it "nearly unrestrained" operations, noting that Waymo is subject to the jurisdiction of multiple regulatory agencies including the Commission, the DMV, and the National Highway Traffic Safety Administration (NHTSA). Waymo further asserts that municipalities such as San Francisco and Los Angeles are well-equipped to address traffic disruptions or potential violations through existing traffic enforcement mechanisms and authority.

The discussion below includes our analysis of the protest, responses, and reply.

DISCUSSION

The Commission has a broad mandate to promote safety in its regulation of passenger carriers including AVs. The Passenger Charter-party Carriers Act⁷ directs the Commission to regulate certain types of passenger transportation service in the state. Per the Act, the “use of the public highways for the transportation of passengers for compensation is a business affected with a public interest. It is the purpose of this chapter [...] to promote carrier and public safety through its safety enforcement regulations.”⁸ In the AV program, the Commission has underscored this safety mandate by establishing “Protect passenger safety” as one of the four goals of the Phase I AV Deployment Program.⁹ Our evaluation of Waymo’s application considers Waymo’s compliance with the specific requirements of the Deployment Decision.

Standard of Review

We discuss our review of Waymo’s application in greater detail below. CPED has assessed the completeness of Waymo’s application relative to the requirements of the Deployment Decision. CPED has also evaluated the content of Waymo’s PSP, both for its completeness relative to the minimum requirements set forth in the Deployment Decision as well as the reasonableness of the strategies described in protecting passenger safety in the context of the proposed service.

Completeness of Waymo’s Application

CPED first reviewed Waymo’s application for completeness relative to the requirements of the Deployment Decision. Ordering Paragraphs 7-11 of the Deployment Decision set forth the requirements for participation in the Phase I Driverless Deployment program. Key requirements for the application process include:

- Holding and complying with all standard terms and conditions of the Commission’s TCP permit, which are governed by General Order 157-E.
- Holding an active AV Deployment permit issued by the DMV.
- An attestation that at least one of the carrier’s vehicles that is representative of the vehicle and technology characterizing the fleet has been in operation on California roads for at least 30 days following receipt of the DMV AV Deployment permit. This attestation must also include a statement and map of the carrier’s ODD as approved by the DMV.

⁷ Public Utilities Code §§ 5351-5450.

⁸ Public Utilities Code § 5352(a).

⁹ Decision (D.)20-11-046 (as modified by D.21-05-017) (Deployment Decision) at 34.

- A plan for how the carrier will provide notice to the passenger that they are receiving driverless AV passenger service and how the passenger will affirmatively consent to or decline the service.
- A Passenger Safety Plan that describes the carrier's policies and procedures to minimize risk for all passengers in their driverless vehicles, which we discuss in further detail below.
- Submission of the application in the form of a Tier 3 advice letter.

We have determined that Waymo's application is complete relative to the minimum requirements of the Deployment Decision. Waymo's advice letter describes its compliance with GO 157-E, including as pertains to the nature of its service (prearranged, no airport service without authorization from the airport, only under names on file with the Commission), its vehicles and equipment listing, record-keeping, and responding to customer complaints.¹⁰ Waymo's advice letter includes the documents required by the Deployment Decision, including the DMV letter approving Waymo's DMV Deployment permit,¹¹ an attestation of 30 days of operation¹² including a statement and map of Waymo's Operational Design Domain,¹³ a passenger notice and consent plan,¹⁴ and a Passenger Safety Plan.¹⁵

Evaluating the Passenger Safety Plan

The Passenger Safety Plan plays a critical role in our evaluation of the safety implications of Waymo's proposed service. As described in the Deployment Decision, "[r]equiring applicants to provide a detailed Passenger Safety Plan tailored to their technology and business model, and making that plan available for public review and comment, will enable parties to lend their expertise, ensure transparency in decision-making, and establish a public document against which the applicant's actions will be compared."¹⁶ Ordering Paragraph 8 of the Deployment Decision sets forth the minimum requirements for the PSP. AV carriers must describe how they will:

- Minimize safety risks to passengers traveling in a ride operated without a driver in the vehicle;

¹⁰ Waymo Advice Letter 0001 (Waymo Advice Letter) at 5-6.

¹¹ Waymo Advice Letter, Attachment D.

¹² Waymo Advice Letter, Attachment F.

¹³ Waymo Advice Letter, Attachment A.

¹⁴ Waymo Advice Letter, Attachment C.

¹⁵ Waymo Advice Letter, Attachment B.

¹⁶ Deployment Decision at 35-36.

- Minimize safety risks to passengers traveling in a shared, driverless ride, including prevention and response to assaults and harassments;
- Respond to unsafe scenarios outside and within the vehicle, such as hostile individuals;
- Educate and orient passengers about the technology, experience, and safety procedures;
- Ensure customers can safely identify, enter, and exit the AV they requested;
- Enable passengers to contact the AV service provider during the ride and to ensure the passengers receive a timely and complete response;
- Collect, respond to, and retain any passenger comments and complaints; and
- Ensure the safety measures described above are accessible to and apply to all passengers, including those with limited mobility, vision impairments, or other disabilities.

Waymo's PSP is complete as it addresses each of the minimum requirements above. Waymo's PSP provides an overview of its technology and driverless service and describes its policies and procedures for educating riders on how to use the service, addressing rider questions or complaints, responding to unexpected or adverse situations, and providing safe and inclusive service including for people with disabilities or other unique needs. As Waymo does not currently propose to offer shared rides, it is not required to address the second bullet point below regarding minimizing risks to passengers traveling in shared, driverless rides.

The technology, policies, and procedures Waymo describes are generally reasonable for its proposed service, and Waymo has demonstrated its commitment to passenger safety through its PSP. This includes rapid response times to rider inquiries while trips are in progress, as well as clear protocols for avoiding and, if necessary, rapidly responding to a range of adverse events. Waymo's PSP also includes model strategies to protect passenger and public safety during pickup and drop-off operations, including visual indicators on the vehicle's roof module to support riders in finding their vehicle and alert surrounding road users of imminent or ongoing pickup and drop-off activities. We are encouraged by the safety record in passenger service to date: incident reports submitted by Waymo to NHTSA as part of NHTSA's Standing General Order on AV crash reporting indicate that driverless Waymo vehicles operating in California have not been involved in any collisions resulting in injuries.¹⁷ However, as we have gained more experience with AVs, particularly driverless

¹⁷ Standing General Order on Crash Reporting, National Highway Transportation Safety Administration, ADS Incident Report Data through March 15, 2023. Available at <https://www.nhtsa.gov/laws-regulations/standing-general-order-crash-reporting#data>.

AVs, we see the need for continued development in our approach to AV regulation and policy.

We have discussed previously in TL-19137 the potential impacts of scale on passenger safety, noting the need to balance the potential benefits of AVs while acknowledging and safeguarding against potential risks. We continue to acknowledge the many potential benefits of widespread AV deployment: enhancements to passenger and roadway safety, accessibility, economic development, and reduction in environmental impacts, among other benefits, as discussed by the many support letters submitted for this advice letter. However, we remain concerned about potential risks, known and unknown, to passenger and public safety as driverless AVs scale up. The Commission will continue to work to protect passenger and public safety in the complex environments in which these AVs operate.

Stakeholders have raised several issues relevant to the broader safety impacts of scaling up AV deployment that merit further discussion.

Scale and Incrementalism

San Francisco protests Waymo's advice letter in part on the grounds that widespread commercial operations are "unreasonable," expressing concerns about the cumulative impacts of AV operations on the transportation network if Waymo vehicles contribute to road and transit blockages.¹⁸ San Francisco recommends the Commission take an incremental approach to authorizing Driverless Deployment service, including limitations on service area, hours of operation, and fleet size. LADOT and CTA express similar concerns regarding the scale of deployment.

While San Francisco's arguments are not within the grounds for a proper protest as protests may not be made where they would require relitigating a prior order of the Commission, nor may they be based purely on policy objections, we discuss the arguments made by San Francisco, LADOT, and CTA below.

The Deployment Decision does not prescribe or contemplate a particular progression for the testing and deployment of AVs in terms of participation in Commission programs, number of vehicles, character of operations, or other factors. The Deployment Decision requires applicants to submit an ODD approved by the DMV,¹⁹ which has authority over the technical ability of the vehicle to operate safely on public roads in California.²⁰

¹⁸ Protest of the San Francisco Municipal Transportation Agency, the San Francisco County Transportation Authority, and the Mayor's Office on Disability of Waymo LLC Tier 3 Advice Letter (San Francisco Protest) at 2-3.

¹⁹ Deployment Decision, Ordering Paragraphs 7(b) at 129, 7(f)(iv) at 130.

²⁰ Deployment Decision at 30.

Therefore, the Commission will neither modify the DMV-approved ODD submitted by Waymo, which includes all of San Francisco at all times of day, nor set limits on fleet size. We encourage continued collaboration between Waymo and stakeholders—including local authorities and transit agencies—to promote thoughtful scaling of driverless AV passenger service and minimize any negative impacts.

Operational Safety

Driverless AVs operate in a complex environment that includes the AV, the AV's passengers, and other road users such as pedestrians, bicyclists, and motorized vehicles. Beyond the immediate operating area on the street, AVs are part of San Francisco's interconnected transportation network that spans public and private transportation, various modes, and a variety of infrastructure and features of the built environment. As we consider the complexity of the immediate and broader operating environment, we recognize that the safety of AV passengers and the safety of the broader public are both interdependent and mutually reinforcing – public safety is passenger safety and vice versa, and we cannot have one without the other.

The operational issues raised by San Francisco are concerning to the Commission given the wide range of potential impacts to passengers and the public. Unplanned stops in unsafe locations create hazards for passengers and other road users, block the flow of traffic, and interfere with public transit²¹ until the vehicle(s) can be remotely moved or manually retrieved. These types of incidents are particularly concerning if they occur in proximity to light rail lines, especially given San Francisco's 400+ passive at-grade light rail crossings. These passive crossings require AVs to properly recognize rail crossings, understand passive control devices such as stop or yield signs, and appropriately predict and react to the movements of a train.

We also express our continued concerns about the safety of AV passenger pickup and drop-off operations, as discussed previously in TL-19137.²² Pickup and drop-off more than 18 inches from the curb creates hazards for passengers and surrounding road users, blocks the flow of traffic, and creates accessibility challenges for passengers who may need or want direct access to the curb.

Available data show Waymo has maintained a good safety record. To date, none of these reported incidents have resulted in bodily harm to passengers or the public. However, we acknowledge that minor incidents and near misses may have other impacts on passengers

²¹ San Francisco Protest at 6-7.

²² TL-19137 at 11-12.

and the public and may be important leading indicators for evaluating AV operations and taking action before serious incidents occur.

Waymo's PSP meets the requirements of the Deployment Decision. Its PSP describes procedures for passenger pickup and drop-off²³ and for responding to unplanned stops.²⁴ The Deployment Decision has not established specific criteria for operational performance, nor does it condition permit approval upon meeting particular thresholds for past performance.²⁵

We share stakeholders' concerns that the current AV Deployment reporting requirements may not give us sufficient information to evaluate potential passenger safety issues as they emerge or change. The AV industry has evolved and expanded significantly since the Deployment Decision was approved in late 2020; the Decision itself acknowledges that changes may be needed as the AV industry matures.²⁶ CPED will continue to develop strategies to address data challenges, engaging with stakeholders on these issues through the Commission's rulemaking process.

The Commission will continue to monitor AV operations and engage with AV carriers and other stakeholders, including the DMV. Per the Deployment Decision, suspension or revocation of a carrier's DMV AV permit causes automatic suspension of its participation in the AV Deployment program.²⁷ DMV may suspend or revoke a carrier's permit if it determines based on the performance of its vehicles that the carrier's vehicles are "not safe for the public's operation."²⁸ The Commission has the authority to initiate investigatory and/or enforcement actions against its permittees, and may modify, suspend, or revoke AV program authorizations it has granted.

Data Confidentiality

Parties expressed concerns around the transparency of the AV Deployment data, asserting that confidentiality claims have obscured the data and thus rendered the public (including municipalities such as San Francisco and Los Angeles) unable to evaluate AV operations and performance in a meaningful and timely manner. San Francisco further recommends

²³ Waymo LLC Advice Letter 0001, Attachment B – Passenger Safety Plan (Waymo PSP) at B-12-14, 16-17.

²⁴ Waymo PSP at B-20.

²⁵ Deployment Decision at 26: "The Commission, however, declines to prescribe targets, and instead, establishes reporting requirements..."

²⁶ Deployment Decision, 4.5.2 at 26: "The Commission prefers to [...] monitor the maturity of the industry, periodically revise the [AV Program] goals if needed, and revisit the establishment of targets when the industry is more mature."

²⁷ Deployment Decision, Ordering Paragraph 13 at 138.

²⁸ 13 CCR § 228.20(b)(6).

that any new data submittals be presumed public and not be subject to requests for confidential treatment.

The Deployment Decision establishes that any claimed confidentiality of quarterly reports will be governed by GO 66-D, which sets the Commission's protocols and procedures for confidential information.²⁹ Waymo has followed these procedures in claiming confidentiality of its quarterly AV Deployment reports. The Commission will take up confidentiality claims through the rulemaking process or via separate resolution(s).

Disposition of Waymo's Application

In analyzing Waymo's application, we find that its application is complete and its PSP is complete and reasonably protects passenger safety. Accordingly, the Commission approves Waymo's application for a Driverless Deployment permit. Driverless Deployment operations are approved in all of San Francisco, 24 hours a day, per Waymo's DMV-approved ODD. We place no additional limits in passenger service on operating hours, geography, or fleet size, but we encourage Waymo to be thoughtful in how it chooses to operate and proactive in its engagement with local stakeholders. The Commission will continue to monitor and evaluate Waymo's operations and has the authority to modify any permit it issues.³⁰

The regulation of emerging technologies is necessarily dynamic and iterative; continuing and emerging safety and data issues have made it clear that the Commission's regulatory oversight must continue to evolve in tandem with the development of the AV industry. The Commission will therefore engage with stakeholders through the rulemaking process to continue developing regulatory policy, including enhancements to data reporting, that protects passenger and public safety and supports the achievement of the AV program's safety, equity, accessibility, and environmental goals.

COMMENTS

Public Utilities Code § 311(g)(1) provides that this resolution must be served on all parties and be subject to at least 30 days public review. Any comments are due within 20 days of the date of its mailing and publication on the Commission's website and in accordance with any instructions accompanying the notice. Public Utilities Code § 311(g)(2) provides that

²⁹ Deployment Decision, Ordering Paragraph 7(m)(v) at 135.

³⁰ Public Utilities Code § 5381: "To the extent that such is not inconsistent with the provisions of this chapter, the commission may supervise and regulate every charter-party carrier of passengers in the State and may do all things, whether specifically designated in this part, or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction."

this 30-day review period and 20-day comment period may be reduced or waived upon the stipulation of all parties in the proceeding.

In compliance with Public Utilities Code § 311(g), a notice was emailed on **May 11, 2023**, informing all parties on the R.12-12-011, R.19-02-012, and R.21-11-014 Service Lists of the availability of the Resolution on the Commission's website at <http://www.cpuc.ca.gov/documents/>. The 30-day review and 20-day comment period for the draft of this resolution were neither waived nor reduced. Accordingly, comments on this draft resolution may be submitted no later than 20 days from the mailing date (May 31, 2023). This resolution was placed on the Commission's agenda on July 31, 2023 for consideration at the August 10, 2023 voting meeting. If adopted by the Commission, the final resolution will be posted and available on the Commission's website.

CPED received 27 timely comments: 23 in support of Waymo's application, 1 expressing conditional support, and 3 expressing concerns and/or in opposition to approval of Waymo's application.

Comments in support were received from American Council of the Blind, Autonomous Vehicles Industry Association, Bay Area Council, Blinded Veterans Association, California Chamber of Commerce, Chamber of Progress, Curry Senior Center, Epilepsy Foundation of Northern California, Golden Gate Restaurant Association, Greenbelt Alliance, Independent Living Resource Center of San Francisco, National Federation of the Blind California, Richmond Neighborhood Center, San Francisco Chamber of Commerce, San Francisco LGBT Center, San Jose Chamber of Commerce, Self-Help for the Elderly, Silicon Valley Leadership Group, TechNet, the Women's Building, United Cerebral Palsy, and Waymo. These comments generally highlighted the safety, environmental, accessibility, and economic benefits of AVs.

HAAS Alert expressed support for expanded Driverless Deployment operations if "Digital Alerting," which alerts vehicles of real-time road hazards, is incorporated. The Deployment Decision does not require any specific technology for AV passenger service and acknowledges the California DMV as the agency with primary authority over vehicle safety. Therefore, no additional technical requirements will be imposed on Waymo.

The City of Santa Monica (Santa Monica), LADOT, and San Francisco submitted comments expressing concerns over approval of Waymo's application.

Santa Monica reiterates and expresses its alignment with the safety concerns raised in the initial responses of San Francisco, CTA, and LADOT to Waymo's advice letter, including concerns relating to operational scale, incidents impacting transit and other road users, and data transparency. Santa Monica argues that the Commission should require a phased

approach to driverless ride-hailing in San Francisco, with each phase including public engagement, review, and correction prior to the launching of the next. Santa Monica further advocates for data transparency with local jurisdictions. This resolution already addresses arguments around an incremental approach and data transparency, so no further changes are needed in response to Santa Monica's comments. As noted above, the Deployment Decision does not prescribe a particular progression for AV operations as it pertains to scale, location, or other factors. We have acknowledged ongoing challenges with AV operations data reporting and have initiated a process to address these issues in collaboration with the public and parties in Rulemaking 12-12-011.³¹ The rulemaking, and not the advice letter process, is the appropriate venue for development of policy.

LADOT expresses its concern that "unimpeded service expansion without local input or management will not satisfy the CPED goals and may cause harm to the Cities where these services will be provided." LADOT argues that new mobility services should be required to engage with the cities in which they operate, and that city administrators should have oversight over AV operations. LADOT recommends the Commission "declare through its rulemaking that local jurisdictions have permitting authority over Autonomous Vehicles to manage the operational issues that the CPUC does not consider," including determining scale, number, and location of AV operations and establishing uniform metrics and performance standards for AVs. Further, LADOT asks the Commission to provide "guidance and authority" to local law enforcement on how to engage with AVs operating in local jurisdictions. Lastly, LADOT argues that AVs should be required to be integrated into the Mobility Data Standard (MDS) for real-time data sharing and that cities should have the authority to require this.

The Commission has already considered the issue of local authority over AVs and declined to adopt a "sandbox" approach to AV passenger service.³² The Public Utilities Code gives the Commission the authority to regulate passenger carriers,³³ including AV passenger service;³⁴ the Commission will not, through its rulemaking or otherwise, delegate this authority. Cities, including Los Angeles, and local law enforcement have the authority to enforce the California Vehicle Code and local ordinances. Additionally, we encourage LADOT and other cities to participate in the continued development of AV operations data reporting currently ongoing in the rulemaking.

³¹ See Assigned Commissioner's Ruling on Development of New Data Reporting for Autonomous Vehicles Driverless Deployment Program, filed May 25, 2023.

³² Deployment Decision at 21.

³³ See Passenger Charter-party Carriers Act, Pub. Util. Code §§ 5351 et seq.

³⁴ Deployment Decision at 8.

San Francisco, submitting jointly as the San Francisco Municipal Transportation Agency, San Francisco County Transportation Authority, and the San Francisco Planning Department, opposes the approval of Waymo's application as granted in the resolution. San Francisco describes additional incidents and complaints regarding Waymo AVs, including incidents where Waymo AVs have interfered with first responders, and argues that approval is unreasonable given the new hazards being reported. San Francisco disagrees with the "reasonableness" standard of review for Waymo's Passenger Safety Plan, arguing that the current record is "inadequate" and presents "material issues" that must be addressed before approval. San Francisco argues that consideration of Waymo's application should be deferred until data reporting issues have been resolved through the rulemaking or, alternatively, that Waymo's service should be approved with limitations to the scale, time, and location of operations.

We acknowledge San Francisco's comments and agree, as we have expressed earlier in this resolution, that incidents such as unplanned stops and improper interactions with first responders are concerning and represent hazards to passenger and public safety. We appreciate San Francisco's efforts to share information on incidents it becomes aware of and are requesting party comment on how to formalize such a process. However, these anecdotes do not represent a sufficiently robust set of facts upon which to alter the Draft Resolution's findings or conclusions. The Commission has initiated a process to update data collection requirements in the AV program through R.12-12-011 and encourages San Francisco to participate so that rigorous, non-anecdotal incident and other AV operations data may be systematically collected, analyzed, and acted upon in the future. At this time, the information shared by San Francisco does not alter our conclusion that Waymo's advice letter meets the requirements of the Deployment Decision and that its PSP is complete and reasonable per existing requirements. Any future modifications to these requirements or the standard of review are more appropriately addressed through the rulemaking, not the advice letter process.

San Francisco disagrees with the Draft Resolution's statement, based on NHTSA data, that "driverless Waymo vehicles operating in California have not been involved in any collisions resulting in injuries." San Francisco states that, contrary to the Draft Resolution's statements regarding Waymo's safety record, the NHTSA data shows Waymo vehicles have been involved in at least four injury collisions with the Automated Driving System engaged.³⁵ To be clear, our statement is specific to *driverless* operations – that is, operations where no safety driver was present in the vehicle. In either case, looking beyond counts and

³⁵ San Francisco Comments on the Draft Resolution Approving Authorization for Waymo Autonomous Vehicle Passenger Service Phase I Driverless Deployment Program (San Francisco Comments) at 16.

into the severity and conditions of reported collisions can support the evaluation of a carrier's safety record. We have included as Appendix A to this Resolution the narrative descriptions of the four collisions San Francisco appears to refer to in its comments. Notably, the reports for all four collisions indicate the presence of a safety driver, three of the four collisions involve a human-driven vehicle striking the rear of the Waymo AV, and according to Waymo's account the other collision did not include any contact with the Waymo AV. The highest reported severity of injuries³⁶ in these four collisions was minor.

San Francisco's comments include its own analysis of Waymo's safety record, based on data available from NHTSA, the California DMV, and the Commission. San Francisco states that its analysis indicates the Waymo AV's injury collision rate appears to be higher than average human drivers. However, we find San Francisco's analysis lacks sufficient rigor and nuance to form a basis for modifying the Resolution. It highlights the need for enhanced systematic data collection that supports objective analysis of AV performance. We encourage San Francisco, along with all parties, to participate in the continued development of AV data reporting requirements through the rulemaking process. We discuss below our concerns with San Francisco's conclusions, including its statistical methods for assessing the frequency of collisions and the lack of contextual awareness in assessing responsibility of the collisions cited.

Regarding the frequency of collisions, San Francisco's analysis necessarily covers a very limited data set – 6 months of operation and an estimated 1.9 million vehicle miles traveled (VMT) – due to the nascent nature and small scale of Waymo's AV operations relative to conventional human-driven vehicles, which constitute multiple orders of magnitude more VMT. Extrapolating from less than 2 million miles to 100 million, and then comparing to a national average without normalizing for factors such as roadway type (e.g. arterial vs. local street) or land use context (e.g., urban, suburban, or rural) introduces an unacceptably high degree of statistical error and uncertainty.

Regarding collision responsibility, San Francisco's analysis appears to omit or overlook relevant facts present in the data and collision narratives that are critical for understanding the context of the cited incidents. The examples of two injury collisions upon which it seems San Francisco bases its analysis of Waymo's relative injury collision rate (included below in Appendix A as entries for June 2022 and July 2022) are problematic in this regard. According to Waymo's account as submitted to NHTSA, the June 2022 collision does not appear to involve any contact with the Waymo AV. The narrative of the July 2022 collision

³⁶ Possible injury severity values are: fatality, serious, moderate, minor, no injuries reported, unknown. See Standing General Order 2021-01 Incident Report Data Dictionary, available at https://static.nhtsa.gov/odi/ffdd/sgo-2021-01/SGO-2021-01_Data_Element_Definitions.pdf.

indicates the Waymo AV was rear-ended by another vehicle, which immediately left the scene. Note that no determination of fault, of the AV or otherwise, is evident through these reports. The highest reported injury severity of these collisions was minor. While we acknowledge the need to proactively evaluate early data and less severe collisions as leading indicators of safety performance in hopes that such proactive monitoring will help prevent additional collisions and/or more severe incidents, the shortcomings of this analysis again highlight the need for systematic data collection that supports objective analysis of AV performance.

Finally, San Francisco raises the applicability of the California Environmental Quality Act (CEQA) to the Resolution and to the Commission's AV Deployment programs. San Francisco argues that the approval of a Draft Resolution is a Discretionary Action under CEQA that has reasonably foreseeable environmental impacts, so the Commission must conduct an environmental review prior to approval. San Francisco further argues that the authorization of widespread AV deployment necessitates the initiation of Phase II of AV Deployment as contemplated in D.21-05-017, which San Francisco believes would trigger the need for environmental review.

D.21-05-017 makes clear, however, that this Resolution is not the proper venue for raising CEQA concerns. In that Decision, we made clear that any environmental impacts caused by these initial deployment measures were "far too speculative to undertake environmental review" ³⁷ We further made clear, however, that we would open a new phase of the TNC proceeding, R.12-12-011, in which "the data we have already required to be collected will be used to evaluate the Deployment Programs," and that "[p]arties may raise the applicability of CEQA at that time." ³⁸ And we set a deadline for opening that phase of the proceeding. ³⁹ Waymo's advice letter was filed pursuant to the Deployment Decision, and is one of the steps toward gathering the information necessary to performing CEQA review — if indeed CEQA review is needed. For the same reason San Francisco's request to open Phase II is premature: we need the data this step will generate.

FINDINGS

1. On December 12, 2022, Waymo LLC (Waymo) submitted advice letter Waymo-0001 applying for a California Public Utilities Commission (Commission) Phase I Autonomous Vehicles (AV) Passenger Service Driverless Deployment permit.
2. Waymo's advice letter received 1 timely protest, 2 timely responses expressing concern, and 38 timely responses in support.

³⁷ D.21-05-017, at 5.

³⁸ Ibid.

³⁹ Ibid.

3. The San Francisco Municipal Transportation Agency, San Francisco County Transportation Authority, and the Mayor's Office of Disability jointly protested Waymo's advice letter on the grounds that the requested permit is unreasonable given the lack of incrementalism, data transparency, and adequate reporting and monitoring. We find this not to be proper grounds for a protest, and therefore treat the protest as a response to the advice letter.
4. The Los Angeles Department of Transportation submitted a response expressing concerns regarding passenger pickup and drop-off in travel lanes, the usability and transparency of Commission AV data reporting and lack of real-time data, and the need for the Commission to establish AV performance standards and evaluate Waymo against those standards before authorizing deployment.
5. The California Transit Association submitted a response expressing concerns about impacts of driverless AVs on transit operations and advocates for an incremental approval in terms of geographic area, hours of operation, and fleet size, that includes additional data reporting on travel lane obstructions.
6. Responses in support were submitted by American Council of the Blind, Arc San Francisco, Autonomous Vehicles Industry Association, Bay Area Council, Best Buddies, Blinded Veterans Association, California Assemblymember Marc Berman, California Assemblymember Vince Fong, California Chamber of Commerce, California Senator Josh Newman, California Senator Steve Glazer, Chamber of Progress, Consumer Technology Association, Curry Senior Center, Epilepsy Foundation of Northern California, Golden Gate Restaurant Association, Greenbelt Alliance, Independent Resource Living Center San Francisco, Local 798 San Francisco Firefighters Toy Program, Mothers Against Drunk Driving, National Multiple Sclerosis Society, NorCal Spinal Cord Injury Foundation, Openhouse, Richmond Neighborhood Center, Safe Kids Worldwide, San Francisco Chamber of Commerce, San Francisco LGBT Community Center, San Jose Chamber of Commerce, Self-Help for the Elderly, sf.citi, Silicon Valley Leadership Group, Students Against Destructive Decisions, Support for Families of Children with Disabilities, TechNet, TransForm, United Cerebral Palsy Association, United Spinal Association, and United Way Bay Area.
7. Support letters highlighted the safety, accessibility, environmental, and economic benefits of Waymo's proposed service.
8. Waymo's application is complete per the requirements of Ordering Paragraph 7 of Decision (D.)20-11-046, as modified by D.21-05-017 (Deployment Decision).
9. Waymo has submitted a complete Passenger Safety Plan that meets the requirements of Ordering Paragraph 8 of the Deployment Decision.

10. The strategies described in Waymo's Passenger Safety Plan reasonably protect passenger safety.
11. The Deployment Decision does not prescribe a particular progression for the testing and deployment of AVs in terms of participation in Commission AV programs, number of vehicles, character of operations, or any other factors.
12. Ordering Paragraphs 7(b) and 7(f)(iv) of the Deployment Decision require the submission of an Operational Design Domain approved by the California Department of Motor Vehicles (DMV).
13. The DMV has authority over the technical ability of AVs to operate safely on public roads in California.
14. AVs operate in a complex environment in which passenger and public safety are interdependent and mutually reinforcing.
15. Unplanned stops, improper interactions with rail crossings, and passenger pickup and drop-off operations in a travel lane create hazards for passengers and the public and in some situations violate the California Vehicle Code.
16. AV operations in proximity to rail crossings are characterized by unique safety concerns and potentially higher levels of risk.
17. Waymo has followed the required procedures of General Order 66-D in making claims of confidentiality related to its quarterly AV Deployment data reports.
18. It is reasonable for AV regulation and policy at the Commission to evolve as AV technology and operations scale and change.

THEREFORE, IT IS ORDERED THAT:

1. Waymo LLC's application for authorization to participate in the Phase I Driverless Autonomous Vehicles Passenger Service Deployment program is approved. The Consumer Protection and Enforcement Division shall issue Waymo LLC's updated permit.

This Resolution is effective today.

I hereby certify that this Resolution was adopted by the California Public Utilities Commission at its regular meeting on _____. The following Commissioners approved it:

Rachel Peterson
Executive Director

Appendix A

Waymo Injury Collisions in San Francisco, reported per NHTSA Standing General Order on AV Data Reporting, through May 2023⁴⁰

Incident Date	Incident Narrative
July 2022	<p>“The Waymo AV was stopped in the dedicated left turn lane facing north on the [XXX], awaiting a green signal for a protected left turn onto [XXX]. The signal for traffic proceeding north on the [XXX] turned green, and traffic in adjacent lanes began moving. The left turn arrow signal for the dedicated turn lane occupied by the Waymo AV remained red. The passenger car that had been stopped directly behind the Waymo AV began moving forward. The front of the passenger car made contact with the rear of the Waymo AV, immediately after which the passenger car left the scene. At the time of the impact, the Waymo AVs Level 4 ADS was engaged in autonomous mode, and a test driver was present (in the drivers seating position). The Waymo AV sustained minor damage and the Waymo AV test driver reported lower back pain.”</p>
June 2022	<p>“On June [XXX], 2022 at approximately 4:50 PM PST a Waymo Autonomous Vehicle (Waymo AV) operating in San Francisco, California allegedly contributed to a collision between a passenger vehicle and a pickup truck on [XXX] at [XXX], according to a claim by the driver of the passenger vehicle.</p> <p>The Waymo AV was in autonomous mode and preparing to enter southbound [XXX] via the slip lane at southbound [XXX]. The Waymo AV proceeded to merge onto [XXX] as a passenger vehicle on [XXX] approached from behind. A pickup truck was traveling next to the passenger vehicle in the adjacent left lane. As the passenger vehicle approached the Waymo AV from behind, the passenger vehicle entered the adjacent left lane that was occupied by the pickup truck and maneuvered around the Waymo AV. The pickup truck proceeded without stopping, and the passenger vehicles driver shortly after signaled to the Waymo AV test driver to pull over. The Waymo AV test driver then transitioned to manual mode and pulled over. Waymo has no data or knowledge of any contact between any of the three vehicles. There was no contact or collision between the Waymo AV and any other vehicle. However, the driver and passenger in the passenger vehicle have subsequently alleged injuries based on alleged contact between the pick-up truck and passenger vehicle, which contact their allegations attribute to the behavior of Waymos AV in a bodily injury claim under Waymos insurance policy. Waymo received notice of this insurance claim on July [XXX].”</p>

⁴⁰ Available at <https://www.nhtsa.gov/laws-regulations/standing-general-order-crash-reporting#data>.

April 2022	“The Waymo AV was traveling in autonomous mode in the slip lane on northbound [XXX] at [XXX]. As the Waymo AV slowed to yield to a pedestrian pushing a shopping cart in a crosswalk, the Waymo AV test driver transitioned to manual mode and stopped the Waymo AV. The Waymo AV test driver then proceeded forward but had to yield to approaching traffic in the merge between northbound [XXX] and northbound [XXX]. As the Waymo AV came to a stop, a pickup truck traveling behind the Waymo AV then made contact with the rear of the Waymo AV. At the time of the impact, the Waymo AV's Level 4 ADS was not engaged and a test driver was operating the Waymo AV in manual mode. Both vehicles sustained minor damage.”
October 2021	“The Waymo AV was traveling in autonomous mode westbound on [XXX] / [XXX] when it stopped for pedestrians who were in a crosswalk and between the westbound and eastbound lanes of [XXX]. An SUV following behind the Waymo AV struck the rear of the Waymo AV. The Waymo AV sustained minor damage to its rear bumper and trunk, and the SUV sustained minor damage to its front bumper and hood. The Waymo AV test driver (in the driver's seating position) later reported lower back pain.”