BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE

STATE OF CALIFORNIA

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PRESIDENT ALICE REYNOLDS, COMMISSIONER JOHN REYNOLDS and COMMISSIONER DARCIE HOUCK, in attendance

ADMINISTRATIVE LAW JUDGE ROBERT MASON and COMMISSIONER GENEVIEVE SHIROMA, co-presiding

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	)	Rulemaking 12-12-011

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SAN FRANCISCO, CALIFORNIA

AUGUST 7, 2023 - 1:00 P.M.

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ADMINISTRATIVE LAW JUDGE MASON: Good afternoon, everyone. In the matter of R.12-12-011, this is the time and place for the status conference all-party meeting to address safety issues regarding driverless autonomous vehicle interactions with first responders.

My name is Robert Mason. I'm the assigned administrative law judge for this proceeding. To my left is the assigned commissioner, Genevieve Shiroma, who will be presiding over and running the status conference all-party meeting.

Before we get started with commissioner remarks and the speakers, I need to go over a few housekeeping matters. Can we go to the emergency evacuation slide. It should be the next slide. Well, I can do it orally.

In the event that there is an emergency, please exit by the back doors, go out into the courtyard, descend the steps heading to Van Ness and McAllister. Or if you have a disability and you're in a wheelchair, there is a ramp outside that you can take to Divisadero and McAllister, then proceed -- Van Ness and McAllister then proceed south on Van Ness to the park, which is in

between the Opera House and the Herbst Theater. When you're there -- so there's the evacuation assembly location slide. As I was saying, proceed south on Van Ness Avenue, and the evacuation assembly location is the park structure between the War Memorial Opera House and the Herbst Theater.

Okay. Let's go to the next slide.

This is the meeting rules. So in-person parties will be asked to speak at the long table in front of the dais during their portion of the agenda. When not speaking, please be seated in the first two rows, but be prepared to approach the long table for your part of the agenda.

Parties must stay within the allotted time for each speaker as described in the agenda. Nonparty speakers can speak during the public comment period. Nonparty speakers must speak up -- sign up to speak at the table at the auditorium entrance. Please keep comments limited to the questions listed and the agenda, and please stay within the allotted time limit for each speaker.

Commissioner Shiroma will call nonparty speakers from the sign-in list during the public comment period. And due to the time constraints, comments during the public comment period must be made in person

in the meeting room. And to note, down if front, we have three court reporters that will be transcribing.

COMMISSIONER SHIROMA: There's no audio on the Webex?

UNIDENTIFIED SPEAKER: They are working on it, Commissioner.

MR. STANFORD: Working on it. I'm going to get the audio back up in one minute.

COMMISSIONER SHIROMA: Okay. Well, I think we can continue with Judge Mason's intro.

ALJ MASON: All right.

COMMISSIONER SHIROMA: Give us a signal when that audio has been fixed for the online participants.

MR. STANFORD: Okay.

COMMISSIONER SHIROMA: Thank you.

ALJ MASON: So, as I was saying, we have three court reporters down in front who will be transcribing the proceedings. So that we have the best possible record, it is important that we all allow these persons to speak without interruptions from the audience because the court reporters will not be able to transcribe the interruptions and who is doing the interruptions.

So we really want to hear from everyone today. We want to get a diverse set of views so we can take this into account at the Commission. So it is very

important that we are able to hear each person speak clearly and completely.

Let's go to the next slide.

So the purpose for today's meeting, and Commissioner Shiroma -- and the other commissioners will amplify this more -- is that we want to hear in person the first responder concerns about driverless autonomous vehicle operations and any proposals for first responder AV interactions that they would like to suggest.

We want to hear from the autonomous vehicle companies in response to the first responder concerns about their current plans or any future plans for improving the interactions with first responders.

Finally, we want to hear party input on the passenger safety plans that have been previously submitted that the -- by the autonomous vehicle companies and if the parties have any suggestions to identify and address possible gaps in those plans for improvements in the future.

So that is it for my preliminary remarks. I will turn the meeting over to Commissioner Shiroma and the other commissioners for their opening comments.

COMMISSIONER SHIROMA: Thank you. And have we resolved the audio?

MR. STANFORD: No, ma'am. I'm working on it.

COMMISSIONER SHIROMA: Okay. All right. Keep -- thank you. All right. Well, we need to keep on pace because we have a very packed agenda this afternoon.

Thank you, Judge Mason. Good afternoon, everyone. Thank you for being here. My name is Genevieve Shiroma. My pronouns are "she," "her." I'm the assigned commissioner on the rulemaking for passenger carriers, ride sharing and online-enabled transportation services including autonomous vehicles.

I called today's all-party meeting on autonomous vehicle interactions with first responders and law enforcement towards providing me and my colleagues on the dais essential information on how first responders in autonomous vehicles need to interact to provide safety for passengers, building the record for our proceeding and in determining if the Commission's autonomous vehicle deployment decision needs to be revised.

The evolution of the autonomous vehicle industry demands a proactive and flexible regulatory approach that must continually evaluate and develop a regulatory policy to assure that AV service can operate safely, is accessible to the widest range of potential riders and meets environmental goals. There have been

reported incidences of AVs blocking traffic, interfering with public transit including light rail vehicles or impeding activities of first responders in San Francisco.

While none of these incidences have resulted in injuries, it is my view that the Commission should put in place policies to monitor and evaluate AV operations and determine the appropriateness of current policy as AV technology continues to evolve and expand.

I look forward to hearing from Cruise and Waymo, who currently are the only companies authorized by the CPUC for driverless passenger service, from first responders and others employed by the City and County of San Francisco, the Los Angeles Department of Transportation and other parties who are scheduled to speak today. I want to thank the parties in advance for strictly following your allotted times.

And I do also want to thank our court reporters today, who are Doris Huaman, Tamara Dawson, Ashleigh Button. I also want to thank our IT folks, who are working vigorously -- yes, the audio is back -- Joe Haga, Robert Stanford, Francisco Hernandez, our timekeepers, from my office, Ritta Merza, from the ALJ office, Daniela Bravo Berumen, and my advisor, Jack Chang, who helped us to organize this today, my chief of

staff, Cheryl Wynn. There are many others who have supported this effort today.

So with that, I will turn now to my Bagley-Keene partner, Commissioner John Reynolds, to say a few opening remarks.

COMMISSIONER REYNOLDS: Thank you, Commissioner Shiroma, and thank you, everyone. Good afternoon. I will be relatively brief here in that we do have a packed agenda, and I want to make sure that we have time to get to our substantive speakers who are here with us today, and thank you all for spending your time with us this afternoon.

My name is John Reynolds. I am one of the five commissioners appointed to the CPUC. I want to start by recognizing my Bagley-Keene partner, Commissioner Shiroma, who on the subject area -- on the subject area and thank her for her leadership in this Docket.

Today's meeting would not be possible without the support and -- of the hardworking members of Team Shiroma. So I want to offer thanks to Commissioner Shiroma's chief of staff, Cheryl Wynn, and her advisor, Jack Chang. I would also like to offer thanks to staff support from the transportation working group team here at the PUC including Doug Ito, Terra Curtis, Josh Honeycutt and Ashlyn Kong. Thanks also to Judge Mason

and the court reporters for today's all-party meeting.

We've heard a lot from the parties about this topic as the Docket has developed. I'm looking forward to hearing from you all directly today and look forward to the continuing dialog as this important area of inquiry and regulatory oversight (indecipherable).

I'll note that this is an interesting topic in that we, as an agency, share responsibility with the California DMV for overseeing the autonomous vehicle industry, and I look forward to the discussion that we're going to have today, hearing from all of you about some of the concerns that you have and also some of the solutions that you may propose. And I look forward to having the dialog and debate that is before us. I will turn it back to Commissioner Shiroma.

COMMISSIONER SHIROMA: Thank you.

Other commissioners? President Reynolds.

PRESIDENT REYNOLDS: Just briefly, thank you, Commissioner Shiroma. And I really did want to just thank Judge Mason and Commissioner Shiroma for hosting today's forum. And then I would also like to add my welcome to the many individuals and organizations who will be participating today and then just finally to echo the thanks and appreciation to the court reporters and IT staff who are supporting the Commission today and

then also all the staff who have been working so hard on this issue.

With that, I'll turn it back to you, Commissioner Shiroma.

COMMISSIONER SHIROMA: Thank you, President Reynolds.

Commissioner Houck.

COMMISSIONER HOUCK: And I also wanted to just echo thanks, Commissioner Shiroma, to you and to Commissioner Reynolds for all of your work on this, to the staff that's been working on it, as well as the parties and participants in today's hearing, the court reporters, Judge Mason for all of your work. I know this is an important issue, to prioritize safety. And I'm looking forward to listening and learning from everyone today.

And, with that, I'll turn it back over to you. Thank you.

COMMISSIONER SHIROMA: Thank you, Commissioner Houck. Thank you, colleagues. Well, we are actually a couple minutes ahead, but we'll take that. So the questions for our first panel will be on the screen for both the viewing audience here in the auditorium and then also for those listening in on the Webex. And so for this first panel, the questions are there on the

screen. Each of the groups of panelists for this first session have slides. And so we'll rely upon you to indicate when to true-up the next slide.

So our first party will be the representatives from Cruise. If you introduce yourself and -- as you are speaking. Thank you.

MS. RAMAN: Thank you. Thank you. My name is Prashanthi Rao Raman. I am vice president of global government affairs at Cruise. Thank you, President Reynolds, Commissioner Shiroma and the other commissioners as well, Commissioner Houck and Reynolds, and Judge Mason for the opportunity to be here today.

We welcome this passenger safety discussion with the Commission, our partners at SFMTA, SF Fire, SF Police and all of the important stakeholders today.

At the outset, I would like to frame our approach to this discussion in the proper context of the Commission's upcoming decision pursuant to its oversight authority. A Commission vote is scheduled on August 10th that would approve a staff resolution allowing Cruise to charge passengers for all rides we provide, not just a portion of such rides. The Commission is not voting on August 10th to increase or decrease the number of Cruise vehicles on the road. The DMV already granted Cruise a permit to fully scale commercial AV services in

San Francisco including AV goods delivery and AV passenger transportation. Under its jurisdiction, after August 10th, the DMV will continue to oversee Cruise's performance of our Law Enforcement Interaction Plan for all of our service offerings.

Now, we are all here at the Commission today because we are dedicated to ensuring passenger safety. This Commission granted Cruise approval for deployment over one year ago. And since that time, the safety record of our operations is borne out in the data we have shared with you. Cruise AVs have now driven over 3 million miles safely, the vast majority of which go unnoticed. We are gratified that none of the issues raised here today has resulted in any reported harm to a Cruise passenger.

When benchmarked against human drivers in a comparable driving environment, our AVs were involved in -- slide one, please -- 54 percent fewer collisions overall, 92 percent fewer collisions as the primary contributor, 73 percent fewer collisions with meaningful risk of injury.]

The conclusion is clear: Cruise AV transportation service improves passenger safety over status quo comparable options such as TNC services. The draft resolution on the Commission's August 10th agenda

affirms Cruise's outstanding safety record.

We respectfully request that the August 10th vote on our resolution is approved as recommended by CPUC staff.

Now, on to question of the number of unexpected stops. The term "unexpected stop" does not translate directly to the data that we track at Cruise. Cruise AVs are trained and designed to stop in circumstances when that is deemed the safest behavior as required by the DMV, and the location and duration of the stop depends on the surrounding scene.

COMMISSIONER SHIROMA: I need to stop you. Sorry. I know you're -- we gave you strict time limits, but our interpreters are asking if speakers could speak just a little bit slower.

Thank you.

MS. RAMAN: What is not expected is that after a stop, one of our vehicles becomes stuck, fail to continue on its course and require retrieval.

We track these events using the term unexpected vehicle retrieval events or VREs. From January 1, 2023, to July 18, 2023, we have isolated 177 unexpected VREs requiring retrieval by our field support team. Of these 177, 26 occurred when a passenger was in the vehicle.

Since these numbers lack meaning with without

context, we know these events occurred during almost 2.1 million miles of driverless operation in San Francisco from January 1st through July 18th of this year. That is approximately ten times greater than all other company -- companies accumulated driverless miles in the city.

This means that an unexpected VRE occurred once per ever approximately 79,000 miles when a passenger was on board, and once per approximately 11,500 miles in total.

As our vehicles have continuously improved their reliability over the course of 2023, this rate has continuously decreased to once every 30,000 miles in the month of June.

Importantly, since the CPUC's jurisdictional focus is passenger safety, none of these events resulted in passenger harm.

Moving on to question two. The reasons for unexpected VREs include operations, approximately 17 percent. This occurs when remote assistance prematurely commands the AV to achieve a minimal risk condition or a safe, controlled stop when exercising extreme caution. I want to emphasize that this is due to being overly cautious in certain circumstances. We resolve this through improved training and decision

trees.

The second category is product issues, approximately 54 percent. As with other cars, there are occasionally issues with product features, such as in-vehicle tablets, windows and doors.

The third category, unwanted public interactions, approximately 22 percent. These are cases with are the AV encounters aggressive interactions from the public, such as tire slashing, window breaking or interfering with the safe operation of the AV.

The final category is loss of service, approximately, 7 percent.

There are infrequent instances where the vehicle experiences loss of service from Cruise's internal systems. When that occurs, the vehicle is designed to achieve a minimal risk condition as required by DMV regulations.

For question three, I would like to turn it to my colleague Greg Dieterich, Cruise's General Manager for the San Francisco Market.

MR. DIETERICH: Thanks for (indecipherable) so many of you from the city here today.

Cruise autonomous vehicles are tracked essentially in real time, 24/7. Cruise's remote assistance, or RA team, monitors fleet health triages

any issues while vehicles are in operation. Remote assistance advisors use an interface that allows them to identify the precise position of the AV, to monitor video feed from the AV's externally-facing cameras and the AV's LiDAR map, to view objects detected by the autonomous driving system or ADS, and to view the surrounding map information.

If a Cruise vehicle is unable to navigate the environment independently due to unforeseen circumstances, the RA advisor is able to assist the AV in determining how to proceed, such as verifying the correct path.

Cruise autonomous vehicles are designed to comply with motor vehicle and traffic laws including responding to emergency response vehicles. Every time the autonomous driving system detects an emergency vehicle, it automatically contacts remote assistance out of an abundance of caution. Remote assistance will evaluate the situation and may assist the ADS to identify a different course of action if needed. There are three primary responses the Cruise autonomous vehicle may execute in response in response to an emergency vehicle depending on the AV's location in relation to that emergency vehicle.

First, pull over to the left or right. The AV

will pull over to the left or right when it encounters an emergency vehicle that is approaching behind the AV or in the oncoming lane.

Second, stop before the next intersection. The AV will safely stop at the line before the next intersection when it detects siren noises but it does not "see" the emergency vehicle.

And last, stop in lane. The AV will stop in lane in rare situations where the stop in line is the safest maneuver given the situation. For example, when it encounters an emergency vehicle in the cross traffic.

For question four, I will turn it back to Prashanthi.

Thank you.

MS. RAMAN: Thank you, Greg.

Recall from our first response that from January 1, 2023, to July 18, 2023, we isolated 177 unexpected VREs with and without passengers. We queried these 177 unexpected VREs using key words for any indication of interactions with San Francisco first responders. Based on this analysis, we determined that two unexpected VRE incidents involved interactions with San Francisco first responders. This means that on two occasions, one of our vehicles was stuck and had to be retrieved from a scene involving first responders. In

both incidents, first responders were able to navigate around the AV and thus were not impeded from carrying out their responsibilities.

We ran a broader inquiry, and during the same period, our vehicles had 168,000 encounters with emergency responder scenes, not limited to those that resulted in unwanted VREs. Of those 168,000 encounters, we found that the vehicle navigates through the scene autonomously 98 to 99 percent of the time.

In the remaining one percent to two percent of these encounters, the remote assistance was able to resolve the scene and continue the vehicle on its course except for 17 occasions which included rides that required an unexpected VRE.

Moving to the next question.

Over 2 million miles that we discussed, the 177 unexpected VREs that involved a physical retrieval by a field support team were resolved anon within 14 minutes and were resolved in a few different ways.

The first in flight(sic) attendance, approximately 25 percent. Field support was required to engage -- reengage the AV, such as moving debris or blockage, but the field support representative did not need to physically interact with the AV. After, the AV is able to resolve -- resume operations.

The second category is approximately in field re-engagement, approximately 37 percent, when field support was needed to interact with the AV.

The third in-person retrieval, which is approximately 34 percent where the field support team drove back to the Cruise -- brought the vehicle to the Cruise facility.

Tow away accounted for one percent, and operational procedures also accounted for one percent where the operation team failed the AV to perform an operational task.

And, finally, cancellation, approximately two percent.

We may not have time for that additional question -- for the last question.

COMMISSIONER SHIROMA: Go ahead. I did interrupt, so go ahead.

MR. WOOD: Thank you, Prashanthi.

Cruise's approach is a reflection of our core principles of putting safety first by testing and validating our technology on a consistent basis. We use a combination of simulation, closed-course testing, on-road testing, data analysis and regression prevention to accomplish this.

Cruise promotes safety while iterating quickly

through a company-wide safety management system to identify and catalog safety risks, then prioritize and minimize the ones that may emerge in our driverless operations. Cruise has developed a continuous feedback loop throughout the Cruise AV development lifecycle and our driverless operations.

Data collected from our fleet of AV is fed into the creation of tests that are performed both in a simulation and on a test track before our software is graduated to the road. These tests ensure that our vehicles cannot only identify the many different types of emergency vehicles and personnel, but also that the AV can safely operate when they encounter these scenarios.

I'm happy to answer any questions on this now or later, and that includes our answer to part one of the Commission's questions.

Thank you.

COMMISSIONER DOUGLAS: Okay. Thank you.

We will hear next from the representatives from Waymo.

MS. DAVIDSON: Thank you so much, Commissioners and Judge Mason. While our folks come to the table, my name is Mari Davidson. I am managing counsel for product and (indecipherable) at Waymo. I am joined by

some of our key members. Members of our product operations and safety organization. Thank you.

We are very pleased to be here today to speak to Waymo's strong safety record, and the robust vehicle utilities that we built into our Waymo AV as they relate specifically to first responder interactions.

Each of our speakers will introduce themselves and will indicate which question they are answering. They are going to tackle each in this particular part, but not in the consecutive order, but they will indicate before they speak which question they are answering.

Now, if I can courage turn it to Shweta.

MS. SHRIVASTAVA: Am I audible? Thank you, Mari. My name is Shweta Shrivastava, and I am senior director of product management for Waymo. My team oversees the operations of AV driving capabilities at Waymo including interactions with first responders. I will be speaking to question six, Waymo's approach to emergency scene detection and testing protocols.

Waymo's top priority is safety and that includes the safety of first responders and the people that were in the vehicle.

The Waymo AVs has powerful capability to detect, identify and respond to active emergency vehicles and first responders in the roadway. The Waymo

AV uses behavior prediction technology built on many thousands of real-word encounters and many more in simulation to understand what an emergency vehicle or a first responder is likely to do and respond accordingly.

Waymo AVs have delivered more than 3 million driverless miles in total and encountered active emergency vehicles once about every hundred miles. That equates to over 100 encounters per day or more than 30,000 encounters with emergency vehicles over our 3 million driverless miles.

These encounters are not rare and in the overwhelming majority of them, the AV operates smoothly and goes unnoticed by first responders. Where there's an issue and the interaction does not go as well as it could, we work quickly with feedback from first responders to implement improvements.

Regarding the protocol for testing and capability, we conduct robust testing of the Waymo AV including to specifically assess performance around emergency scenes and first responders. Waymo's testing methods and approach to performance validation are detailed at length in our papers which are available on our website and are referenced in Waymo's safety -- passenger safety plan.

To briefly summarize, Waymo uses various safety

methodologies supported by (indecipherable) level testing, simulation, closed course -- close closed driving and public road driving. The extensive testing and evaluation is completed before the point of driverless service to our fleet passengers.

From the testing and because of our commitment to continuous improvements, Waymo vehicles have a strong record of safe operations including around emergency vehicles.

First and foremost, Waymo AVs are typically able to reroute away from emergency vehicles all together. If an alternative route is not available, the AV can maneuver to a different area, for example, by performing a multi-point turn or reversing; and where the AV cannot avoid emergency vehicles, we have tools to help quickly resolve the situation. These tools include activating prerecorded messages to tell first responders and other users what the AV intends to do; (inaudible) in the event of miscommunication that might otherwise delay the AV from attempting to exit.

Waymo can also authorize first responders to drive the vehicle itself in that moment. This is a feature that we built in response to requests from first responders in our Phoenix service area several years ago.

With that, I would like to ask my colleague David to address the next question.

MR. MARGINES: Thank you so much. My name is David Margines. I'm Director of Product Management for Waymo. My pronouns are he/him.

I will start by speaking to question number three regarding remote assistance. Waymo AVs are driven by Waymo's autonomous driving system using onboard perception, path planning and behavior prediction capabilities. Our remote operators do not take control of the vehicle to perform driving tasks. In fact, we refer to the team that directly supports our fleet as remote assistance to help underscore that they do not perform any driving.

If a Waymo AV detects an emergency vehicle blocking the street, even blocks ahead, it will first consider a route that it identifies to avoid the emergency vehicles. In the vast majority of our emergency vehicles encounters, the Waymo AV is able to autonomously avoid or navigate around the scene.

In some cases, the positioning of emergency vehicles and related signage, may be sufficiently ambiguous as the AV requests human assistance to confirm the correct path to proceed. In most ambiguous scenarios, remote assistance can suggest a path for the

car to seek.

It's important to note that Waymo AV evaluates all human input provided and remains in control of the execution of the driving task. Waymo is designed as fully autonomous AV. Remote driving raises questions concerning (indecipherable) and reliability communications medium, as well as human factor concerns. Waymo designs our (indecipherable) functionality based on these particular circumstances and other safety measures.]

I'm now going to move to Question No. 1. I'd like to start with some important context for the data that we'll be sharing today. Fully validating this type of data requires clear definitions and adequate time for quality assurance. While we didn't have that for today, we've worked very hard to produce data that is accurate and as relevant as possible in the time provided. So thank you for understanding.

For purposes of this response, we note that the term "unexpected stop" is not defined in this request, nor is it an industry standard term. We've attempted to draw a data set from our passenger trips that is responsive to the question based on how this issue has been presented in a relevant ruling and from the data reporting record building in June.

We define "unexpected stop" to include events where the AV achieves the minimal risk condition and is retrieved on scene by on-scene personnel or by first responders, and where the stop would likely be unexpected to other road users, if any are present, because of the location.

As noted, this data set is limited to events occurring while serving the public rider, given the CPUC's purview of passenger safety. Also relevant is the time period. We selected January 1st to June 30th, 2023, because it is inclusive of a large volume of Waymo's driverless miles serving public riders in San Francisco.

With those parameters in mind, Waymo identified 58 events in the data set occurring over those six months and hundreds of thousands of drivers and miles during the passenger carrier service. In addition, we've observed a downward trend in the rate of these events per mile traveled. For example, the number of events per mile observed in the month of June was an 80 percent reduction as compared to earlier in the year. This downward trend demonstrates the commitment and ability of Waymo to improve over time in this area.

With regard to the reasons for these stops, Question No. 2, the top-level reason is that in all such

cases the Waymo AV is designed to stop wherever is the safest course of action. Prioritizing the safety of passengers and other road users is why the Waymo AV achieves the minimal risk state when there is some median complexity.

More specifically to this data set, these stops occurred, for example, when the AV was either unable to find a path of realtime conditions before a rapid response remote assistance team arrived to move in; or in the case of severe weather, or some action taken by a passenger or a pedestrian that prevented the vehicle from continuing to drive autonomously.

Importantly, because our systems continuously learn, these circumstances occurred less and less. In fact, we are confident that in most of these cases, using our latest software, the vehicle would either not have to stop at all, be able to get moving again with remote assistance, or be able to get it moving again fully autonomously.

Now, I'll ask Lety to respond.

MS. CAVALCANTE: My name is Lety Cavalcante. I am the head of the operations center for Waymo. I've been at Waymo for five years.

In October, 2020, I was part of the launch of the driverless service in Phoenix. They also launched a

testing here in San Francisco. My team today has supervised the remote assistance, roadside assistance, customer service, and also our event response team.

I'm here to respond now to Question 5 on how we maintain the super rapid response times with the roadside assistance team.

For events that David just mentioned, we average approximately 10 minutes to retrieve those vehicles, with some of the cases being resolved in just two minutes. Our standards are really focused on prioritizing, minimizing all sorts of disruption for the community into a safe and rapid retrieval. To do so, we strategically position our roadside assistance teams across our service territory, you know, so they can always respond in a rapid way. Of course, actually in realtime targets that we have practice vary because of the unique circumstances of some of those retrievals, or operational and issues in that service area. But we always try, and we actually implemented the technology that is now able to prioritize events of higher severity, like these ones that we are talking about today, first responders, and they are given priority in comparison to the ones that are not causing congestion and disruption.

Our Waymo roadside assistance team, they can

disengage, they can reengage the vehicle, and may drive the passengers manually, if needed to. And they also (indecipherable) the training of our team to really know how to exchange documentation at the scene. Also, infield conversations with law enforcement and how to manage those situations.

And finally, this team works very well with our customer service team to make sure that the riders arrive safely in their pick up and drop off and they are communicated with the whole time.

And now I'll hand it over to my peer, Rob.

MR. PATRICK: Thank you, Lety.

Good afternoon. My name's Rob Patrick, and I lead Waymo's First Responder Outreach Team.

I came to Waymo after a 30-year career in law enforcement because Waymo prioritized the relationship between our company and first responders.

I'll be addressing Question 4.

COMMISSIONER SHIROMA: Rob, you've got one minute.

MR. PATRICK: Okay. I'll be addressing Question 4 really quick.

So first, in looking at the data set, the data previously mentioned, we found four cases in which first responders were present at a scene. This doesn't

necessarily mean they were impeded, but they were present. Two of these cases involved first responders routing traffic away from downed trees after a major storm, and two of the other cases involved first responders that were directing traffic.

Separately, in a very recent meeting we had with SFFD leadership, they were able to provide us with a list of events that caused their concerns. We discussed these specific events with them, and it was great in that our team had the opportunity to demonstrate how the software improvements we implemented since these events occurred would reduce the potential for similar events in the future. Having spent over 30 years in law enforcement, I know how important it is that first responders not be impeded in emergencies. At Waymo, we're working to ensure that our vehicles stay out of the way of active emergency vehicles whenever possible.

We appreciated the opportunity to have a dialogue and collaborate with San Francisco Fire and San Francisco Police Department both in the field and at the leadership levels, and we look forward to that continued collaboration in the future. Thank you.

COMMISSIONER SHIROMA: Thank you.

All right, now we will hear from the

representatives from San Francisco.

MS. FRIEDLANDER: Good afternoon, Commissioners, staff, ALJ Mason. I wanted to start by thanking you for convening this conversation. We very much appreciate your attention to the concerns that our first responder agencies have been bringing to the table.

I want to start also with some context, and note that ALJ Mason started with an emergency procedure for what should happen in this room. And the leadership of the San Francisco Fire Department and Police Department that are here today are the people who would stay if the rest of us left. They are the people who would come into this building to take care of us if they were outside. That is the context that is most important from our perspective.

We can flip the slide.

Chief Nicholson is going to present some information about what the experience of the fire department has been and what the expectations of the fire department are. Deputy Chief Luttropp and I will also be then talking about some of the things that we think are important solutions.

We are very, very grateful that the Commission's attention to this has in fact lead us to

some very, very positive meetings that we've had with the industry over the last few weeks. We have presented and discussed with them a very small handful of the incidents of concern to the city, and we were grateful for the opportunity to look at what those incidents look like from the other side.

We can move forward now.

And we took from that primarily the fact that there's a need for much more dialogue, and we wish that we had started those conversations long ago.

We can move forward to the next slide.

Unfortunately, most of the questions that you have posed are questions that we can't answer. We agree with the industry that there are many important questions about definitions. We have used the term "unexpected stops," and we understand that some of the vehicle retrieval events that Cruise spoke about are events that are a subset of the unexpected stops. And I want to be clear, that in the handful of instances that we discussed recently with the industry, there was not one of those events that was either characterized as a vehicle retrieval event or a minimum risk condition event, so that is not the extent of the problem that we are concerned with.

We can move forward.

Given that we do not have actual data, what we have is information from reports that have been made by members of the public, by city employees, by firefighters, by transit operators, and what we have seen is that things are not getting better. The monthly rate of incidents has been growing significantly over the course of 2023. You'll see that June was the month with the highest number of incidents of all kinds. These are -- some of them are stops, some of them are instances of AVs driving erratically, some of them are instances of AVs making illegal moves in traffic. And that pool is much greater than the specific list of issues that we're talking about today, the interactions with first responders.

We can move forward.

ALJ MASON: Excuse me. Before we go forward, would you go back to that slide -- sorry for interrupting -- something said "unknown?"

MS. FRIEDLANDER: Yes, in many cases where members of the public, or even staff, city staff, report they don't know what the company is. It's not that they don't know -- so sometimes people have a hard time identifying the difference between a Cruise and Waymo vehicle, and that's what the unknowns mean.

ALJ MASON: Thank you.

MS. FRIEDLANDER: Sure.

You'll see that you -- I think that actually this is -- did we miss one slide? No, we didn't. Okay.

So I'm going to turn this over to Chief Nicholson to share more information from the fire department perspective.

MS. NICHOLSON: Greetings, staff. Greetings and salutations, commissioners. Thank you so much for having us here today. I am your San Francisco Fire Chief, Jeanine Nicholson, and I appreciate the time today.

Just a little context before I begin. I am not anti-technology, I am not, you know, trying to stop technology from moving forward, nor would I ever have the power to do so. What I am, is pro safety. And I know that, you know, the companies have said that their core value is putting safety first, but what would have really helped would have been a two-way conversation several years ago, instead of us just being told "This is how you interact with our vehicles." It's been a one-way conversation up until very recently, and really we could have avoided all of this had that actually happened. But let me get started with this slide.

We are an incredibly busy fire department. We are in the second most dense city in the country, second

to New York City, and we have, as you know, crazy topography and, you know, a lot of wooden boxes all stuffed together on hillsides. And so that makes things really challenging for us. And, you know, we also do medical calls. And so I understand and appreciate the safety that autonomous vehicles can bring to the table in terms of no drunk drivers, no speeding, all that kind of stuff. However, they are still not ready for prime time because of how they have impacted our operations. And, you know, I think that it would have been really helpful had folks known about our operations to begin with.

And so, as I said, we are incredibly busy. We have over -- we run over 160,000 calls a year. About 80 percent of our calls are medical in nature, but we send fire engines and ambulances to those calls. Engine 3, in the Tenderloin, is the busiest engine in the country, and the Tenderloin is actually the busiest 911 corridor in the country. The Tenderloin also has most of our incidents that were up on the board with our autonomous vehicles. And in terms of equity, it also has the poorest people and people most at need where our highest call line is. And that's what you see on this -- on this page.

The other thing I want to say is, in terms of

our operations, medical, fire, we're surrounded on three sides by water. We go on search rescue, water rescue, cliff rescue, all sorts of things. And so -- you can go to the next slide, please. But we have a ton of responsibilities, and I would not be doing my job if I were not standing here.

And so, again, as Julia Friedlander said, we can't really answer the questions that you posed to us, because we don't have the data. It's not been disclosed by the AV companies. Everything has been redacted. So what I can say is, on here it says 50 written reports of interference. Make that 55. We've had five more over the weekend of interference. And this includes not just unexpected stops in front of our fire stations, not allowing our vehicles to respond to incidents unless us having to call other -- other vehicles to respond from further away, thus delaying our response time. Also, obstructing travel to incidents where we have to go all the way around the block or back out because the vehicles are in our way. But also the vehicles impacting -- coming into our scenes in an unsafe and unpredictable manner.

And you might say "Well, 55, that's not a lot." Well, if it's your family, it's a lot. If we are trying to get to someone -- and for me, it's not just your

family, it's everybody's family. I'm responsible for everybody in this city.]

And so if we don't get to one person, that's one person too many that we didn't get to. And, you know, it's -- it's -- it's the unpredictability, the obstructions and the lack of sort of -- working with us on the front end is really -- is really a problem. And the zero transparency into their data.

Next slide, please.

So -- next slide -- human traffic control. Not human trafficking. Let's not get this confused. Human traffic control. So we work closely with the police department and the MTA department of parking and traffic. They are key partners for us. And in several incidents -- they are key partners because they keep us safe. They keep out vehicles and people that we don't want in our scenes that will impact us.

We run very complicated complex scenes, and in both of these photos that you can see, neither one of these vehicles listened to or was able to understand anything that our partners were saying to them, and that can lead to real problems. And the one on the left, I believe, is from the 22nd Avenue explosion and fire where there was a fatality.

Next slide, please.

And so human eye contact and simple gestures are much faster than AV substitutes. If this looks like a confusing slide to you, it's because it is. And this is what we've been told, meaning, to do, when an autonomous vehicle comes into one of our zones.

Now, it is not the responsibility of my people to get in one of your vehicles and take it over. It is the responsibility of the autonomous vehicle companies to not have them impact us in the first place. And if it looks like there's a lot of cooks if the kitchen here, it's because there are. And we do have complex incidents. When we are calling all these resources to the scene, there is an absolute reason for that. It's because we will need them or we expect that we will need them. And our folks cannot be paying attention to an autonomous vehicle when we've got ladders to throw.

Yes, ma'am.

COMMISSIONER SHIROMA: Chief Nicholson, your time is up. Can you wrap up your remaining comments. Thank you.

CHIEF NICHOLSON: Yes. So skip the next slide, please, and put up the one with the big fire on it.

So in terms of response, let me just say that every second can make a difference. A fire can double in size in one minute. And here's how that impacts us.

If we are blocked by an autonomous vehicle, a fire will double in size in a minute. That could lead to more harm to the people in that building, to the housing overall and to my first responders in terms of going into a more advanced fire. It also can lead to worse outcomes on a medical level, and this is -- the next one is the last slide, and I will wrap up.

Again, we need to focus on saving lives and protecting property. We have an increase in our call volume that will continue and does continue to rise, and giving full authorization for autonomous vehicle companies to expand, really gives them no reason to, you know, meet us and work with us on what our operations require.

Thank you very much for your time.

COMMISSIONER SHIROMA: Thank you, Chief. All right. We will now hear from the Los Angeles Department of Transportation remotely off of the Webex panel.

MR. MURRAY: Hello. Hi. This is Jarvis Murray. Can you all hear me?

COMMISSIONER SHIROMA: Yes, we can.

MR. MURRAY: Wonderful. Thank you very much, and commissioners, thank you for having this hearing. The City of Los Angeles really appreciates that. Because many of these questions relate directly to San

Francisco, I will speak primarily in general terms to try to answer some of these questions, and then I will read a document from our City of Los Angeles Fire Department related to the concerns that are voiced here today.

So, generally, we do want to say that the LADOT wants to support advanced technology, but we also want that technology to support the city's goals and the state of an equitable and a dignified transportation system. The issue that we have of unexpected stops with the idea that the vehicle will simply disable itself in the middle of the road, which increases congestion and confusion for those around it, in our view two-way data information sharing would allow cities to note areas where these unexpected stops continuously occur, and this will allow us to evaluate the street design in that area. But without this type of data and information, cities are frankly powerless to assist the companies and the communities and alleviate these concerns.

And, also, it may simply be that the area where the unintended stops continue to occur is simply not safe or practical for AV use and, thus, should be excluded from the operational domain. And, again, for us, the City of Los Angeles, the two-way information sharing can help us figure this out, and near realtime

data can help us audit and verify that a vehicle is behaving appropriately in the area.

As this meeting goes on, we will eventually get to the point where we can discuss how MTS works for the City of Los Angeles, and I can explain to you through graphs and through images exactly what we mean when we say there's two-way data communications and two-way information sharing.

And I do want everyone to keep in mind that right now we're currently talking about, you know, a relatively small number of vehicles. But we're potentially looking at tens of thousands of additional vehicles especially if it goes by way similarly as CHPs.

We're looking at tens of thousands of extra vehicles on the right of way at a given time, and the only way that cities can help manage vehicles at that scale is through near realtime two-way digital information sharing. And the way we often do it is it's fluent and dynamic, and it's often based upon geography. And with our system, it's not a system unto itself. So the City of Los Angeles does not control vehicles, rather, we set policies related to vehicle behavior. So we communicate those policies to the companies' vehicles, and we receive information back from those vehicles in near realtime that the vehicles are seeing

the policy and are adhering to the policy.

And that way, by seeing this data in near realtime, we are able to visualize this data so that we can audit and verify that the policies and any geofences are being adhered to. And this allows for accountability of vehicle behavior within our system, and it improves the integrity of our transportation ecosystem.

So, you know, the examples I'm going to give later on involve scooters, but it's not about scooters. We've been planning for this for years. We've been planning for passenger service-free delivery on our right way for years, whether it's through connected vehicles or just through this two-way information sharing. So we are equipped and ready to manage that information.

You know, in the City of Los Angeles, we're 500 square miles, approximately, and we're 5 million people. And if we're looking at tens of thousands of vehicles in a city that large, this has to be the way for cities to be able to manage their right of way.

So, really quickly, I would also like to read a letter from our fire department on these issues, and please bear with me. I am reading directly from their letter. This is from the Los Angeles Fire Department:

The LAFD's highest priority is to provide exceptional public safety and emergency services to the citizens of Los Angeles. The concern is a decision to allow AVs to operate in the City of Los Angeles eventually without a well-developed plan or collaboration in advance of their deployment may have adverse impacts for the LAFD to effectively provide timely services for the citizens of Los Angeles. The LAFD is in agreeance with our agency partners at LAPD and LADOT, that the CPUC's direction of implementing these driverless vehicles is a notable accomplishment in leveraging technology to improve transportation options for the disadvantaged and to reduce greenhouse gasses. However, without local governance and the ability to implement restrictions for AVs to interoperate with emergency vehicles, public safety is a legitimate concern. Allowance of any AV company to operate without limiting conditions from public safety agencies may encourage other companies to separately operate without cooperation. Recently, the

San Francisco Fire Chief, Jeanine Nicholson, shared her concerns with the LAFD after her emergency vehicles experienced several incidents that precluded her resources from arriving on scene due to interference from an AV as well as concerns for public safety for passengers traveling in AVs while sharing the roadway with emergency vehicles and active emergency scenes. Reports of San Francisco Fire Department incidents including AVs -- involving AVs include: Running through yellow emergency tape and ignoring warning signs to enter a street with compromised electrical wires causing entanglement around the rooftop sensors, blocking firehouse driveways resulting in other resources being dispatched, sitting motionless on one-way streets causing emergency vehicles to back up while responding to incidents, pulling up behind a fire truck with emergency lights on, which interfere with firefighters unloading ladders, entering an active fire scene, then parking on top of the firehose. The

LAFD also shares concerns outlined by LADOT and LAPD in their correspondence with the CPUC and communicates additional concerns as described below: Unexpected behavior of AVs while interoperating with responding emergency vehicles, AVs creating barriers for responding resources to arrive on scene, AVs restricting resources from arriving on scene within required National Fire Protection Association response time standards, inability of AVs to recognize emergency scenes placing responders, the public and passengers at risk. The LAFD also expresses general concern for the implementation of AVs to include the following: AVs heavily rely on complex software systems and sensors to operate safely. Technical failures, such as software glitches or sensor malfunctions can lead to accidents or unexpected behavior on the road.

COMMISSIONER SHIROMA: Mr. Murray.

MR. MURRAY: "AVs are vulnerable" --

COMMISSIONER SHIROMA: Sorry.

MR. MURRAY: Yes.

COMMISSIONER SHIROMA: Would you slow down just a little bit for our court reporter.

MR. MURRAY: Oh. No problem. I'm just trying to stay within time.

COMMISSIONER SHIROMA: Sure. I understand. Thank you. Go ahead.

MR. MURRAY: AVs -- thank you:

AVs are vulnerable to cybersecurity threats. Hackers could potentially exploit vulnerabilities in the vehicle's software or communication systems gaining control over the vehicle and endangering the passengers or other users sharing the road. AVs are currently being tested and deployed alongside traditional manually driven vehicles, which can pose challenges. Human drivers may not always understand the intentions or behavior of autonomous vehicles leading to potential conflicts or accidents. AVs need to actively detect and respond to pedestrians and cyclists to ensure their safety. However, the technology may face difficulties in identifying and predicting the actions of vulnerable road users potentially leading

to accidents or near-misses. Widespread public acceptance and trust in autonomous vehicles are crucial for their successful integration. Concerns about safety can affect public perception. It is essential to address these concerns through effective communication, transparency and comprehensive safety regulations. In conclusion, the LAFD has a responsibility to ensure the preservation of life, protection of property and the safeguarding of our communities through our relentless commitment to any all-hazard response. Deploying AVs without local oversight or collaboration with AV companies creates a challenge for our resources to effectively respond to an emergency and potentially endangers the lives of the citizens of Los Angeles during active scenes. The LAFD supports the recommendation of LADOT and echos the concerns of LAPD in this matter. The LAFD recommends the CPUC and California DMV support local agencies in developing operational policies, regulations and allow those agencies to provide oversight of AV

deployment. Lastly, the LAFD encourages the CPUC to allow local government to use performance measurements to provide analysis of positive and negative interactions with AVs to support planning and implementation. To mitigate these concerns, ongoing research, testing and collaboration between technology developers, regulators and policymakers is vital to the progression of AVs. Striking the balance between innovation and safety is key to realizing the full potential of autonomous vehicles while ensuring the safety of all citizens across the country.

And that comes from the Los Angeles Fire Department. And, again, I just simply want to say that for the LADOT, the primary issue is ensuring that we have near realtime two-way data communication between the AV providers and the cities, and we would encourage and ask that the CPUC require such interaction for cities that choose to have this type of data-sharing integration within their systems.

Thank you very much.

COMMISSIONER SHIROMA: Thank you, Mr. Murray, and if you could provide us with the fire chief's

letter, that would be great. Thank you very much.

MR. MURRAY: Yes, we can do that and send it to the service list.

COMMISSIONER SHIROMA: Yes. Thank you. All right. We now have -- thank you to all of the parties speaking in the first panel. We now have time for commissioner and ALJ questions. We allotted 10 minutes for this. We are couple a minutes over time, but we turn to my colleagues on the dais for any questions.

Commissioner Houck.

COMMISSIONER HOUCK: This is a question for the industry folks. How many vehicles are currently on the road? And how many do you anticipate -- do you anticipate the number of those that would increase if the resolution is adopted later?

MS. DAVIDSON: Mari Davidson, Waymo.

Thank you for the question, Commissioner Houck. We currently have approximately 250 vehicles on our CPUC equipment list. That doesn't mean that all of those vehicles are on the road at any given time, and we manage our fleet dynamically in order to meet demand and other operational constraints. I would say, subject to check, we have approximately 100 on the roadway, kind of, at a given time in the state of our current operations.

With respect to scaling and what our intents are or what our plans are for adding vehicles to the equipment list for -- onto the roadways, you know, once securing a driverless deployment permit, I would say that the references to tens of thousands of vehicles, those are not representative of Waymo's plans to scale an immediate aftermath of securing our permit. We plan to grow our fleet in a very measured way, and there are practical constraints that sort of dictate that. And there are also -- you know, it doesn't serve Waymo, from a business sense, to grow our business in an unsustainable way.

We want to have riders that are customers for life, and we don't do that if we outpace demand or supply or don't continue to align those. So it's a very close eye on continuing to provide an excellent rider experience.

UNIDENTIFIED SPEAKER: Hi. I run operations for Cruise here in San Francisco. I'll go ahead and take this question for Cruise.

So today currently we have roughly 300 vehicles operating at night and 100 during the daytime. We have larger vehicle numbers across our total operating fleet across all markets that we operate in. What I would say is in terms of expansion or scale, there's a couple of

things. First, safety guide with everything that we do. We do not take any decision to increase fleet size lightly.

The second thing I would say is, for expansion, it is not just about AV numbers. It's about being in a time and place of where San Franciscans want to be moved from place to place. I'm a San Franciscan myself. That includes daytime hours. That includes possible locations where we're not permitted today. So unlocking that information is key for us.

Then the last thing I would say, as highlighted well from our counterparts, is we control this at 500 percent. So if you think about the traditional to sort of TNCs, the service ride that we have today, we would expect to replace a lot of that. And we can actually control the vehicles where they are so that we can only put out enough to actually match that demand to exactly match where San Franciscans want to be and when. So that's another major consideration in terms of the overall picture to tack on the city as well.

COMMISSIONER HOUCK: Thank you. So a major tool that local governments or law enforcement have with vehicle safety compliance is issuance of citations. So, first, is it correct that driving citations cannot currently be issued to AVs? And if so, how do Waymo and

Cruise access and demonstrate their vehicle's level of compliance with the California Vehicle Code if the issuance of traffic citations are currently not allowed and how -- and such issuance will be allowed has not yet been determined?

MS. DAVIDSON: I'm sorry. Is that -- that's a question for industry?

COMMISSIONER HOUCK: Yes. Yeah. That's a question for industry.

MS. DAVIDSON: Yes. Thank you. Mari Davidson from Waymo.

We don't believe that local traffic control officers are not permitted to cite autonomous vehicles. We have received citations for autonomous vehicles, and we have paid those in due course.

COMMISSIONER HOUCK: And is that consistent with law enforcement's perspective?

MS. JONES: Yes.

COMMISSIONER HOUCK: Thank you. I just wanted that on the record. And then the last thing is could you -- I think the industry indicated a handful of incidents. Yes, the fire department indicated there was -- they have the chart with a -- much larger documented incidents of interference with the AVs. Can you reconcile that?

MS. RAMAN: Sure. I think -- this is Prashanthi Raman with Cruise.

All the cars stop for a variety of reasons even for AVs alike. So they are not expected -- all unexpected nor do all of them cause destruction. In fact, the vast majority of the reason people do stop is to be -- for a good reason, to be a cautious road user. So we don't believe that the Commission is concerned about AVs stopping appropriately, in a controlled manner and as intended by design.

What we believe the Commission cares about is when we stop unexpectedly. And given that there's no definition, we came up with a definition that we thought best addressed the issues raised in the context of the data reporting rulemaking and response to the questions included in the assigned commissioner's ruling.

So given the short notice, we had to prioritize building a query that gave us reasonable confidence, but we did not have time to fully verify or manually review every piece of information in the data. And we're happy to continue these conversations and the discussion -- to get a discussion as to what that definition would allow the Commission to get consistent -- allow for the Commission to get consistent data from the parties.

COMMISSIONER HOUCK: Does law enforcement want

to provide any additional comment?

MS. FRIEDLANDER: Commissioner Houck, I just want to make sure that there hasn't been a misunderstanding. It is correct that San Francisco's parking control officers or traffic control officers are able to issue citations. These are civil citations that are issued for parking violations.

As far as moving violations are concerned, those are required to be delivered to a driver in -- behind the driver's seat. This is a regulatory gap in California law that arises from the fact that we have never -- the California Vehicle Code never imagined that there would be a situation where there would be a driver who was not in the driver's seat.

Moving violations generate a notice to appear in court, and you need to go to court for that. There's not a system for that under California law. So possibly you could issue a citation and send it somewhere, but there's not a process in California law currently today for processing those violations.

COMMISSIONER HOUCK: I'll apologize if I wasn't clear. Yes. For the moving violation, then what would be the process if one of these cars had a moving violation?

MS. FRIEDLANDER: The process would be that we

need to fix this regulatory gap with state law.

COMMISSIONER HOUCK: Thank you.

COMMISSIONER SHIROMA: Thank you. I think we have time for one more commissioner question.

Commissioner Reynolds.

COMMISSIONER REYNOLDS: Thank you, Commissioner Shiroma. I have a question for Mr. Murray. You highlighted the data platform that the City of Los Angeles has for -- for mobility data. Do you currently have human-driven passenger vehicles on that platform? Can you tell us what scale of current vehicles do you have on that platform today?

MR. MURRAY: Yes. Currently we have some of our taxi companies on that platform. And right now the number of vehicles is probably about 500, give or take. We don't have all of our taxi vehicles on as yet primarily because their technology isn't as sophisticated as the AV company. But we are working to have each -- all of our vehicles on that platform soon.

COMMISSIONER REYNOLDS: All of your vehicles, meaning all of the vehicles in the city and county or all the commercial vehicles?

MR. MURRAY: All the taxicab vehicles. Those are taxi-specific. We also have our scooters as well as the (indecipherable) on that level as well.

COMMISSIONER REYNOLDS: Thank you.

MS. DAVIDSON: If I could just very briefly follow up to that question from Commissioner Houck --

(Reporter clarification.)

MS. DAVIDSON: Oh. I'm sorry. To clarify, we have received violations that exceed traffic citations. We received an obstruction citation. My understanding is that "moving violation" is not a technical term, although I'm happy to go back and confirm that. So I don't know exactly where it falls in that category, but it is not a -- not a -- not a parking citation that we have received, and, again, processed in appropriate course.

MS. RAMAN: And if I may -- this is Prashanthi Raman -- we're actually happy to address it with the legislature or rulemaking given that there is a regulatory gap. Today, if we were to get a citation issued to Cruise, we would accept it and pay it.

COMMISSIONER SHIROMA: Thank you.

ALJ MASON: Thank you. I just have a question. In these instances where -- I think you called it an autonomous vehicle-at-rest condition or an unexpected vehicle-retreat-mode event, why can't Cruise and Waymo remotely move the vehicles if it's come to a stop or

it's obstructing a first responder from performing its duty?

MS. RAMAN: My colleague will be answering that question.

MR. MARGINES: I'm happy -- thank you.

(Reporter clarification.)

MR. MARGINES: Yeah, of course. My name is David Margines. I'm from Waymo.

Judge Mason, in the vast majority of the cases that we see where a Waymo autonomous vehicle has come to a stop and where that stop might have the opportunity to either be too close to an emergency scene or it might have the opportunity to obstruct or impede or even distract the behaviors of any fire department or first responder, in the vast majority of those cases, our remote-system operators are able to assist our vehicles from extricating themselves from those scenes.

We have capabilities that our remote-assistance team uses which range from instructing the vehicle to take specific actions similar or to, like, a U-turn. We can instruct the vehicle which path to take in the case that it might be ambiguous. Or in some of the most complex scenarios, the remote-assistance operator can suggest a path for the vehicle to take away from that scene.

So I would say that those capabilities do generally exist, and our success rate on those is generally very very high.

ALJ MASON: By that answer, it sounded like the technician is providing information to the vehicle. But my question was can the technician actually take over the driving of the vehicle, or did I mishear your answer?

MR. MARGINES: Hopefully I didn't say that, because I didn't want to imply that. The remote-assistance operators cannot operate the vehicle remotely. What the remote-assistance operator is doing, he is making suggestions to the vehicle to help disambiguate what the correct path is for a scene or describe the activity to take including just stopping if that's the safest path.

The challenges with remote operation are varied, and these are things that we're looking into. But just to give some examples of those challenges, first off, is the latency -- right? -- so the amount of time between when an -- when an action is corrected and when it's received by the vehicle as well as the feedback from that, so when the sensory data from the vehicle goes back to the operator. In those cases, the latency can be long enough so that if -- you know, the

important thing for the vehicle to do is to press the break, then there are challenges in getting that action over to the vehicle fast enough, which is why what we have seen is that it's best for the Waymo driver to remain in control and only take suggestions or directions from the -- from remote assistance, which the Waymo driver can then judge for itself whether it should take and only take those when it's safest to do.

COMMISSIONER SHIROMA: Thank you, Waymo. And, Cruise, 30 seconds, please.

MR. WOOD: Thank you. Mathew Wood from Cruise.

A very similar response. Our remote-assistance advisors cannot provide direct driving task performance but instead accept and guide proposals from the vehicle in the event of ambiguous scenes. But for the most part, our vehicles are -- are able to navigate these things fully autonomously, and for the ones that require remote assistance, are able to do so with their support.

ALJ MASON: But how is a first responder supposed to take over the driving of the vehicle?

MR. WOOD: Recently we worked very closely with the San Francisco Fire Department and members of the first responders here in San Francisco to provide under very, very rare cases, the ability to manually interact with the vehicle and remove it from the scene if deemed

necessary.

MR. MARGINES: A similar answer from Waymo. David Margines, again, from Waymo. So we have successfully demonstrated the ability for first responders to take over the vehicle. I would say that it is never the responsibility of the first responder to have do so. We create that as on option at the suggestion of law enforcement and first responders. And we generally do so when they proactively ask for that option, as we just said. So we wanted to have it as an additional option, but certainly never anything that we wanted to rely on first responders who are much busier taking care of emergency scenes.

COMMISSIONER SHIROMA: Our chief respondent, 30 seconds also for you.

MS. NICHOLSON: Yes, thank you so much. Yes. Again, I will reiterate it as not our job to babysit their vehicles. And while they may have, you know, folks back at their control center that are making suggestions, we have had vehicles on scene for 30 minutes at a time that we have had to babysit, and that's just unacceptable.]

COMMISSIONER SHIROMA: Thank you. Definitions, communications, timing are some things that I have I heard from the first group.

Now, we are going to go onto part two. I understand, Chief, that you aren't able to stay for the second part but thank you for -- for being here, but your deputy will be here.

MS. NICHOLSON: Yes.

COMMISSIONER SHIROMA: Okay. So, part two is on training. The questions are going to be posted and, once again, the order is we will hear first from Cruise.

MS. RAMAN: Thank you. Thank you for the questions.

As we have shared with the DMV in the context of our law enforcement plan, we have conducted multiple formal training sessions with first responders to provide them with the information they need to safely identify and interact with the driverless AVs and have considerable engagement (indecipherable) in March of 2020 in conversations with both fire and police.

Cruise offers training on an ongoing basis for first responders in a number of different formats. Cruise offers both in training -- in-person training and video options. Additionally, Cruise offers presentation and tours of its offices and facilities to allow first responders to familiarize themselves with Cruise AVs, the technology and protocol for interacting with its vehicle.

Cruise continuously reaches out SF Fire and SF PD to offer opportunities for training either at one of the Cruise facilities or at San Francisco precinct offices and fire stations. Cruise has conducted training with all SFPD precinct commanders. We have also created a training video in collaboration with SF Fire where firefighters conducted a demonstration where they cut open a Cruise vehicle with a jaws of life to simulate extracting a passenger and demonstrate where to cut the EV AV.

Cruise has dedicated staff focused on engaging the San Francisco officials and city employees in all departments including SF Fire and SF Police.

Cruise meets with SF Fire and SF Police on a regular basis to discuss operations and areas for continued improvement within the city. Additionally, Cruise meets with our state regulators on these issues, the DMV and CHP on a weekly basis, and we schedule additional meetings as requested. It is also common practice for Cruise to reach out to DMV in real time to discuss incidents or provide updates and our responses when the DMV has real-time questions, particularly as it relates to law enforcement interactions and the DMV codified scope.

We also meet with CPUC CPED staff on a monthly

basis, and we regularly communicate with staff in real time to discuss incidents and updates.

Moving to the next question. To date, we have held onsite training, two in-district trainings for dozens of the force and invited and hosted SFPD commanders and leadership at our facility.

Additionally, we have shared Cruise's training video widely with San Francisco first responders and created a shorter video at the request of SF Police and SF Fire leadership, which has also been widely disseminated.

Cruise has not kept records of the precise number of first responders who have attended our trainings; however, we are committed to creating, maintaining and storing such records in the future. We are also very committed to working with SF Fire and SF Police and continue to work collaboratively together.

Next question. In-person training lasts between 30 minutes to 90 minutes. Based on feedback from first responders, Cruise has developed training videos that can easily be disseminated to emergency departments for incorporation into training materials. The original video was 18-minutes long. Feedback from first responders suggested the truncated version, which would be appreciated, and Cruise created a

three-and-a-half-minute version, which we will show shortly.

Slide two, Cruise submitted for DMV approval for our law enforcement interaction plan, which the DMV vets and approved and is shared with and approved by the California Highway Patrol. This plan is also part of the passenger safety plan that the Commission approved and is publicly available on the Commission's website. This plan includes instructions on how to approach and interact with vehicles without drivers, emergency power disconnect and extraction procedures as well as procedures for a variety of other scenarios.

Cruise updates its AV Law Enforcement Interaction Plan, or LEIP, at least once a year as required by the DMV regulations that oversees law enforcement interactions.

Cruise also updates our training materials periodically in response to feedback from first responders and law enforcement and our weekly discussions with the DMV and CHP.

Moving on to question 11. Cruise and SF Fire are planning a joint-training exercise on Treasure Island in the near future. We have also requested an opportunity to bring cars to SFPD stations for interactions, Q&A and on-site training. We plan to hold

this training session at all ten stations within the next few months as allowed. We also plan for these training sessions to be held for a broad group of officers during shift changes.

First responders have provided feedback to Cruise that they prefer a short and simple training video they can distribute to their teams, which Cruise is working on.

Cruise offers training on an ongoing basis for first responders in a number of different formats. The in-person training and video options along with the one-pager takeaway sheets for easy access to information. Additionally, Cruise offers presentations and tours of offices and facilities to allow first responders to familiarize themselves with Cruise AVs, the technology and protocol for interacting with the vehicles.

Cruise and Waymo have also begun discussing and exploring whether there are common practices amongst our companies that be unified for first responders.

The next question 12. Cruise has designated individuals responsible for communication and coordination with the first responders. Cruise has primarily coordinated with leadership at the various departments to organize training personnels -- training

for personnel such as Deputy Chief Darius Luttropp and Assistant Chief Julia Mau from SF Fire and Assistant Chief David Lazar, Deputy Chief Pete Walsh, and Commander Nicole Jones from SF Fire -- PD, Excuse me.

Aside from the dedicated staff already at Cruise, we are also hiring an engagement manager dedicated to fire responder engagement in San Francisco, who will assist in facilitating these discussions and additional training sessions.

For slide three, I would like to show a clip from the first responder training video to demonstrate the information that we share with law enforcement in its video format. This video provides both an introduction to the Cruise AV and specific information to inform law enforcement interactions with a vehicle.

This video is a much more abbreviated form of a longer video we made, and we shortened that at the request of our law enforcement partners, and the intent is for it to serve as an introduction to Cruise AVs.

We are sharing it here today to illustrate the ways we have collaboratively with first responders. It is accessible at getcruise.com/firstresponders in addition to being distributed widely during all of our training and law enforcement agency level conversations.

If you can please play the video.

(Video played.)

COMMISSIONER SHIROMA: Thank you.

Okay. Our next speakers will be from Waymo.

MR. PATRICK: Good afternoon. Ron Patrick, Waymo's first responder outreach program.

Thank you for the questions.

I would like to point out from the beginning that Waymo has always valued first responder input and first responder training and communications.

Evidence of that --

MS. DAVIDSON: I'm sorry, can I interrupt you? Thank you.

MR. PATRICK: Perfect, thank you. Got the slides up.

Yeah, so evidence of that is my presence in the company. Waymo recognized that in order to interact with first responders effectively, we need someone from the first responder community to -- to develop a team for that specific purpose, and it's great for me to hear some of the comments from our first responder friends here today about the desire for collaboration and being involved with each other earlier.

One of the more difficult things we find when we come into a new community is -- is -- is the means by which we might get that first responder community

engaged; and when we came into San Francisco in early 2021, shortly after I was hired here, we made phone calls, we sent emails, we knocked on doors, we showed up at (indecipherable) meetings. I showed up at 5:00 AM briefings just to get the word out, so that we get first responders trained. That is very important to us. It's great to see that we're -- we're working toward collaboration.

Next slide, please.

Additional evidence of that is the team that I have developed. We don't have time to go into resumes, but what you see on the slide are three additional -- I come from a first responder background as a first responder executive after 30 years, and three additional individuals that completed first responder careers that came to Waymo for this distinct purpose of being assigned individual areas to work with first responders to get their input, so that we can understand their needs better, and we worked very hard at that.

Next slide, please.

As you can see on this slide, since Waymo started in April of 2021, we trained 2500 first responders in California. We've conducted more than 100 training sessions, and we have 40 more plans for just this year.

As I just alluded to, sometimes it's pretty difficult to get these training sessions on the calendar because we know how busy first responders are. We work very hard to have the opportunity for that collaboration. We've trained 900 first responders; that's between San Francisco Police Department and San Francisco Fire Department, and we are -- we stand ready to train more as soon as they are available. We have both a 90-minute, in-classroom training, which concludes with hands on our vehicles; and we also modified that to a 20-to-30-minute training.

One of the things we recognized was first responders -- especially it seems more on the law enforcement side -- just don't have the time to get the trainings, so we showed up where they work, when they are working, showed up at 5:00 in the morning, showed up at 3:00 in the afternoon, then showed up again at 10:00 at night to be sure we can get them the training when they're working at the time.

Sometimes the training sessions have been as large as 400 in the national conference, but we've trained some SFPD stations at night when we only had four.

Every additional first responder has more information that is valuable to us at Waymo, and we

value their feedback. During these training sessions, we ask first responders if you see something out there that you didn't understand about a Waymo vehicle, Waymo vehicle behavior, call us. We provide our -- we provide phone numbers, we provide emails. They can get ahold of us 24/7. You see something and you have questions, ask us about it. We're happy to explain it to you. We can demystify this idea of autonomous vehicles that way.

Next slide, please.

So, consistent -- thank you. Consistent with DMV requirements, we do maintain our LEIP and ERG, and we update those regularly. We establish the use of the LEIP, which is I think is very interesting, even before there was such a requirement here in California from our experience with first responders in Arizona. So, I think that's great.

We give the -- we provide this location -- you can see here -- to our first responders with a dedicated location on our website, where they can go; and they can obtain that law enforcement interaction protocol, and the emergency response data. That serves as a source of truth. What is the latest information on Waymo and how to operate around Waymo vehicles, they can go to our website here, and they can get that.

Additionally, as you see on the right of the

slide, we partnered with California Highway Patrol, the San Francisco Fire Department and the San Francisco Police Department to create a training video that we use to augment those learnings. So, those who have had the training that haven't been there for a while, can always go back and watch the video. For those that maybe didn't have an opportunity to go get to the training, they can watch the video as well.

In addition to what we've done here in the San Francisco Bay Area, hearing the -- the concerns from LA here, and love to hear the Los Angeles community is interested in interacting with us at the first responder level -- we've already done a significant amount of training with the first responders in Los Angeles. In -- Amongst the 40 training sessions we have coming up, we have a training in -- training with the Los Angeles Sheriff's Department, Los Angeles Police Department, Santa Monica Fire Department. We've already trained Santa Monica Police Department, too. So, we've done several (indecipherable). We continue our ongoing efforts here in San Francisco, but at the same time, these individuals I have on my team are focused on getting those regions the -- the information that they need.

In addition to that, we take first responder

feedback seriously, as I said before. So, some of the things that we -- we've heard from first responders is, hey, I don't even remember your -- I don't even remember your phone number. So, you know, what are we gonna do with that? Sometimes I have a phone, but I don't know the phone number, so we placed QR codes on both sides of the vehicle, just forward the mirror, so if a first responder needs to contact us, they can use the QR code, scan it, it'll call the phone number for them.

In addition, we ask them to leave the phone number with their dispatch center, so if they are a firefighter, and they're out in the middle of the night and don't have a phone, their dispatch center can make that phone call for them.

Additionally, we talk to them through the in-vehicle speakers as well. And most recently, we've established this idea of external audio prompts. One of the things we saw is first responders don't know what that vehicle is gonna do next, so we established these external audio prompts so the car can tell them what is coming next. We've recently received some feedback from San Francisco first responders that maybe those need to be refined, and we look forward to having those discussions so that we can give them the tools they need to operate safely around the vehicles.

What does the training content look like? Well, the training content -- both training sessions, the 90 minute and -- and the shorter version cover the same information. They don't just -- they just don't cover it as significantly in depth. So, it's about how our driving system works. It's about resources. Very important that they have resources that they can make contact with. It's about not only individual 24/7 contact numbers, but our 800 number -- 877 numbers that they can call. Our training covers scenarios specific to passenger safety, including if a passenger happens to be incapacitated, or if for some reason, something -- a bad actor from outside the vehicle should be involved with our car; and the training also includes detail by detail of the ERG and LEIP. We've talked to firefighters about issues of extrication concerns and power disconnects and things they need to know should they respond to our vehicles in these situations.

Every one of our training sessions goes in-depth about what to anticipate when you're dealing with a Waymo AV at a emerg -- at an emergency scene, and we give them a multitude of options. As David so accurately put it out earlier, yes, we -- we do offer the ability to manually disengage the vehicle. We also want to give you other options and other resources of --

as a first responder, so you can react appropriately in these situations.

So, we cover a multitude of substantive topics in these sessions, and we always encourage first responders to provide feedback. We begin our training sessions with Q&A and we end our -- our training sessions with Q&A. We go out to the car and -- and actually allow them to manipulate the vehicle and see where the buttons are, understand what -- how things might look in an emergency, So we work very hard in the city of San Francisco to get training on the schedule. As you can see this slide -- next slide, please. Sorry, I get busy talking and forgot the slide. Okay.

Oh, I already covered training content. Thank you, sir, can you go onto the next slide.

Thank you.

So, we work very hard here in the city of San Francisco. You see in the photos here, some training sessions we recently conducted with San Francisco firefighters. As I said, we've trained more than 500, and it's been -- it has been -- we can train more numbers on the fireside than we can on the PD side, just because it's easier to get them all in one place, but we would have trained many, many more firefighters and police officers in San Francisco if we could -- if they

had the resources and the time, and if they let us do the training. We are always available and always willing. Thank you.

Word of mouth is very important. A lot of people that have attended our training, you know, say, hey, you need to get that Waymo training. It's valuable.

So, in addition to training, we get involved with community events. We just recently did, as you're probably familiar, with National Night Out with LAPD Rampart Division and SFPD Park Division. It's just on more opportunity to talk to first responders about vehicles, our technology and how the operate safely around them.

Next slide, please.

I won't get into the numbers on this slide, but if you look at column two, column three, you will see some of the initiatives that we have developed as a result of first responder feedback. We're developing an opportunity to for real-time communication. The QR codes that have already discussed. Adjustments to training that are made on a regular basis based on first responder feedback. Super important for us that we have that level of collaboration.

Next slide, please.

Hard to get all this in ten minutes but, you know, what I want -- what I want to say is, you know, Waymo has always been committed to first responder interactions and our emergency response outreach team will continue to do that. We will continue to provide trainings for first responders where they want the training, when they want the training, so they can be safe around our autonomous vehicles; and I will conclude by circling back that -- you know, that engagement -- that two-way communication is very important, and as we heard earlier, it has to be two-way. We have to sit at a table and have a discussion about how Waymo can improve its operations for our first responders, so I very much look forward to that in the future.

Thank you.

COMMISSIONER SHIROMA: Thank you.

Okay. Let's hear from San Francisco.

MR. LUTTROPP: Okay. Good afternoon, I am Deputy Chief Darius Luttropp, San Francisco Fire Department. Thank you for your time.

Are our slides up? If you can advance to the next slide, please?

So, I want to thank all the public safety outreach people from Cruise and Waymo, and it is a fact that we have conducted a fair amount of training here in

the city of San Francisco. I'm currently Deputy Chief of Operations, but I do go back in this conversation to 2019, 2020 when I was a happy-go-lucky captain in our training division, and we were first approached by the autonomous vehicles.

We did agree that in-service training on their vehicles would be a -- a -- a strong move, and that we were happy to -- to sit down and have a conversation and help them develop training materials, et cetera, and that part of our relationship has been strong.

The challenges, however, were that we didn't know what we didn't know, and we could see even in our early conversations that having two separate companies that had proprietary information, they don't wanna share with each other, and there would be no standardization across the industry, so that was an early concern, but we felt we could get around it with continued training.

Our current challenge is the -- the content of the training doesn't address what we're seeing in the streets and the problems that we're encountering. Both those videos are tremendous, and if you take the statements made by Waymo and Cruise today about the advances we've been making and our ability to communicate, that'd be fantastic, but you won't find them reflected in these videos because they are new as

of last week or the week before.

These videos are not addressing our concerns for communication. They still include making phone calls and having very, very baroque methods of communication with these companies. We need, moving forward, to have something that meets our needs. So, again, we will train on those when they are created and adapted, but they are in early phases; and they've all come about since these meetings have been announced, and it's been clear that there's a problem.

Can we move to the next slide, please?

So, the things we would actually like to see, and I'd be happy to train on any of these once we -- once we see them in action, we need some kind of avoidance or some kind of geofencing for our incidents. We need them to not interfere with our operations and not be a part of our operations, and we can help them design those.

Our preference would be that it is not a bespoke response by each individual AV agency, but we need that as a -- as a primary response; them staying out of interaction with an emergency scene. From that, we need them to be trained better on how to recognize what is going on around them in their environment, how they can learn, and they can be trained to recognize

cones. They can recognize sandwich boards and tape. They can recognize the operations that are going on on fire ground or any other emergency scene, police operations or human traffic control. They are poorly trained themselves in these regards.

We need them to learn how to communicate in a way that is accessible to first responders. Again, we don't carry phones as a rule. We may have a phone with us, but not many of you would like to get your phone wet on a regular basis or take your phone into a hazardous environment with you; and if we do have a phone, again, it -- they need to be trained on how to interact with us and not have multi-layers of bureaucracy between us and the action we need taken on the ground.

So, once they have this voiceover wire communication, and we can communicate directly with their cars -- they have learned to do that -- we can do a training video and have in-service training, and then we can take that to our first responders.

And I'll hand it over to Commander Jones for the next slide.

MS. JONES: Thank you, Commander Jones for the police department.

And just to piggyback off what Deputy Chief Luttropp said, we need have better communication in

response, especially as it relates to people who are actually conducting the traffic control. So, we have special events. They could be planned -- a parade, a marathon, you know, a street festival, or unplanned first amendment activities, a lot of those events require excessive amounts of traffic control with intersections blocked off, et cetera; and we need to be able to communicate with vehicles because, like I said, some of those are planned, and those are not, we're not necessarily going to know ahead of time what area these are taking place in.

One thing is that going to make my hair go gray is our APEC conference that is coming in November. That's the Asia-Pacific Economic Cooperation, which is going to have an inordinate amount of dignitaries in this city all at the same time and an inordinate number of motorcades; and we aren't necessarily going to know these routes ahead of time; that information is tightly controlled for security reasons, but due to the number that are going to be there, it is going to take an extreme amount of human traffic control, intersections blocked. It's very dangerous. It's going to be imperative that we are able to communicate with the autonomous vehicles, and when we give commands, we pretty much need those commands to be heeded pretty much

immediately.

So, those are some of the things that we worry about. Again, there's lots of types of events that block streets, storm damage we've talked about already, you know, those are not planned. They come as they are. So, really that's what we are hoping to see in the future.

Thank you.

COMMISSIONER SHIROMA: Thank you. Anyone else from San Francisco?

MS. FRIEDLANDER: Next slide, please. Next slide, please.

Again, another thing that is needed is for the remote advisors to be better trained for emergency responder interactions, and the small handful of incidents that we've discussed with companies recently, for which we are very grateful, there were a number of circumstances in which the remote advisors made errors and slowed down the process that interfered with the operations of our first responders.

Next slide.

Fundamentally, we think it's important for our first responders to be co-designing these tools with the companies. We were very grateful that, for example, Waymo took initiative to develop a method for

communicating out from the vehicle after an incident that involved construction workers. The needs of our construction workers, and the needs of our firefighters are not necessarily the same; and we need to be evaluating those. We need to have the people who are the most important users evaluating and providing feedback directly on those.

Next slide, please.

I want to -- it looks like some part of that slide is missing, but we have a number of tools that the city uses to communicate with the public generally and we have questions about whether all of those have been really ingested and used to their full extent by the companies.

I am going to move through these slides quickly.

The most important one is simply our alerts that we send out for all kinds of has hazardous conditions. These are alerts that were sent out to -- in relation to incidents where they were actual challenges from the AV companies.

Moving forward, and I want to make sure that there's an opportunity for you to pose questions to the first responders directly, but we also provide a number of digital ways that we are seeking to inform, not just

AVs but all kinds of, for example, navigation service providers about important changes in the roadways, so they're capable and prepared to respond to those changes.]

Next slide.

We also have a very robust portal that provides many, many forms of information about our streets as they exist today. Those are updated frequently. A number of them are things that we think would be of value if the AV companies were taking them into account including, for example, we've not spoken about our crossing guards concerns about the way AVs are interacting around the locations.

So I'm going to stop there and see if you have questions for our first responders.

COMMISSIONER SHIROMA: Thank you.

We'll hear from Los Angeles, and then we'll go to questions from the dais.

MR. MURRAY: Thank you.

This is Jarvis Murray with the Los Angeles Department of Transportation.

In response to the questions, we have had some training. I know that our traffic control officers have had the training with Waymo, and we thank Waymo for providing a chance to do that. We note that they

provided a PowerPoint, kind of a general overview of the technology and the various protocols for law enforcement intervention. And again, that was appreciated. They really appreciated the presentation, and they thought it was beneficial, if nothing to understand -- to better understand the AV technology.

As far as I'm aware, that is the only presentation that our department has received. And we do want to emphasize that we believe that as these trainings happen, as first responders in law enforcement, we believe that our field officers and transportation investigators should absolutely be part of those trainings, and we also agree with San Francisco in that we think the training needs to be standardized, because what we don't want is a protocol for Company A, a protocol for Company B, C, D, E, and F, because that's not going to be helpful for the average person needing to deal with them and having to follow a different protocol for each vehicle type. So we would like to have something more standardized across the board that they could use and work with.

And also, we'd also agree that, you know, the issue isn't necessarily the training itself, but more how the vehicles interact with our providers, with our law enforcement, with our traffic control officers. We

only recently had an experience related to this over the -- it was like a Thursday or Friday that this occurred, and we had an incident on (indecipherable) and (indecipherable) Street, which is kind of just west of downtown, where we had a power outage. And the traffic officer directing traffic had an issue with an AV, because the AV didn't know how to respond to that traffic control officer's hand gestures and hand signals. So really for us, it's more of an issue of how do the vehicles respond to the individuals? How do the vehicles respond to our law enforcement officers? You know, are there things that, you know, we can do to help them respond better? But really we think the training goes on their side, and they need to work with the systems in the vehicle, or their operators, and help figure out what are the right things to do in these situations.

And then finally, I also wanted to add that I thank the City of San Francisco for bringing out some of these issues. You know, it was mentioned that we have a lot of planned and unplanned events. We're just like San Francisco, we have a lot of planned and unplanned events. And again, we're going to continue to say this: Our two-way data communications through MDS, who helps us with this, we've assisted our LAPD with, you know,

civil unrest issues where they knew that there may be an issue. They would contact us. We draw maps of the area and geofence the area to prevent any new vehicles from entering into the area, any vehicles that are entering the MDS platform.

As I mentioned before, it's our scooters. We have about 20,000 scooters on our platform. At our height we had 30,000 on our platform. On a given day, 15 to 20,000. We have taxicabs, and we also have delivery robots, so we are able to geofence areas, depending on our needs. So we had advanced notice, you know, occasions of potential civil unrest, marathons. We have what's called (indecipherable) of the year where we block off the road to allow people to walk and ride nonmotorized bicycles through. We generate geofences for that. And again, that's two-way data communication where you can see their vehicles, and we're able to push information to indicate you cannot enter these areas between this time and this time.

And we've also done emergencies, so -- and again, when I inspect MDS further, I can show how we were able to block off an entire area that was being evacuated from allowing any new vehicles to enter into that area. But again, that only works with the near realtime information that we are able to collect from

the providers.

So again, we're going to say it again, that we just believe that the PUC needs to allow cities that have this capability to be able to use this capability with providers; and not as a suggestion, and not as a request, but as a requirement, so that we can ensure that we are doing our due diligence and being the appropriate stewards of our firefighters.

So again, that's I think all that we have to say about it. Traffic officers should be included in any training that is done by AV companies. Thank you.

COMMISSIONER SHIROMA: Thank you.

All right, we'll turn to questions from the dais, and check with Judge Mason to see if he would like to go first.

ALJ MASON: Thank you.

I just have a few questions. The first question is for Deputy Chief Darius Luttropp.

Sir, you said that in the training there was some proprietary information that was not shared. What type of information were you not getting during the training that you would like to see to make the training more effective?

MR. LUTTROPP: Perhaps I misspoke. That was in reference to standardization across our platforms, and

that we weren't seeing a standardization because of the way that the vehicles operate and their proprietary operations.

ALJ MASON: Okay, thank you for that clarification.

And then my other question is for Cruise. I was watching that video, and as the car was getting more dismantled, it looked like there were like three or four first responders taking that vehicle apart. And I was wondering, is that a reasonable type of scenario that you would expect first responders to have to deal with when they're trying to get a patient to a hospital or they're trying to put out a fire? It seemed like that's a lot of person power being devoted to dismantling that vehicle.

MS. RAMAN: Yeah, I respectfully don't have the answer to this question, Judge Mason. I do not have any experience with fire inves (sic) in this circumstance to acknowledge what a reasonable number would be for any given circumstance. And so I would love my -- you know, my colleague on the right or myself or Deputy Chief Luttropp to answer.

ALJ MASON: I'll take an answer from anyone. But frankly, I was alarmed by the video.

MR. LUTTROPP: So the resources require --

luckily, in the city of San Francisco we have plenty of firefighters, so we can accomplish this operation. But to your point about the technology on top of that Cruise vehicle, I was flabbergasted to learn that was over 300 pounds. So that was part of our in-service training was to learn the obstacles we will face in extrication, and that was one of them.

ALJ MASON: That video, that comes into play when you're not able to remotely open up the door and take control of the vehicle? That's what I'm trying to understand, what I'm looking at in that video.

MR. LUTTROPP: So this has kind of been one of our concerns with our service training and deployment. It wasn't the fault of any of the operators, Cruise or Waymo. Our initial concerns when we saw the vehicles were if it can do what you said it can do and it's a magical car that can get out of our way, then our concerns tend to be more toward the electrical vehicle aspects of it, or what will we do when it becomes part of a traffic accident? How would we go through normal operations, operations we conduct on a regular vehicle? So that's what's being demonstrated here. And to, you know, don't cut here because you're not going to get electrocuted, et cetera et cetera. And it's just not the state of play for us currently. The incidents we're

having aren't an inability to extricate from vehicles, it turns out it's just interference in our fire scene.

ALJ MASON: Thank you.

Thank you, Commissioner.

COMMISSIONER SHIROMA: Thank you.

I'll turn to the other commissioners on the dais.

Yes, President Reynolds.

PRESIDENT REYNOLDS: Thank you, Commissioner Shiroma.

Question for the companies. San Francisco raised a number of specific suggestions and -- including better recognition of cones, clear and fast communications, so kind of some really specific items that were mentioned. I wanted to hear from the companies whether you have any response to whether that's something you're willing to discuss, or are discussing, or making changes, and the reaction to the things that you are hearing today.

MS. SHRIVASTAVA: Hi. Shweta Shrivastava from Waymo.

We appreciate the feedback on this very much. And in fact, several areas mentioned by Deputy Chief are in fact areas that they are currently focusing on, have made improvements on. I'll name a few from memory. I

was trying to take notes in realtime. Better reception on caution tapes, cones, and wires. We do detect caution tapes, cones, and wires, and we are constantly improving getting around those. We also recently used audio prompts indicating what the AVs intention is when it's in the proximity of an emergency scene. And this is to provide more transparency, and this is also something that you heard feedback on on different occasions from the fire department. We are interested in improving remote operator tools, again, to provide transparency and faster reaction time to the situation. When an emergency scene is detected and confirmed, we do actually propagate the geofencing information automatically to the rest of the fleet. So that is something that we do do.

Also, we maintain a calendar of events that are coming up in the city and proactively do geofencing around those events for the duration of time. So these are some of the things that I heard during the presentation from the fire department, and we have (indecipherable) in those areas. We're about to get more feedback. We'd love to collaborate and continue to improve the service.

PRESIDENT REYNOLDS: Thank you.

MR. WOOD: Matthew Wood from Cruise.

We have worked closely with the fire department on a couple of the scenes and improvements they have been mentioning; one, being caution tape and charged hoses that we've encountered in the previous year. Other things that we've discussed and made improvements on have been direct communication with the fire department or any first responder present on the scene, to feedback that we received that no, it shouldn't be expected that any first responder has a phone present on them in an emergency scene.

We've continued to make improvements in the response to these scenes, as well, and simplify the interface with our remote assistance and shorten the time to respond to these emergency scenes to prioritize FEMA, and make sure that we're addressing the highest need across our entire fleet here in San Francisco.

In addition to that, we provide very similar abilities to cordon off locations once one vehicle experiences it into our entire fleet. Thank you.

COMMISSIONER SHIROMA: Thank you.

Yes, Commissioner Houck, and then Commissioner Reynolds, and I do have a question.

COMMISSIONER HOUCK: To follow onto that, and getting a little more specific on this issue of standardization of protocols, are the different

companies working to provide standardization so that the emergency responders don't have to learn several different ways to deal with each different company, and is that a regulatory or a statutory fix that may be needed there? And then the second part, for conferences such as APEC, that was mentioned by Commander Jones, how are you coordinating with the city, especially when some of those grounds are going to have human traffic officers controlling traffic and they may not know the routes until very close in time to the event?

MS. DAVIDSON: Thank you. Mari Davidson from Waymo.

I'd like to ask Rob to speak to the standardization, because he is most close to it. But one potential solution along the lines of trying to make autonomous vehicle documentation specific to law enforcement more intuitive, more accessible, would be to standardize and reform DMV-approved law enforcement interaction protocol.

As Rob mentioned, Waymo has had a LEIP since even before it was required in California, and we are proud of the content that we provide in that document. And it is a living document that we do update, as my colleague mentioned. But if it would be in fact more intuitive to access at least the format that document

is, you know, standardized, then that's absolutely something that we would, just as a very first measure, you know, propose as a point of exploration. And I'd like Rob to follow up.

MR. PATRICK: Yep. Thank you, Mari.

So I am involved currently with two national committees, the point of which is to bring together industry and first responders to try to understand how we can standardize certain steps so that they could -- they will understand them better. We're designing fundamental training as it relates to autonomous vehicles and autonomous vehicle interaction specifically for first responders.

If I could, while I'm -- I have a mike, as it relates to APEC, we are currently working on, I know that, Commander, one of my team members contacted you. We just recently did a briefing with the U.S. Secret Service, and we're going to provide them some autonomous training before the (indecipherable) will be working. I met with SFPD on that, as well.

MR. MARGINES: Just as a quick addendum, my name is David Margines, I'm from Waymo.

So I think that there were two concerns that were highlighted around these types of events, both the proactive road closures and then the realtime instances.

So I think, as my colleague referred to a little bit earlier, we proactively block off roads that the city has chosen to block off and geofence those so that our vehicles don't go there when that publicly available information is posted on a list of websites that we monitor for these things. In the moment our vehicles can recognize gestures, as well as blocked areas, say for motorcades or things like that. And when that does occur, we have the capability to send out that message fleet wide. We've seen instances where that fleet-wide message comes out in less than a minute so that all of our other vehicles know that that road is closed, as well, so we can get that realtime communication out.

That said, I think there are more opportunities for more collaboration with the city so we can get more accurate and more consolidated lists of when those events are occurring. We'd love to work with them.

COMMISSIONER SHIROMA: Thank you.

And Cruise.

MS. RAMAN: Thank you, Commissioner.

So I think that what we're talking about is just smaller (indecipherable) interactions, because there are thousands of interactions that we have where the vehicles do in fact respond accordingly, pull over, et cetera, as we shared in earlier conversations.

I do think that there is continued collaboration with fire and police, and with us over the last multiple years and, of course, as it was recently with regards to changing certain behavior of operations of our fleets. One of the details that we learned and illuminated one of our conversations prior was that as the police would like us to stop in place, and in certain circumstances when fire arrives to get out of the way. So really having conversations on how to luminate the difference of behaviors that are required and requested in different circumstances we're going to continue to reiterate on in those unique set of circumstances.

We are of course collaborating, and also very open to having a Law Enforcement Interaction Plan that is overseen by the DMV to provide service for a uniform standard that will allow for future iterations and opportunities to ensure that we are providing those standardization efforts across the workforce as we continue to explore and expand.

With regards to the motorcade and some of the special events, we are actually in communication with first responders and law enforcement, as well, to help our vehicles and to do a training about how to do those motorcades, as well as having conversations as potential

routes, and maybe even doing some dry runs as it relates to it.

We are also -- Cruise is also exploring different vendors with SF Fire, as well, where we can sort of utilize this information in realtime such that we'll able to activate avoidance areas almost -- hopefully within a short period so that vehicles that aren't in the area do not go into that specific area, as well.

COMMISSIONER SHIROMA: Thank you.

Commissioner Reynolds.

COMMISSIONER REYNOLDS: Thank you, Commissioner Shiroma.

It's great to hear really a shared interest, as I heard it, between the cities and the industry in making sure that there's continuing improvement in how the trades perform, that they covered everything that's needed for first responders with respect to AVs. It sounds like there's a lot of shared interest and continuing dialogue for a time to do that training program.

I do have a question following up on Commissioner Houck's question and the presentation from Deputy Chief.

Just to make sure I'm understanding, it sounds

like you'd like to have consistency for certain aspects of trainings across different companies so that first responders don't have to learn different systems where there's an opportunity to unify. Am I correct that you'd like to see that for all 41 licensed AV companies in California?

MR. LUTTROPP: Thank you for your question. I didn't realize there were 41 AV companies in California. Gee whiz.

So, yeah, I think the standardization is imperative for the safety of operations, and that that's an operational question, not necessarily a training question, but once the operations conform with that, then obviously the training would reflect it. And thank you for the question.

COMMISSIONER REYNOLDS: Thank you.

COMMISSIONER SHIROMA: Yes, Commander, if you want to --

MS. JONES: The only thing I wanted to add, is if there are 41 companies and 41 different things that first responders have to do in emergency situations, we will not be successful. So as much as we can pare that down and standardize what we can. Obviously, we understand that there's proprietary information. I think that everybody is sharing the same goal. We want

to keep people safe, we want people to deal with emergency situations quickly and effectively. And if there are 41 different protocols that have to be followed, 41 different phone numbers that have to be called, you know, it's just a lot. So I think that any collaboration we can do, and standardization, to Deputy Chief Luttropp's point, is going to make us more successful. Thank you.

COMMISSIONER SHIROMA: Very quick question on my part for the fire department and police department.

How many firefighters, how many police officers, juxtaposed against the number that have received some training; albeit, not under the circumstances that you have described of more recent importance, as we've learned the need for the interface between AV and first responders. How big is your department, in other words?

MR. LUTTROPP: So it's 1,800. And it would be hard to disaggregate how many went to Waymo, how many went to Cruise, et cetera. I would say probably about a third of the department and (indecipherable) staff has been trained over the course of, you know, a few years. So we're trying.

COMMISSIONER SHIROMA: I'm sure. Thank you.

MS. JONES: We have similar numbers. 1,800.

We need two more, so SFPD is hiring, everyone.

But I believe that Waymo has done about half of our district stations and the majority of the shifts, and Cruise has provided the training videos. We are working with Cruise to get people out to the stations to do the in-person training, as well, because we think that's really helpful. But that represents probably about 800 of our 1,800 people, and obviously people work in all different settings in the police department. So our district stations are of our utmost priority, but eventually we would like everybody to be able to respond to these emergency situations.

COMMISSIONER SHIROMA: Sure. Sure, thank you.

Okay, we are going to take a short break. It's 3:08. We're going to take a 10-minute break to 3:18. I'll say 3:15. 3:15.

Now, for the latter part of our session we are allotting three minutes per party. I will ask in advance -- we're digging a little deeper dive in this latter part of our all-party, so if you could aim for two minutes, then we are appreciative. I understand if you need three minutes. Okay, thank you. We'll see everyone back here at 3:15. Thank you.

(Off the record.)

COMMISSIONER SHIROMA: Just a reminder to speak

slowly for our court reporters and our interpreters, and then also we have a timekeeper here who will be raising a one minute to go and time expires, so keep an eye over here on our timekeeper. And again, if you can keep your remarks to two minutes, much appreciated, but it's not required for this next session.

All right, we are right now at the 4.2. The question's queued up. So we will hear first -- this is about a circumstance where a first responder is responding to an emergency and the AV is blocking the way. How should this situation be resolved and how quickly? We're just asking for a little deeper dive, more regularity in the answers. Much has been discussed so far. Appreciate everyone's cooperation.

All right, we will be hearing first from San Francisco, then Los Angeles, then Waymo, and then Cruise, and then I will call the other parties in the list after they have commented.

All right, San Francisco first.

MR. LUTTROPP: The question, how should AV interference be resolved, and how quickly can we go to the next slide?

So the answer is, they should respond immediately. For our purposes, the answer really is they should not be interfering in the first place. And

those are -- those are the requests we made about the vehicles not entering scenes and et cetera. So that's the goal.

Once they have entered -- entered the scene or interfered with our response, we just want to reiterate the point that every second in an emergency response is important. So the word "immediate" doesn't mean 30 seconds or 14 minutes, the word "immediate" means immediately. So if we can -- if we can get the vehicles to respond to voice commands or to otherwise interact in a realtime conversation with emergency responders to resolve the scene, that would be very beneficial to us.

As my chief stated, in the current fire environment fire doubles in size in a minute, so in 14 minutes the fire is tremendous. So a larger fire in this environment leads to the displacement of many more people. And in a situation where housing is at such a premium, we can't afford to lose peoples' homes.

Then in the setting of an emergency response, we're stealing it from the Red Cross in saying time is possible, but my chief also likes to say "Try holding your breath for a minute." So things that sound like a minor interference in an emergency setting are now to a huge impact on the community we serve. We are seeing tremendous impacts to our response times, just in

changes to the (indecipherable) environment, the city, et cetera et cetera. And having autonomous vehicles enter scenes, stop, otherwise interfere, it is only going to make the mission less possible for us. That timely response anywhere in the city to respond to the needs of the people of the city is our goal. So the answer is they need to respond immediately. Thank you.

COMMISSIONER SHIROMA: Commander.

MS. JONES: Yes, just to piggyback on that, as soon as I issue a command, my expectation is that that command be heeded, because I'm issuing you a command because I need you to do so something, whether it be stop, whether it be move. So really, for me, what "immediately" means, is when I issue you the command and ask you to do something, my expectation is that you do it as soon as I say it. And that really is supported by the Vehicle Code. You know, there are a variety of Vehicle Code violations related to yielding to emergency vehicles. You know, stopping in front of fire stations, driving over hoses. And those laws exist because it is imperative that we be as expedient as possible in our emergency response. So that's the only thing I'd like to add. Thank you.

COMMISSIONER SHIROMA: Thank you.

All right, let's go to Los Angeles.

MR. MURRAY: Thank you. Jarvis Murray.

Just like the fire chief just said, "immediately" is the only answer that works here. And for us, again, as you mentioned, in Los Angeles an immediate geofence that would be set around a perimeter for us, and it's something we can do in a matter of minutes. And again, this is done through two-way information sharing. And again, it's something that we create in a matter of minutes.

I do appreciate that some of the companies mentioned that they do geofences, whether it's planned or unplanned, in various areas, and that is great. But as was mentioned, we have 41 authorized companies right now technically. If each of those companies had 500 cars, we're looking at 20,000 vehicles. If they're (inaudible) approximately 40,000 vehicles. And what you don't want is 41 separate companies creating their own separate type of geofence.]

You want something standardized, and that standardization is something that we create through the MDS platform, because we would draw the geofence. We would get the information directly from fire or from the police department, draw the maps, draw the geofence, push that out to the vehicles, see an immediate response -- and, again, this is why we need realtime

information so that we can note that they are responding right away within seconds, and then that way we're able to audit and verify the (indecipherable) in terms of what's happening on the right of way.

So that's really how we view it. And, again, I do have slides for this, but that will come in our three minutes to discuss MDS later on. Thank you.

COMMISSIONER SHIROMA: Thank you.

All right. We will hear next from -- let's see here -- from Waymo.

MR. KUSANO: I'm here. Hi. My name is Christopher Kusano, and I'm a staff safety research engineer at Waymo. After completing my Ph.D. in mechanical engineering, I worked at a leading transportation safety institute at Virginia Tech and an automaker before joining Waymo to continue researching AV safety.

With respect to the question, Waymo agrees that when an AV or any vehicle, for that matter, is blocking an active response of a first responder, these situations should be resolved as quickly as possible. Waymo approaches this issue with urgency, and we design our vehicle and operational response so as to resolve these situations as close to immediately as the urgency of the situation requires and feasibility allows. How

we resolve any particular event will, of course, depend on the circumstances.

My colleagues have earlier addressed the various ways in which Waymo AVs can detect and avoid emergency vehicles and scenes. They further describe how Waymo remote assistance and roadside assistance get the vehicle moving as needed. And in rare circumstances, first responders can be authorized to drive the vehicle manually.

Given the importance of this topic, I'd like to expand on the urgency with which we approach making improvements in our service. Safety is fundamental at Waymo. In fact, one of our company mottos is "Because Safety is Urgent," which emphasizes the importance of the work we're doing to reduce traffic injuries and fatalities by driving safely and responsibly.

We are proud of our safety record and are confident that the safety benefit of Waymo AVs to the public is real. We can realize that benefit through careful incremental scaling and continuous improvement in all areas -- all areas including how we interact with emergency responders.

We publish many peer-reviewed papers detailing our approaches to safety and the evidence that shows that Waymo AV is already reducing the serious injuries

and fatalities on the roads of San Francisco today. These publications include a February report analyzing our first one million driverless miles that shows no injury collisions over these many miles.

To follow on this study, we are working with one of the largest reinsurance companies in the world to compare the rate of property damage and bodily injury insurance claims between the Waymo AVs and human drivers. Early results show that Waymo's insurance claims frequency is much lower than that of human drivers. We look forward to completing and publishing the study.

As someone who has dedicated their entire career to research and traffic safety with the goal of reducing the human toll of motor vehicle collisions, this research is extremely encouraging and continues to reaffirm our safety mission.

Thank you.

COMMISSIONER SHIROMA: Thank you.

All right. We'll hear from Cruise.

MR. DIETERICH: Thank you. Greg Dieterich for Cruise.

So, as we've discussed, when an incident or emergency arises and an emergency vehicle is present, our autonomous vehicle will detect and automatically

connect to a remote advisor. We acknowledge that for extremely dynamic and changing emergency scenes, humans can interpret the situation and communicate much faster than an autonomous driving system, which is why we connect to remote advisor every time.

As previously mentioned, the remote advisor has immediate access to the external camera feeds of the AVs to see first responders and to respond to any gestures or hand-signal indications just as you or I would. The remote advisor can also immediately roll down windows and communicate directly with first responders to understand their intent to stop or to proceed and relocate to help clear the scene if necessary.

For redundancy, Cruise also includes our critical response line numbers you saw on the front windows of AVs and displays on tablets when stopped. The first responders and city agencies can also directly communicate with the remote team and check the status of any AV as needed. We've heard very, very clearly in first responder feedback that in exigent circumstances first responders also need the ability to move the vehicles. As a result, in these circumstances, we've implemented a process by which first responders with verification can take full manual control of the vehicle. The Cruise remote-assistance team will unlock

the doors, disengage the Cruise AV, transition the vehicle to manual mode giving the first responder full access and manual control of the AV to help relocate the vehicle for these rare but critical emergency situations.

We have made these improvements as a result of direct feedback from first responders across San Francisco, and Cruise looks forward to continuing to collaborate with first responders and law enforcement to further improve our operations.

COMMISSIONER SHIROMA: Thank you. All right. Now we will hear from -- sorry. Let me take a look here at -- all right. Our next speaker will be Mark Gruberg from the San Francisco Taxi Workers Alliance, and then we will hear from The Silicon Valley Leadership Group and then Lighthouse for the Blind and Visually Impaired.

MR. GRUBERG: Thank you, Commissioner Shiroma, Commissioners.

(Reporter clarification.)

MR. GRUBERG: Yes. I'm sorry. What should be done about interference with first responders? I'd say listen to them. They know best. But I'd like to point out that interference with first responders is only one aspect of a much larger problem, which is the fitness of AVs for handling the driving task. This may change in

time, but they are not anywhere near ready yet. I've witnessed the hundreds of reported incidents of erratic hazardous driving, street blockages, and so forth. I've seen it myself. Interference with first responders is a piece of the rest.

It's well and good and necessary to talk about what needs to be done when interference takes place, but by that time, as Fire Chief Nicholson has pointed out, the damage has been done. Confining this conversation to incidents with first responders ignores the many other failures that pose significant safety risks every day.

The real conversation here should be about how the Commission can minimize the possibility of any of these incidents happening, and that calls for a different approach than the one the Commission has taken up to now. It means slowing things down and not giving a premature approval to an immature technology. This process seems to be proceeding on its own momentum, and it's not an approved pace. You've established a process without any meaningful performance review. This meeting is what passes for a performance review, but it's taking place three days before a vote that under your rules would ordinarily be little more than a rubber stamp. So rather than getting to the heart of the problem, this

meeting seems designed to paper it over.

Your own Consumer Protection Enforcement Division under threat of this rulemaking has proposed a number of reporting requirements that give you a great deal of insight into what is going on with the AVs. That is what you should have been first considering before you even got to this point. You need -- you need to have that kind of data before you give full commercial approval to these vehicles.

So you should be postponing this vote that's upcoming until you've collected and analyzed the data that the CPED and other parties have proposed. If you want this -- I'm sorry. I lost a track of my thought, but I'll stop right there.

Thank you.

COMMISSIONER SHIROMA: Thank you, Mr. Gruberg.

We'll hear next from Peter Leroe-Muñoz, general counsel, Silicon Valley Leadership and then Sharon Giovinazzo -- and I apologize for mispronouncing your name -- CEO, Lighthouse for the Blind and Visually Impaired and then Ariel Wolf, online, with the Autonomous Vehicle Industry Association.

Mr. Leroe-Muñoz.

MR. LEROE-MUÑOZ: Very good. Good afternoon, Commissioners. My name is Peter Leroe-Muñoz, and I'm

speaking today on behalf of The Silicon Valley Leadership Group, a business association that represents California's innovation economy and its ecosystem.

Few technologies are at the forefront of innovation like autonomous vehicles, and SVLG has proudly supported Waymo and Cruise throughout this rulemaking process at the CPUC. We believe that the issues referenced in this question were addressed in the existing deployment decision. It is our understanding that the overwhelming record of Cruise and Waymo is such that first responder interactions are promptly resolved, and we appreciate that Cruise and Waymo work hand-and-hand with law enforcement and first responders.

We recognize that fully autonomous technology is novel and that we can see that there may be numerous ways for this technology and ensuing issues to be resolved by the tech itself, by remote assistance, by roadside assistance or even manually by first responders.

As a longtime party to this proceeding, we believe that the CPUC's expertise is squarely within the realm of passenger safety. We also believe that this is a question that is better addressed by the DMV as it relates to road rules independent of passenger service.

It is also important to contextualize the

promise of this technology. Just last year nearly 43,000 lives were lost on US roadways, and the overwhelming causal factor in nearly all of them was error on the part of the human driver. We believe that autonomous technology can be one key factor in reducing this ongoing tragedy.

Thank you.

COMMISSIONER SHIROMA: Thank you.

Our next speaker is Sharon Giovinazzo, CEO, Lighthouse for the Blind and Visually Impaired. Then Ariel Wolf, counsel for Autonomous Vehicle Industry Association and then Cory Hohs, CEO of HAAS Alert.

MS. GIOVINAZZO: Thank you, Commissioners. My name is Sharon Giovinazzo. I'm the CEO of the Lighthouse for the Blind and Visually Impaired in San Francisco headquartered just --

(Reporter clarification.)

MS. GIOVINAZZO: -- headquartered in this beautiful city. I'm also a person who is blind. I lost my vision at the age of 31 as a result from multiple sclerosis. The Lighthouse has been an integral part of the San Francisco community since 1902 advocating for and providing services for people who are blind to reach their highest levels of independence.

I have to say, respectfully, of course, that

this happens every day with licensed drivers. In fact, it happens with emergency vehicles far too often. In 2021, according to the National Highway Traffic Safety Administration, 198 people died from crashes involving emergency vehicles. But how often do we talk about that? You can read reports of drivers blocking emergency vehicles with careless driving and bad parking every day.

In 2020, there was over 40,000 fatalities nationwide, six million non-fatal crashes from 2016 to 2020. More than 10,000 people lose their lives annually due to alcohol-related crashes. Speeding accounts for 26 percent of all -- fatalities every year, and more than 6,000 pedestrians and 800 cyclists are killed annually, and it's an estimated cost of 240 billion dollars annually because of motor-vehicle accidents. And that factors in medical expenses, property damage, lost productivity and legal fees having far-reaching impacts on families, communities and the overall economy. Yet that's not on the Docket. But I digress.

As this technology continues to improve, I believe, as do many people that I talk to, that the occurrences of the very isolated situations on the roads will become rarer and rarer, and that has already proven to be the case. After all, this is new -- or although

not new technology or solution, I believe there are numerous ways to address the challenges. The technology will continue to advance, possibly a roadside-assistance service or maybe even manual intervention by first responders that could bypass and override the system.

But, truly, let's be realistic. No system, human or machine, can guarantee zero traffic situations. What we cannot overlook is the tremendous potential of autonomous driving technology in reducing serious injuries and fatalities on our roads. Embracing this technology responsibly is crucial for our collective safety.

At the San Francisco Lighthouse for the Blind, we deeply appreciate our first responders. Waymo and Cruise has worked collaboratively, as you have -- saw, with law enforcement and first responders in pioneering this technology. Working hand-in-hand with everyone at the table, we can ensure a safer more efficient integration of autonomous vehicles into our transportation system.

Of course, general road safety is vital, but it's also essential to recognize the significant impact that autonomous vehicles can have on the lives of people who are blind and have no vision. AV can open up a world of possibilities to us, granting us greater

independence, mobility and opportunities to participate fully in society without the fear of discrimination. The question of embracing AV technology is one that needs to be addressed thoughtfully and collaboratively.

As we move forward, let us remember that all the progress comes with challenges, but the potential benefits, especially in terms of safety and accessibility, are too great to ignore or delay.

Let us continue to work together and involve relevant authorities like the DMV to navigate these exciting technological advances responsibly.

Thank you.

COMMISSIONER SHIROMA: Thank you. Our next party is Ariel Wolf with the Autonomous Vehicle Industry Association then Cory Hohs with HAAS and then wrapping up with Dylan Hoffman, executive director of California and Southwest, TechNet. All right. We have Ariel Wolf online.

MR. WOLF: Good afternoon. Can you hear me all right.

COMMISSIONER SHIROMA: Yes, we can.

MR. WOLF: Well, thank you, Commissioner, Judge Mason. My name is Ariel Wolf, and I serve as general counsel for the Autonomous Vehicle Industry Association or AVIA. In responding to question one, let me say

that -- at the outset, that these are important situations to address, and I appreciate all of the information provided by the SFMTA, the fire chief and other stakeholders.

But I want to make two points here about context. The first is the regulatory context in which this proceeding is taking place. California has had AV testing and deployment regulations in place for more than five years issued by the DMV and with input from the California Highway Patrol and other agencies. These regulations include a requirement for operators to submit a Law Enforcement Interaction Plan first. And that plan for California regulations must include a description of, quote, "how to safely remove the vehicle from the roadway" and any additional information the manufacturer deems necessary regarding hazardous conditions or public safety risks associated with the operation of the autonomous vehicle.

As I noted, the LEIP requirement has been in place for more than five years, since 2018. It is required to be updated no less frequently than annually, and AV operators must share with local law enforcement.

The DMV continues to work on updating these regulations including holding a workshop as recently as a few weeks ago for many of the same parties here

participating. The involvement of this Commission with autonomous vehicles relates to the carriage of public passengers. That is the foundation of the CPUC's jurisdiction here, and in that regard, we were pleased to see the statement in the notice for this conference that, quote, "AVs have maintained a good passenger safety record" and -- close quote, and also the quote, "None of the first responder incidents questioned have resulted in injuries."

So back to the issue of context, the (indecipherable) CPUC own finding that AV operators that maintain a good passenger safety record, we should be reticent to stand up another regulatory apparatus for AVs, rather questions about AV operation that do not involve passenger safety. For example, we heard today about issuing citations, removing vehicles, conducting first responder training, even vehicle cybersecurity. These should be addressed through ongoing proceedings at the DMV, which already regulates Law Enforcement Interaction Plans and in some cases to think about the federal government which has the authority to regulate the design, construction and performance of other vehicles.

Second, we need to understand the performance of AVs relative to human performance and behavior. What

we don't have in front of us, and no one can ever try to provide, is the extent to which traditional human vehicles block the road in a variety of situations, for example, when a car or truck is double-parked, which we know happens routinely every day all over city, or when a driver is not paying attention and fails to get out of the right of way for an emergency vehicle or when an accident occurs as a result of human impairment, blocks traffic or a human driver has a medical issue and is unresponsive. These situations happen on our roads all the time. So it's worth taking a step back and considering how they are resolved by the same stakeholders at the hearing here today and what the CPUC is doing to address it.

So, in that regard, speaking to the specific question at hand, to the extent that there is a nexus of passenger safety, the CPUC should be focused on comparing the performance of AVs with other data that may be collected regarding incidents involving traditional human-driven vehicles and their interactions with first responders in similar incidents. Thank you for the opportunity to provide comment today.

COMMISSIONER SHIROMA: Thank you. Our next party is Cory Hohs, CEO of HAAS Alert.

MR. HOHS: Is there -- there were slides?

COMMISSIONER SHIROMA: Okay. You have slides. There you go.

MR. HOHS: Thank you. I'll stick to two minutes and 55 seconds.

COMMISSIONER SHIROMA: Okay.

MR. HOHS: It's my pleasure to address the committee and industry colleagues here today. My name is Cory. I'm the founder and CEO of the tier one automotive safety company called HAAS Alert, and we have the privilege of working with thousands of first responder agencies on the exact issue being discussed today for first responder and passenger safety.

Next slide.

In 2015, I was nearly struck and killed by an ambulance. That experience and my discussions with first responders afterwards made me realize there was an opportunity to develop a modern evolution to traditional lights and signs. Shortly after we received funding from the Department of Homeland Security to build a national solution for first responder vehicles to communicate with motorists. Through that work, the national platform Safety Cloud was born, and that's exactly what has been available across the country for over four years.

Next slide.

Every day in every community, emergency services and roadway -- next slide -- and roadway workers are doing everything they can to get the attention of drivers, but before Safety Cloud, the only option was lights, sirens and cones. Today nearly 3,000 agencies across the country are using the solution. Large cities like New York and DC Fire and EMS, rural communities from Pennsylvania to Oklahoma, more than half the state DOTs, USDOT, AAA and more.

Cities don't even have traffic signals that are using the solution to communicate with drivers on busy highways. So much work has been done to make this solution accessible, equitable and affordable for agencies. This technology is an emergency vehicle standard, like the NFPA, included in the infrastructure law that was recently passed has dedicated funding through NHTSA, and to date, we've processed over 4 billion emergency messages to vehicles to ensure responder and driver passenger safety.

In the last three years, nearly every fire truck manufacturer has made the solution standard on new trucks. It is pre-installed and paid for at the factory so it's no cost to cities. Now the ambulance manufacturers, (indecipherable) manufactures and others are also making it standard. For existing emergency

vehicles on the road, it takes less than 30 minutes to activate, and today millions of consumer vehicles already receive these two-way alerts across the country.

I want to make clear to everyone here today, the solution to this problem is not a technology waiting to be developed. Even my rental car from the airport that's parked right outside this building already has the solution and receives emergency alerts. I invite you all to come out to experience the safety alert after our session today right on the back side of the building.

The council asked a question. How should an AV blocking an emergency vehicle be handled? Our answer is that there is already a solution available to ensure that that doesn't happen because the emergency vehicle would have already communicated to the AV 20 to 30 seconds in advance giving more than enough time to safely maneuver for passenger safety.

In conclusion, I'm not here to comment on whether or not I think AVs can safely operate on the streets of San Francisco, rather, as the agenda calls for, I'm here to share a solution. That is something -- this is something that can improve safety for first responders, drivers and everything else that shares the road. And afterwards, again, we'd love for folks to

come by and continue the conversation and see this live.

Thank you.

COMMISSIONER SHIROMA: Thank you. All right. Our final speaker for this question is Dylan Hoffman with TechNet.

MR. HOFFMAN: Thank you. Dylan Hoffman on behalf of TechNet. I'm the executive director for California and the Southwest.

TechNet is a national (indecipherable) technology company that promotes the growth of the innovation economy. We represent over a 100 members of the industry including several autonomous vehicle companies. We're proud to support Waymo and Cruise throughout this rulemaking process and really appreciate the thoughtful discussion today.

Regarding Question 1, we believe that these issues were addressed in the existing deployment decision. Cruise and Waymo have an extensive record of resolving first respondent interactions as quickly as possible and have designed and continued to modify their vehicles to avoid these situations entirely. Cruise and Waymo are proud to work hand-in-hand with law enforcement and first responders.

And considering that autonomous vehicles are still a very new technology, our member companies are

committed to collaborating with first responders to identify the best course of action and respond to changing and new circumstances and to ensure the safe operation of the vehicle.

We also believe that this may be a question that is better addressed by the DMV as it relates to general road safety. As previously mentioned, LEITs require this information to be reported already, and we believe that that process covers that. So appreciate the opportunity to speak today.

Thank you.

COMMISSIONER SHIROMA: Thank you. All right. We will go to our next set of questions, and these next two questions are directed to San Francisco and Los Angeles. So our first comments will be from San Francisco. This has to do with updating of the passenger safety plan.

MS. FRIEDLANDER: Good afternoon, Commissioner Shiroma. Julia Friedlander.

Thank you for asking about this. We really appreciate this, but what we want to communicate is that the gaps that we are concerned with are not gaps in the plans. They are the gaps between the statements of aspiration in those plans and many statements of aspiration here today and the actual performance on the

street. These are the gaps that require stronger regulation. They require data gathering. They require evaluation of performance, and they require demonstration of performance before there is a rapid and unlimited expansion.

We appreciate that California is on the frontier. We appreciate that people have been working in good faith for many years to try and anticipate the problems. Five years ago when the Law Enforcement Interaction Plans were developed and when those regulations were developed nobody had seen driverless AVs on the street. Now we have seen that. And there have been problems that have emerged that no one anticipated including the problems that we talked about today.

You've heard statements today that the Cruise and Waymo vehicles respond to human traffic control. We are sure that they do sometimes, and among the 55 examples that we have cited of interference with law enforcement operation, first responder operation, there are many, many more in the 600 complaints that the City has received that have been fact-demonstrated that the vehicles themselves are not understanding human traffic control, that the dialog between the vehicle and the remote advisors is necessary and can sometimes be quite

extended before there is a response. "As soon as possible" is not the same as "immediately." As soon as possible sometimes involves making a phone call from our first responder dispatch agency to a Cruise or a Waymo in situations where the phone call doesn't get picked up or it doesn't get picked up for several minutes. There is a big difference between "as soon as possible" and "immediately," and that is the gap that we are most concerned with.

Thank you.

COMMISSIONER SHIROMA: Thank you.

Los Angeles.

MR. MURRAY: Thank you. Again, this is Jarvis Murray with the LADOT, and we are in agreement with San Francisco. We think that these plans -- that the passenger safety plans aren't necessarily the issue, you know, the plans that address users of the vehicles and passengers, but for us it does not address the protocols for incidents that occur outside of the vehicle, such as incidents with pedestrians or collisions with other vehicles or cyclists or property damage or the vehicles disabled in a crosswalk.

The issue for us is how does the vehicle act or react or respond to issues that occur outside of the vehicle, and so, for us, that's really where the meat of

the issue is. It's really about how do those vehicles interact with the public, with the right of way and with everything involved with us.

And, again, like I mentioned before, we're going to continue to state our issue that we want near realtime two-way data communication in order to help make these things easier. And, really -- you know, the City of Los Angeles is not afraid of technology. So we don't want -- we're hoping that the companies -- that the PUC is not afraid of technology that we as a city are presenting. So that's really our thought on it. It's really not the passenger safety plan in how the vehicles react to people, to individuals, things that are unplanned.

Thank you.

COMMISSIONER SHIROMA: Thank you. And so the next question is simply for Cruise and Waymo to respond to the comments presented by San Francisco and L.A.

So we will go with Cruise first.

MS. RAMAN: Thank you. Again, Prashanthi Raman, Cruise's vice president of global government affairs.

First, we really appreciate the concerns raised here today. We take them very seriously, and identifying and improving the AV behaviors in these

narrow sets of circumstances remains critical to us.

As the DMV asserts in their letter to the CPUC last night -- last week -- excuse me -- the appropriate place to have these discussions is within the context of the Law Enforcement Interaction Plan overseen by the DMV pursuant to its jurisdiction.

As stated by SFMTA earlier, the passenger safety plans themselves should not require revision. Cruise believes that they are very robust. We have implemented the PSPs over the past year in a manner that have proven to keep passengers safe. The focus of the issues raised today is whether Cruise vehicles are causing any interference with their emergency vehicles and emergency crews. We are dedicated to resolving that issue under the guidance of the DMV. As discussed, we have resolved known issues raised and will continuously improve. In the unlikely event that a vehicle has the potential to impede emergency responders in the future, our system now grants prompt access to the vehicle so that any emergency responder can take control and move it.

Cruise provides realtime responses to comments from first responders through its Critical Response Line as detailed in our LEIS or our Law Enforcement Interaction Plan.]

Since January, Cruise has received and responded to over 240 calls from San Francisco personnel. As Cruise explained in its training that it conducted in partnership with first responders, the critical response line is a key component of facilitating communication between Cruise and first responders, and your heard from my colleague earlier that -- that our remote assistance is always available immediately.

During these calls, Cruise provides up-to-date information about the status of AVs and police response. Cruise meets with SF Fire and SF police on a regular basis to discuss operations within the city, and we have dedicated staff who are focused on engaging San Francisco officials and city employees in all departments including SF Fire and SF Police.

We've also actively modified operations and vehicle responses based on the feedback of the first responders. So, to provide some specific examples, we have increased our operational staffing for field response teams to continue to respond quickly to any on-road incidents or interactions, utilized sources like CHP, Samdesk, Citizen and Urbanite SF as well as social media platforms to identify active incidents to which law enforcement officers or fire are responding to set

avoidance areas, established a notification process to the city when certain incidents are ongoing that may impact city resource or dispatch; and improve the AV performance in detecting emergency -- active emergency vehicles and emergency scenes.

So, Cruise is dedicating to continuously improving and engaging in law enforcement and for first responders including further training that has been discussed here.

COMMISSIONER SHIROMA: Thank you.

All right. So, for the -- the remaining set of questions, and then we will be going to commissioner questions, and then public comment.

MS. DAVIDSON: Oh, I have --

COMMISSIONER SHIROMA: Oh, I'm sorry. I skipped Waymo.

MS. DAVIDSON: Thank you.

COMMISSIONER SHIROMA: Sorry.

MS. DAVIDSON: No worries.

COMMISSIONER SHIROMA: Let's hear from Waymo.

MS. DAVIDSON: Thank you. Mari Davidson.

So, I appreciate the comments from the panel. It sounds like from that discussion that there is no disagreement that there are any gaps in Waymo's passenger safety plan, but this is really important

point; and I -- I do want to reiterate it.

Waymo's passenger safety plan addresses every one of the Commission's mandatory requirements contained in the deployment decision. In addition to addressing all of the discretionary element details in CPED's topic specific items, our PSP is tailored to our available and service offerings and demonstrates that we have identified risks to passenger safety and have strategies in place to mitigate those risks. This includes a potential for unsafe circumstances from outside of the vehicle. Our passenger safety plan describes how we address these risks, and the passenger safety compliments to Waymo's DMV required LEIP.

Our passenger safety plan is complete, and we agree with CPED draft conclusion which finds the same.

Of course, if the Commission should decide to consider new requirements for future passenger safety plans, Waymo is very much eager and active to participate in those conversations. But at this time, we haven't concluded that the Commission's deployment decision has overlooked or omits any passenger safety related topics, or that the PSP is the proper place to address these broader concerns about law enforcement interaction.

I think it has been stated that the potential

proper place for that would be in the DMV LEIP.

Furthermore, we strongly disagree with the characterization that was made that the existing AV regulatory frameworks are a little more than rubber stamped. The DMV and PUC requirements to secure these operating authorities are uniquely comprehensive and stringent, and Waymo has met these requirements after having conducted years of testing, validation, planning, community engagement and by making major investments in our people, tech and operations.

We are confident that we can provide a safe and reliable passenger carrier service, while at the same time reducing the tragic human toll of traffic collisions, expanding transportation access to traditionally underserved and by advancing the CPUCs and the state and (indecipherable) legal. As those of us have noted, the Commission may be -- will be making it (indecipherable) ongoing, and we are open to additional perspective requirements to advance (indecipherable) passenger safety goals that includes potentially submitting updates for our (indecipherable), PSP in (indecipherable) future to reflect any requirements.

But to be very clear for this record, Waymo's passenger safety plan is complete and compliant with the Commission's requirements for driverless autonomous

vehicles.

Thank you.

COMMISSIONER SHIROMA: Okay. Now, thank you.

All right. We are going on to our final set of questions.

MS. FRIEDLANDER: Commissioner Shiroma, would you mind if I just clarify something?

COMMISSIONER SHIROMA: Sure. Go ahead.

MS. FRIEDLANDER: I think I have either been misquoted or I misspoke. I just to be clear that I did not say that there are no gaps in the passenger safety plan. What I was saying is that the more important concern is the gaps between the statements and the passenger service plan and reality.

Both companies have suggested that I said there are no gaps, I just want to be clear that is not what I said.

If it -- if it was that not my intent.

Thank you so much.

COMMISSIONER SHIROMA: Thank you. All right. We have two more questions for the parties. All ten parties, and we will start with Waymo.

MS. DAVIDSON: Thank you.

COMMISSIONER SHIROMA: Talk about gaps.

MS. DAVIDSON: Thank you, Commissioner and

Judge Mason.

I -- I think we did speak to this question in the prior set of questions, so I would like to focus my comments -- unless there are, of course, any -- any questions, but on the -- the question related to the MDS.

Waymo has long been actively involved in the Open Mobility Foundation, which is Uber's MDS. We are an active participant in that -- that process, we have long been -- been a longstanding member of the Open Mobility Foundation, and we are actively involved in those discussions.

So, we are very open to exploring MDS. Now, with that said, there are many outstanding questions about the design and implementation of this tool, and we are not presently convinced that it resolves particular concerns discussed today. There are also issues of data privacy that may implicate the privacy of our riders, which is something we care deeply about.

We believe this is premature to develop any requirements to use these tools absent broader (indecipherable) input and better alignment on potential utility.

Waymo intends to remain very involved in these discussions in the months and years ahead.

Thank you.

COMMISSIONER SHIROMA: Thank you. We will hear from Cruise next.

MS. RAMAN: Thank you. Prashanthi Raman for Cruise.

The issues raised today do not identify any gaps in the PSPs. The draft resolution on the Commission's 8/10 agenda states that Cruise has updated PSP meets the Commission's requirements and states that Cruise has demonstrated its commitment to passenger safety through its PSP.

To date, there have been no passenger safety issues. The focus of this rulemaking is on data reporting requirements and Cruise looks forward to continuing the discussion in this rulemaking format, which is separate from the approval of the draft resolution.

We remain deeply engaged with the DMV and with first responders to close any gaps that appear on the ground in actual engagements with first responders. Passenger safety is strongly protected by the existing PSPs, and there have been no passenger safety issues to warrant any additional changes.

Moving to the question of MDS. As we shared, Cruise's North star is safety. From our vehicle design

to how we operate on the roads to our passengers in the AVs, safety remains our number one priority.

LADOT recommends that if an AV plans to operate in a municipality that uses tools like MDS or mobility data specification, the vehicle should not -- should be integrated into those platforms. Cruise has serious concerns about the use of MDS data collection for AVs. Government closely tracking the movement of citizens is a very serious matter. MDS automatically compiles real-time data for each trip including the start and end point, start and end time, and the specific route taken. Researchers compared two anonymized data sets and were able to match more than 55 percent of individuals using just one month of collected data. Additionally, compiling real-time geolocation data -- even if not directly tied to an individual -- invades passengers' privacy and puts their safety and security at risk.

Based on this these and other privacy concerns, the Commission concluded that latitude and longitude data for TNC passenger pick ups and drop offs should be kept confidential on privacy grounds. In addition, the Commission is now reconsidering whether timestamp data for each TNC should be aggregated in TNC annual reports in order to strike the appropriate balance between providing public access and safeguarding against

potential privacy risks.

Data tracked via MDS is at least as, if not more, precise than latitude and longitude information that the Commission protects from disclosure.

The Commission should continue to be sensitive to the legitimate privacy concerns of mobility users in California.

Thank you.

COMMISSIONER SHIROMA: Thank you. Our next party is San Francisco.

MS. FRIEDLANDER: Thank you. Thank you, Commissioners. I believe that the first slide is one that addresses the MDS. If we can adjust the slide? Next slide. Super. Thank you.

I am not going to take a great deal of time with that, because I know that my colleagues from LA will do so. But I want to indicate first of all that we agree with the industry that there is great importance in protecting user privacy in using data about passenger transportation. We -- there are many other contexts in which we are discussing that, and some of the arguments have not been demonstrating real havoc to customer privacy but, fundamentally, we do believe as was mentioned here many times, that there are issues about what are the right data to collect in order to evaluate

the performance of AVs on critical indicators; and we do believe that co-creating indicators between public sector and the private sector is very important in order to facilitate the exchange of information that will be very helpful in expanding safety.

So, we do support the use of data standards, and we are grateful that Waymo has participated in the Open Mobility Foundation. We look forward to working further on refining those metrics.

So, I want to move to the next slide, please, and I want to just make clear that our large concern is that none of the incidents that our first responder agencies have been experiencing on our streets are captured in any data collection nor are they regulated. There are no standards to limit these incidents to decide what immediately means in the context of AVs, and it is essential that the Commission take action to reduce these impacts on safety and first responders.

Safety is not just the avoidance of crashes. Safety is also maintaining the many, many functions that need to be fulfilled by our streets in order to keep the people of San Francisco -- whether they be residents, workers or travelers -- safe at all times and police and fire protection are critical to that.

So, moving forward, we think that the -- we

agree that there are many, many occasions in which AVs have been able to successfully navigate around first responders. We do not doubt that, but the exceptions are the critical things that the Commission must capture and understand in order to ensure that we are not fundamentally compromising public safety in ways that nobody ever anticipated.

So, next slide, please.

Under the circumstances of what we see today on our streets, we believe that the impact of driverless operations as they have developed over the last month -- six months of 2023 in particular, when these two companies have driverless operations, the impact that we have seen on first responder operations should preclude unlimited expansion of fleet size, unlimited expansion of the hours of service into peak travel hours.

We think it is critically important for the Commission to create a level playing field on which operators can compete for to improve the impacts on the public -- the negative impacts and the unintended negative consequences that we have seen here. Not just to compete for the business of their customer, and the convenience of their users. Only the Commission can create a level playing field where the companies compete to provide the least disruption and the least unintended

negative consequences, and we welcome working with you to achieve that.

Finally, Cruise and Waymo should demonstrate, through the data that that may make available to the public, the ability to avoid or minimize interference. These -- these occurrences that we have documented are real. They have the potential to affect life and death, and there are -- we are very eager to work with the companies on the methods that they are trying to improve this performance. We are very happy to work with them to evaluate that, but there should be a week when -- if we had had this conversation last week, we would have been describing to you 50 incidents of interference, but this week, it is 55.

So, we think that the companies are ready to move forward with broad expansion when that number has gone down and does not continue to go up.

Thank you.

COMMISSIONER SHIROMA: Thank you. We will hear from Los Angeles next.

MR. MURRAY: Again, this is Jarvis Murray, and I do have slides here.

Can we actually go to the next slide while I kind of give an introduction?

So, mobility data specification or MDS is a

tool that allows cities to conduct two-way communication with transportation providers in near real time. Los Angeles being a large dynamic city with various neighborhoods and varying intensities has been preparing for this future for years. Many often think this system is about scooters, but it was always about motor vehicles, passenger service, freight and delivery. And while I recognize today it's about Cruise and Waymo, for us, it's about more than Cruise and Waymo. It's about the numerous other companies that will eventually occupy our space as well.

We've always needed this information to assist with managing curb space and creating and managing and loading delivery zones, but this tool has also allowed us fluid and dynamic management of right of way without creating static long-term infrastructure.

Again, we are trying to be technology forward in a way that allows us to be dynamic and fluid along with technology companies who often have to be dynamic and fluid in their operations. So, what we have created is a digital infrastructure that allows vehicles to talk to and get direction from the city without us having to paint curbs, create signs or build barriers. By using this tool, we have been able to create vehicle caps in oversaturated communities. We've created additional

parking for vehicles. We've created no-travel zones both long term and temporary, and if these vehicles are going to be on our right of way for profit, they should be required to share near real-time data with the cities.

So, we are not interested in collecting data on the people in the vehicles. We are interested in collecting data on where the vehicles are going.

So, in this first slide here, this is showing you our saturated community of Venice when we with had scooters initially dropped into Venice. This is an area where many -- numerous people live and that left side shows you what scooter traffic looked like in Venice. We created a policy to address congestion for the people and the residents of Venice, because what we are leaving out of these conversations is that this technology will impact the communities; and so, when communities come to us, the cities, we are the ones having to be responsible to ensure that they have a safe way to manage their neighborhoods.

So, we created a policy, pushed that policy out to the scooters, and then that allowed us to set vehicle caps and no-ride zones in certain areas to ensure that it goes from looking like this cluttered mess to a lot less. They're still able to make money. It's still a

very high traffic area, but we are trying to balance the communities' needs with the companies' needs; and as you can see with the graph below, our complaints were skyrocketing, and once we implemented the policy, the complaints from the community went down; and it goes a long way to building public trust.

Next slide, please.

So, the next slide here, also demonstrates similar issue on the Hollywood Walk of Fame. This shaded area on the Hollywood Boulevard where you can see the stars on the sidewalk. You know, the community there and the businesses there complained heavily about the traffic in the area, so what did we do? We created a no-ride zone in the area. No start, no stop in the area, and no traveling through the area. So, these are scooters ridden by third parties, so it's people who are going to just try it anyway, but it goes down to zero in that area, which means at some point they have to get off the scooter and walk it until it's outside of the zone.

With the AVs, we think it would actually be a lot easier, because there isn't a person who is going to try to test the limits of the geofence, so we do believe that this will be very helpful as we develop policies for management through our cities and, again, the top

slide is what it looked like pre-policy, post-policy is what it looked like on the bottom slide.

Next slide, please.

Back in 2019, we had a wildfire near the Getty Museum that was fastly moving downhill into a residential area; and so, because of that, the fire department reached out to our staff and asked us if we can cut -- shut down that area from additional scooter traffic, which is what we did.

Next slide, please.

And so, when we did that, we are able to draw up polygons, draw up a map, and as you can see on the left side, this is what the scooter traffic looked like, but after we drew the map and pushed out the policy, the right side is what the scooters -- or what that traffic looked like afterward.

Again, because of two-way near real-time communication, we were able to do this.

Next slide, please.

So, the lesson here is that we are able to do this with law enforcement, with our fire department. We have been able to do it for mar -- CicLAvia, (indecipherable) Americas, we were able to geofence temporarily various areas. The other thing that we planned to do when we are able to get this data is start

to develop loading zones sewn, because if we start to see that there's a heavy amount of traffic, pick up and drop offs in certain areas -- and this is what we do with taxis, and we will be doing it with our scooters -- we take a look at the traffic pattern, we take a look at the number of trips, and then we determine where should a loading zone be, so that we don't have to continuously double-park in that area.

And so, we did this -- this is our digital parking for our scooters, and this -- again, we are vetting through the community. This isn't just private industry gets to do what it wants on the right of way. This is the city coming in and saying, hey, we are going to help you gain public trust. We are going to help the community absorb we you're bringing in, because we don't want tech to just happen to our communities; and we don't think that usage of MDS is premature, because if it is premature, then the question is does that mean that AV service is premature, and that is not what we are going to say.

We do think, though, that if we have two-way communication between the parties with the data being provided, we will be able to have an ecosystem that allows us to verify and ensure safety for our community. And, again, as it relates to privacy concerns, you know,

we have had people mention that. We have been taken to court over it, and the courts have determined that there isn't a privacy concern with the type of data we are collecting to manage our right of way, and that would do have the ability and the right to collect that data to help our communities.

So, that is all that we have to say on that matter. And, again, PUC, we do believe that you should require, for cities that want to use it, this type of data and information sharing so that we, as a city, who have to take the complaints and talk to the community can help manage our right of way.

Thank you.

COMMISSIONER SHIROMA: Thank you.

Our next party is Dylan Hoffman with TechNet.

MR. HOFFMAN: Thank you. Dylan Hoffman on behalf of TechNet. We believe the existing passenger safety plan as outlined in the proposed decision is appropriately comprehensive. The PSP should reserve some flexibility for us allowing them to adjust to changing circumstances as they continue to adapt to this new information and in collaboration with first responders. We do not believe that there are gaps in the PSP.

In terms of engagement with first responders,

TechNet supports regular and coordinated meetings between first responders, current AV companies and CPUC staff. We believe that this regular and open communication will foster valuable Commission sharing, allow stakeholders to continue to improve the technology and service.

Turning now to the question about MDS, we do not think that the MDS is the appropriate solution here. We believe that there may be serious concerns about the use of MDS. TechNet has been an active stakeholder in consumer privacy spaces since before the passage of the California Consumer Privacy Act, CCPA, as well as its successor, the Consumer Privacy Rights Act, CPRA, and we believe the MDS may raise privacy concerns that are contrary to those goals (indecipherable).

Additionally, we understand that the MDS system is subject to privacy ruling communications. We think that this system raises interesting questions and potential, but suggest the Commission explore other avenues in light of these privacy concerns.

Lastly, TechNet has a national and federal view of the development of these technologies. And that with respect to autonomous vehicle technology, it appears that California is falling behind despite being the pioneer on both the technology and the regulation of

that technology.

Our member companies, Waymo and Cruise, have already commercially deployed in other states like Arizona and Texas. Delaying action further risks our State's position as a global (indecipherable) leader while allowing other jurisdictions -- jurisdictions to surpass our ability to deploy AV and make the streets safer. Waymo and Cruise already have CPUC and DNC authorization to operate autonomously and carry passengers in the city.

Our aim is to ensure that companies that submitted permit applications and run a wide (indecipherable) the proposed decision are able to move forward to expand their services to their users and in California.

Thank you.

COMMISSIONER SHIROMA: Thank you. Our next speaker -- next party is Ariel Wolf with the Autonomous Vehicle Industry Association.

MR. WOLF: Making sure I can be heard okay?

COMMISSIONER SHIROMA: Yes.

MR. WOLF: Thank you so much for the opportunity again to provide a comment.

We believe the CPUC's requirement for passenger safety plans are robust, and we commend the Commission

for developing elements to help ensure passenger safety. If these details have safety risk to passengers will be minimized, how the AV will respond to unsafe scenarios for passengers like (indecipherable) individuals, and how passengers will be educated about the technology. The plan is properly focused on passenger safety.

The questions about how first responders will be able to communicate with AVs and response times are not a topic that should be included in the PSP, especially since these exact issues are addressed in law enforcement interaction plans that all AV operators are required by regulations to submit and make publicly available.

We would therefore have strong concerns of adding LEIP-type requirements to PSP requirements.

Regarding question five, we believe that implementing tools like MDS would be premature at this point. It's not yet clear how AV companies would use this data, and how data providers of AVs would be used by municipalities. Without more specific information on the purpose of data collection uses as well as many other data collection requirements already (indecipherable) sectors, we would discourage the CPUC from imposing such requirements.

So, for my remaining time, I would like to

return to the issue of context that I raised earlier. The proceeding before us, which is focused exclusively on a small subset of incidents involving autonomous vehicles, risks unfairly distorting public perception about this live-saving technology, which is all the more training that the Commission itself agrees that the passenger safety record is good.

We don't have before us comparable data looking at how human impairment interferes with first responders every single day, nor do we have data that looks at the instances where AV may have actually helped in the -- in a first responder situations. For example, by avoiding these areas and safely navigating around them, especially where human driven vehicles would have failed. Instead, we have a narrow focus on alleged AV incidents and (indecipherable) stakeholders to slow down the deployment of this life-saving technology.

I saw with my own eyes a few months ago, the very issue that I am talking about here when I was traveling in an autonomous vehicle on the San Francisco streets. The AV was traveling along, but then slowed down at a green light when the path was clear. I was concerned at first, why was the vehicle stopping at a green light until I saw an emergency vehicle coming down a cross street at a high speed with lights on, but not

its sirens. I did not see it myself until it was already through the intersection, but I immediately understood that had I been driving, there may have been a close call or God forbid, a collision.

This technology is helping, and we need to ensure that regulatory proceedings do not unintentionally prevent these benefits from being brought forward to the public.

Thank you very much.

COMMISSIONER SHIROMA: Thank you. We will hear from Mark Gruberg with the San Francisco Taxi Workers Alliance then Peter Leroe-Muñoz with the Silicon Valley Leadership Group.

MR. GRUBERG: Thank you, again. Mark Gruberg.

On the question of the passenger safety plans and first responders, the -- to respond as quickly as possible that -- that's an absolute but, again, I would like to emphasize the fact that what this -- what this requires is prevention and not -- on a piecemeal, case-by-case cure where each incident has to go through a protocol or a procedure. They have to be sufficient -- sufficient technology -- sufficient procedures so that these vehicles don't get into these kinds of problems or at least do so, you know, extremely rarely instead of the multiple incidents that we have

already learned about in a situation where they're operating under very limited circumstances.

This -- if you approve them on Thursday, this is going to open up. I noticed that both Waymo and Cruise were very vague about their future plans. There may be 200 or 300 vehicles now, but they're not saying whether that could be 500 or 600 or 1,000 or 2,000 or how many; and with the number of problems that we've had so far, you know, you're just going to multiply them unless things vastly improve.

As far as what Los Angeles is suggesting or proposing, I think it sounds promising. I would like to know more about the specific applications of this technology and how, you know, it would -- they plan to use it, and how it would be used. It seems to me that there would be some tremendous advantages to be able to communicate directly both ways with the AVs in -- in terms of alerting them when problems are going to arise and also alerting the city when they are the cause of the problems, but I -- I would like to learn more about this.

So, I will leave it at that, but I would -- I would, again, urge the Commission to -- to slow this process down to allow time for robust data to be collected and analyzed and -- and to see really the

depth of the problem that we're facing. We hear from the AVs and their -- and their supporters that it's really not much of a problem. We hear from the city that it's an enormous problem and, frankly, without the data, you don't know, so why would you go ahead and approve these vehicles, you know, with those kind of blinkers on -- with those kind of blinders on, basically in the dark.

You need more data. You need more analysis. You need more time to figure this out.

Thank you.]

COMMISSIONER SHIROMA: Thank you.

Our next speaker is Peter Leroe-Muñoz with Silicon Valley Leadership Group, then Sharon Giovinazzo with Lighthouse for the Blind and Visually Impaired, and then wrapping up, Jeremy Agulnek with HAAS.

MR. LEROE-MUÑOZ: Commissioners, thank you.

We believe that the existing Passenger Safety Plan, as outlined in the proposed decision, is sufficiently robust. PSP already requires AV companies to provide plans, policies, and procedures to protect the personal safety of passengers and detail, and also allows for flexibility for companies to integrate as they continue to be responsive. Further, the PSP is thoroughly reviewed by the CPUC and published on the

Commission website. We also encourage quarterly (indecipherable) for first responders and CPUC permitted companies.

Regarding Los Angeles Department of Transportation's proposal that AV companies should adopt the MDS system is a proposal that might not be the right solution for the concern being expressed by that organization. Our understanding, is that the MDS system is not without controversy, and there are concerns about user data and wide-scale data collection that may implicate the California Consumer Protection Act, as well as intended regulations. We support a more flexible approach to harnessing new transportation technologies and exploring a variety of options to bring greater safety and mobility to Californians.

Finally, California continues to fall behind in deploying AVs to the public on a larger scale and in offering commercial service. Both Waymo and Cruise already have CPUC and DMV authorities to operate autonomously throughout the city of San Francisco, which includes carrying external passengers.

We want to ensure that the companies who submitted for permits and reliance on the existing programs and the existing deployment decision are able to proceed in commercializing their service and

benefiting more Californians. Thank you.

COMMISSIONER SHIROMA: Thank you.

All right, we'll hear from Sharon Giov -- sorry, Giovinazzo.

MS. GIOVINAZZO: It's hard. It doesn't just roll off the tongue, Commissioner.

COMMISSIONER SHIROMA: Thank you.

MS. GIOVINAZZO: So again, I'm Sharon Giovinazzo with Lighthouse for the Blind.

I believe that the current plan ensuring passenger safety is strong enough and reliable. However, I think that the plan should allow companies to make changes and improvements, as needed, to address any issues that may arise. I would suggest that the first responders and companies authorized by the CPUC meet quarterly to discuss and coordinate their efforts.

It's important to note that California is lagging behind in autonomous vehicles for public use at a larger scale. Companies like Waymo and Cruise have already obtained their necessary permits from the CPUC and the Department of Motor Vehicles to operate autonomously and carry passengers throughout the city. I would hope that companies that apply for permits, based on the existing decision, can continue their operations and bring benefits to us Californians.

I've experienced every problem with transportation systems in the past 23 years, but I always have to rely on someone or something to get me to where I need to go, and I always hope for safety. But I can say that as a person who is blind, who relies on a guide dog to navigate my world, I've experienced firsthand discrimination, being thrown to the side. Challenges faced by riders who are blind. Imagine a world where a blind individual can travel freely, independent, and without fear of discrimination. Autonomous vehicles offer that solution that transcends the barriers and biases that I and others like me, and those that the Lighthouse serve, encounter every day. These vehicles are not only capable of transforming transportation, but they hold the power to transform lives, and I know they have in mind the end user.

This city has always been on the forefront of invasion and progressive thinking. You've embraced groundbreaking technologies, championed environmental sustainability, and prioritize social justice, and this is what these companies do.

Moving forward, the decision to license autonomous vehicles in San Francisco just seems like the next logical step in our journey. Allowing this would allow people like me to enjoy the freedom of going where

I need to go when I need to go and when I want to go. It also would mark a historic milestone in the pursuit of accessibility, empowering people like me to participate more fully in our vibrant community.

Let us not choke this on red tape and unnecessary regulations just for the sake of doing it. Instead, let us all in this room, and the organizations that we represent, champion the licensing of autonomous vehicles in San Francisco, and together let us create a future with no boundaries. Thank you.

COMMISSIONER SHIROMA: Thank you, Ms. Giovinazzo. I think I got it that time.

All right, we'll hear from Jeremy Agulnek with Haas.

MR. AGULNEK: I think my name's just as difficult.

Good afternoon. My name is Jeremy Agulnek. I am the senior vice president of Connected Vehicle and Haas Alert. I will address Question 4 about solutions that can be implemented.

You heard earlier from my colleague, Cory Hohs, who introduced you to a commercially available solution, Safety Cloud, that can create a more connected, safer and smarter transportation network in the city of San Francisco.

In my role at the company, I have the opportunity to work with car manufacturers and their suppliers who are all developing passenger safety solutions to ensure their customers can get home every day. The AV companies are no different. They are building self-driving vehicles with passenger safety top of mind. When we share how Safety Cloud can help all of these automotive companies further their commitment to passenger safety through a common realtime vehicle communication platform, every single one of them immediately understands the benefit that we can bring to their drivers and passengers.

In 2017, Haas Alert teamed up with Waze, that you see here, to start sending alerts to the tens of millions of drivers using their mobile navigation app. While we started calling on public safety agencies from coast to coast, we also entered into agreement with fire truck manufacturers and ambulance builders to connect their new emergency vehicles to Safety Cloud at the factory, making Safety Cloud a standard safety feature of their vehicles, just like seatbelts and airbags. This top-down approach has enabled agencies big and small, taking delivery of new emergency vehicles, to connect to the expanding Safety Cloud network. Next slide.

Last year -- nope, go back. Last year, the first car brands, Jeep, Dodge, Chrysler, and Ram, connected their vehicles as far back as 2018 to Safety Cloud. Today, these vehicles in North America are able to receive realtime passenger safety alerts directly in their info (indecipherable) screens. These messages are wirelessly transmitted over the same cellular networks that you and I use in our mobile phones. Other car companies are now working with us to implement similar passenger safety solutions for their customers.

When it comes to Safety Cloud adoption by AV companies, while I cannot share specific details, I can share that they all support what Haas has developed, but they are disappointed to learn that the municipal agencies in San Francisco are not currently connected to Safety Cloud.

I hope today's discussion will lead to action so that we can help a city achieve it's roadway and passenger safety goals.

Final slide. Just as a reminder, we have a rental car parked outside this building that can receive Safety Cloud's alerts, so I encourage you to see it, and then we also want to continue the dialogue across the street after today's session. Thank you.

COMMISSIONER SHIROMA: Thank you. Thank you,

Mr. Agulnek.

All right, that concludes the party comments and answers to questions. We'll go to Commissioner and ALJ questions.

ALJ MASON: I just have two quick questions. Thank you, Commissioner.

The first question is for Julia Friedlander. You had mentioned 50 to 55 incidents of autonomous vehicle interference. How many of those incidents have been communicated to Cruise and Waymo?

MS. FRIEDLANDER: Roughly 45. They come in very frequently, so -- and I think that it would be important to know that when we've met with Cruise and Waymo, both companies assured us that they had identified all of these incidents that have taken place over the last six months, but did not raise them to our attention. So we have only, with the advent of these proceedings recently, had the motivation to sit down with us and go over those closely. And we are grateful that we have done that.

But, again, the solutions that we understand the companies are working on, we're very pleased about. We hope they will be successful. We do think that the input from our first responders, and not just our first responders, but also our construction workers in the

street, our transit operators in the street, there are a lot of people in the street who are having trouble interacting with AVs. So we have been -- we're eager to continue that conversation, and we would like to see the results of those efforts to improve, not just the good creativity that we are seeing from our industry colleagues.

ALJ MASON: Thank you.

The last question for Cruise and Waymo: Do your companies have something like a Haas Alert or -- in your responses were you indicating that you're looking to have some kind of an emergency alert system so that the driver of an autonomous vehicle is put on notice that an emergency vehicle may be approaching?

MS. RAMAN: Thank you for your question, Judge Mason.

We, at Cruise, have utilized sources, as we stated, like CHP, and Samdesk, and Citizen, and some of the social media platforms, as well, to identify areas where we need to set up avoidance areas. We are also exploring options with vendors like Haas with the help of the fire department and a couple of vendors that may be appropriate for us to do a realtime -- you know, realtime capabilities and setting avoidance areas moving forward.

MS. CAVALCANTE: This is Lety Cavalcante with Waymo.

We also are exploring in the -- piloting one of those networks that my colleague mentioned to make sure that we are tracking anything that could be, not just an emergency, but even other conditions, for example, and anything that can disrupt the community so we can proactively create geofences and avoid the area in general. So not just emergencies, but anything -- taking the risk off the safety of the passenger, so we can block these areas. So we are currently doing a pilot on that.

ALJ MASON: Thank you.

COMMISSIONER SHIROMA: Yes.

Commissioner Houck.

COMMISSIONER HOUCK: Thank you, Commissioner Shiroma.

I want to thank all of the parties, and particularly the industry and emergency responders for coming to talk with us today.

I do understand the value and importance that autonomous vehicles can provide, and that we do need to address and move forward with looking at how technology can assist people, but I also understand the need to do that to deploy safety.

I know we talked about a number of -- and I also want to commend you both, I think both the industry and the emergency responders recognize that over the last few weeks the communication and coordination has improved, and I encourage you to continue that.

We did identify several gaps today, such as looking at how those may be regulatory, statutory, or just technological in regards to things like how to address moving violations, the standardization of how do emergency responders address vehicles across the different companies, response to human traffic controls, and then we talked about data collection. And although I understand that many of the gaps we talked about directly address the Law Enforcement Implementation Plan under the DMV's authority, to the extent that these issues create problems for emergency responders and passengers that are in these vehicles that can result in safety -- passenger safety issues.

So I'm grappling with how do we address that, and where the outline is between the DMV's authority and our authority. And to the extent you can talk a little bit about your perspective on that, as well as how you intend to continue to coordinate and improve communication to address filling these gaps both between the industry and emergency responders, as well as the

DMV and the Public Utilities Commission, so that I have a better understanding of how you perceive moving forward with addressing the need to fill these gaps, I think that would be really helpful from my perspective.

COMMISSIONER SHIROMA: Who would like to go first and respond to Commissioner Houck?

MS. DAVIDSON: Mari Davidson from Waymo.

Thank you so much for the question, Commissioner.

There's a lot of narrative. We have a brief amount of time, but with respect to the assertion that there are, kind of, regulatory gaps specifically, there was an assertion that interactions between AVs and first responders are not regulated, and I would disagree with that characterization. I think vehicle capabilities and vehicle safety are squarely within the jurisdiction of the DMV, and also NHTSA. And so to the extent that there was an assertion made that, you know, behaviors or actions taken in the field are not without remedy, I would disagree with that characterization.

Further, to the point of citation authority held by local government, I would also defer on that question to a response from Prashanthi regarding our willingness to work that through the legislative process to the extent that there is ambiguity about how moving

violations or certain classifications of citations would be assessed against an AV company.

I guess with respect to engagement, in a broader sense, we are very happy to hear that -- from SFMTA that they are eager to work with us. And not just SFMTA, but from the other parties here, as well. We absolutely feel the same.

We understand that the Commission is interested in having more visibility into that engagement, and we are very interested in exploring possible solutions for that. To the extent that we -- you know, that our communications with the Consumer Protection and Enforcement Division about these engagements, about these events is insufficient, then we are open to collaborating on additional ways that we can surface that information and engagement with you directing.

MS. RAMAN: Prashanthi Raman with Cruise. Thank you for the question, Commissioner.

So in agreement with my colleague, Mari, at Waymo. I think there are -- there's been very sufficient work on the regulatory front. California's unique in that it has a dual regulatory structure to begin with. And with regard to autonomous vehicles, it has several permits and sequences to be able to, you know, really kind of trace and permit various stages of

operations along the way.

I think, as I shared earlier, we're committed to solving solutions that we can with the legislature with regard to moving violations, but the PSP has stood, and how we describe it along with the draft resolution, has really been robust and comprehensive, and what we've noted is we met our burden.

I think in addition to that, that doesn't take away from our continued work to collaborate with these stakeholders. They are important. We want to launch with communities and not at them, and that includes the people next to me and alongside -- along the way here.

So we are continuing to work hard. We talked a lot about the trainings that are forthcoming with both fire and police. We also have a consistently, hopefully more regular cadence with the other city agencies, as well. And then we also discussed the weekly meetings that we have with the DMV, the monthly meetings we have with CPED, and we can ensure that we, you know, increase those if those are necessary or find a different venue to really help cultivate this discussion. So I think that is -- hopefully I answered all of your questions.

COMMISSIONER SHIROMA: Thank you.

San Francisco.

MS. FRIEDLANDER: Commissioner, there were

quite a few questions, so I'll try to capture a few.

First of all, we think the answer is yes and yes, DMV has jurisdiction to address these concerns, but we believe the Commission does also, partly because in many of the instances that have affected fire response have been with vehicles that have no passengers. Had they had passengers, the situation would become more complex.

The communication. One of the companies has indicated that they're trying to separate the communication that they are having with their passenger from their communication between the remote advisor and the vehicle. The presence of the passenger and their wishes may make the response to the requests of law enforcement or fire department slower, not faster.

So we do believe these issues are both under the jurisdiction of the DMV and under the jurisdiction of the CPUC, and I think that Deputy Chief Luttropp would like to also address this.

MR. LUTTROPP: Yeah, to that point, so we had an incident this weekend. I'm Deputy Chief Darius Luttropp. I won't say which provider it was. I don't think it's germane. A simple, simple incident, a car fire in the Richmond District of San Francisco with firefighters actively fighting that fire, and at which

point one of their vehicles entered the scene, stopped, and parked between the fire engine and the vehicle that was on fire. I wouldn't want to be a passenger in that car. That seems like an event that should raise a bunch of red flags for operations.

Now, to their point, and in support of the things they have said today, our firefighters were able to take that vehicle over and move it out of the way. But as far as addressing the Passenger Safety Plan and the impact on the community from that side, I think there's still questions. Thank you for your time.

COMMISSIONER SHIROMA: Los Angeles, any response? Only if you want to, Mr. Murray.

MR. MURRAY: We don't have any additional response to that. We do agree that that fits squarely within the CPUC.

COMMISSIONER SHIROMA: Thank you.

Other questions from commissioners at this time? Okay.

I have a question in regard to the viewpoint expressed between CPUC jurisdiction versus DMV jurisdiction, our Passenger Safety Plan requirements, the Law Enforcement Interaction Plan requirements. The DMV oversees it, and that plan includes fire and medical, as well.

First of all, I appreciate that I've had an opportunity to ride in the autonomous vehicles, in those cases with a technician, but truly operating autonomously. And it was a pretty insightful experience in so far as the technology that's involved with the LiDAR, the radar, the cameras, the operators back at the headquarters interfacing with the vehicles. It was very insightful. I do look forward to an opportunity to experience that with completely driverless, and I know that the companies have offered, and I will be availing of that.

Now, in the meantime, I have experienced a house fire where thankfully Michael and I were watching TV, dozing off in front of the TV as we were upstairs in the bedroom and started to smell something funny. Ran downstairs and saw that in our over a hundred year old house the electrical lighting unit was on fire. We tried with fire extinguishers, called 911, which said "Get out of the house now." On the sidewalk 1:00 o'clock in the morning, fire trucks rolled up. We said "It's in the kitchen." The crew went in, put out the fire. Our house did not burn down.

Afterwards, the captain I think that said to us that it's very unusual to find -- in that kind of a fire to find the owners outside on the sidewalk and the house

in flames. And the mere fact we had called when we did, and that they were to arrive when they did, saved our house.

I also was in the vicinity of the Angora Fire when Cal Fire and others saved South Lake Tahoe. So I appreciate what the first responders are doing and how time is of the essence. I also appreciate the technology and advances therein. I also happen to firmly believe -- in my engineering troop I took a (indecipherable) class, that tells you how old I am, and I worked with soccer programmers to put together data sets to achieve things that the nontechnical people need to have achieved. So I know that when we have that dialogue between the companies, and the programmers, and the engineers with the people who need something done, it can be done.

So my question is this: You had started a dialogue. It sounds like it's going along very productively. And meanwhile, you have the opportunity to -- the opportunity to update the living document, the DMV Enforcement and Interaction Plan. We're talking about do we need to update the public safety -- Passenger Safety Plan at CPUC. But in these efforts that you're doing right now, are you close? Are you close to hearing their concerns and making adjustments

to your platform? Any insights for that would be very helpful. And it's to both to the first responders, to the cities, and to the companies. What else needs to occur for that to occur?

MS. RAMAN: Thank you for the question.

We have, you know, showcased a lot of opportunity, and alternatives, and options that we have discussed here today. They are not completely comprehensive of all the discussions that we've had. We have started to go through data points that the fire department has sent us in order to achieve an understanding of the behaviors of the AV in order to augment our understanding and to tweak the behaviors, if necessary. That is a work in progress. The exploration of the vendors are a work in progress. We are continuing to have conversations. We are working with fire to help -- the fire department to help get approval of some of those vendor applications towards us. We are also, you know, thinking about how to address the various concerns moving forward on an incident basis, as well, talking about what that looks like from a discussion standpoint and education standpoint. I also want to contextualize the conversations and, sort of, the larger grand scheme of the miles we've driven. Over 98 to 99 percent of the VRE interactions have gone --

you know, have gone as planned and as designed.

So we are works in progress, but we also continuously improve, but we have actually implemented things that have been discussed over the past couple years and implemented that into our Law Enforcement Interaction Plan, having improved our Passenger Safety Plan for the last time we were in front of the Commission to now. So we will continuously do that as we see appropriate.

MR. PATRICK: Rob Patrick from Waymo again. Thank you for the question, Commissioner.

I think first and foremost it comes down to dialogue. It comes down to having these conversations.

I would just like to correct, if I may, an inference that I heard earlier, and that is that we produced a video because this process was taking place. We produced that video in 2022. That we reached out to have a meeting because this process is taking place. I've been requesting meetings on a regular basis with the first responders here in our community in San Francisco since 2021. It was difficult to get those meetings to happen. So I'm absolutely excited that our first responders that are here, the leadership here at the table today, is interested in having these meetings and having these conversations. That dialogue will lead

to exactly what you're looking for. We need their input, and we value their input, but we need dialogue on a regular basis.

MR. MARGINES: And if I could just add -- David Margines at Waymo.

I completely agree with my colleague, Rob, here that dialogue is absolutely important. We were grateful to have the opportunity to sit down with Deputy Chief Luttropp and Julia Friedlander from SFMTA a few weeks ago and discuss some of their concerns.

I think the point that I'd like to make is that there were some great insights that -- that the two of them both offered from that meeting and that we started to take into account, and some feedback in terms of how we can improve. But at the same time, I think one of the things we highlighted in that meeting was that significant improvement had already taken place in the events that were highlighted, and in many of the cases those events wouldn't have happened in the first place if re-simulated on the software that we have today. And so I think that we have demonstrated a commitment to continuously improve. We cited a number of an 80 percent reduction in the events on a per-mile basis that we saw during the time period that we offered. And so independent of that dialogue, which we welcome, Waymo is

also taking the responsibility to improve on our performance across all aspects of our system.

MR. LUTTROPP: All right, thank you for that.

So the concern for us is, despite technology changes and the fact that simulation shows it won't happen, five in a weekend is 10 percent of total over our reporting period. They revealed to me that they got 240 calls from my membership, and I have 55 UOs written, which means I'm seeing the tip of the iceberg.

So our meetings have been highly productive, especially since they've been at the level of technology. So when we can sit in a room and we can understand that it's not necessarily the machine that isn't working, it's the information that's going into the machine, and they don't understand what we're looking for in operations from the machine, things are left fairly shaken. I'm not going to reveal necessarily what they were, but I think they -- they're making an earnest effort, but don't really understand necessarily the things that go into having -- like the story I told a minute ago, having a vehicle pull up and stop between a fire engine and a burning car and necessitating us moving our hose and other equipment, and then commandeering their vehicle to rectify the situation.]

It -- with all the technology and the LiDAR and

the fact that they can see us from a mile away, I need to understand why the vehicle still chooses to drive onto the scene and why the remote operator is merely making a suggestion to the vehicle, not telling the vehicle what to do. But these are bigger question. So I do thank you for your time and -- yeah.

COMMISSIONER SHIROMA: Thank you. Should I go to the comments? We have 18 signed up, and we're applying for one minute each. Thank you to all of the auditorium and my colleagues for staying beyond 5:00.

Okay. So our first three speakers are Lana Nieves, Marcelo Fonseca, Cyrus Hall. And thank you for taking the time to be with us today. Lana Nieves.

STATEMENT OF SPEAKER NIEVES

Yes.

COMMISSIONER SHIROMA: Marcelo Fonseca, Cyrus Hall and then Brett Bertocci.

SPEAKER NIEVES: Hi. I'll make this brief. My name is Lana Nieves. I'm the executive -- besides being just a private citizen and a person with a disability, I'm the executive director of the Independent Living Resource Center of San Francisco.

Our mission revolves around people with disabilities striving for independence, striving to live as independently as possible. And one of the ways --

or, actually, the chief way that this is achieved today in the 21st Century is through technology and technological advances. So when we heard about AVs, that was, of course, really exciting. As a person with a disability myself, I find it to be really compelling -- compelling technology. I'm a fan. So I'll be frank. I'm a fan of it. I want to see this progress.

And this is not going to slow down. You know, I know there are certain people in certain industries who would love to see it slow down, but the fact of the matter is the squeaky wheel gets the grease. And, yeah, I think it's really unfortunate. You know, every incident that has been pointed out is really unfortunate, but I've seen -- you know, I've been in a car where my cabdriver was like maybe a little tipsy. I've also been in a car where -- you know, I've been on the street where people were parked at a hydrant. All really unfortunate incidences. But I have to say, along with my colleague from the Lighthouse, that these are things that happened that are really unfortunate, and I don't think if we're -- are we going to hold this industry to a standard that we don't hold private driver's, like actual human drivers to? Is it a good reason to hold up this technology? I don't think so.

But by the same point, I think what's come out during this hearing, which has been really interesting, is that it worries me that there's not universal glossary of terms even. You know, we've talked about standardization, but it seems like if we can't even agree on what an un -- what was the phrase that was used? That was like an unanticipated stop.

COMMISSIONER SHIROMA: Unexpected.

SPEAKER NIEVES: If we can't agree on what that means, if we can't sit at a table and agree as to what that means, I don't know that any of the numbers actually mean anything. And I think that's where we have to hold back, not in terms of taking the cars off of the road or slowing down how this technology is developed but sitting down and like before standardizing anything or buying anybody software, decide what you're talking about, agree on a glossary of terms. Start there. That just seems the starting pointing for me.

COMMISSIONER SHIROMA: Thank you.

SPEAKER NIEVES: Thank you.

COMMISSIONER SHIROMA: All right. Mr. Fonseca, and then Cyrus Hall then Brett Bertocci and then Lauren Renaud.

STATEMENT OF SPEAKER FONSECA

My name is Marcelo Fonseca. I am a career

cabdriver, and I am very proud to say -- the police officer just left, but I'm very proud to say that I drove full-time for 31 years, and I never drove one single shift tipsy. But anyway.

Although Waymo and Cruise technology is not quite ready for prime time, I'm not here to oppose technology. I'm here to oppose Waymo and Cruise and Uber and Lyft providing taxi services in the City of San Francisco without paying into the medallion system cabdrivers have to. As mayor, in 2010, the governor, who now appoints commissioners to this bench, charged cabdrivers a quarter of a million dollars to operate on our streets. Why must only the downtrodden cabdrivers pay? Why can't the California legislature have these multibillion dollar companies pay? That would be the most equitable and moral solution for all parties involved.

Thank you.

COMMISSIONER SHIROMA: Thank you.

Cyrus Hall.

STATEMENT OF SPEAKER HALL

Good afternoon, Commissioners. My name is Cyrus Hall. I have a Ph.D. in computer science. I have been a practicing computer scientist for 20 years, both in academia and in industry, most recently at Amazon web

services where I left as a principal engineer.

I want to talk to you about training of software and AI that both Waymo and Cruise have put forward in this process as software performance only gets better. This is not a realistic training of how software or AI models work. Software can regress. AI can regress.

Waymo and Cruise have developed tools to try to detect, of course, but it is a matter of when, not if a serious life-threatening bug gets into production in cars that are on the road. CPUC and CA DMV must work with independent software engineers to develop clear guidelines around when -- I'm sorry -- around and the monitoring of the software lifecycle of AVs including clarity on bugs, their severity and operational events.

As Uber's AV software program demonstrated, when it killed a woman in Arizona, you cannot trust companies to do the right thing when their software is not ready and there are bugs in production. I trust the AV engineers to do the best that they can under the human conditions under which they work. But those human conditions are flawed.

Second, the CPUC must recognize the unique and concerning intrusion of cameras, LiDAR and audio recording that AVs represent on our streets.

COMMISSIONER SHIROMA: Sorry. Mr. Hall, could you wrap up your comments.

SPEAKER HALL: Absolutely. I ask you to look at AB 645 by Laura Friedman and the privacy considerations that it puts on recorded data and apply them to your AVs.

Thank you very much.

COMMISSIONER SHIROMA: Thank you. All right. Brett Bertocci and then Lauren Renaud and then Matthew Sutter.

STATEMENT OF SPEAKER BERTOCCI

All right. I'm Brett Bertocci. We need transit that works for everyone, not just those who are deemed easiest to serve. AV companies have made it clear that they aren't even attempting to try the universally accessible service. Their cars are not wheelchair accessible. They frequently double-park in the middle of the street instead of pulling to the curb. Sometimes they even park in locations like in the middle of an intersection or in the middle of a turn. Meanwhile all of these illegal stops are obstructing muni busses that are actually meant as a universally accessible service.

We need to choose people over profits. We need to choose transit for everybody. These are just a few

of the many safety issues with AVs. It would be negligent to expand service while we know that there are this many outstanding problems. If we expand service, service will only get worse. It is harder to run more cars on the road. I urge the Commission to reject expanded service.

COMMISSIONER SHIROMA: Thank you.

Lauren Renaud.

STATEMENT OF SPEAKER RENAUD

My name is Lauren Renaud. I'm a former transportation fellow at Carnegie Mellon's Traffic21 Institute, though these comments are my own.

While the SFMTA and SFCTA have noted that street safety should include all road users, AV service providers and this Commission claim that other agencies already address safety issues.

The DMV and NHTSA are about individual vehicle safety not about regulating AVs as a utility. I read a regulatory test, and I don't see much actual regulation. If the idea is to give companies time to ensure before creating standards, which I do not agree with because I did not consent to be a media tester for immature technology, then the time is now to create some standards rather than allow expansion. Just like the TNCs before, how many times are we going to let these

companies operate before regulations are in place and then write their own rules after the fact.

The question is not are AVs today or in the future safer than human drivers? The question is will this regulatory body enact regulations to ensure the safety of everyone on and around our public roads? Regulation does not mean technology cannot progress. Please create actual safety standards with consequences including, as Cyrus pointed out, that includes how coaching just might happen, not just reporting rules. And please do not grant any further authorization.

COMMISSIONER SHIROMA: Thank you.

Matthew Sutter, Hector Topete.

STATEMENT OF SPEAKER SUTTER

Good afternoon. My name is Matthew Sutter. Born and raised in San Francisco.

I purchased one of those $250,000 medallions, and, yes, you should pay us our medallions (indecipherable). Why is it about the money? Why do we have to hurry? Can you not hear them telling you about public safety? They talk about responding. Are they going to respond to their families when we lose a citizen or one of our first responders? Are you just going to push this through in a big hurry for money and technology? What about us? What about the safety?

What about my job? You guys don't care about anybody but yourselves. It's disgraceful. And I wish that no one gets hurt. And I see these driverless cars. They are driving on the wrong side of the road. One cut me off the other day. They are turning the wrong way. They are aggressive. And you guys do not have the technology.

And as far as the handicap person -- the elderly and the handicap is what makes my job really feel good. How is she going to get that wheelchair into the car? Have you guys thought about that? Why is it that you're not listening to, you know, the fire department, police department? Why is it just about money?

COMMISSIONER SHIROMA: Thank you. Thank you.

Hector Topete.

SPEAKER TOPETE: Topete.

COMMISSIONER SHIROMA: Then Susan Vaughan, then Adam Wood.

STATEMENT OF SPEAKER TOPETE

Ah, yes. Hello. My name is Hector Topete. Thank you for listening. And I've been a San Francisco cabdriver for 16 years. And I have to say I have seen it all. Perhaps I may have seen too much. I can't imagine if there's no driver in the car what the inside

of the cars will look like.

And as the previous speaker mentioned, that we definitely need drivers. We need drivers to like help up grandma with the walker, you know, also just for the cleanness of the cab as well. I keep my cab very, very clean. The reason why it's clean is because of me. We act as -- as well as the peace officers as well just to keep the peace in the -- the cab. So, yes, please reconsider. And, yeah, thank you for listening.

COMMISSIONER SHIROMA: Thank you. Susan Vaughan, then Adam Wood, then Brian Donahoe.

STATEMENT OF SPEAKER VAUGHAN

Good afternoon, Commissioners. My name is Sue Vaughan.

And Cruise and Waymo is seen as luring passengers from transit and locally regulated cabs. Disabled people will be stranded. These vehicles would eliminate human jobs that are crucial to the safety of people with disabilities. I speak from experience. Five-and-a-half years ago I suffered major injuries. I initially depended on wheelchair-accessible cabs driven by a human being who navigated my wheelchair over a ditch and into the cab and then up the ramp to my medical appointment. When I was ambulatory but using crutches, I depended on the cabdriver to open the doors

and hold my crutches when I got in and out.

Mr. Murray of the Los Angeles Department of Transportation also brought up an issue in his protest that I would like you to ask about. He said these vehicles cannot pull up to the curb. That is against the law and incredibly dangerous. When I was recovering, there was no way I could have safely walked into oncoming traffic in order to get into the cab. I'm also questioning why you are not demanding an EIR. We are in a climate of emergency. We need to have the environmental impact of these vehicles assessed.

Additionally, Commissioner John Reynolds, I note that you were once a lawyer for Cruise. I'm wondering if this is a conflict of interest and if you should be excusing yourself from these proceedings.

COMMISSIONER SHIROMA: Sorry, Ms. Vaughan. Can you wrap up.

SPEAKER VAUGHAN: Yes. Please do not approve this authorization. Thank you.

COMMISSIONER SHIROMA: Thank you. Adam Wood, Brian Donahoe, Brent Ritz, Barry Taranto.

STATEMENT OF SPEAKER WOOD

Good afternoon, Commissioners. My name is Adam Wood. I'm the secretary of the Firefighters Union here in San Francisco.

And Chief Luttropp and the other City representatives have done an excellent job describing the type of issues our members have had with the autonomous vehicles since they arrived on our streets. I appreciate the statements from the companies here today willing to work with the departments to resolve some of these issues in the future. But, to date, what our members are experiencing are continued problematic behavior by autonomous vehicles both at fire scenes and at emergency medical incidents where I personally had witnessed ambulances with patients in the back blocked by late-arriving autonomous vehicles in them that freeze and are unable to be moved where we've had to reroute the ambulance to get someone to the hospital.

Given that, if you approve to remove their restrictions on the number of vehicles and hours of operation, what's that's going to mean, at least in the immediate term, is that these incidents will continue and increase in frequency, and that vote would have to accept that continued experience of those incidents.

So I ask you take the foot off the gas. This may be able to work, but we're not there yet and we certainly won't be there by Thursday.

COMMISSIONER SHIROMA: Thank you.

Brian Donahoe, Brent Ritz, Barry Taranto,

Georgio Klironomos.

STATEMENT OF SPEAKER DONAHOE

Hello, Commissioners. My name is Brian Donahoe, civil engineer.

I oppose the expansion of the AV service in San Francisco. Just this morning I watched an empty Cruise ignore roadwork construction detour signs blocking access onto McAllister Street. It crossed the double yellow and swerved into oncoming traffic to go around creating a dangerous environment --

(Reporter clarification.)

SPEAKER DONAHOE: -- both for bystanders and construction workers.

COMMISSIONER SHIROMA: For the court reporter, slow down.

SPEAKER DONAHOE: Did Cruise report this to the CPUC? I highly doubt it. Any one of these actions would be grounds for an immediate failure when testing to get a California driver's license. So why would we grant increased freedom to a technology that fails to achieve the minimum required competency for someone to have a license to drive? If this resolution passes, the CPUC is telling the autonomous vehicle companies that they would be held to a lower standard than the average Californian and that these corporations will have no

incentive to ever improve.

There are over 90 pages of online public comment with near unanimous opposition to the expansion of AVs in SF. Scores of people have submitted a comment just this morning denouncing the presence of bugged and glitchy cars on SF streets. I urge you to read every single page.

In this meeting, the MTA stated all you need to hear. There is a regulatory gap and a debate. Your job is to protect San Franciscans and regulate, not to let billion dollar companies write their own rules.

Thank you.

COMMISSIONER SHIROMA: Thank you. Our next speaker.

STATEMENT OF SPEAKER RITZ

Good afternoon, Brent Ritz. I'm actually the Uber seller of travel. So I control everything about land transportation for vehicles. You can look me up on the USDOJ website. I held (indecipherable) technologies as the driver. I was their only 5.0 black (inaudible) holder. I also comanaged the world's largest private army, the most successful intelligence agency oversees. We had 84 autonomous AVs in Africa.

As to (indecipherable) question, as far as whether these vehicles can be taken over, absolutely. I

did it in Libya. It was during (indecipherable) their spring. One of the rebels (indecipherable) an inflexion point. So that can't happen. We crashed (indecipherable) into a control tower.

Personally, in the last four months, I've been in 19 incidents with these vehicles where there's been an issue. Three of them potential head-on collisions. The only accident I've been in the last 25 years was an ATM autonomous vehicle. Okay? The vehicle failed according to the CHP. 737 max, 2 crashes, those were semi-autonomous too. Went straight into the ground.

COMMISSIONER SHIROMA: Mr. Ritz, would you wrap up your comments.

SPEAKER RITZ: Yeah. Tore the economy completely apart. But I will tell you in meetings with Larry Page and David Crane, who finance (indecipherable) in 2018, the only thing they care about is money. Okay? They are focused on doing it this month because the Department of Labor is about to make a ruling.

Thank you.

COMMISSIONER SHIROMA: Thank you.

Barry Taranto, Georgio Klironomos, Edward Escobar, Zach Lipton.

STATEMENT OF SPEAKER TARANTO

Good evening, Commissioners. My name is Barry

Taranto, a longtime cabdriver. I am someone who observes the behavior of these vehicles in the evening specifically. The issue is about dealing with the emergency situations. I have watched them have to go around these vehicles. I personally, myself, have been unable to actually leave the curb because they are double-parked next to me. Honking at them, shouting at them does not do anything at all. So it interferes with me doing my job to take seniors and disabled and others who need to get from one destination to another.

So this -- the thing is, though, is that San Franciscans do not like the behavior of these vehicles. So I urge you to put a pause on expanding the vehicles until they resolve some of these issues that were brought up today. A -- being an experiment is not a good thing. So -- and just letting them continue without any ramifications -- you're just putting more cars on the road.

And last but not least, you already allowed Uber and Lyft to go -- unlimited amounts of cars on the road without any ramifications of what it does to city traffic and public transit. And they are narrowing the number of lanes available, et cetera.

And so, in closing, a human driver gets arrested or punished by a police officer for doing

something bad. There's nobody to really punish for doing something bad in these autonomous vehicles.

Thank you.

COMMISSIONER SHIROMA: Thank you.

Georgio Klironomos, Edward Escobar, Zach Lipton, and then David Friedlander-Holm.

STATEMENT OF SPEAKER KLIRONOMOS

Hi. Thank you, Commissioners, for hearing us out today. My name is Georgio Klironomos. This is Carmine. We are both residents of the Castro District here in San Francisco. And already just in the experimentation phase, it's a terrifying place to be. It feels infested with these robo cars. And I'm scared to walk Carmine around. Just earlier this summer a small dog was killed by robo cars. And if that happens now, I'm scared for what will happen if it is expanded with robo cars running 24 hours.

I don't have to worry about this while I'm walking Carmine a couple of times a day, and I don't worry about myself getting hit either, knowing that there's no one thinking in the car about what's in front of it and especially knowing that these robo cars aren't tested by anyone outside of the company and knowing that the companies -- they are likely taking shortcuts to get their profits quicker. Carmine -- there were many other

dogs in the city to be run over by these cars.

And to that end, I would ask the CPUC to delay any further authorization of the AVs in SF, roll back any previous authorizations where the active AVs are. Vehicle (indecipherable), climate change, pollution and especially public safety, as studied by the independent government body, and demand that AV companies share unredacted incident data with the public.

Thank you very much.

COMMISSIONER SHIROMA: Thank you.

Edward Escobar, Zach Lipton, David Friedlander-Holm, Tes Welborn and Douglas O'Connor.

STATEMENT OF SPEAKER ESCOBAR

Hello. I'm Edward Escobar, the founder of The Alliance for Independent Workers and the Drivers Unite movement. I'm also a professional black-level driver and a native San Franciscan.

I'm here to talk to you about a very important issue that affects all of us, the future of autonomous vehicle technology as the tipping point for the ushering in of the new age of AI and shaping the future of work.

AVs pose some challenges and risks that we need to be aware of and address before we allow them to operate on our streets 24/7 for profit. These include cyber attacks, ethical dilemmas, liability issues, and

potential job losses for millions of human drivers. Cyber attacks are a serious threat to the safety and security of AVs. Hackers can remotely take control of AVs and cause them to crash or stop or even be used for terrorism.

They can also steal personal data, ransomware from the passengers or the owners of the AVs. This could result in injuries, deaths, property damage or privacy violations, ethical dilemmas where AVs have to make difficult decisions that involve moral values or human lives. For example, an AV is faced with a situation where it has to choose between hitting a pedestrian or a cyclist or swerving into a wall or another car, what should it do? How should it prioritize the lives of its passengers, other road users or itself? Who should be responsible for making these decisions? Liability issues --

COMMISSIONER SHIROMA: Mr. Escobar, would you wrap up your comments.

SPEAKER ESCOBAR: Okay. I ask the CPUC to slow down and explore full-impact studies before allowing the deployment of AVs on our roads. We are not against tech, but we are against tech that benefits the few at the expense of the many.

I'm Edward Escobar. Drivers Unite.

COMMISSIONER SHIROMA: Thank you.

Zach Lipton, then David Friedlander-Holm, Tes Welborn and then Douglas O'Connor.

STATEMENT OF SPEAKER LIPTON

Hi. Good afternoon, Commissioners. Zach Lipton. I'm a San Francisco resident.

And I oppose the expansion of autonomous vehicles unless and until we have meaningful regulation in place to get the benefits and not negatives of this technology.

I was reading through the written public comments last night, and what I saw was not some knee-jerk rejection of new technology but hundreds of people who don't feel that this Commission currently has their back when it comes to regulating machines that, frankly, can kill them on our streets. I want to believe that AVs can help make our streets safer, but there are these necessary commonsense regulations that I don't know who doesn't think that it should be in place before we talk about expanding this technology.

We shouldn't have more AVs while it's impossible to cite them for moving violations. They need to be prohibited from double-parking or dangerously discharging vehicles -- passengers in the middle of the street. We need real accessibility requirements with a

firm timeline for implementation and privacy regulations.

But -- we've heard a lot about safety today, but we also need regulations that will address how AVs integrate into our community so we aren't just dumping more cars on the streets.

California's climate plan is clear. Electric cars are not enough. We need to reduce vehicle miles traveled by 25 percent by 2030. The plan says that we must channel the development of AVs to high passenger occupancy and low VMT impact services models that compliment transit and ensure equitable access. And that, right there, is your job, Commissioners. And yet the proposal right before you do nothing to address this. We've heard a lot of "We're working on it" from Cruise and Waymo today, but where's the work --

COMMISSIONER SHIROMA: Sorry, Mr. Lipton. Would you wrap up your comment.

SPEAKER LIPTON: Of course. Putting an unlimited number of zero- or single-occupant vehicles on the road isn't regulation. Let's get this right before we expand. Thank you.

COMMISSIONER SHIROMA: Thank you. Okay.

STATEMENT OF SPEAKER WELBORN

Thank you, Commissioners. Tes Welborn. Yes,

please. Defer this --

COMMISSIONER SHIROMA: Tes Welborn. Okay.

SPEAKER WELBORN: Defer this decision. There's a lack of data. I'm sick and tired of having technology and investors' priorities to make money put ahead of our safety in San Francisco. We've heard very compelling examples from the fire department and the police department about emergency situations, but it's not just those. It's everyday situations too where police are trying to stop people from entering the street and the vehicle keeps coming and the vehicle goes around the block and then comes again five times, which is one of the ones I saw.

But the biggest thing is no data. They don't want to show you any facts because this is all proprietary and it's all about investors. And now we're going to let the investors here take over from where the investors for Uber and Lyft. You know, when are we going to put ourselves first? Let's have money for muni and public transit. Again, we need mass vehicle movement of people, not one or two or even six.

And we need actual data to make decisions, not just stories and not "Just we're trying." Our police and fire have told you that there's problems.

Thank you.

COMMISSIONER SHIROMA: Thank you.

Is David Friedlander-Holm here? Are you the next speaker, and do we have you on the list to speak?

SPEAKER McELHENNEY: I'm No. 18 on the list.

COMMISSIONER SHIROMA: Oh, okay. Douglas O'Connor?

SPEAKER McELHENNEY: Marcus McElhenney.

COMMISSIONER SHIROMA: Okay. All right.

SPEAKER McELHENNEY: Yeah.

COMMISSIONER SHIROMA: Come on up.

STATEMENT OF SPEAKER McELHENNEY

I'll be quick. My name is Marcus McElhenney. I'm a San Francisco resident and attorney.

Thank you for the first responders here, and thank you, Waymo, and thank you, Cruise. I've done about maybe 200 autonomous rides, and I just honestly want to thank -- honestly, I'm here to thank Waymo and Cruise. I do a bunch of promo work, actually, victims of domestic violence, sex trafficking, and sometimes we often work late. And one of the nicest and easiest things is to be able to actually put them into an autonomous ride right -- door-to-door and them not have to worry about anything. So that's something that I just want to be able to be out here and speak out to that and the amount of times I've used that and shared

that with other people. So for that and that alone, thank you so much on behalf of all my clients and all those women in the city that you're helping to keeping safe. So thank you Waymo, and thank you Cruise.

COMMISSIONER SHIROMA: Thank you. Do we have one more speaker, and speak low -- speak slower -- go ahead -- for our court reporter.]

STATEMENT OF SPEAKER SMITH

My name is Michael Smith.

As the CPUC, you're responsible for asking good questions, getting good answers and then basing your decisions off of those. But there is a problem, AV companies are not answering questions.

You ask how many times -- this is your very first question. You asked how many times there were unexpected stops, but the AV companies only told you about a small subset of those. The times that vehicles had to be retrieved, what they called VREs. That's different. They did not answer your question.

You also asked how many cars might this lead to? But both companies gave you an answer of, well, we don't know.

At the same time, the CEO of Cruise is publicly telling everyone they want to expand by a factor of 10 to 3,000 cars. Why didn't they tell you that? Also, I

should mention that there was another crash of an AV today on Standing street, just before this meeting; and they didn't tell you about that either; and so, it's a problem that you ask good questions but you're not getting good answers.

And the -- when you ask about emergency situations, they never talk about how they will not have the EVs cause havoc in the first place. This isn't about, oh, we're just learning. The problems have been increasing; and so, we need you to hold their feet to the fire to not allow expansion of charging passengers until they can demonstrate that they're not causing those problems in the first place.

Right now, they are causing the problems.

COMMISSIONER SHIROMA: I will need you to wrap up.

SPEAKER SMITH: Yeah, the problems are increasing, but you can prevent that by not allowing them to continue to expand their service until it is ready.

Thank you.

COMMISSIONER SHIROMA: Thank you.

All right. Those were all of the speakers who signed up. Oh, is there one more? Two more. All right. Three more.

Come on down, and then I think we will go to closing remarks.

STATEMENT OF SPEAKER NATALIE

Hi, I'm Natalie. I'm a software engineer in the Bay Area. I've lived here for seven years or plus. I got the chance to ride Waymo multiple times. I'm a huge fan of it. I actually felt safer in Waymo than I did in Ubers. I felt like the driver is much more consistent; and I have a hard time believing that the Waymo car would crash into anyone. Looking at their screens, I can see that it can pinpoint and identify people quiet far distance with their radar, and I also believe in the future of having autonomous cars. We probably will reduce carbon usage on the roads or the need for people to have cars, so I can also see for sustainable reasons, it would be beneficial as well.

Thank you.

COMMISSIONER SHIROMA: Thank you.

All right. We have Sean Phan, and then Marcus Ian.

STATEMENT OF SPEAKER PHAN

Hello, Commissioner. My name is Sean Phan. I'm a private citizen who drives.

I just wanted to point out in my personal opinion the magnitude of the fact that human emotion has

on things. So, if I am driving, I am way more concerned about someone having a bad day or if some -- if a driver is inpatient at me crossing on the sidewalk or having to share the road if I am on a bike and, you know, I am not, like, cowering in fear every time I see a Cruise or autonomous vehicle, but it is easy for me to get intimidated by, like, someone on the road who maybe, like, having a bad day, so I just wanted to point that out.

Thank you.

COMMISSIONER SHIROMA: Thank you. And our last speaker is --

SPEAKER IAN: I am good. They said --

COMMISSIONER SHIROMA: Okay. All right. Thank you.

SPEAKER IAN: I agree with them.

COMMISSIONER SHIROMA: Thank you, everyone.

Any closing remarks by commissioners? You don't have to if you don't want to.

Yes, Commissioner Houck?

COMMISSIONER HOUCK: Just thank everyone for the information provided today.

COMMISSIONER SHIROMA: Thank you.

Yes, I also want to thank all of the parties who appeared today, the court reporters who took down

every word that you said. Very hard working court reporters. The time keepers. Everyone who attended today either in person or through the Webex.

To my colleagues on the dais, I also want to thank our industry division, the Consumer Protection Enforcement Division team that worked very hard on the autonomous vehicle program.

Thank you, Judge Mason. Judge Mason and I will be reviewing the transcripts, reviewing all of your comments within the proceeding and determining what next steps are within the proceeding itself and whether we may have some additional questions with the usual comment deadlines and reply opportunities.

So, again, it -- the judge and I will be evaluating that in terms of the next steps.

Judge Mason, any other closing remarks?

ALJ MASON: No, Commissioner, there's nothing else, and this meeting is now adjourned.

Thank you very much for everyone who attended.

(At the hour of 5:30 p.m., this matter having been concluded, the Commission then adjourned.)

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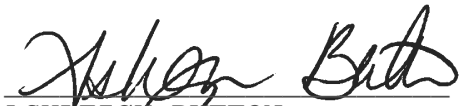

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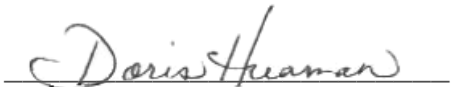

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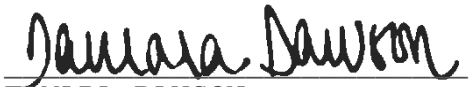

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