

# Status Conference/All Party Meeting to Address Safety Issues Regarding Driverless Autonomous Vehicles Interactions with First Responders

August 7, 2023, 1 – 5 pm

CPUC Auditorium

505 Van Ness Avenue

San Francisco

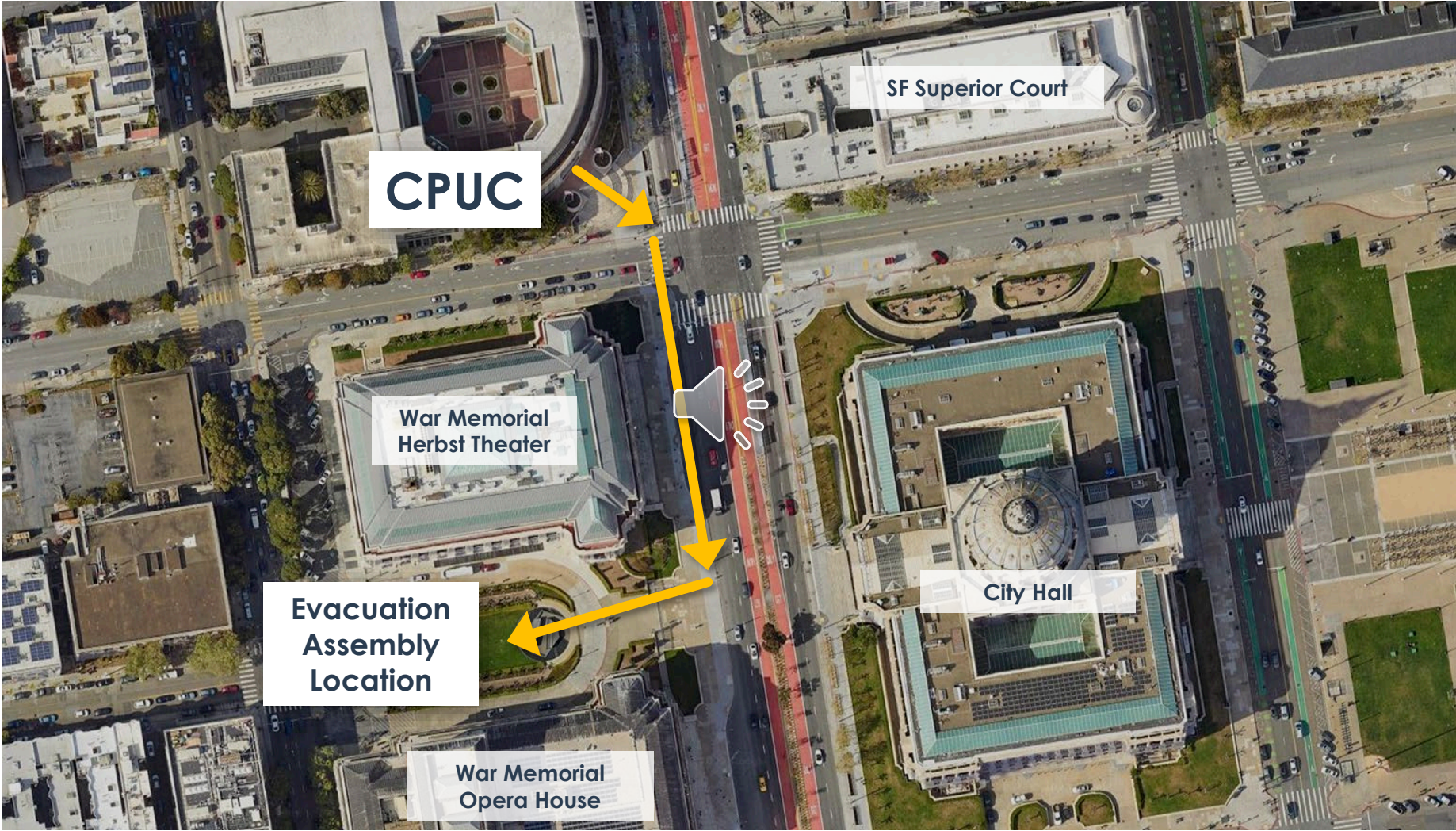


California Public  
Utilities Commission

# Call to Order, Safety Message, Agenda Overview



# Evacuation Assembly Location



# Meeting Rules

- 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.
- Non-party speakers can speak during the public comment period. Non-party speakers must sign up to speak at the table at the auditorium entrance. Please keep comments limited to the questions listed in the agenda, and please stay within the allotted time for each speaker.
- Commissioner Genevieve Shiroma will call non-party speakers from the sign-in list during the public comment period.
- Due to time constraints, comments during the public comment period must be made in person in the meeting room.

# Purpose of Today's Meeting

- Hear first responder concerns about Autonomous Vehicle operations and proposals for first responder-AV interactions.
- Hear AV company responses to first responder concerns and current and/or future plans for interacting with first responders.
- Hear party input on Passenger Safety plans filed by the AV companies and suggestions to identify and address possible gaps in the plans.

# CPUC Opening Remarks



# Section 4.1 Part 1 – 1:15 – 1:55 p.m.

## Order of Speakers

- A. Prashanthi Rao Raman, Vice President of Global Government Affairs, Cruise LLC  
Matthew Wood, Director of Software Engineering, Cruise LLC  
Greg Dieterich, General Manager of San Francisco Market, Cruise LLC (1:15-1:25 pm)
- B. Mari Davidson, Managing Counsel, Waymo LLC  
David Margines, Product Management, Waymo LLC  
Shweta Shrivastava, Senior Director of Product Management, Waymo LLC  
Lety Cavalcante, Head of Operations Center, Waymo LLC  
Rob Patrick, Manager, Emergency Response & Outreach, Waymo LLC (1:25-1:35 pm)
- C. Jeanine Nicholson, Chief, San Francisco Fire Department  
Darius Luttrupp, Deputy Chief for Operations, San Francisco Fire Department  
Julia Friedlander, Senior Manager, Automated Driving Policy, San Francisco Municipal Transportation Agency (1:35-1:45 pm)
- D. Jarvis Murray, For-Hire Transportation Administrator, Los Angeles Department of Transportation (1:35-1:45 pm)

# Section 4.1 Part 1 – 1:15 – 1:55 p.m.

## Questions for Parties

1. How many times has a Cruise or Waymo driverless AV come to an unexpected stop in San Francisco?
2. What were the reasons for a Cruise or Waymo driverless AV to come to an unexpected stop in San Francisco?
3. Describe how remote operators interact with AVs in emergency situations, including actions remote operators are able to use to provide navigation aid to vehicles to move vehicles to locations that do not block traffic. If remote operators do not take control of the vehicle and perform the dynamic driving task in these situations, please describe why not, including technical and liability issues associated with remote control of AVs.
4. How many of the Cruise or Waymo driverless AV unexpected stops have impeded a San Francisco first responder from executing their duties, if any?
5. How were these unexpected stopped driverless AV situations resolved and how long did they take to be resolved?
6. Describe the testing protocol used by Cruise or Waymo to test that its AVs recognize an emergency situation.



# All-Party Meeting Regarding Driverless Autonomous Vehicle Interactions With First Responders

## **Overview of Cruise's Engagement**

August 7, 2023

# Cruise AV Safety

Cruise AVs have now driven over 3 million miles safely

When benchmarked against human drivers in a comparable driving environment, our AVs were involved in:

- **54%** fewer collisions overall
- **92%** fewer collisions as the primary contributor
- **73%** fewer collisions with meaningful risk of injury



# Section 4.1 Part 1 – 1:15 – 1:55 p.m.

## Questions for Parties

1. How many times has a Cruise or Waymo driverless AV come to an unexpected stop in San Francisco?
2. What were the reasons for a Cruise or Waymo driverless AV to come to an unexpected stop in San Francisco?
3. Describe how remote operators interact with AVs in emergency situations, including actions remote operators are able to use to provide navigation aid to vehicles to move vehicles to locations that do not block traffic. If remote operators do not take control of the vehicle and perform the dynamic driving task in these situations, please describe why not, including technical and liability issues associated with remote control of AVs.
4. How many of the Cruise or Waymo driverless AV unexpected stops have impeded a San Francisco first responder from executing their duties, if any?
5. How were these unexpected stopped driverless AV situations resolved and how long did they take to be resolved?
6. Describe the testing protocol used by Cruise or Waymo to test that its AVs recognize an emergency situation.

# **CPUC Status Conference: Safety Issues Regarding Driverless AV Interactions with First Responders**

August 7, 2023

**Jeanine Nicholson, Chief**  
San Francisco Fire Department (SFFD)

**Darius Luttrupp, Deputy Chief: Operations**  
San Francisco Fire Department (SFFD)

**Nicole Jones, Commander**  
San Francisco Police Department (SFPD)

**Julia Friedlander**  
San Francisco Municipal Transportation Agency (SFMTA)

# Outline of San Francisco Responses

## **Part 1.** Section 4.1: Questions 1-6

- Driverless AV Impacts on Emergency Response

## **Part 2.** Section 4.1: Questions 7-12

- Training Issues
- San Francisco Tools Supporting Solutions

## **Part 3.** Section 4.2

- How should AVs blocking first responders be cleared and how quickly?

## **Part 4.** Section 4.3

- Gaps in Passenger Services Plans

## **Part 5.** Section 4.3

- Solutions for gaps & role of Mobility Data Specification (MDS)

# **CPUC Status Conference: Safety Issues Regarding Driverless AV Interactions with First Responders**

**PART I: Driverless AVs stopping unexpectedly: impacts on  
safety of first responder operations**

# SF doesn't know. Operators don't disclose this information

The following chart of VRE per 1,000 miles illustrates this month-over-month improvement. Of specific note, the ratio of VRE per 1,000 miles can be seen to improve even as total driverless miles continue to rise.



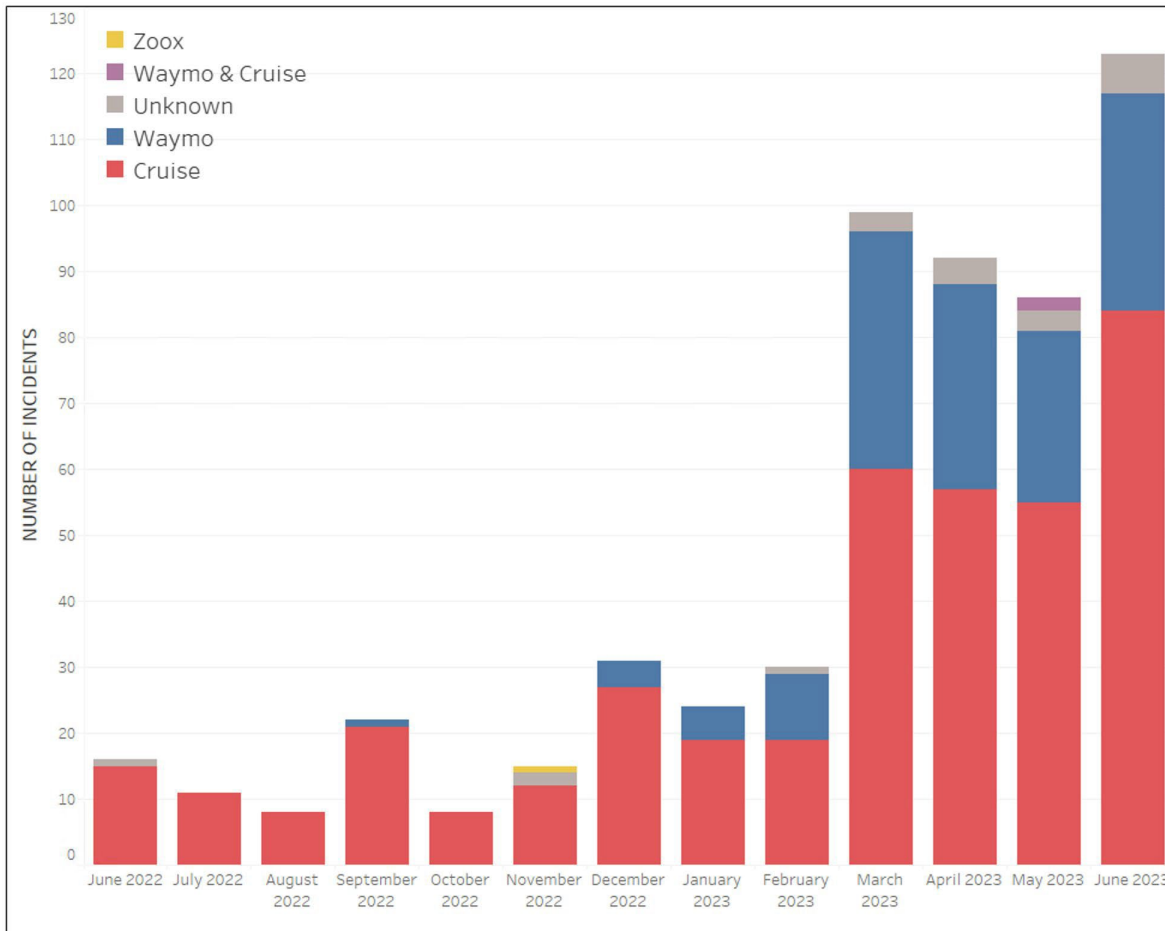
**REDACTED**

Figure 4: VRE per 1000 Miles

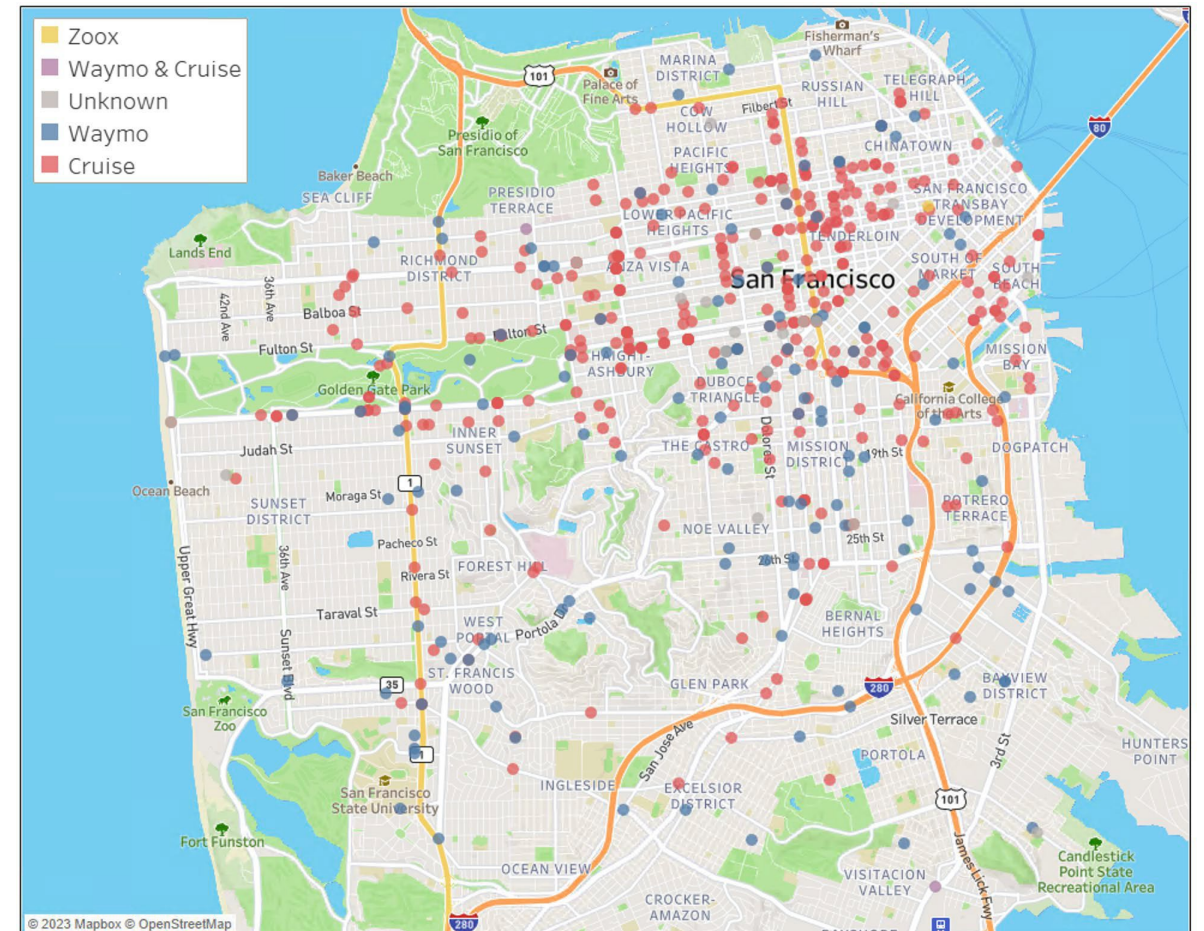


# What we know: Almost 600 incidents reported since launch of driverless operations – likely a fraction of actual incidents

### AV Incidents Reported to SF by Month



### Known Locations of Reported AV Incidents

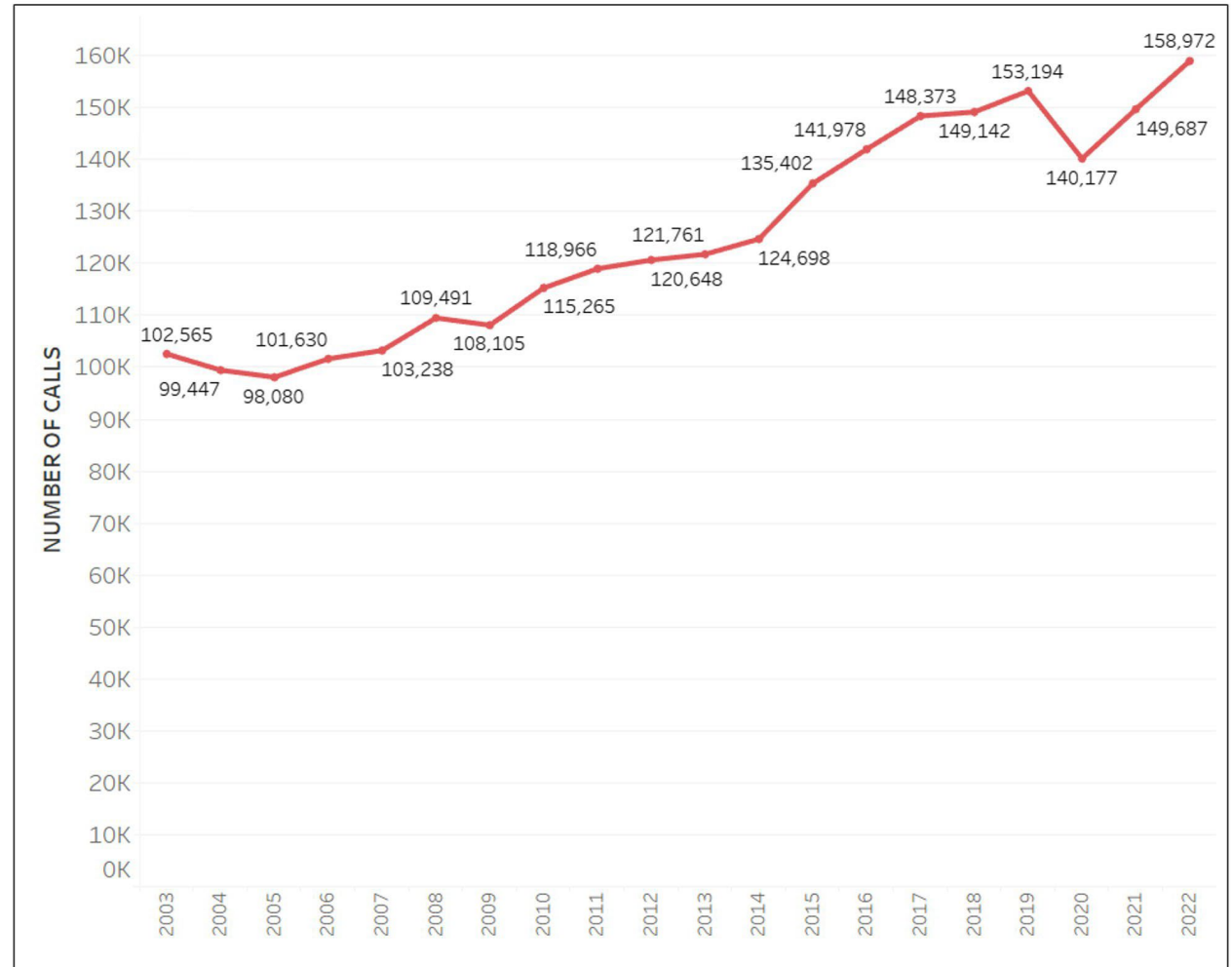


# What we know: SFFD is 9th busiest fire department in the U.S.

- Engine 3 is the busiest engine in the nation (~9,100 calls)
- Truck 3 is the third busiest truck in the nation (~5400)



SFFD Calls per Year (2003-2022)



# Cruise & Waymo do not disclose counts of unexpected stops or other incidents that impeded first responders

SFFD has logged  
~50 written reports  
of interference in  
2023

- **Stops:** Obstructing station ingress/egress
- **Stops:** Obstructing travel to emergency
- **Driving:** Contact or near-miss with personnel or equipment
- **Driving:** Intrusion into SFFD operations
- **Driving:** Unpredictable operations near response zone



Q5: HOW DID INCIDENTS RESOLVE & HOW LONG DID IT TAKE?

# Human traffic control provided by SFPD & SFMTA is essential to SFFD operations

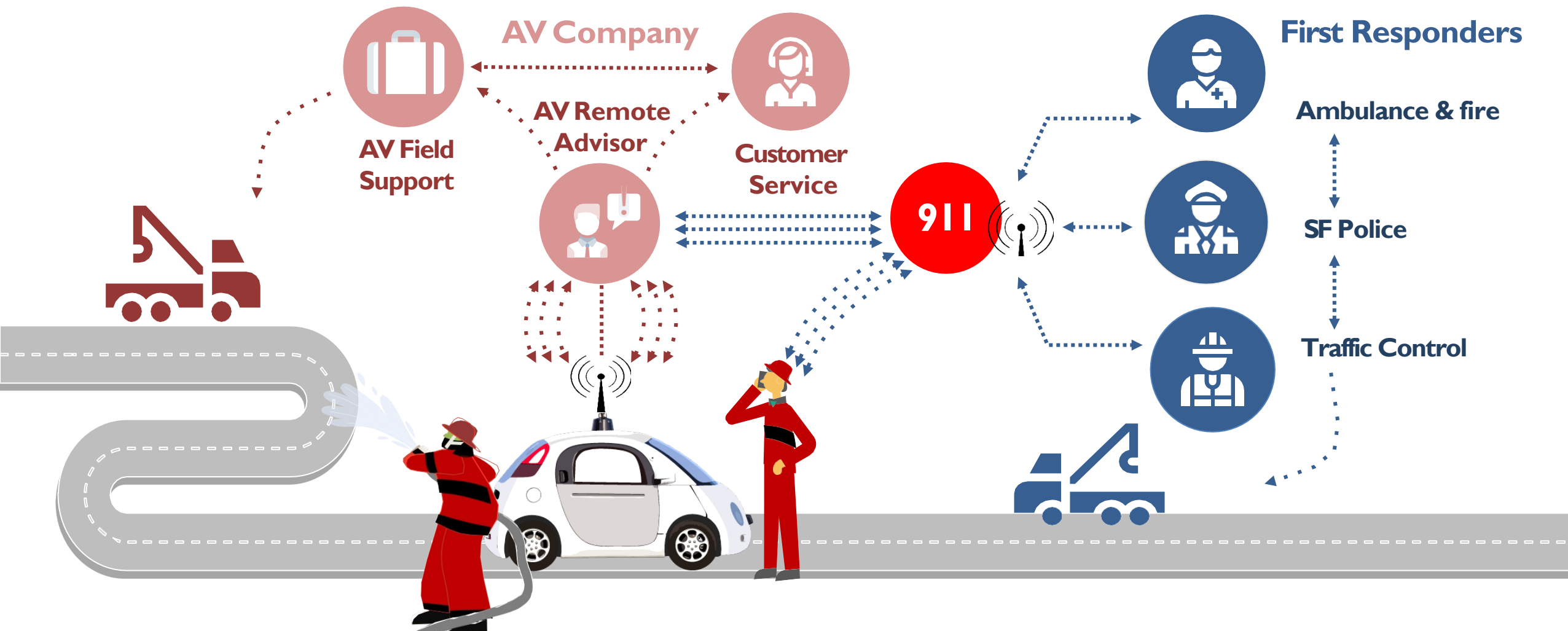


**San Francisco Police Department (SFPD)**



**SFMTA Parking Control Officers (PCO)**

# Human eye contact, simple gestures & on-site conversation are much faster than AV substitutes



# Cruise does not disclose the duration of unexpected stops; City records show incidents ranging from minutes to hours

## 7. Please provide information on Cruise's incident response timing between:

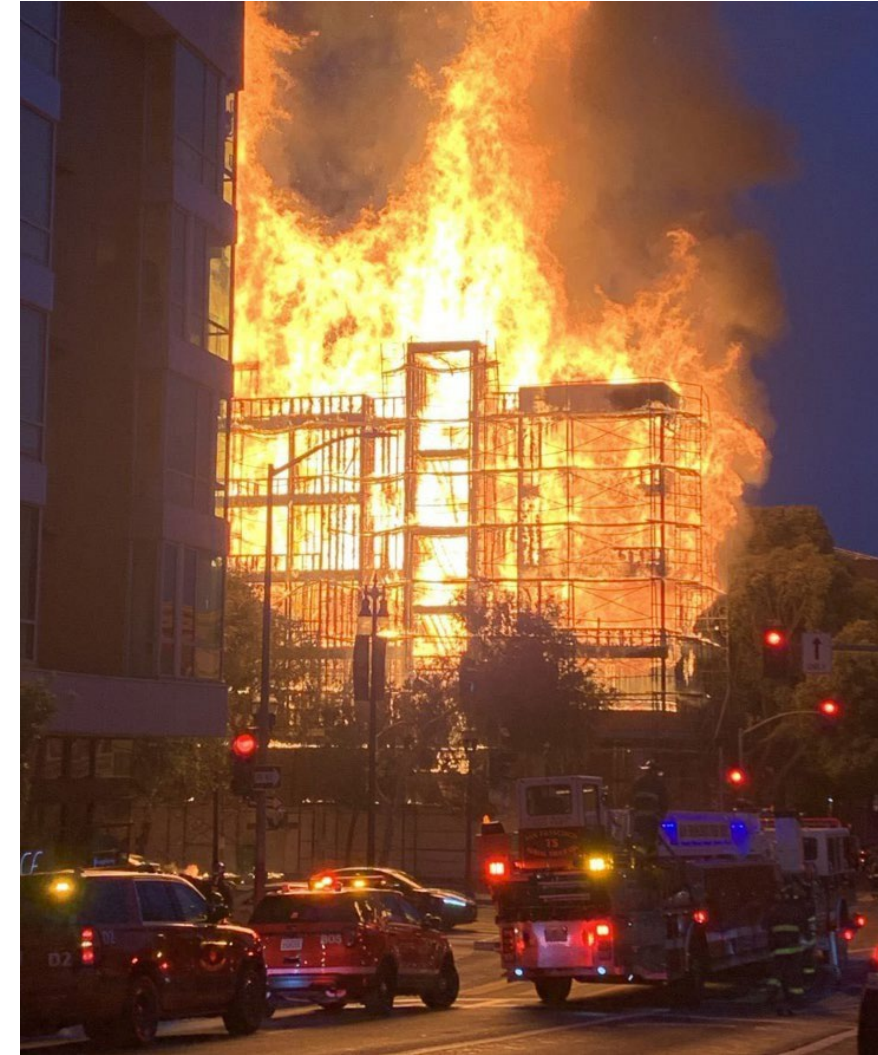
As noted, an MRC is a low-risk operating condition that the ADS automatically executes in certain non-nominal conditions. As Cruise uses the term, "MRC" refers to instances in which the vehicle can recover on its own or recover with remote assistance. That is, in-person human assistance is not required to recover from an MRC. As discussed in Question 5, in the event the AV cannot recover on its own or with remote assistance, the AV would need to be retrieved by a field service representative. We refer to such events as vehicle retrieval events (VREs).

[ **REDACTED** ]

Q: WHERE AVs ARE BLOCKING SFFD, HOW AND HOW QUICKLY SHOULD SITUATION BE RESOLVED?

## AVs should respond to SFFD direction immediately

- Every second can make the difference between life or death
- A fire's size can double in one minute
- Larger fires lead to > displacement
- “Time is muscle” in response to heart attacks





# Driverless AVs are not ready to scale in San Francisco



- Fire personnel need to focus on our mission to save lives and protect property from catastrophic loss
- Current trends:
  - Increasing runs for both fire & medical response
  - Increasing interference from driverless operations will undermine already stretched resources
- Giving Cruise & Waymo authority to expand at their own discretion does not serve public safety

# Section 4.1 Part 1 – 1:15 – 1:55 p.m.

## Questions for Parties

1. How many times has a Cruise or Waymo driverless AV come to an unexpected stop in San Francisco?
2. What were the reasons for a Cruise or Waymo driverless AV to come to an unexpected stop in San Francisco?
3. Describe how remote operators interact with AVs in emergency situations, including actions remote operators are able to use to provide navigation aid to vehicles to move vehicles to locations that do not block traffic. If remote operators do not take control of the vehicle and perform the dynamic driving task in these situations, please describe why not, including technical and liability issues associated with remote control of AVs.
4. How many of the Cruise or Waymo driverless AV unexpected stops have impeded a San Francisco first responder from executing their duties, if any?
5. How were these unexpected stopped driverless AV situations resolved and how long did they take to be resolved?
6. Describe the testing protocol used by Cruise or Waymo to test that its AVs recognize an emergency situation.

# **Commissioner/ALJ Questions**

**1:55 to 2:05 p.m.**

# Section 4.1 Part 2 – 2:05 – 2:45 p.m.

## Order of Speakers

- A. Prashanthi Rao Raman, Vice President of Global Government Affairs, Cruise LLC  
Matthew Wood, Director of Software Engineering, Cruise LLC  
Greg Dieterich, General Manager of San Francisco Market, Cruise LLC (2:05-2:15 pm)
- B. Rob Patrick, Manager, Emergency Response & Outreach, Waymo LLC (2:15-2:25 pm)
- C. Darius Luttrupp, Deputy Chief for Operations, San Francisco Fire Department  
Nicole Jones, Commander, San Francisco Police Department  
Julia Friedlander, Senior Manager, Automated Driving Policy, San Francisco Municipal Transportation Agency (2:25-2:35 pm)
- D. Jarvis Murray, For-Hire Transportation Administrator, LA Department of Transportation (2:35-2:45 pm)



# Section 4.1 Part 2 – 2:05 – 2:45 p.m.

## Questions for Parties

7. How many times, if any, has Cruise or Waymo conducted training sessions for San Francisco first responders in dealing with unexpected stopped driverless AVs?
8. How many San Francisco first responders, if any, has Cruise or Waymo trained in dealing with unexpected stopped driverless AVs?
9. How long does each training last?
10. Does Cruise or Waymo update its training materials for first responders, and if so, how often?
11. How many training sessions, if any, does Cruise or Waymo have planned in the future?
12. How do first responders learn about the Cruise or Waymo training regarding dealing with unexpected stopped driverless AVs?

# Cruise's Law Enforcement Interaction Plan

Our Law Enforcement Interaction Plan is submitted and approved by the DMV and updated at least annually.



**Guide for Law Enforcement & First Responders for  
Interacting with a Cruise Autonomous Vehicle**

***Cruise AV (Chevy Bolt Platform) Version***

*Updated February 2023*

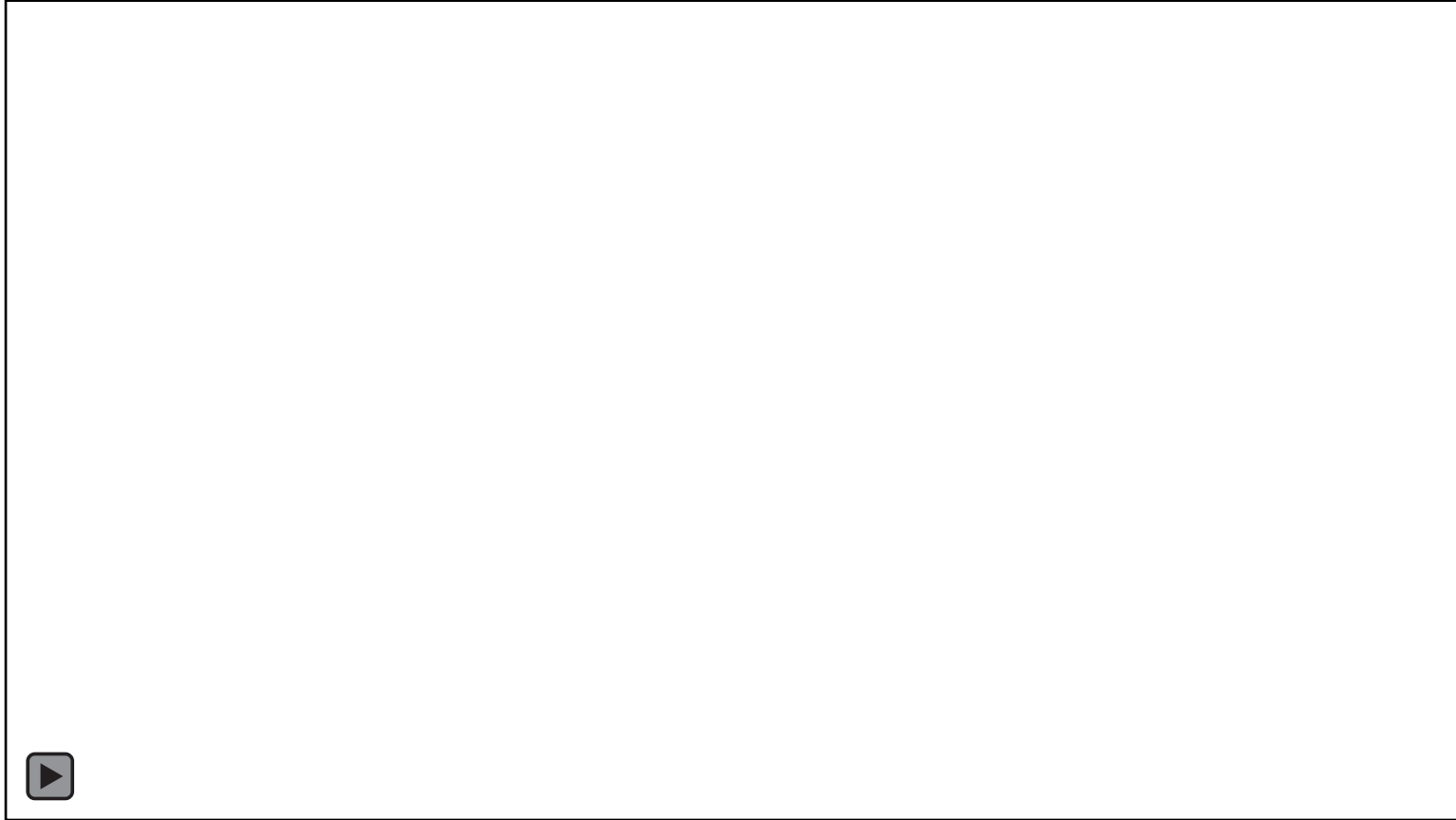


## Table of Contents for Law Enforcement and First Responders Guide

<b>Section One: The Cruise Autonomous Vehicle</b>	<b>6</b>
Identifying the Cruise AV	8
Inside the Cruise AV	10
Vehicle Identification Information	10
<b>Section Two: Communicating with the Cruise Team</b>	<b>10</b>
Contacting Cruise	10
Cruise Incident Experts	12
OnStar Emergency Assistance	12
<b>Section Three: Incidents &amp; Emergency Scenarios</b>	<b>12</b>
Responding to Non-Emergency Incidents	12
Responding to an Emergency	13
Approaching the AV - When a Cruise Representative is Present	13
Approaching the AV - When a Cruise Representative is Not Present	14
Determining Autonomous Mode	14
Disengaging to Manual Mode	14
Confirming Manual Mode	14
Safely Moving the AV	15
Towing	15
Pushing	15
Providing Emergency Assistance for Electric Vehicles	15

# Cruise Trainings for First Responders

Cruise has hosted in-person trainings and created video trainings and materials for first responders.



Excerpt from [Interacting with a Cruise Autonomous Vehicle: A Guide for First Responders](#)

# Waymo

## All Party Meeting

Rob Patrick  
Manager, Emergency Response & Outreach  
August 7, 2023



# Waymo Emergency Response & Outreach Team



**Rob Patrick**

Manager, Emergency Response & Outreach

Retired CHP Captain

32 Years of Law Enforcement Experience

Expertise

- Emergency Response
- Incident Management
- Investigations



**Scott Campbell**

First Responder Ambassador

Retired FBI Supervisor

31 Years of Law Enforcement Experience

Expertise

- Investigations
- Passenger/Cargo Security
- Interstate/International Ops



**Arnold Hardy**

First Responder Ambassador

Retired CHP Captain

28 Years of Law Enforcement Experience

Expertise

- Commercial Enforcement
- Chair, CVSA AV Committee
- Legislation



**Jaeson White**

First Responder Ambassador

Retired Chief of Police

34 Years of Law Enforcement Experience

Expertise

- Police Practices
- Incident Management
- Investigations

**125 years combined first responder experience**

# 2500



First Responders Trained



900+ SFPD/SFFD



100 + Training Sessions  
to date 6/23



Sessions on calendar for 2023  
= 40

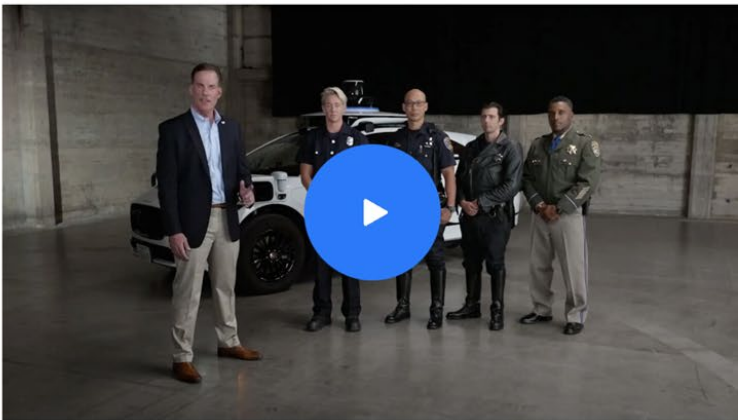


# First Responders

## Waymo Emergency Response Guide and Law Enforcement Interaction Protocol

TRAINING

### Jaguar I-PACE



Waymo works closely with public safety officials to ensure the safe introduction of our technology. The instructional guides and video below provide information for first responders interacting with our vehicles. These materials supplement the overview of how we design, test, and validate our technology found in the [Waymo Safety Report](#).

**Waymo**  
autonomously driven  
**Jaguar I-PACE**

Emergency response guide  
and law enforcement interaction protocol

This document includes material  
from the JLR First Responders  
Instruction Pack (X590 2021MY)

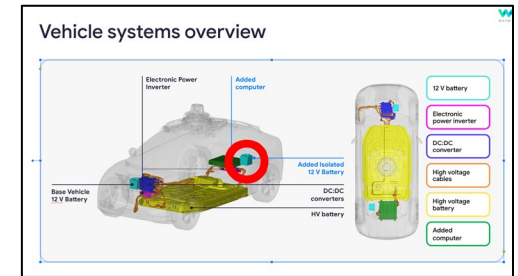
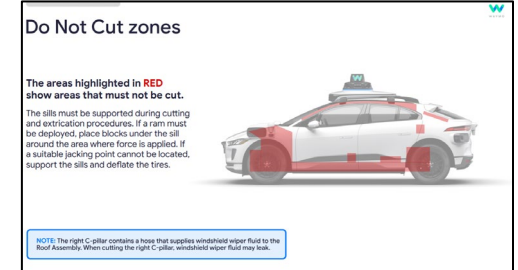
 Updated January 2021

Jaguar I-PACE Waymo Emergency Response Guide and Law Enforcement Interaction Protocol (PDF)



# Training Content

- Background and Waymo Mission
- Basic understanding of the technology
- Contrast between Advanced Driver Assistance Systems (ADAS) and Autonomous Vehicles
- What first responders can expect when they come into contact with one of our vehicles
- Passenger safety and emergency situations
- How the vehicle will react to emergency equipment (Lights & Siren)
- Where to locate documentation or get assistance
- Investigative follow-up & additional resources
- Extrication
- Power disconnect
- Fire considerations
- Q&A and hands on time with vehicles







← **Tweet**

 **SAN FRANCISCO FIRE D...**    
**@SFFDPIO**

This past week dozens of our members got educated by [@Waymo](#) on how to respond to and address issues with their AV safely.

This is another example of how [#SFFD](#) works towards keeping you safer.



# We actively engage first responders

## Training

- 2500 First Responders Trained
- 100 Training Sessions this year in CA with 40+ on the calendar
- 900+ First Responder trained at San Francisco PD/FD
- Other agencies include CHP, SF Parks/University Police/US Park Police & Rangers

## Real-Time Communications

- Real time communication with 911 Dispatch Centers (waymofrinfo@google.com)
- Realtime communications between First Responders and Waymo's operational response teams
- In-car communication channels and our dedicated first responder line

## Ongoing Feedback

- Development of new features, such as the QR code which facilitates rapid communication
- Development of training adjustments, internal practices via first responder feedback



# Continuing our tradition of engagement

- Our Emergency Response & Outreach team will continue proactively training first responders in the communities where we operate
- We'll continue to provide trainings at the frequency and in the formats most useful to these key stakeholders
- Waymo will continue updating our vehicle Emergency Response Guide and LEIP as we make further improvements to these processes and add new vehicle platforms



# **CPUC Status Conference: Safety Issues Regarding Driverless AV Interactions with First Responders**

## **PART 2: Training questions**

# Cruise & Waymo training for SFFD & SFPD needs improvement

## Scheduling

- Included with scheduled in-service training

## Challenges

- **Separate** training with no industry standard for Cruise, Waymo (& soon Zoox) is burdensome
- **Content** of training does not address current problems



# AVs need to be better trained for emergency response and other interactions

- Faster placement of geofencing exclusion zones /avoidance areas around emergency sites to prevent intrusion
- Better perception of caution tape, cones & wires
- Easier & faster communication to and from first responders & other road users



# AVs need to be better trained to communicate more quickly and effectively in emergency response events

**Timely response to direction from human traffic control is essential**

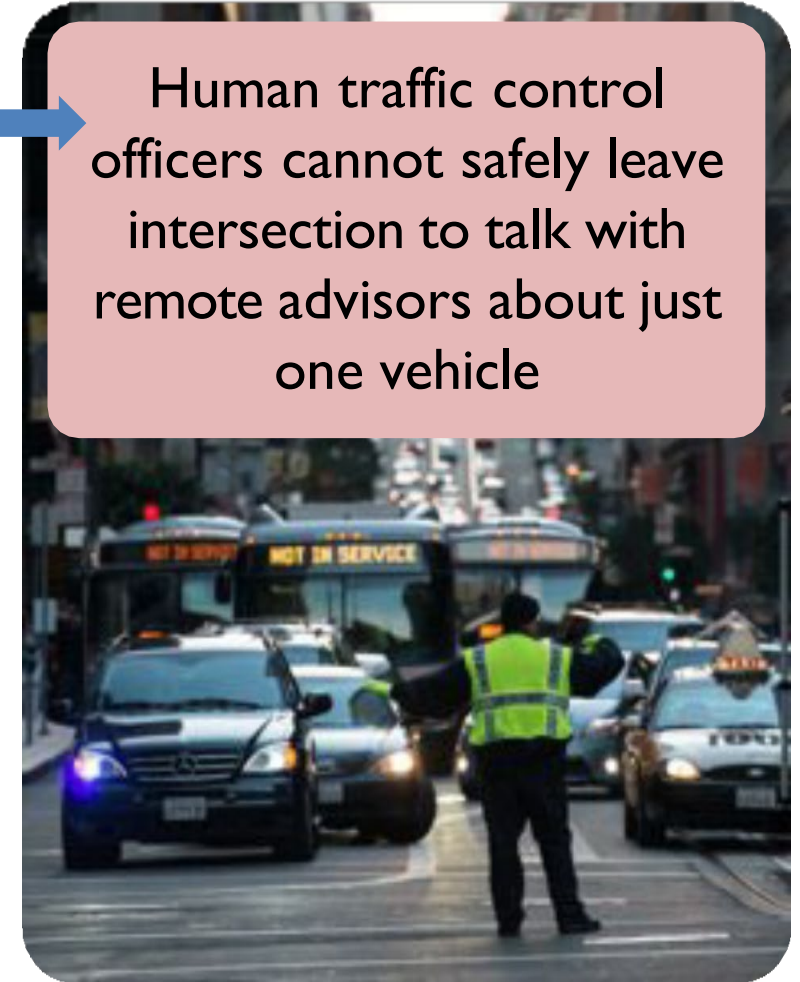
Special Events

Motorcades

Traffic Signal Outages

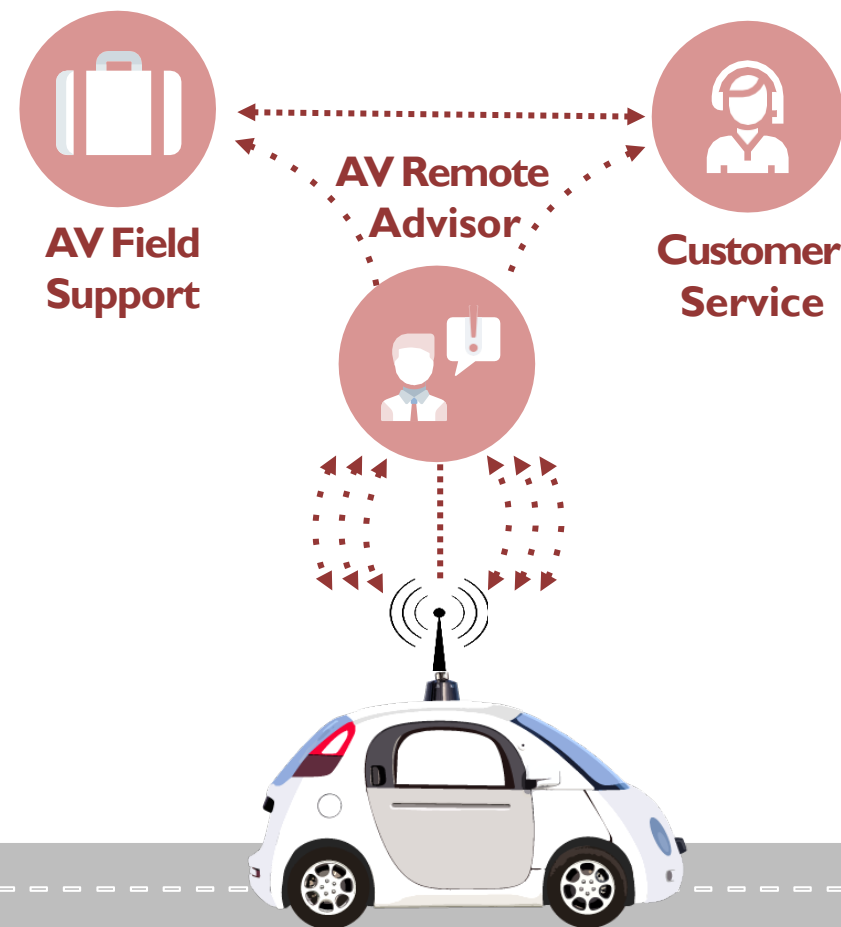
Storm damage

Human traffic control officers cannot safely leave intersection to talk with remote advisors about just one vehicle



# AV remote advisors need to be better trained for emergency responder interactions

- In review of sample incidents, companies both cited errors by remote advisors
- Interactions between AVs and remote advisors take too much time



# AV providers should be designing improvements with input & review from first responders

- Improvements should be workshopped with & evaluated by emergency responders:
  - Human traffic control
  - Response to lights & sirens
  - Avoiding areas marked with caution tape
  - Methods for communicating to first responders
- AV companies, not taxpayers, should cover City costs for this process
- Recent discussions between City and Cruise & Waymo show the potential value of closer collaboration in achieving better AV performance around emergency responders



Section 4.2 question: How quickly should AV disruptions be resolved?

# They should be avoided or resolved immediately.

## City tools that may support AV industry improvement.

Jul 25, 2023 5:41 PM

March 21, 2023 5:41 PM

ALERTSF: Extreme wind has caused major traffic and transit delays. Use caution while driving & prepare for power outages.

ALERTSF: The incident in the area of Waller St. and Fillmore St. has been RESOLVED.

Aug 1, 2023 6:09 AM

ALERTSF: Avoid the area of Octavia St and Oak St due to fire activity. Emergency crews are on scene.



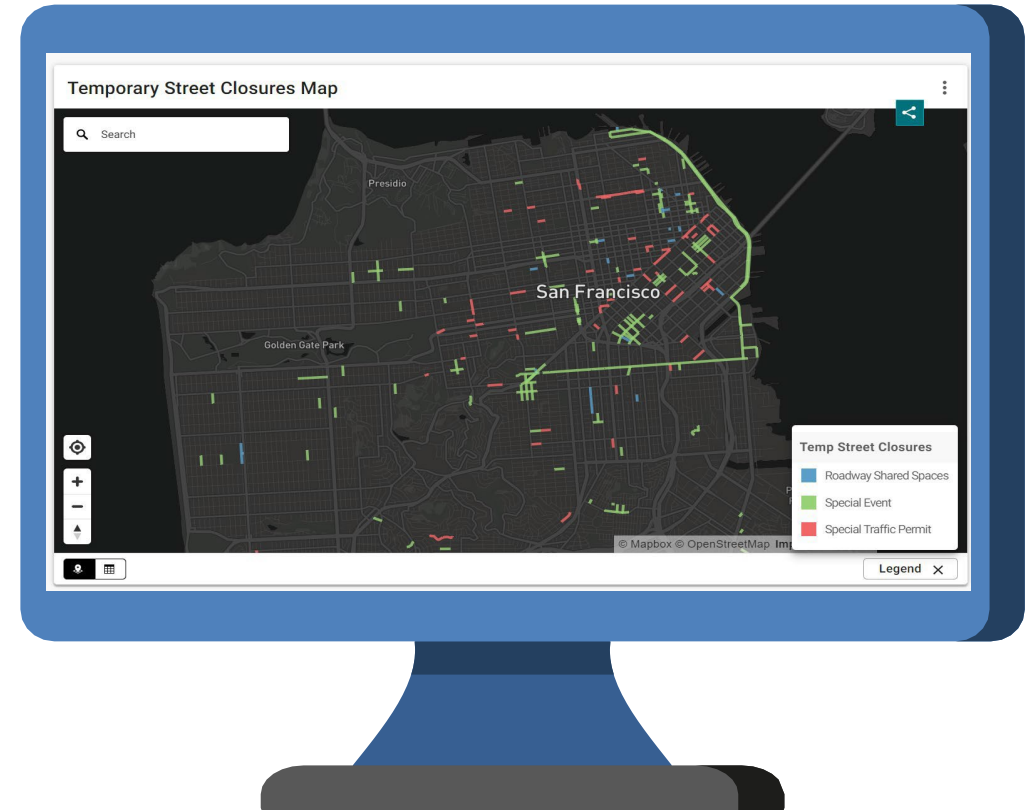
# City tools could support AV industry improvement

Work Zone Data Exchange (WZDx) Feed	Navigation Service Provider Support	Digital Curb Project
<ul style="list-style-type: none"><li>• Announces upcoming &amp; current permitted street closures due to the Shared Spaces program</li><li>• Announces some special event &amp; construction related permits issued by SFMTA</li><li>• Uses WZDx industry standard sponsored by USDOT</li></ul>	<ul style="list-style-type: none"><li>• Regular SFMTA emails announce major street changes to navigation &amp; transportation providers (e.g., Google &amp; Apple Maps, Uber, Lyft, Waymo, Cruise, &amp; Zoox)</li><li>• Real time transit updates @ <a href="https://twitter.com/sfmta_muni">https://twitter.com/sfmta_muni</a> &amp; <a href="https://sfmta.com/Updates">SFMTA.com/Updates</a></li><li>• Weekly press releases announce street closures for special events, supplemental transit services, additional passenger loading zones, construction updates</li></ul>	<ul style="list-style-type: none"><li>• SFMTA will create &amp; maintain a citywide dataset on all curb locations &amp; regulations</li><li>• Will make data available via the standard Curb Data Specification</li><li>• Funded by USDOT: 2023</li><li>• Expected completion: 2025</li><li>• Facilitated in coordination with other cities by Open Mobility Foundation</li></ul>

# City tools could support AV industry improvement

San Francisco's open data portal, [DataSF.org](https://data.sfgov.org/) contains numerous data sets about San Francisco streets

- 20+ datasets about SF streets
  - Temporary Street Closures
  - School crossing guard locations
  - Muni routes and stops
  - Bike lane network
  - High-injury network
- Data can be downloaded or obtained from the portal via an API
- Update frequency varies



# Section 4.1 Part 2 – 2:05 – 2:45 p.m.

## Questions for Parties

7. How many times, if any, has Cruise or Waymo conducted training sessions for San Francisco first responders in dealing with unexpected stopped driverless AVs?
8. How many San Francisco first responders, if any, has Cruise or Waymo trained in dealing with unexpected stopped driverless AVs?
9. How long does each training last?
10. Does Cruise or Waymo update its training materials for first responders, and if so, how often?
11. How many training sessions, if any, does Cruise or Waymo have planned in the future?
12. How do first responders learn about the Cruise or Waymo training regarding dealing with unexpected stopped driverless AVs?

# **Commissioner/ALJ Questions**

**2:45 to 2:55 p.m.**

# **10-Minute Break**

**2:55 to 3:05 p.m.**



# Section 4.2 – 3:05 – 3:35 p.m.

## Order of Speakers

- A. Darius Luttrupp, Deputy Chief for Operations, San Francisco Fire Department  
Nicole Jones, Commander, San Francisco Police Department  
Julia Friedlander, Senior Manager, Automated Driving Policy, San Francisco Municipal Transportation Agency (3:05-3:08 pm)
- B. Jarvis Murray, For-Hire Transportation Administrator, Los Angeles Department of Transportation (3:08-3:11 pm)
- C. Kristofer Kusano, Staff Safety Research Engineer, Waymo LLC (3:11-3:14 pm)
- D. Prashanthi Rao Raman, Vice President of Global Government Affairs, Cruise LLC  
Matthew Wood, Director of Software Engineering, Cruise LLC  
Greg Dieterich, General Manager of San Francisco Market, Cruise LLC (3:14-3:17 pm)
- E. Mark Gruberg, Board Member, San Francisco Taxi Workers Alliance (3:17-3:20 pm)
- F. Peter Leroe-Muñoz, General Counsel, Silicon Valley Leadership Group (3:20-3:23 pm)
- G. Sharon Giovinazzo, CEO, Lighthouse for the Blind and Visually Impaired (3:23-3:26 pm)
- H. Ariel Wolf, Counsel, Autonomous Vehicle Industry Association (3:26-3:29 pm)
- I. Cory Hohs, CEO, HAAS Alert (3:29-3:32 pm)
- J. Dylan Hoffman, Executive Director for California and the Southwest, Technet (3:32-3:35 pm)

# Section 4.2 – 3:05 – 3:35 p.m.

## Question for Parties

1. In a circumstance where a first responder is responding to an emergency (police, fire, medical) and an AV is blocking the way, how should this situation be resolved and how quickly?

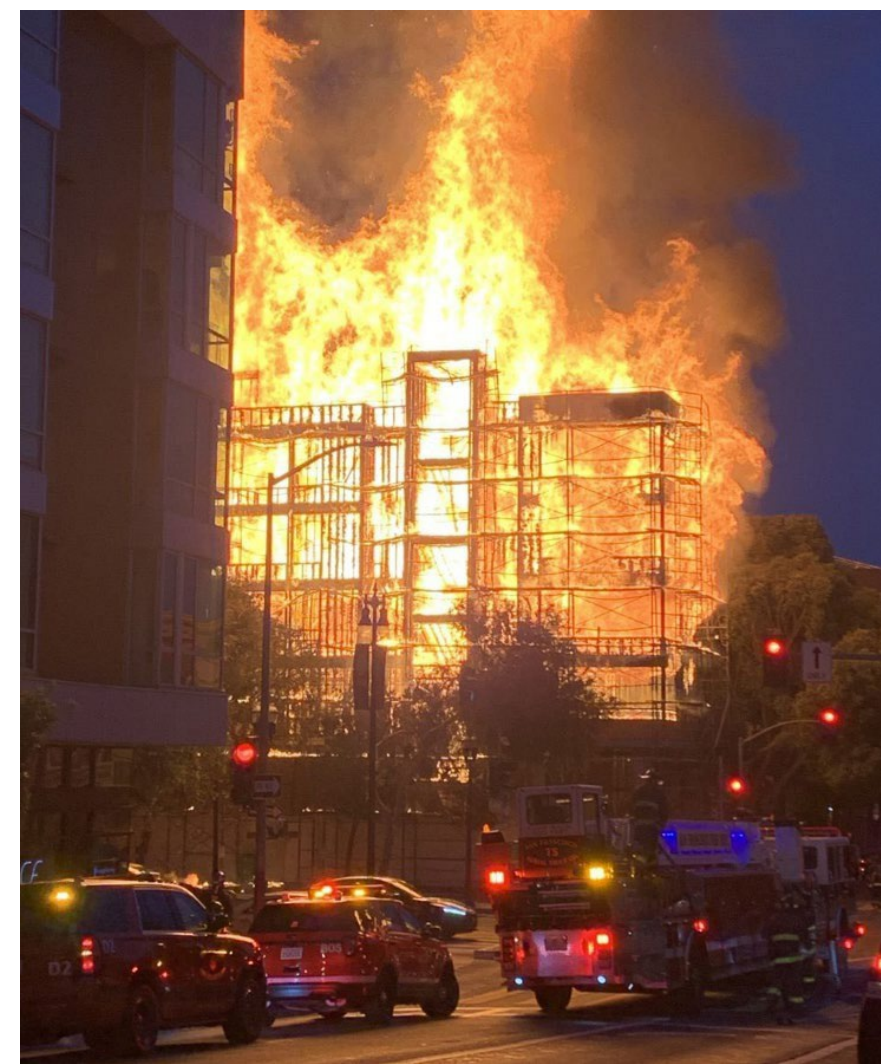
# **CPUC Status Conference: Safety Issues Regarding Driverless AV Interactions with First Responders**

**PART 3:** How should AV interference be resolved and how quickly?

Q: WHERE AVs ARE BLOCKING SFFD, HOW AND HOW QUICKLY SHOULD SITUATION BE RESOLVED?

## AVs should respond to SFFD direction immediately

- Every second can make the difference between life or death
- A fire's size can double in one minute
- Larger fires lead to > displacement
- “Time is muscle” in response to heart attacks



# AV should respond to Fire Department, SFPD, or MTA traffic control direction immediately

- CVC = California Vehicle Code
- CVC Section 21806 requires a motor vehicle to yield the right of way to an emergency vehicle approaching with lights & sirens
  - Human driver must pay \$490 fine and receives a point on their license
  - Violations should also affect AV permittee privilege of operating
- CVC Section 22500 prohibits stopping, parking or leaving standing any vehicle, attended or unattended in an intersection, on a crosswalk and within 15 feet of a fire station driveway
- CVC Section 21708 prohibits driving on, over or across or in any manner damaging any fire hose under the supervision of a fire department



# Section 4.2 – 3:05 – 3:35 p.m.

## Question for Parties

1. In a circumstance where a first responder is responding to an emergency (police, fire, medical) and an AV is blocking the way, how should this situation be resolved and how quickly?



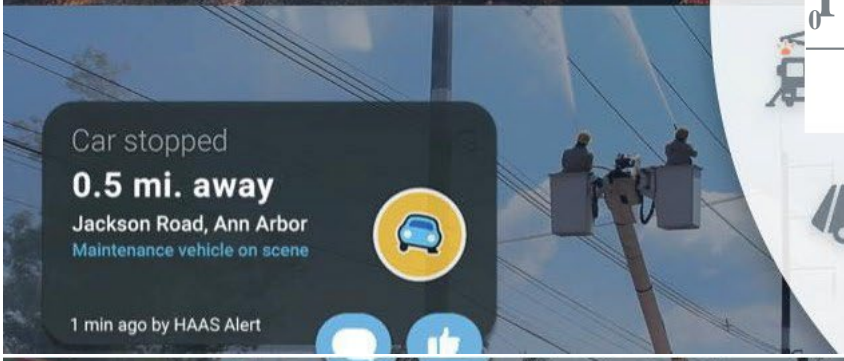
**SAFETY**  
**CLOUD<sup>®</sup>**

*POWERED BY HAAS ALERT*

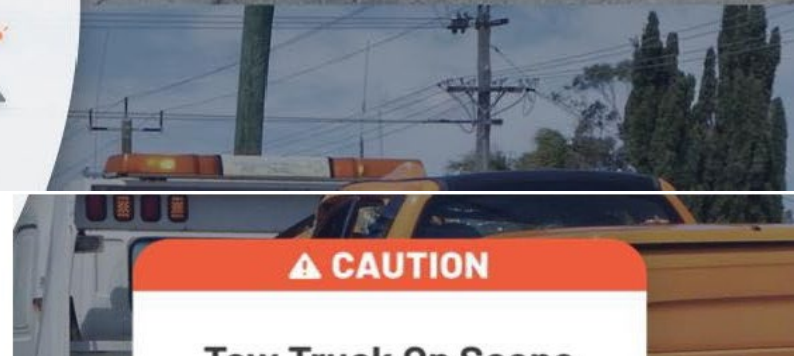


Car stopped  
**0.2 mi. away**  
 Broad St, Philadelphia  
 Construction vehicle on scene  
 1 min ago by HAAS Alert

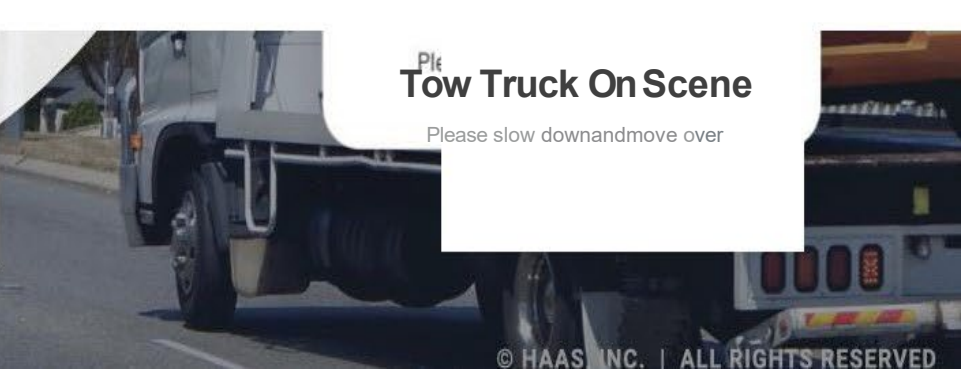
**CAUTION**  
**Emergency Vehicle On Scene**  
 Please slow down and move over



Car stopped  
**0.5 mi. away**  
 Jackson Road, Ann Arbor  
 Maintenance vehicle on scene  
 1 min ago by HAAS Alert



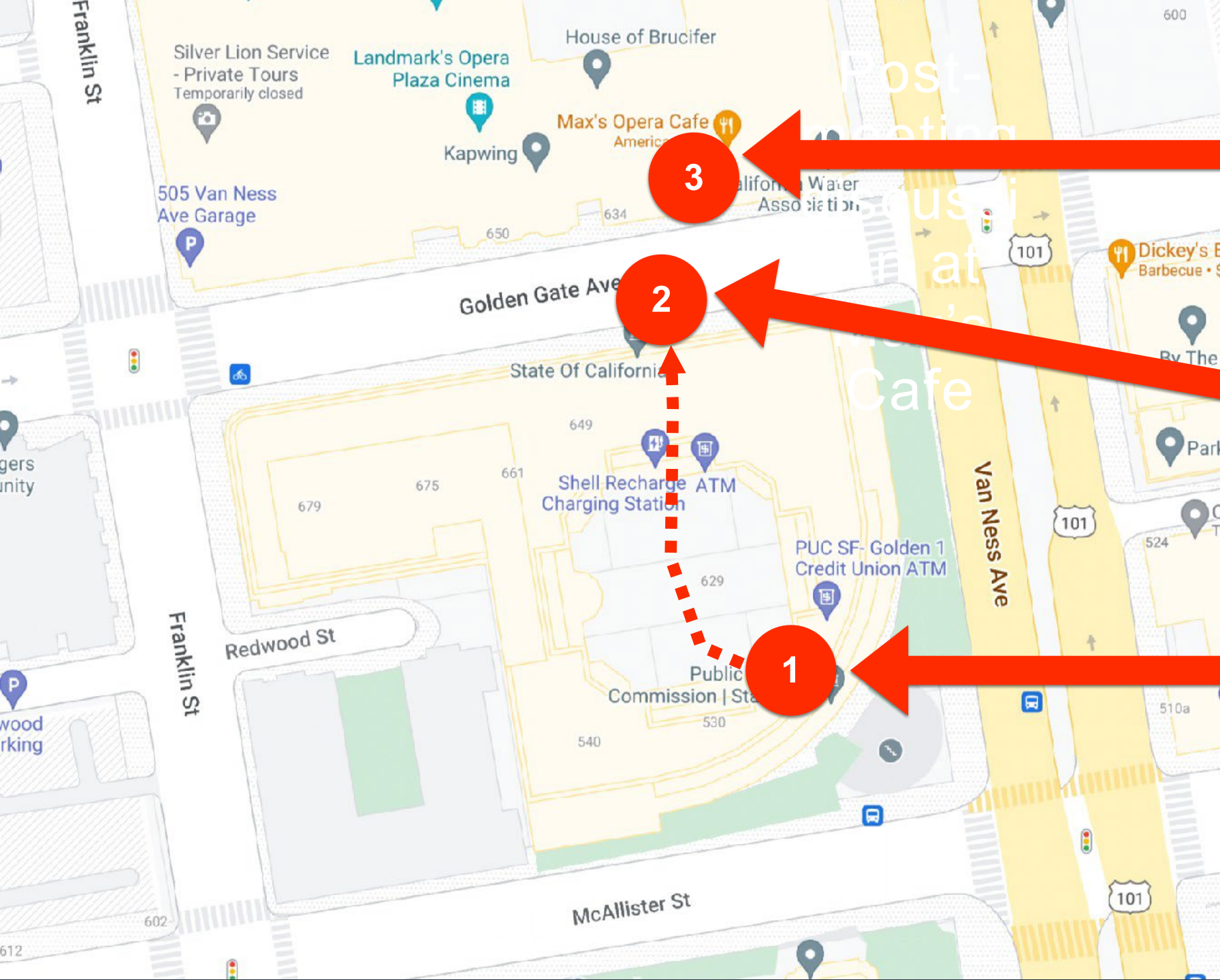
**CAUTION**  
**Tow Truck On Scene**  
 Please slow down and move over











Post-

mission

at

Cafe

Vehicle alerting  
(Golden Gate ave)

We are here



# Section 4.2 – 3:05 – 3:35 p.m.

## Question for Parties

1. In a circumstance where a first responder is responding to an emergency (police, fire, medical) and an AV is blocking the way, how should this situation be resolved and how quickly?

# Section 4.3 Questions 1 and 2 – 3:35 – 3:41 p.m.

## Order of Speakers

- A. Darius Luttrupp, Deputy Chief for Operations, San Francisco Fire Department  
Nicole Jones, Commander, San Francisco Police Department  
Julia Friedlander, Senior Manager, Automated Driving Policy, San Francisco Municipal Transportation Agency (3:35-3:38 pm)
- B. Jarvis Murray, For-Hire Transportation Administrator, Los Angeles Department of Transportation (3:38-3:41 pm)

# Section 4.3 Questions 1 and 2 – 3:35 – 3:41 p.m.

## Questions for Parties

1. The Commission has heard from first responders that from their perspective the Passenger Safety Plans (PSPs) filed by the AV companies have gaps when dealing with emergency and catastrophic situations. For first responders, please describe gaps in AV companies' Passenger Safety Plans with regard to protecting passengers and the public during emergency situations.
2. How quickly do first responders need to be able to communicate with AVs in such emergency and catastrophic situations?

# **CPUC Status Conference: Safety Issues Regarding Driverless AV Interactions with First Responders**

## **PART 4: Gaps in passenger safety plans (4.3)**

# Gaps of greatest concern are those between aspirational statements in plans & actual performance on the street

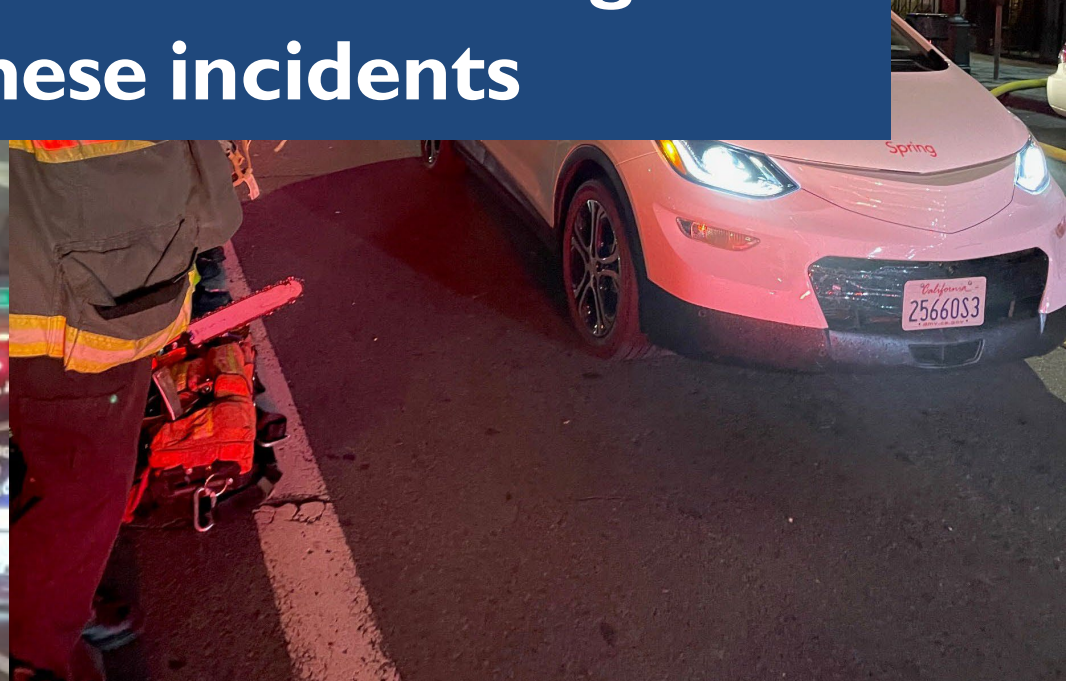


- These gaps require stronger regulation
- Commission should
  - measure performance
  - authorize expansion incrementally
  - Based on applicant performance





**California regulators collect no data documenting the frequency or impacts of these incidents**



# Section 4.3 Questions 1 and 2 – 3:35 – 3:41 p.m.

## Questions for Parties

1. The Commission has heard from first responders that from their perspective the Passenger Safety Plans (PSPs) filed by the AV companies have gaps when dealing with emergency and catastrophic situations. For first responders, please describe gaps in AV companies' Passenger Safety Plans with regard to protecting passengers and the public during emergency situations.
2. How quickly do first responders need to be able to communicate with AVs in such emergency and catastrophic situations?



# Section 4.3 Question 3 – 3:41 – 3:47 p.m.

## Order of Speakers

- A. Prashanthi Rao Raman, Vice President of Global Government Affairs, Cruise LLC  
Matthew Wood, Director of Software Engineering, Cruise LLC (3:41-3:44 pm)
- B. Rob Patrick, Manager, Emergency Response & Outreach, Waymo LLC  
Mari Davidson, Managing Counsel, Waymo LLC (3:44-3:47 pm)

# Section 4.3 Question 3 – 3:41 – 3:47 p.m.

## Question for Parties

3. For Cruise and Waymo, please respond to the comments that we've received from first responders on this issue.

# Section 4.3 Questions 4 and 5 – 3:47 – 4:17 p.m.

## Order of Speakers

- A. Mari Davidson, Managing Counsel, Waymo LLC (3:47-3:50 pm)
- B. Prashanthi Rao Raman, Vice President of Global Government Affairs, Cruise LLC  
Matthew Wood, Director of Software Engineering, Cruise LLC  
Greg Dieterich, General Manager of San Francisco Market, Cruise LLC (3:50-3:53 pm)
- C. Darius Luttrupp, Deputy Chief for Operations, San Francisco Fire Department  
Nicole Jones, Commander, San Francisco Police Department  
Julia Friedlander, Senior Manager, Automated Driving Policy, San Francisco Municipal Transportation Agency (3:53-3:56 pm)
- D. Jarvis Murray, For-Hire Transportation Administrator, Los Angeles Department of Transportation (3:56-3:59 pm)
- E. Dylan Hoffman, Executive Director for California and the Southwest, Technet (3:59-4:02 pm)
- F. Ariel Wolf, Counsel, Autonomous Vehicle Industry Association (4:02-4:05 pm)
- G. Mark Gruberg, Board Member, San Francisco Taxi Workers Alliance (4:05-4:08 pm)
- H. Peter Leroe-Muñoz, General Counsel, Silicon Valley Leadership Group (4:08-4:11 pm)
- I. Sharon Giovinazzo, CEO, Lighthouse for the Blind and Visually Impaired (4:11-4:14 pm)
- J. Cory Hohns, CEO, HAAS Alert (4:14-4:17 pm)



# Section 4.3 Questions 4 and 5 – 3:47 – 4:17 p.m.

## Questions for Parties

4. To the parties, please suggest solutions that can be implemented to address identified gaps in the PSPs. How quickly do first responders need to be able to communicate with AVs in such emergency and catastrophic situations?
5. The Los Angeles Department of Transportation has recommended in comments that AV companies in the city of Los Angeles use the Mobility Data Specification system now required for scooters and soon to be required for taxi cabs to immediately communicate to AV companies real-time and fluid traffic data such as special events and road closures. Are tools like this an option for enhancing safety and improving the ability of AV passenger services to identify safety hazards to protect passengers?

# CPUC Status Conference: Safety Issues Regarding Driverless AV Interactions with First Responders

**PART 5:** Solutions for gaps; use of Mobility Data  
Specification (MDS)

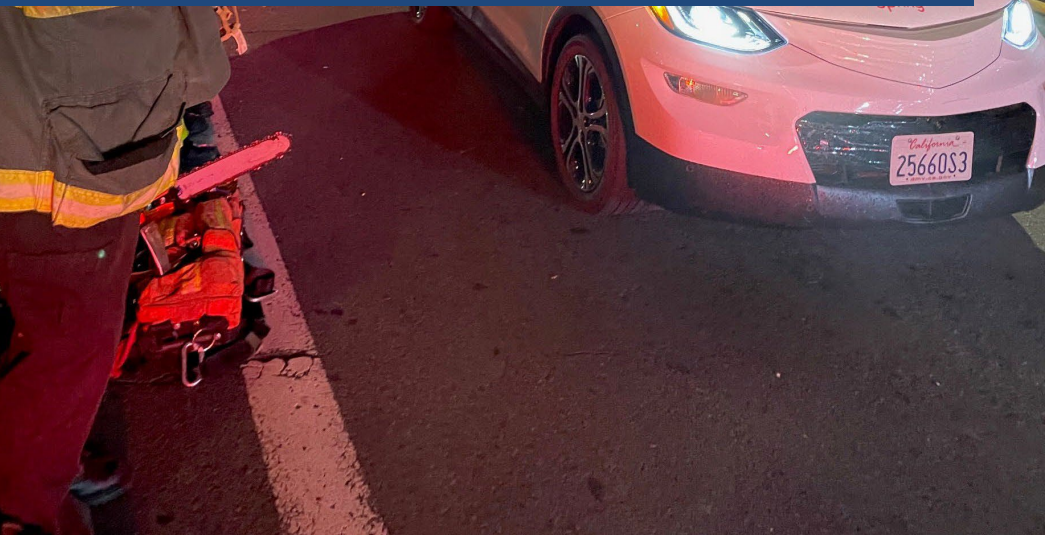
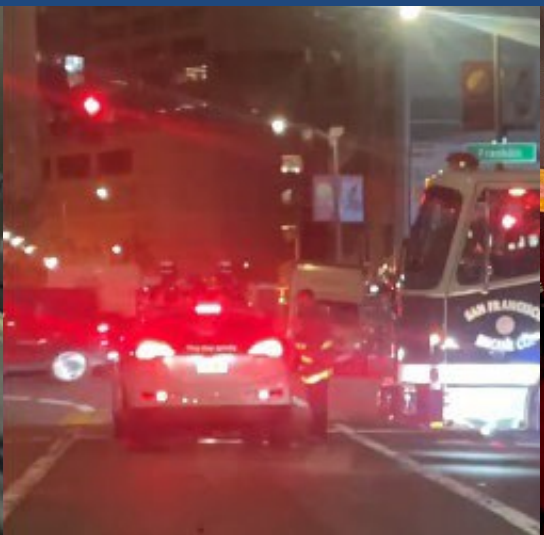
## Role for Mobility Data Specification (MDS)

- **Background:** MDS created by LA & other cities to define data fields & data transmission to manage transportation services in the public right of way
  - **Open Mobility Foundation** manages MDS for public & private users
  - **Use:** Some cities use for real time device management; others for routine reporting
  - **MDS 2.0** recently added data fields for motor vehicle passenger services
  - **MDS 3.0** could incorporate new data fields for AV passenger services
- **Purpose:** facilitates data exchange for right of way management that provide standard data collection so that companies offering shared mobility in many markets can use standard approaches
- **SF Position:** San Francisco supports using data standards jointly developed by public & private sectors to facilitate safe street operations





**California regulations set no standards to limit these incidents or reduce their impacts on safety & first responders**



# Conclusion

- Current impacts of driverless operations on first responders should preclude unlimited expansion:
  - of fleet size
  - of hours of service into peak travel hours
- Commission actions should create level playing field on which operators compete to improve impacts on public, not just convenience for users
- Cruise & Waymo should demonstrate, through data available to the public, ability to avoid or minimize interference with emergency responders before expansion approval

**Thank you**





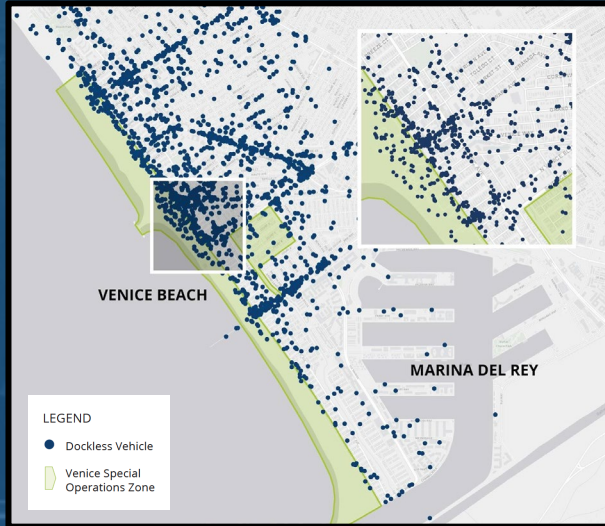
**CPUC LADOT Comments**  
**Jarvis Murray, Esq.**  
**August 7, 2023**





# How Two-Way Communication Benefits Communities

## Saturation



Sunday, May 5 @ noon

## Digital Policy

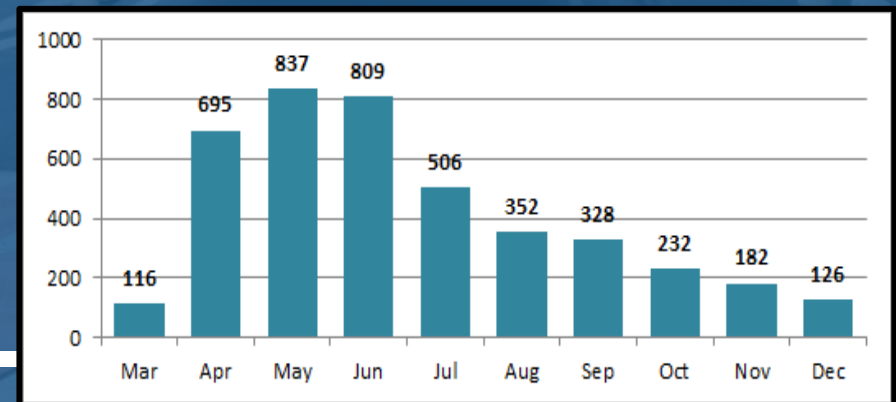
```
{
  "name": "Venice Prohibited Zones",
  "rule_id": "8ad39dc3-...",
  "rule_type": "count",
  "maximum": 0,
  "vehicle_types": [
    "bicycle",
    "scooter"
  ]
  "statuses": {
    "trip": [],
    "reserved": [],
    "available": [],
    "unavailable": []
  },
  "geographies": [
    "c0591267-..."
  ],
},
{
  "name": "Venice Drop-off Caps",
  "rule_id": "c1fcc729-...",
  "rule_type": "count",
  "start_time": "05:00:00",
  "end_time": "10:00:00",
  "maximum": 5,
  "vehicle_types": [
    "bicycle",
    "scooter"
  ]
  "statuses": {
    "available": [
      "provider_drop_off"
    ]
  },
  "geographies": [
    "6dc968c7-...",
    ... 22 removed ...
    "e1d54dc4-..."
  ],
},
}
```

## Outcome



Sunday, Sept. 16 @ noon

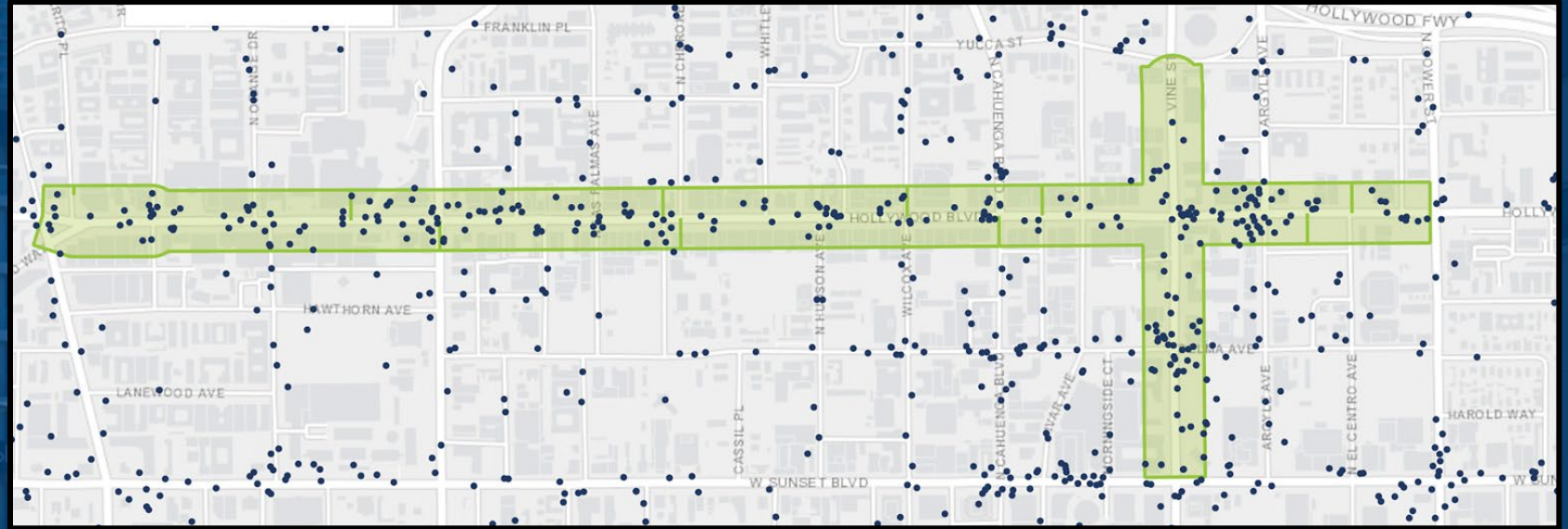
MyLA311 Service Requests in Venice, March 2019 - December 2019



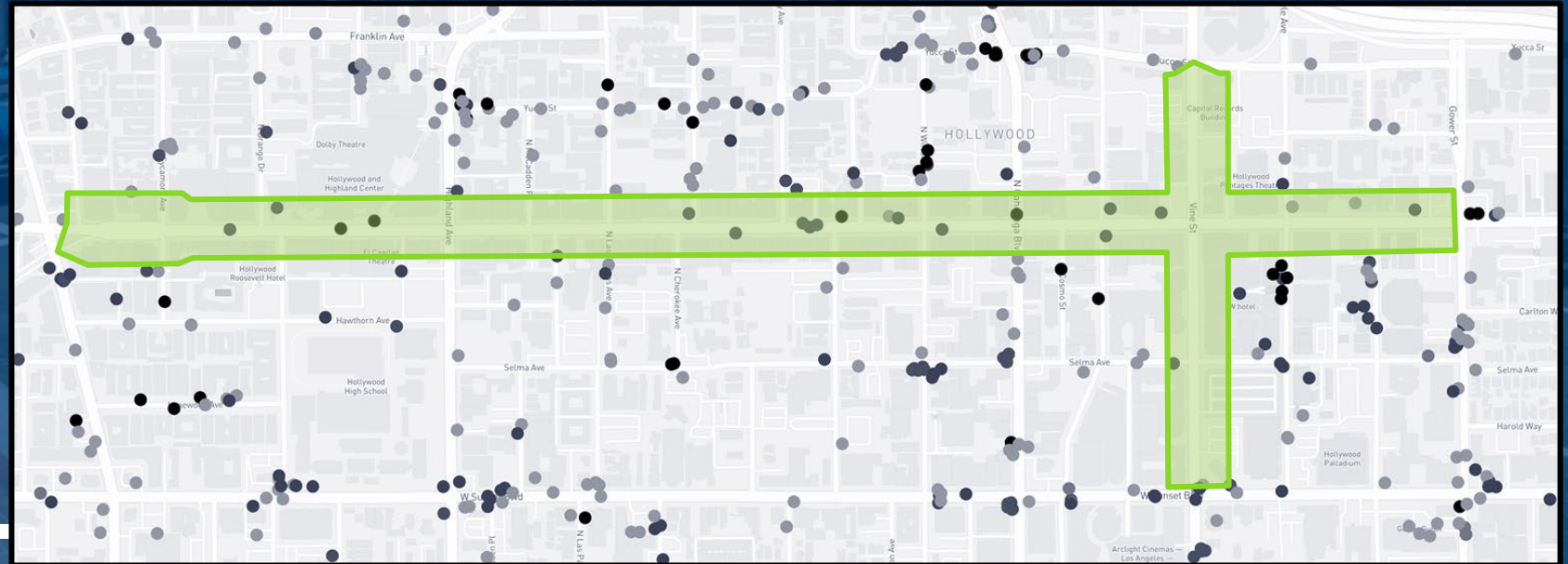


# Example: Outcome-Based Digital Policy (Micromobility in LA)

Hollywood Boulevard pre-policy

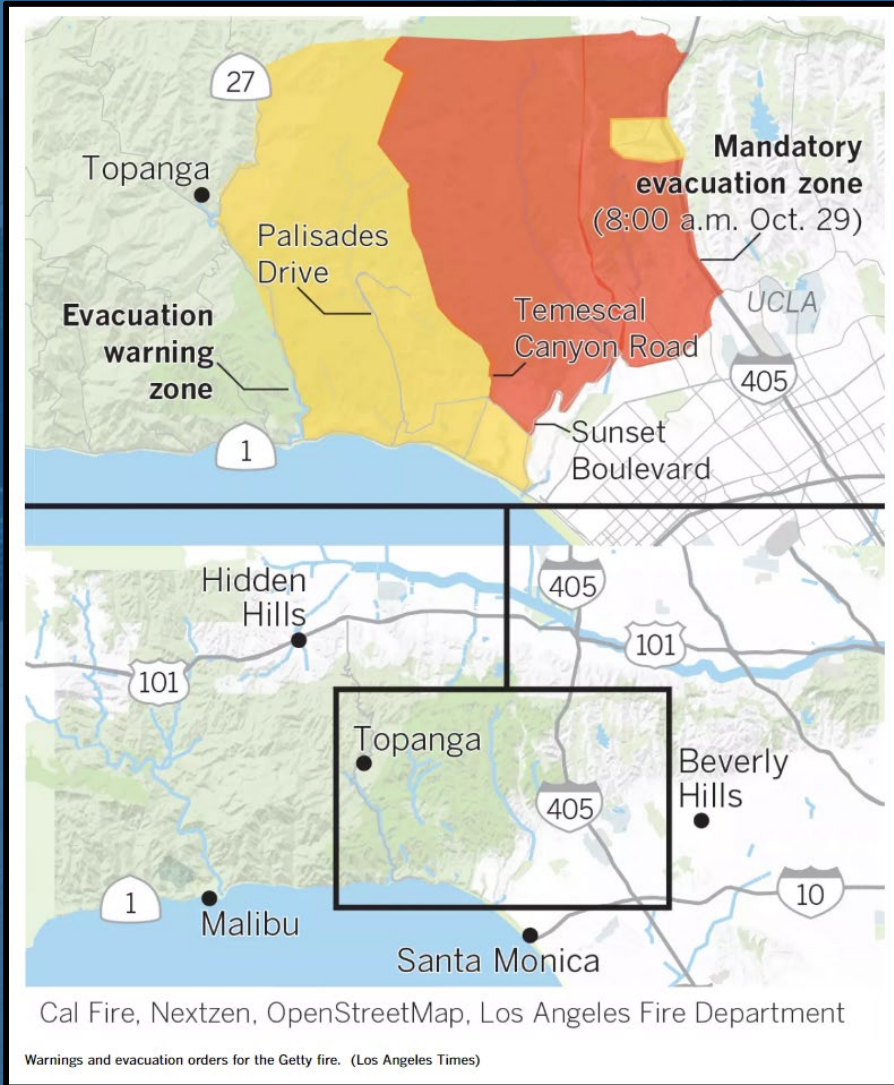


Hollywood Boulevard with policy





# 2019 Getty WildFire: Lessons Learned



Los Angeles Times

CALIFORNIA

## Getty fire off 405 Freeway in L.A. destroys several homes; thousands flee



BY HANNAH FRY, BRITTNY MEJIA, MATTHEW ORMSETH, LOUIS SAHAGÚN, RUBEN VIVES

OCT. 28, 2019 6:25 PM PT

### SUBSCRIBERS ARE READING >

CALIFORNIA

FOR SUBSCRIBERS

How a madam at Chinese massage parlor outside L.A. took on federal law enforcement

HOUSING & HOMELESSNESS

FOR SUBSCRIBERS

This L.A. developer aims to tear down and build apartments where the city does them

ENTERTAINMENT & ARTS

The ultimate guide to seeing Taylor Swift at SoFi Stadium

ENTERTAINMENT & ARTS

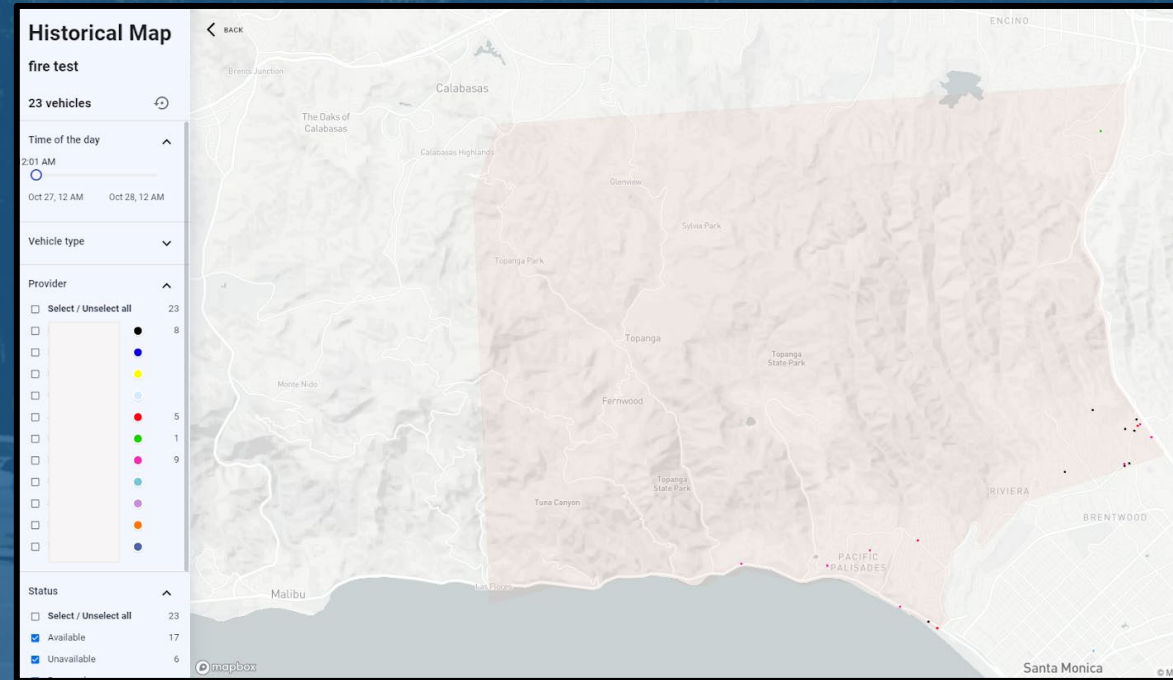
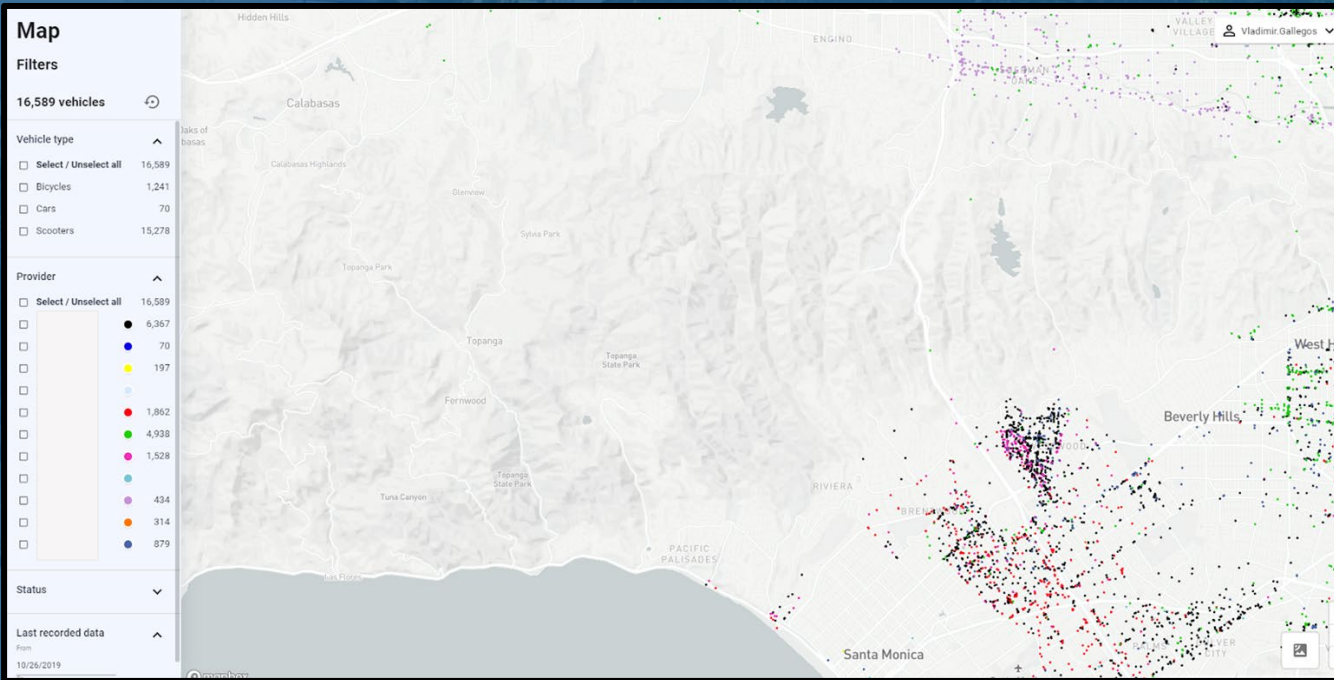
What to know about SoFi Stadium before the Taylor Swift Eras concert

CALIFORNIA

Inglewood tells Taylor Swift fans: No parking in the middle of the parking lot at SoFi



# 2019 Getty WildFire: Lessons Learned





# Special Events in Los Angeles



The City of Los Angeles hosts over 150 large special events annually. This includes the LA Marathon, LA Triathlon, CicLAvia, The Academy Awards, and large scale events such as the Summits of the Americas and 2028 Olympic and Paralympic games. Information sharing with mobility service providers and cities is critical to ensure our streets remain safe to all.



# Section 4.3 Questions 4 and 5 – 3:47 – 4:17 p.m.

## Questions for Parties

4. To the parties, please suggest solutions that can be implemented to address identified gaps in the PSPs. How quickly do first responders need to be able to communicate with AVs in such emergency and catastrophic situations?
5. The Los Angeles Department of Transportation has recommended in comments that AV companies in the city of Los Angeles use the Mobility Data Specification system now required for scooters and soon to be required for taxi cabs to immediately communicate to AV companies real-time and fluid traffic data such as special events and road closures. Are tools like this an option for enhancing safety and improving the ability of AV passenger services to identify safety hazards to protect passengers?



**SAFETY**  
**CLOUD<sup>®</sup>**

*POWERED BY HAAS ALERT*





Car stopped

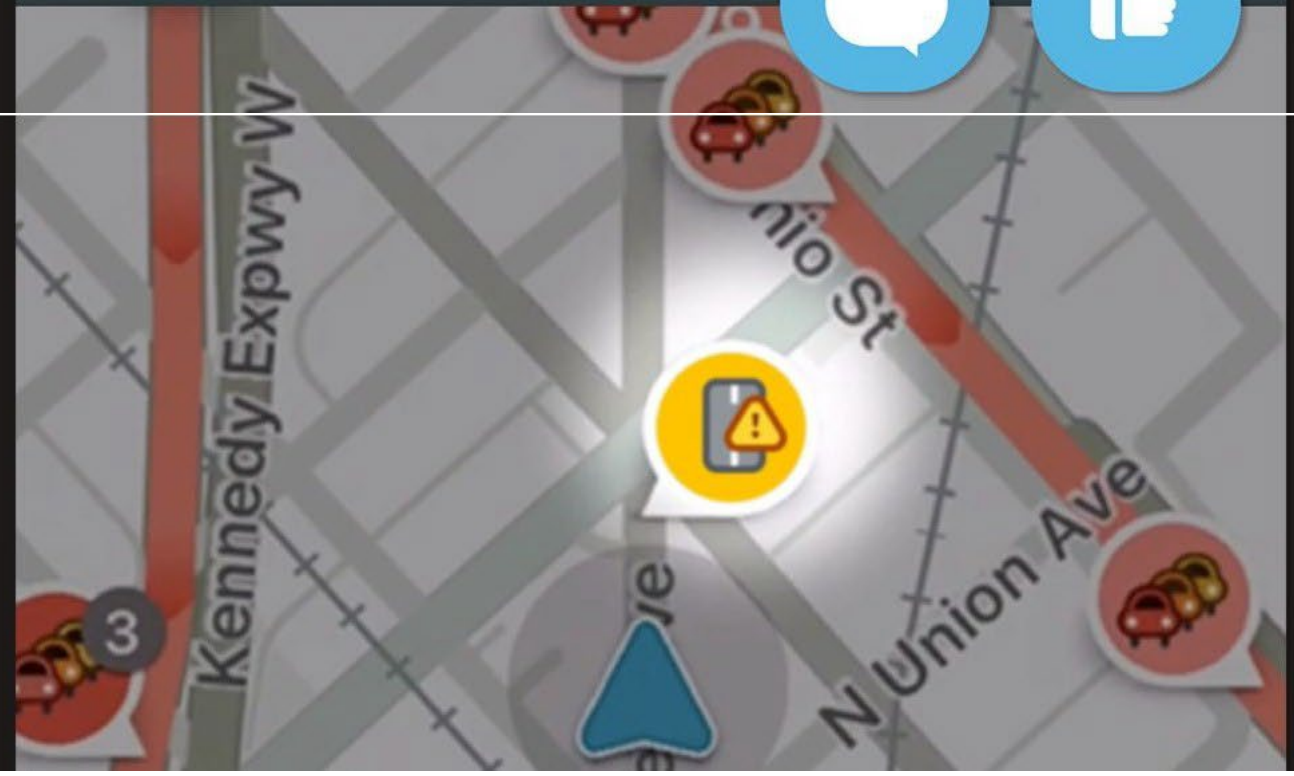
**0.4 mi. away**

**N Milwaukee Ave, Chicago**

Fire truck on scene



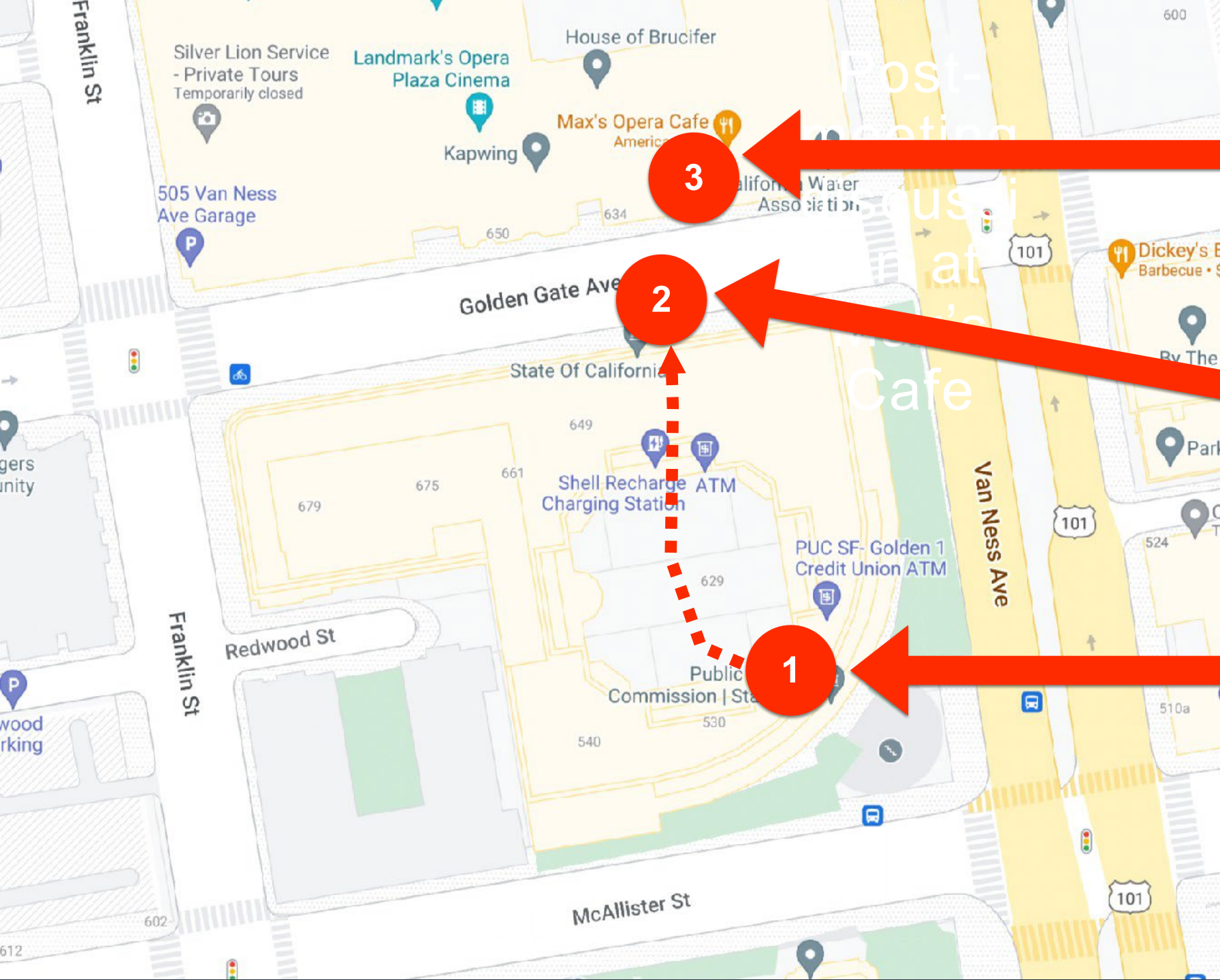
3 min ago by HAAS Alert











Post-

mission

at

Cafe

Vehicle alerting  
(Golden Gate ave)

We are here



# **Commissioner/ALJ Questions**

**4:17 to 4:27 p.m.**

# **Public Comment**

**4:27 to 4:57 p.m.**

# **Closing Remarks and Meeting Adjournment**

**4:57 to 5:00 p.m.**