



Waymo LLC  
1600 Amphitheatre Pkwy  
Mountain View, CA

December 12, 2022

## **ADVICE LETTER 0001 (Tier 3)**

TO THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In accordance with Decision (D.) 20-11-046 (as modified by D.21-05-017) (the “Deployment Decision”) and the *CPUC Autonomous Vehicle (AV) Drivered and Driverless Pilot and Phase I Deployment Programs Application Instructions and Requirements (Version 1.0)* (“Application Instructions”), Waymo LLC (“Waymo”) (TCP0038152A) hereby submits this Advice Letter 0001, complete with the AV-specific attachments appended hereto.

### **PURPOSE**

By this advice letter, Waymo seeks California Public Utilities Commission (“CPUC” or “Commission”) approval of Waymo’s application for a Phase I Driverless Autonomous Vehicle (AV) Deployment Permit. Based on the comprehensive showing made herein, we respectfully request the timely and favorable disposition of this advice letter by the Commission pursuant to General Order (GO) 96-B and the authorities referenced above.

### **INTRODUCTION**

Waymo is an autonomous driving technology company with a mission to make it safe and easy for people and things to get where they’re going. AVs hold the promise to improve road safety and offer new mobility options to millions of people. Safety is at the core of Waymo’s mission - it’s the reason we began our pioneering AV research and development over a decade ago, originally as the Google Self-Driving Car Project. Our experience includes over a decade of developing this technology, 20 million autonomous miles on public roads, 20 billion miles of simulated driving, and tens of thousands of comprehensive tests. More about Waymo’s comprehensive safety practices and publications can be found at [waymo.com/safety](http://waymo.com/safety). These publications include *Waymo’s Safety Methodologies and Safety Readiness Determinations* (Oct. 2020), which outlines our approach to deployment, whereby we engineer safety into our autonomous driving technology, from concept, architecture, requirements, and implementation, to verification, validation, and operations.

Waymo’s north star and ultimate service model is to offer AVs without a human driver, including in our commercial ride-hailing service, Waymo One™. Our Waymo One service is

powered by our automated driving system (“ADS”), called the Waymo Driver. Waymo’s ADS includes the software, hardware, and compute that, when integrated into the vehicle, performs all driving functions while operating within a defined geography and set of conditions. This type of technology falls under SAE International’s definition of a Level 4 automated driving system and will not exceed the boundaries of its authorized operational design domain (“ODD”). The Waymo Driver’s sophisticated sensor suite allows our vehicle to see a detailed 3D picture of the world, both in daytime and at night, and is designed to identify dynamic and static objects including pedestrians, cyclists, and other vehicles and road features. The Waymo One ride-hailing experience is supported by our Waymo One mobile app. To request rides in Waymo’s autonomously driven vehicles, riders download the Waymo One app to their mobile device (iOS or Android). Currently, Waymo One operates in both Arizona and California. In Arizona, we commenced our first driverless trips with members of the public in 2019 and have since served our riders in both Metro and Downtown Phoenix with tens of thousands of driverless trips. More about Waymo’s California operations can be found below.

Improving mobility is core to Waymo’s mission as a company, and we are dedicated to improving independence and access through the deployment of our technology. Our work is ongoing, but we seek to execute on our commitment to improve the quality of transportation access in many ways, including through our product features and service enhancements. Examples of the former include accessibility features in the Waymo One app,<sup>1</sup> as well as the availability of website and app resources in Spanish and Chinese (traditional and simplified). An example of an access-oriented service enhancement is the ability of riders with accessibility needs to hail a conventional wheelchair accessible vehicle (WAV) using our Waymo One app in San Francisco. This conventional WAV service is currently available to hail from a dedicated fleet using the same Waymo One app interface as for Waymo AVs, and operates during the same hours (24/7) and geography as Waymo’s AV service.<sup>2</sup>

Furthermore, to better understand the needs of historically underserved communities in developing our service, Waymo actively solicits feedback from local and national advocacy organizations. Waymo also generates valuable learnings from the inclusive cohort of riders we’ve onboarded as our high-touch Trusted Tester riders. The composition of this ridership seeks to reflect the diversity of the communities in which we operate. For example, in San Francisco, our Trusted Tester riders hail from neighborhoods all over the city, including neighborhoods in Equity Priority Communities<sup>3</sup> such as Excelsior and Bayview/Hunters Point. For more on Waymo’s features, services, and engagement efforts advancing accessible and

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<sup>1</sup> Certain of Waymo’s app features were submitted to the USDOT’s 2022 Inclusive Design Challenge. Together with our accessibility-focused partner organizations, Waymo engaged in multiple rounds of dedicated research focused on inclusive wayfinding features for our Waymo One mobile app. Waymo’s proposal received semifinalist honors.

<sup>2</sup> WAV trips are provided in partnership with Tower WAV (PSG0039427) using conventional vehicles equipped with side ramps and securement systems that are owned and operated by Tower WAV. WAV trips provided to Waymo riders provide valuable feedback to help us establish a quality service.

<sup>3</sup> See the Equity Priority Community map generated by the Metropolitan Transportation Commission (available at <https://epc-map.sfcta.org/>)

equitable service, please refer to Parts IV.A *Public Engagement* and VII.A *Accessibility* of Waymo's Passenger Safety Plan.

Finally, Waymo also recognizes the importance of sustainability in delivering additional clean mobility options to our riders, as demonstrated through our investment in the battery-electric Jaguar I-PACE vehicle platform. Our chargers are matched with 100% renewable energy through a combination of partnerships with local community choice energy programs like CleanPower SF and renewable energy certificates.

## **WAYMO ONE IN SAN FRANCISCO - LICENSING AND OPERATIONS**

Headquartered in California, Waymo has long-been an active participant in the Commission's development of industry rules for the piloting and deployment of AVs in passenger carrier service to the public.<sup>4</sup> Waymo has held and exercised CPUC operating authority dating back to July 2019, as one of California's first passenger carriers permitted to transport members of the public in autonomous vehicles.<sup>5</sup> Currently, Waymo holds CPUC operating authority as an AV charter party carrier of passengers (TCP) and participates in the Commission's Drivered Pilot, Phase I Drivered Deployment, and Driverless Pilot programs.<sup>6</sup>

Through its participation in these programs, Waymo already operates an AV passenger carrier service in San Francisco under the jurisdiction of the CPUC. We have incrementally expanded our public passenger carrier service over time since obtaining our first CPUC approval in July of 2019. Our early service provided rides to members of the public through educational demonstration rides and as guests of Waymo employees hailing Waymo AVs through our mobile app. In August 2021, Waymo launched the Waymo One service in San Francisco, enabling our initial group of public riders to hail Waymo AVs any time of day or night (with a human driver behind the wheel). Waymo started providing driverless trips in San Francisco to Waymo employees in March 2022,<sup>7</sup> began charging fares in our public Waymo One drivered service in May 2022, and has now expanded the availability of the driverless AV experience to members of the public on a pilot (no fares) basis. On November 9, 2022, the California Department of Motor Vehicles (DMV) amended Waymo's DMV Deployment Permit (originally secured in September 2021) to include the driverless configuration, authorizing Waymo to charge fares and collect fees for driverless AV services provided in San Francisco and a portion of Daly City.

With this latest DMV grant, Waymo now seeks CPUC approval to participate in the Commission's Phase I Driverless Deployment Program, which will allow Waymo to charge fares for the driverless trips in Waymo AVs that we provide in the San Francisco service area of our

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<sup>4</sup> Rulemaking (R.) 12-12-011.

<sup>5</sup> Pursuant to Waymo's Drivered AV Pilot permit, granted July 2019.

<sup>6</sup> The CPUC approved Waymo to participate in each of these programs in July 2019, February 2022, and November 2022, respectively.

<sup>7</sup> Employee-only trips provided pursuant to Waymo's DMV AV Testing Permit (without a human driver).

Waymo One ride-hailing service. Waymo's DMV-approved ODD for operations in the driverless configuration is appended hereto as Attachment A.

## **ADVICE LETTER REQUIREMENTS**

Applicants seeking to participate in the Commission's Phase I Driverless AV Deployment Program must submit their applications as a Tier 3 Advice Letter. The contents of Waymo's advice letter, complete with the attachments referenced herein, demonstrate that Waymo has satisfied the requirements of the Deployment Decision and that the subject application should be timely approved.

### **A. Compliance with D.20-11-046 (as modified by D.21-05-017)**

The Deployment Decision sets forth the requirements for participation in the Commission's Driverless Deployment Program. Applicants are required to submit the following:

- **Passenger Safety Plan.** In accordance with Ordering Paragraph 8 of the Deployment Decision and in furtherance of Waymo's commitment to the safe operation of our Waymo One service in a driverless configuration, Waymo provides the Passenger Safety Plan (December 2022), appended hereto as Attachment B. Waymo's Passenger Safety Plan describes the policies and procedures adopted to minimize risk for all passengers in our driverless vehicles.

- **Passenger Notice and Consent Plan.** In accordance with Ordering Paragraph 7(h) of the Deployment Decision, Waymo will inform and seek confirmation from passengers that they understand and consent to riding in an autonomous vehicle operating pursuant to the Commission's jurisdiction, as specified in the plan provided in Attachment C.

- **Deployment Data Reporting Plan.** In accordance with Ordering Paragraphs 7(m) and 18 of the Deployment Decision, Waymo will transmit quarterly data reports to the Commission in connection with all CPUC-jurisdictional driverless deployment operations (i.e. driverless passenger carrier service available to the public for monetary compensation). Driverless deployment quarterly reporting will be in addition to any other quarterly reporting required in connection with Waymo's participation in the Commission's other AV programs.

- **Transmittal of DMV Reports.** In accordance with Ordering Paragraph 7(g) of the Deployment Decision, Waymo will provide the Commission with a copy of all reports required to be submitted to the Department of Motor Vehicles in connection with driverless deployment operations.

- **Vehicle Photo.** In accordance with Ordering Paragraph 7(i) of the Deployment Decision, the Waymo One app will display an image of the vehicle model that will provide service to the requesting rider. This feature, along with other distinctive ways Waymo makes it easier for riders to find and board their unique vehicle in driverless operation, is described in

Part IV.C *Identifying and Boarding the Vehicle* of Waymo's Passenger Safety Plan.

- **No Remote Driving.** As described in Waymo's Passenger Safety Plan and consistent with Ordering Paragraph 7(e) of the Deployment Decision, Waymo AVs are driven by our ADS and are not designed to be remotely driven. Waymo Fleet Response and Rider Support teams do not perform the dynamic driving task (i.e. drive our AVs remotely via teleoperations).<sup>8</sup>

- **Insurance.** In accordance with Ordering Paragraph 7(c) of the Deployment Decision, Waymo maintains insurance in compliance with applicable DMV regulations.

- **Unaccompanied Minor Riders.** As described in Part VII.B *Minor Riders* of Waymo's Passenger Safety Plan and in accordance with Ordering Paragraph 7(k) of the Deployment Decision, Waymo requires all riders to be at least 18 years of age to create a Waymo account and request rides in Waymo AVs.

- **Rider Communications.** As required by Ordering Paragraph 7(l) of the Deployment Decision, Waymo will "record all communications from passengers in the vehicle with the remote operator while Driverless Autonomous Vehicle Passenger Service was being provided," and will retain such recordings for one year from the date of the recording.<sup>9</sup> Such recordings will be provided to the Commission upon request.

**B. Compliance with General Order 157-E**

The Commission's GO 157-E sets forth the requirements that apply to all charter party carriers of passengers. Waymo holds a TCP Class A certificate and maintains this authority in accordance with applicable requirements of the General Order.<sup>10</sup> Waymo seeks to prioritize and promote a culture of compliance and maintain ongoing adherence with applicable rules and regulations. This includes compliance with GO 157-E's charter party carrier requirements

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<sup>8</sup> Waymo has two teams that continuously monitor our fleet, to enhance the safety and comfort of our riders and the smooth operation of the Waymo AV. Waymo's Rider Support team provides assistance to our riders, while Waymo's team of Fleet Response Specialists monitor the status of our vehicles in real-time as they travel on public roadways. Training programs for each team are designed to match the level of training to the complexity of the scenarios the specialist might encounter, and utilizes various instructional tools, including self-paced learning through a dedicated learning management system, guided observation, hands-on practice, supervised time on training tooling, as well as evaluation at each level of training. Proprietary training outlines have been provided to the DMV and to the CPUC under claim of confidentiality.

<sup>9</sup> Per 13 CCR Section 227.02(n), "remote operator" is defined to mean "a natural person who possesses the proper class of license for the type of test vehicle being operated; is not seated in the driver's seat of the vehicle; engages and monitors the autonomous vehicle; is able to communicate with occupants in the vehicle through a communication link. A remote operator may also have the ability to perform the dynamic driving task for the vehicle or cause the vehicle to achieve a minimal risk condition."

<sup>10</sup> Not all requirements of General Order 157-E apply (e.g. Part 11 sets forth conditions applicable only to transportation network companies).

(certain of which are specifically referenced in Ordering Paragraph 7 of the Deployment Decision, as specified) for:

- **Service.** For example, Waymo provides rides to the public only by prearrangement (Section 3.01), will not conduct operations on airport property without the relevant airport's express authorization (Section 3.02; Ordering Paragraph 7(j)), and operates only under names on file with the Commission (Section 3.06).

- **Vehicles.** For example, Waymo maintains a current equipment list through the Commission's Transportation Carrier Portal (Section 4.01), displays our CPUC carrier name and TCP number on all vehicles used in CPUC-jurisdictional passenger carrier service (Sections 4.03 and 4.04), and timely performs 19-point inspections on all vehicles providing such service (Section 4.05; Ordering Paragraph 7(d)).

- **Record-keeping.** For example, Waymo maintains required records for a minimum period of three (3) years (Section 6.01).

- **Answering customer complaints.** For example, Waymo has procedures in place to respond to written complaints concerning transportation service within 15 days of the receipt of complaint (Section 7.01).

At this time, Waymo does not request any exemptions to General Order 157-E for purposes of operating its driverless deployment service pursuant to Section 8.01 or the Deployment Decision.

### **C. Compliance with California Department of Motor Vehicle Requirements**

Participation in the Commission's Driverless Deployment Program is predicated on securing and maintaining corresponding licensing authority from the California Department of Motor Vehicles (DMV). Waymo's advice letter contains the requisite demonstration of Waymo's compliance with applicable DMV requirements, as set forth below:

- **DMV Deployment Permit.** In accordance with Ordering Paragraph 7(b) of the Deployment Decision, Waymo holds an active DMV AV Deployment Permit, originally granted to Waymo by the DMV on September 30, 2021. Waymo's AV Deployment Permit was most recently amended on November 9, 2022, to add deployment operations in the driverless configuration. The DMV letter approving Waymo's 2022 Deployment Amendment, dated November 9, 2022, is appended hereto as Attachment D.

- **Attestation of Compliance with DMV Regulations.** In accordance with Ordering Paragraph 7(b) of the Deployment Decision, Waymo provides an attestation of compliance with DMV regulations applicable to autonomous vehicles, appended hereto as Attachment E.

● **Attestation of 30 Days of Operations.** In accordance with Ordering Paragraph 7(f) of the Deployment Decision, Waymo provides the required attestation of 30 days of Operations following the November 9, 2022 grant of our DMV Deployment permit amendment, adding the driverless configuration, appended hereto as Attachment F.

### **EFFECTIVE DATE**

Pursuant to Section 7.3.5 of GO 96-B, and Ordering Paragraphs 11 and 18 of the Deployment Decision, Waymo respectfully requests that this Tier 3 advice letter become effective immediately upon Commission approval.

### **PROTESTS AND RESPONSES**

Any person (including individuals, groups, or organizations) may submit a response or a protest to an advice letter (General Order 96-B, Section 7.4). When submitting a response or a protest, please include the carrier's name (Waymo LLC) and the advice letter number (0001) in the subject line. A protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name, telephone number, postal address, and (where appropriate) e-mail address of the protestant; and statement that the protest was sent to the carrier no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Section 3.11). A response or protest must be submitted within twenty (20) days of the date the advice letter was filed and must be served on the carrier on the same day.

Responses and protests must be submitted to:

Douglas Ito, Director  
California Public Utilities Commission  
Consumer Protection and Enforcement Division  
505 Van Ness Avenue  
San Francisco, CA 94102-3214  
[douglas.ito@cpuc.ca.gov](mailto:douglas.ito@cpuc.ca.gov)

and to

[AVPrograms@cpuc.ca.gov](mailto:AVPrograms@cpuc.ca.gov)

On the same day the response or protest is submitted to the Commission, the respondent or protestant shall email a copy to Waymo to the attention of Mari Davidson and Rem Dekker at the following address:

[waymo-regulatory-permits@google.com](mailto:waymo-regulatory-permits@google.com)

**NOTICE OF SERVICE**

In accordance with Section 4 of General Order 96-B, and D.20-11-046 (as modified by D.21-05-017), a copy of this advice letter is being sent electronically to the parties on the service lists for R.12-12-011, R.19-02-012, and R.21-11-014. Address changes to these service lists should be directed to the Commission’s Process Office at (415) 703-2021 or at Process\_Office@cpuc.ca.gov.

Respectfully,

DocuSigned by:  
  
957C85A8F0EC427...  
DAVID M. IRESSIER  
Deputy General Counsel  
Waymo LLC  
1600 Amphitheatre Parkway  
Mountain View CA 94043

**INDEX OF ATTACHMENTS**

<b>A</b>	Statement and Map of Operational Design Domain - Driverless Deployment (November 9, 2022)
<b>B</b>	Passenger Safety Plan - CPUC Driverless Autonomous Vehicle Deployment Program (December 2022)
<b>C</b>	Plan for Notifying Passengers (Driverless AV Deployment)
<b>D</b>	Waymo DMV Deployment Permit Approval Letter (2022 Amendment)
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<b>G</b>	Law Enforcement Interaction Plan for the Waymo Autonomously Driven Jaguar I-Pace (DMV Deployment)
<b>H</b>	Disclosure to Passengers Regarding Collection and Use of Personal Information (April 18, 2022)



**ATTACHMENT A**

**Statement and Map of  
Operational Design Domain - Driverless Deployment**

Waymo’s ODD<sup>11</sup> for deployment operations in the driverless configuration, as most recently approved by the California Department of Motor Vehicles on November 9, 2022,<sup>12</sup> is as follows:

<b>Roadway Type</b>	The intended operational design domain of Waymo’s vehicles will include the following roadway types: <ul style="list-style-type: none"><li>● Freeways, highways, city streets, rural roads, and other roadways.</li><li>● Parking lots.</li></ul>
<b>Speed Range</b>	The intended operational design domain of Waymo’s vehicles will include roadways with posted speed limits up to 65 miles per hour.
<b>Inclement Weather</b>	The intended operational design domain for operation in autonomous mode will include the following inclement weather situations: <ul style="list-style-type: none"><li>● Rain</li><li>● Fog</li></ul>
<b>Time of Day</b>	The intended operational design domain for operation in autonomous mode will include all times of day and night.
<b>Types of Operation</b>	Waymo autonomous passenger vehicles may transport the following categories of passengers (who may pay a fare): <ul style="list-style-type: none"><li>● Members of the public;</li><li>● Waymo or Alphabet employees and their guests; and/or</li><li>● Waymo or Alphabet contractors or agents.</li></ul> Waymo’s autonomous passenger vehicles may also transport goods for a fee in a commercial delivery service.

<sup>11</sup> Pursuant to 13 CCR Section 227.02(j), the operational design domain (“ODD”) is “the specific operating domain(s) in which an automated function or system is designed to properly operate, including but not limited to geographic area, roadway type, speed range, environmental conditions (weather, daytime/nighttime, etc.), and other domain constraints.”

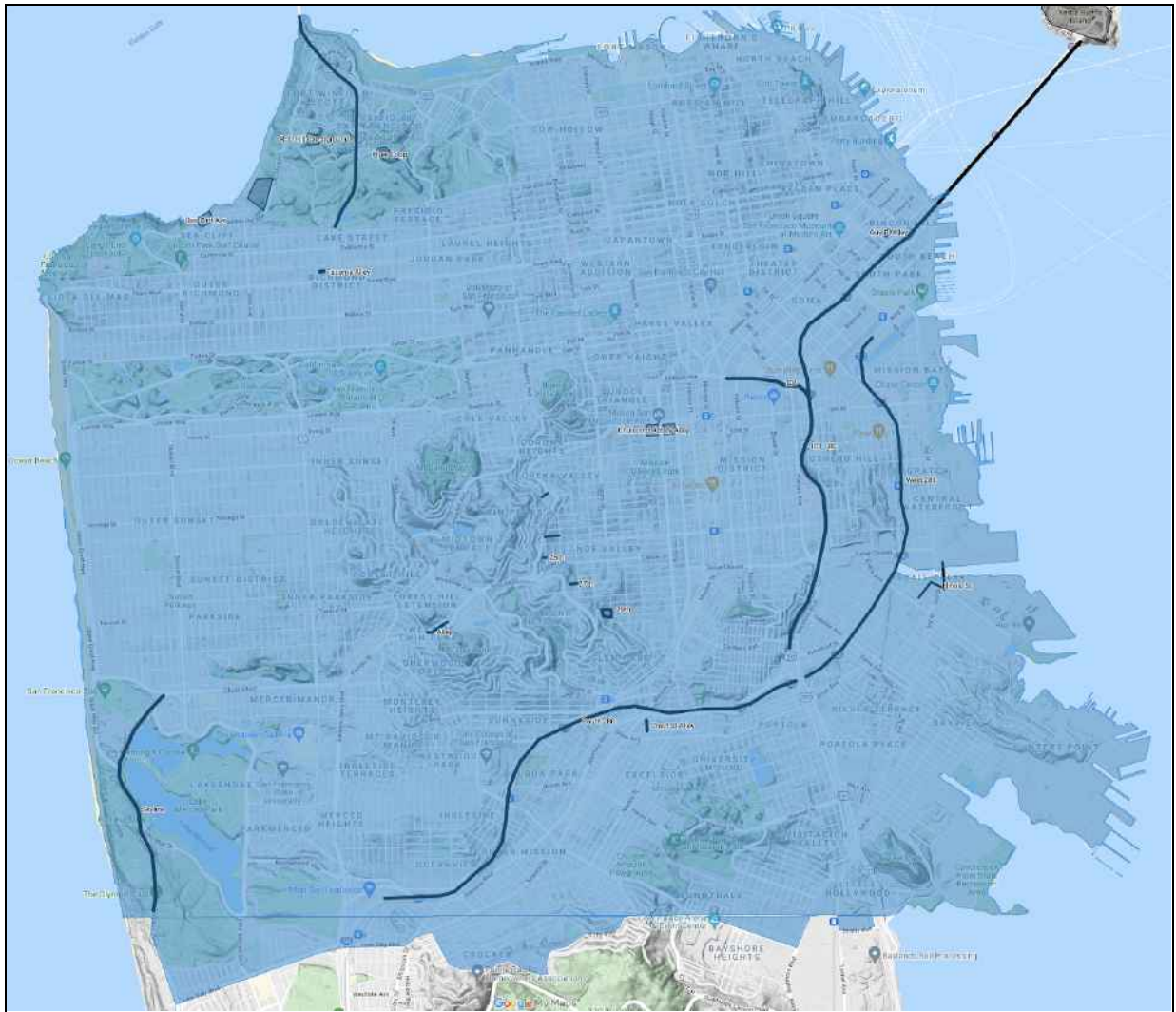
<sup>12</sup> Attachment A shows the ODD for Waymo’s driverless deployment operations, as stated on Waymo’s DMV permit. Waymo has omitted from Attachment A detail not required for Waymo’s CPUC Driverless Deployment Permit application, in particular text relevant to Waymo’s ODD for drivered deployment operations and internal cross-references to materials specific to the DMV permit application.

<p><b>Domain Constraints</b></p>	<p>The intended operational design domain will not initially allow for deployment operations in autonomous mode under the following conditions:</p> <ul style="list-style-type: none"> <li>● Snow or ice</li> <li>● Hail</li> <li>● Offroad</li> <li>● One-way mountain roadways</li> </ul> <p>Controlling the operating domain of its autonomous vehicles is a part of Waymo’s dynamic operations. Waymo may choose to change domain constraints for some or all of its vehicles at various times. For example, Waymo may limit commercial operation to certain times of day or to roadways with lower posted speed limits, or restrict AV operation in autonomous mode around specific roadway features (e.g., freeway ramps, construction zones, roundabouts) or in certain weather or weather-related road conditions (e.g., heavy rain, wet roads).</p> <p>If an AV encounters any of these domain constraints, the ADS is designed to achieve a minimal risk condition.</p>
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<p><b>Geographic Area Driverless Configuration</b></p>	<p>The geographic ODD for deployment operations in a <u>driverless configuration</u> will include San Francisco and a portion of San Mateo County, as depicted below.<sup>13</sup> The areas marked in black in the map, which include a select subset of limited access freeways, alleyways/narrow roads, parking lots, and dead ends, are currently excluded from the geographic ODD for driverless deployment operations.</p>
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<sup>13</sup> Note that Treasure Island is currently outside of the geographic ODD for deployment operations in both drivered and driverless configurations.



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**ATTACHMENT B**



**WAYMO**

**Passenger Safety Plan  
CPUC Driverless Autonomous Vehicle Deployment Program**

**December 2022**



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BECAUSE SAFETY IS URGENT™



## I. Our Mission

Waymo’s mission is to bring autonomous driving technology to the world, making it safe and easy for people and things to get where they are going. We’re building *The World’s Most Experienced Driver™* and we believe our technology will improve access to mobility and save thousands of lives now lost to traffic crashes.

Safety is at the core of Waymo’s mission — it’s why we were founded over a decade ago as the Google Self-Driving Car project. Our commitment to safety is reflected in everything we do, from our company culture, to how we design, test, and deploy our automated driving system (“ADS”), which we call the Waymo Driver™. Safety is also the hallmark of our rider experience.

Waymo’s Passenger Safety Plan describes how we deliver a safe, comfortable, and delightful rider experience each and every day. The features and service enhancements highlighted in this Plan are drawn from our experience driving over 20 million autonomous miles on public roads and over 20 billion miles in simulation, as well as from years of meaningful community engagement. Our deep experience includes tens of thousands of autonomous trips (and counting!) operated by our Waymo Driver, provided to riders seeking a new way forward in mobility in our Arizona and California service areas.<sup>14</sup> We presently serve Phoenix with our fully autonomous fleet, as well as the San Francisco Bay Area in our home state of California.<sup>15</sup>

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<sup>14</sup> Waymo’s Arizona service areas include Phoenix Metro (50 square miles encompassing the cities of Chandler, Gilbert, Mesa, and Tempe), and 40 square miles of Downtown Phoenix (public rides with a driver commenced in May 2022 and without a driver in August 2022).

<sup>15</sup> Waymo currently operates drivered and driverless AV passenger carrier service pursuant to the jurisdiction of the California Public Utilities Commission (“CPUC”) under TCP No. 38152-A.

## II. The Waymo Driver

Waymo’s automated driving system is designed to perform the entire dynamic driving task, operating within a defined geography and set of conditions, without the need for a human driver. Our ADS includes the software, hardware, and compute that, when integrated into the vehicle, performs all driving functions.

### The Waymo Driver

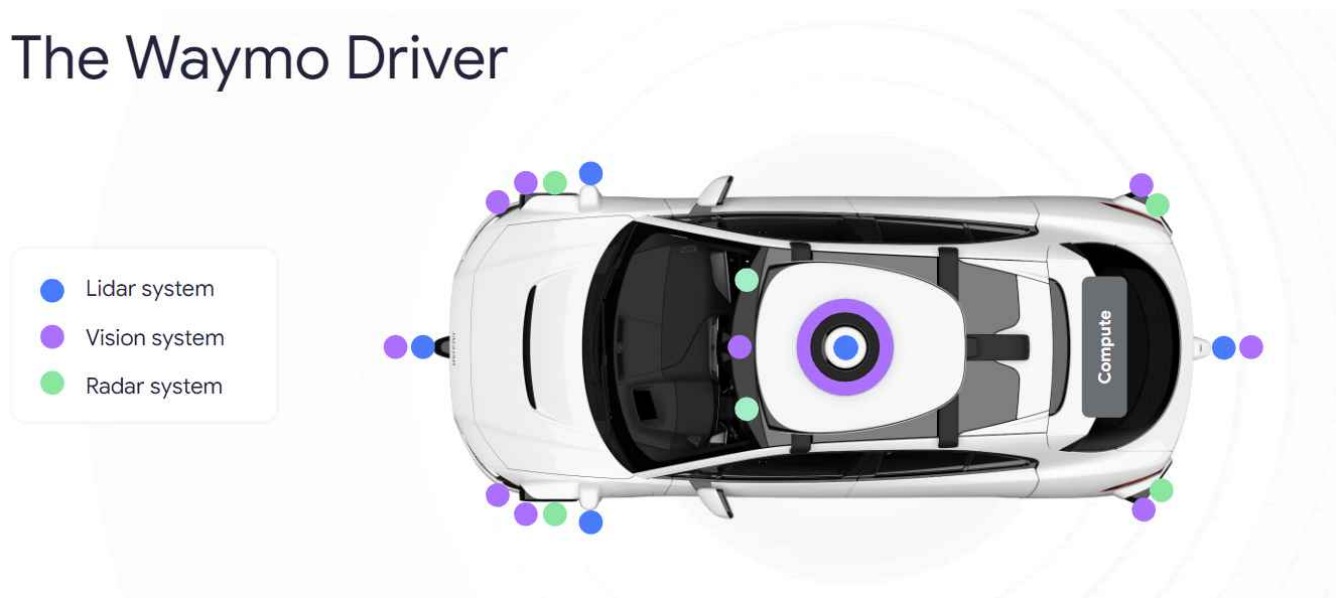


Fig. 1 Illustration of the Waymo Driver sensor suite<sup>16</sup>

To meet the complex demands of autonomous driving, Waymo has developed an array of sensors that allow our vehicle to see a detailed 3D picture of the world, both in daytime and at night, and up to nearly three football fields away. This multi-layered sensor suite (composed of lidar, radar, cameras, and other supplemental sensory equipment) works together seamlessly, capable of identifying dynamic and static objects including pedestrians, cyclists, other vehicles, traffic lights, construction cones, and other road features.

In Waymo’s San Francisco Bay Area operations, we operate our battery-electric Jaguar I-PACE vehicle platform, powered by 100% renewable energy. The agile Jaguar I-PACE, equipped with our ADS, provides an exceptional autonomous vehicle (“AV”) passenger carrier experience in a dense urban environment.

<sup>16</sup> Please note that Waymo’s website, mobile app, and other materials referenced in this Plan may be modified from time to time in consideration of new information and operational updates, and are provided here for illustrative purposes.



### III. Moving People with Waymo One

Waymo has been driving autonomously in the Bay Area for more than 13 years, learning from each step along the way as we progress towards a fully autonomous (driverless) commercial service. In March 2022, Waymo employees began taking driverless trips on public roads in San Francisco for the first time, an experience we've been able to make available to public riders starting in November 2022, with the grant of Waymo's CPUC Driverless AV Pilot permit.

Outside of California, Waymo already has extensive experience operating a fully autonomous transportation service offering trips to members of the public. In the summer of 2019, we commenced our first driverless trips with non-employees in Arizona's Metro Phoenix area. In October 2020, we expanded our initial service offering with the launch of our Waymo One™ service, making our fully autonomous fleet available to all potential riders in our 50 square mile service territory. In 2022, we expanded our Arizona service area to include Downtown Phoenix, serving public riders in our driverless cars starting in August 2022. On Arizona roadways, Waymo has provided tens of thousands of rides without a human driver and has driven more than 500,000 fully autonomous miles to date.<sup>17</sup> We've applied learnings from our

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<sup>17</sup> For details about the miles we've driven on public roads in Arizona, see Waymo's Public Road Safety Performance Data whitepaper available at: [waymo.com/safety](https://waymo.com/safety)



groundbreaking AV service in Arizona to San Francisco - advancing the capabilities of the Waymo Driver, discovering and developing features to enhance our rider experience, and refining our operational programs.

### **A. Waymo One**

Waymo One is Waymo’s autonomous ride-hailing service, powered by our Waymo Driver and supported by our Waymo One mobile app. To request rides in Waymo’s autonomously driven vehicles, riders download the Waymo One app to their mobile device (iOS or Android). Riders choose their destination and set a pickup location using an interactive map. Before confirming the trip, riders will see an upfront fare estimate, route overviews, and anticipated ETAs. Riders also may tailor their Waymo One app and trip experience to their accessibility needs, as described in more detail in Part XI.A. *Accessibility* below. At the present time, Waymo will not be offering shared rides.<sup>18</sup>

In our Arizona service areas, riders may request rides immediately after downloading the app and successfully creating an account with Waymo. In the Bay Area, we currently limit ridership in the initial service offering. Individuals who download our app may indicate their interest in riding with us, including as part of our early research and feedback-focused trips — what we call Waymo One Trusted Testers.<sup>19</sup> Waymo’s rider programs will grow and change over time.

### **B. Waymo’s Driverless Service in our Bay Area ODD**

In California, Waymo will provide driverless rides exclusively within the operational design domain (“ODD”) authorized by the California Department of Motor Vehicles (“DMV”) for both driverless testing (CPUC pilot) and deployment. Waymo’s pilot and deployment ODDs cover everyday driving on the complex city streets throughout San Francisco (excluding Treasure Island) and in a bordering portion of San Mateo County. In addition, Waymo’s driverless pilot ODD includes all or portions of the South Bay cities of Mountain View, Palo Alto, Los Altos, Los Altos Hills, and Sunnyvale. Driverless passenger carrier operations (pilot and deployment) will be conducted under a variety of weather conditions, on roadways up to 65 MPH, at all times of day and night.<sup>20</sup>

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<sup>18</sup> Shared rides here refers to rides where two or more chartering parties occupy the same vehicle for rides hailed separately.

<sup>19</sup> For more, see <https://blog.waymo.com/2021/08/welcoming-our-first-riders-in-san.html>

<sup>20</sup> Maps and descriptions of Waymo’s DMV-authorized ODDs are contained in Waymo’s Law Enforcement Interaction Protocol for the Jaguar I-Pace, which may be modified from time to time pursuant to 13 CCR 227.30.

Waymo's ADS is designed so each vehicle does not operate outside of its approved ODD. For example, our riders cannot select a destination outside of our approved geography, and our software will not create a route that travels outside of a geo-fenced area that has been mapped in detail. The Waymo Driver also is designed to detect changes in conditions (such as a heavy downpour) within the ODD, and come to a safe stop until conditions improve.<sup>21</sup>

We also design our vehicles to be capable of complying with federal, state, and local laws within our geographic areas of operation. Through our internal programs and processes, we identify legal requirements relevant to safe driving and build those requirements into our system. Before our vehicles drive in a new jurisdiction, our team works to understand unique road rules or driving customs, and we update our software so our vehicles are capable of responding safely and appropriately.

Waymo is developing fully autonomous driving technology to move people and things from A to B, anytime, anywhere, and in all conditions. As our system's capabilities grow, we will expand to bring our technology to more people.



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<sup>21</sup> See Part IV.C. *Every Waymo Ride (Pulling Over and Safely Exiting)* for more on how the Waymo Driver identifies a safe location to pull over, including in the process of achieving a “minimal risk condition.”

## IV. Rider Education

Our automated driving technology is cutting edge, but how we talk about it isn't complicated. Our rider-oriented communications educate our riders about how our technology and services work, what they can expect in riding with us, and what precautions and processes we have in place to transport them safely and comfortably.

### A. **Public Engagement**

Before signing up to ride with Waymo, potential riders and the broader community may be introduced to our service through various media and methods. Waymo seeks to reach beyond our potential customers to the broader public, because we know that in order for AVs to fulfill their promise for safety and mobility, people must understand their capabilities.

- Waymo's Website. Waymo maintains a website with useful information about Waymo's service, experience, and safety information. Key resources are provided in Spanish, Chinese (traditional and simplified), and Tagalog. Our website links to our published safety papers ([waymo.com/safety](http://waymo.com/safety)), our law enforcement interaction plans ([waymo.com/firstresponders](http://waymo.com/firstresponders)), and other informative resources, as illustrated in the two sample images below (see Figures 2 and 3).

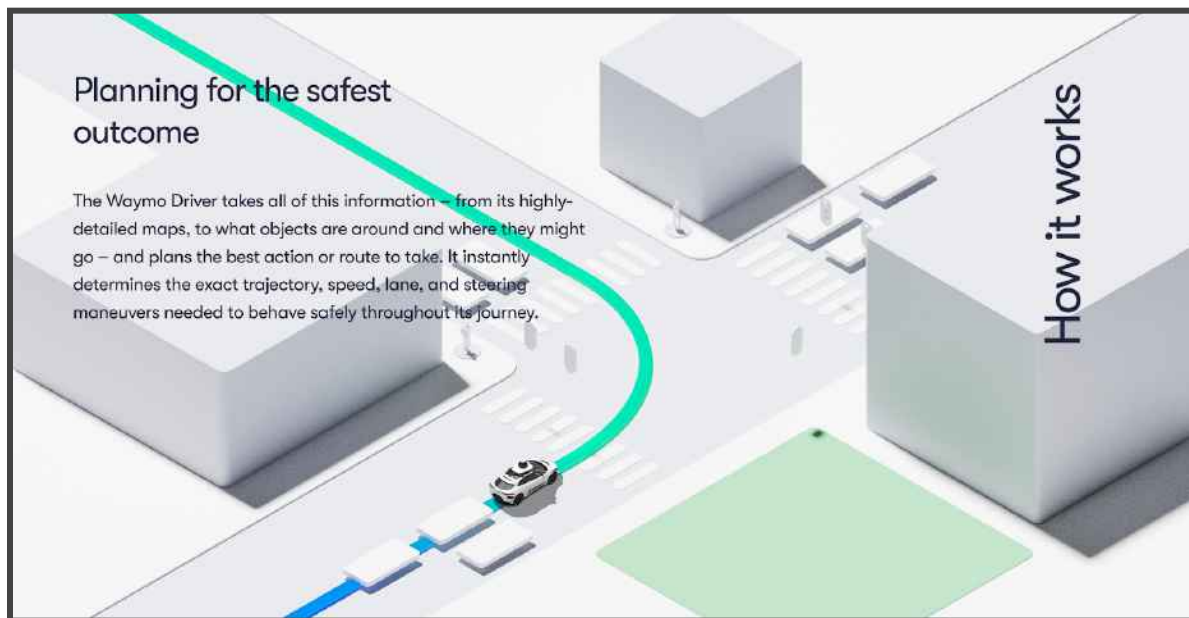


Fig. 2 “How it works” slide story at <https://waymo.com/waymo-driver/> (English)



Fig. 3 “How it works” slide story at <https://waymo.com/waymo-driver/> (Chinese - simplified)

- Community Events with Waymo . Waymo routinely hosts informational events in the communities in which we operate. These engagements help us to inform, and be informed by, our neighbors and local organizations. Our community events typically include a static demo of our ADS-equipped Jaguar I-PACE vehicle, with Waymo representatives available to answer questions and share their experiences. We also set up interactive displays at events that describe Waymo's technology, Waymo's mission, and Waymo's vision for the future. We employ digital content, video tutorials, and a scale model of our car with interactive touchpoints to educate about our sensor suite. These community events are a user-friendly way to introduce Waymo's state-of-the-art technology to the public.



Fig. 4 Waymo Pop-Up Event at the 2021 Stern Grove Festival

- *Let's Talk Autonomous Driving*. *Let's Talk Autonomous Driving* (or “LTAD”) is the world’s first public education campaign about fully autonomous vehicle technology. In this Waymo-led initiative, we work in partnership with national and local safety, disability, equity, mobility, and senior organizations to engage and educate the public about how AV technology works and the public benefits it may unlock. Educational materials can be found at [ltad.com](http://ltad.com).

## **B. Getting Started with Waymo**

Waymo’s onboarding process provides our future riders with a variety of resources about the Waymo trip experience.

Prospective riders seeking to take driverless trips in our Bay Area service will be given the opportunity to review our terms of service and privacy policy, and to express interest in riding with us, including as a Waymo One Trusted Tester. Once invited to ride with Waymo, the rider will be guided through account setup.<sup>22</sup>

The onboarding process includes notice to riders that they will be receiving driverless AV service provided by Waymo under the Commission’s jurisdiction, and riders acknowledge and agree to receive such service as part of creating a Waymo account. Riders will also be required to confirm that they are at least 18 years of age, which is a requirement to ride with Waymo (unless accompanied by an adult account holder).

Key actions taken in the onboarding flow are memorialized in communications sent to the rider by email. For example, riders receive confirmations regarding their participation in Waymo One, as well as useful information about how to request their first autonomous ride using the Waymo One mobile app.

Once a rider is approved to ride, they will have 24/7 access to FAQs and articles hosted in the Waymo One mobile app and through the Waymo One (online) Help Center. Waymo’s Help Center provides resources describing the rider experience, from the Waymo app display (see Figure 5 below, a sample excerpt intended to help familiarize riders with the mobile app display — in this case, during a ride), alerts riders can expect when the vehicle is on its way or has arrived, how much time riders have to board, how to enable or change accessibility settings, and other tips.

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<sup>22</sup> While rider onboarding may change and streamline over time as our Waymo One service expands to serve more riders, essential notices and acknowledgments will remain.

## During your ride

During your ride, the app will display:

- The car's route to your dropoff
- The status of your trip
- The car's license plate number

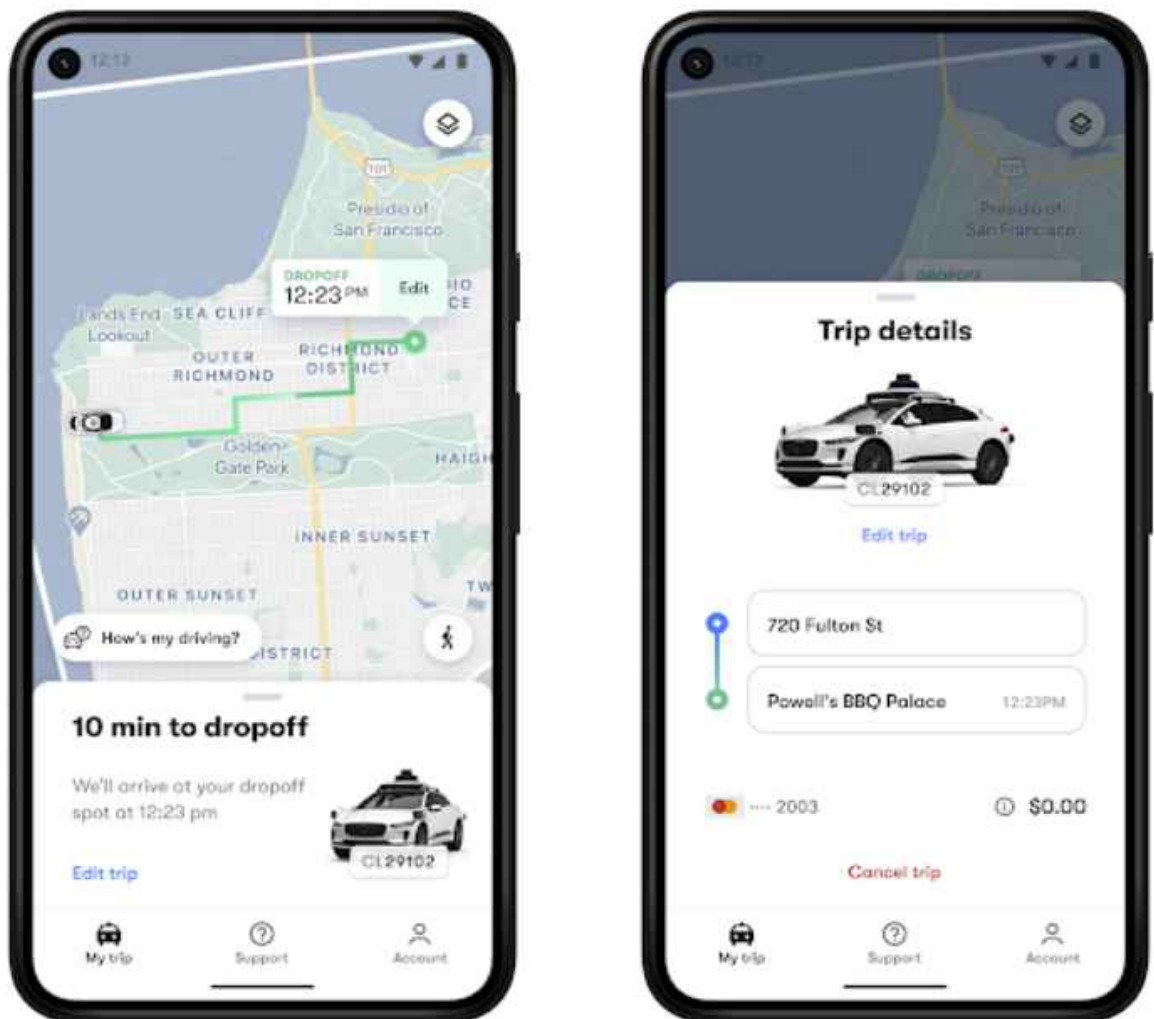
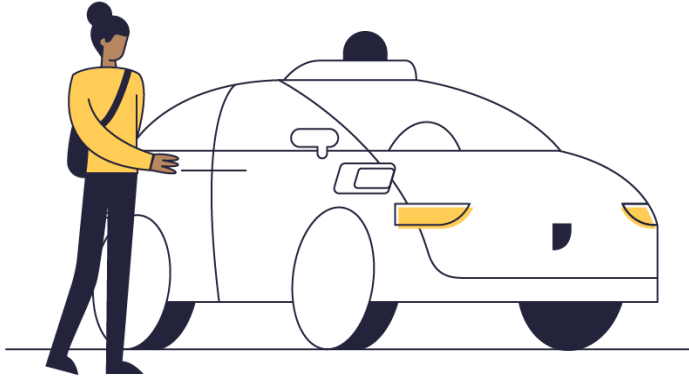


Fig. 5 Help Center excerpt from "Your first ride" article



### C. Every Waymo Ride


Each time a rider hails a Waymo AV, we have an opportunity to educate about how our service can safely serve them. Together, the Waymo One app and the features we integrate into the in-car experience help our riders understand how our fully autonomous vehicles operate. We enhance rider safety and comfort through timely and relevant communications (e.g. safety belt reminders) and with an ever-expanding suite of safety features and functionalities (e.g. changing a destination).

These communications and features include the following:

- COVID-19 Prevention. We require our riders to follow current COVID-19 health and safety guidance issued by relevant local, state, and federal authorities, as directed by Commission Resolution TL-19131. Information and instructions are communicated to our riders in accordance with Waymo’s COVID-19 Response Plan, which is provided in Part VIII below.
- Seat Belt Reminders. Buckling up saves lives, and Waymo has developed multiple ways of keeping seat belts top of mind for our riders. In our driverless vehicles, riders will be reminded to buckle their seat belt through in-vehicle screen notifications (e.g. our rider safety video), and other media (e.g. in-vehicle labels and our seat-back safety card shown in Figure 6 below). Riders also receive automated visual and audio alerts if the vehicle’s sensors detect unbuckled seat belts.


# Hello!

Here are some tips to enjoy your ride safely




Buckle up

### Buckle up properly



You should feel free to relax. However, please keep your seat belt on and leave your seat upright while the car is in motion.


### Bring your own car seat



Bring your child's car or booster seat and secure it in the back row according to the manufacturer's installation instructions.


[See back for more info](#) →

### Belt use for pregnant riders



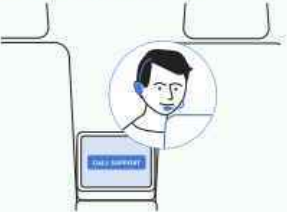
Secure the lap belt snugly below your belly – across your hips and pelvic bone. Place the shoulder belt across your chest and away from your neck, then remove any slack.

### Watch for cyclists when exiting



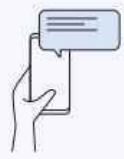
When exiting, check for people approaching on bikes or scooters before slowly opening the door.

### Call on helpful humans



Tap the Call Support button on the passenger screen in the car, or visit Support in the app for assistance at any time.

### Tell us about your ride



Let us know what you love and how we can improve. We'll ask at times, but you can always send feedback in the app.

[Get more info in the app or at \[waymo.com/help\]\(http://waymo.com/help\)](#)

Fig. 6 Seat-Back Safety Card (front and back)



- Setting and Changing Pickups and Dropoffs. We want our riders to enjoy a smooth trip experience and sometimes that means they'll want to adjust their pickup or dropoff location. Riders can do so in the Waymo One app, even after having arrived at the original destination so long as they have not yet opened the door to exit. Detailed instructions for editing a trip are available to riders in our app and also in the Waymo One Help Center. A Help Center excerpt illustrating this functionality is below.

### Adjust your pickup or dropoff spot

In "My trip," you can double check where the car will pull over to pick you up and drop you off, and adjust if needed.

To make sure we're picking you up and dropping you off at the best spot, you can check the map before requesting your ride.

1. Select **Edit** on the map callout.
  - a. Available pickup spots show up as blue lines or dots, and available dropoff spots show up as green lines or dots.
2. Drag the map to move the pin to your desired pickup or dropoff spot
  - a. Hint: Your location will be marked by a dark blue dot. Using satellite mode may help you see the location surroundings.
3. Tap **Update** if you made any adjustments, and then choose **Request car** to finalize

Even after following the steps above, you may still need to walk up to a few minutes to or from the car. Walking directions will appear on the map with a walking time estimate.

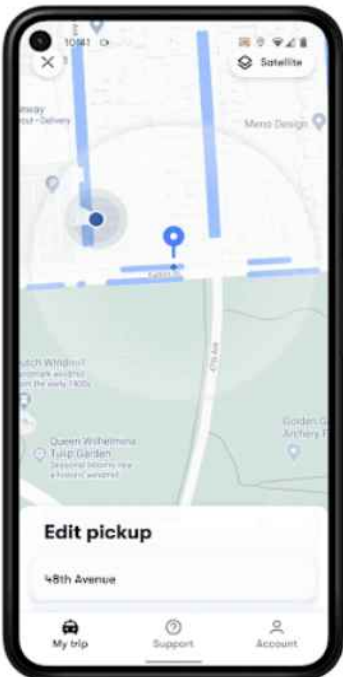


Fig. 7 Help Center article "Pickup & Dropoff" explaining how to adjust locations

- Identifying and Boarding the Vehicle. For each trip, the rider is shown an image of the vehicle model in the app. Each Waymo AV is easily identifiable by the main ADS sensor module (located on the roof assembly) and front fender additions, each of which bear Waymo's distinctive blue ring, as well as by the Waymo name on the sides of the vehicle and TCP number.



Fig. 8 Vehicle Identification (Hardware, Name, TCP)

To make it easier for riders to find and board their unique vehicle in driverless operation, Waymo AVs will have a vehicle identification feature that displays two (2) letters and a color unique to the hailing rider on the AV's main ADS sensor module. Riders can select the letter and color combination for each trip in the app, or the display will default to the rider's first and last initials. This feature is displayed on the vehicle when the AV arrives at the pickup location and is ready for the rider to board.



Fig. 9 Vehicle Identification (Initials Display)

The Waymo app also allows riders to prompt their Waymo AV to emit a distinctive chime sound or to honk the vehicle's horn (see Part VI.A *Accessibility* for more about this feature). This functionality helps to assist the rider in identifying and wayfinding to their unique vehicle using sound.

Having arrived at the vehicle, the rider will receive additional cues that they have located their car, including the door unlocking and handle releasing, which is triggered by the rider unlocking the vehicle in-app, as well as a distinctive welcome chime that will play a greeting using the rider's first name once the door is opened.

Waymo also enhances the safety of the boarding process for the benefit of our riders and other road users by displaying a boarding icon on the main ADS sensor module. This boarding icon turns on once the vehicle parks at the pickup location and is waiting for the rider to arrive, indicating that the vehicle is stopped for a rider to board.



Fig. 10 Rider Boarding Notification Icon

- In-Vehicle Screen Display. Each Waymo AV has an in-vehicle screen display that is for the dedicated use of the rider during their trip. The screen enables the rider to take certain actions throughout their ride, which include the following functionalities: Start Trip, Call Rider Support, Pullover, and Lock Door. The screen also displays notifications about the rider’s trip that are important to know along the way, such as: ETA, destination details, and instructions in the event of a trip interruption.

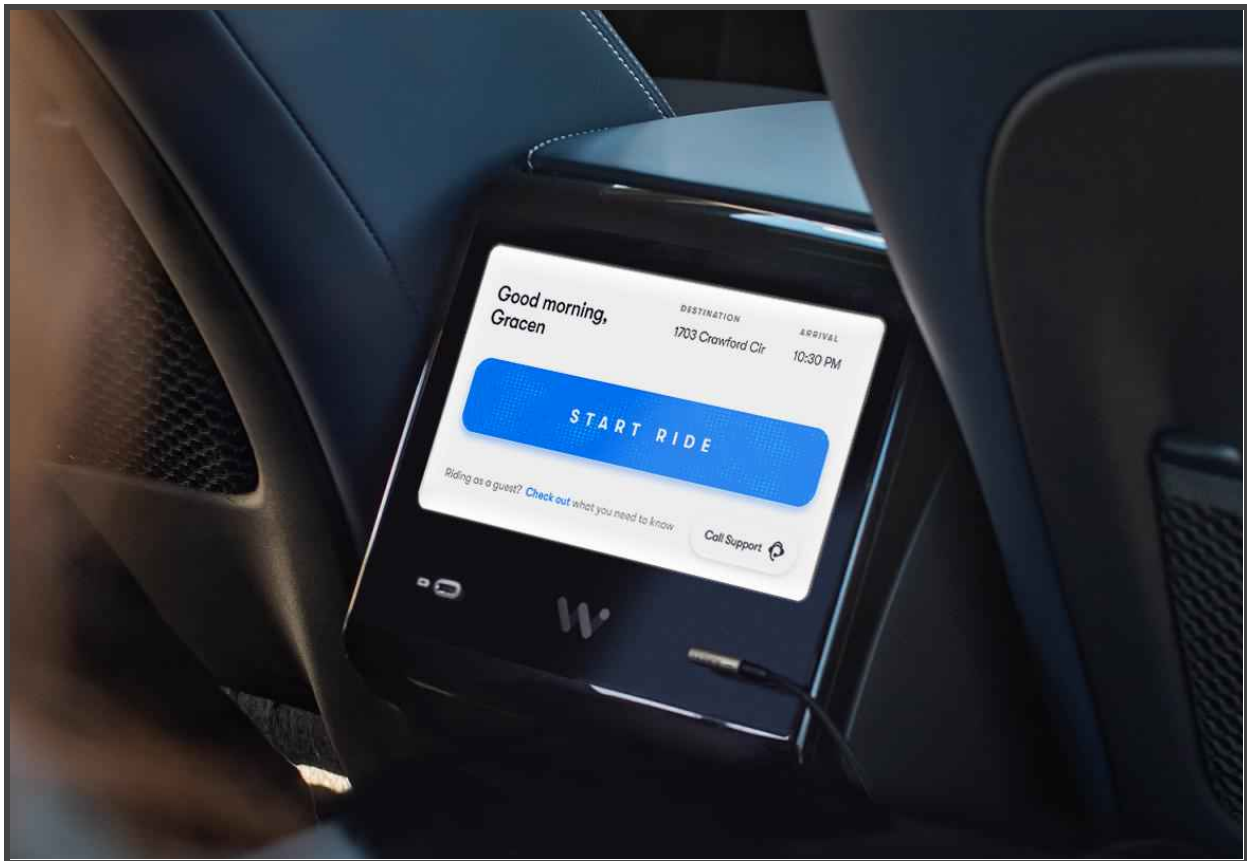


Fig. 11 In-Vehicle Screen in Jaguar I-Pace

- In-Vehicle Cameras. Cameras inside our driverless AVs help to ensure trips go smoothly and improve the service. For example, we use cameras to check that a rider’s vehicle is clean before it arrives at the pickup location, confirm all riders are wearing seatbelts, provide assistance in case of emergency, and make sure that nothing has accidentally been left behind at the completion of a ride.

- Pulling Over the Vehicle and Safely Exiting. Riders may choose to exit the Waymo AV before reaching their destination by using the Pullover button. This feature is conspicuously displayed on the in-vehicle screen and in the Waymo app. Once activated, the rider will receive confirmation of having initiated a pullover by audio and visual alerts inside the vehicle (in-vehicle screen and speakers), including a notification that the car is looking for a safe spot to pull over.

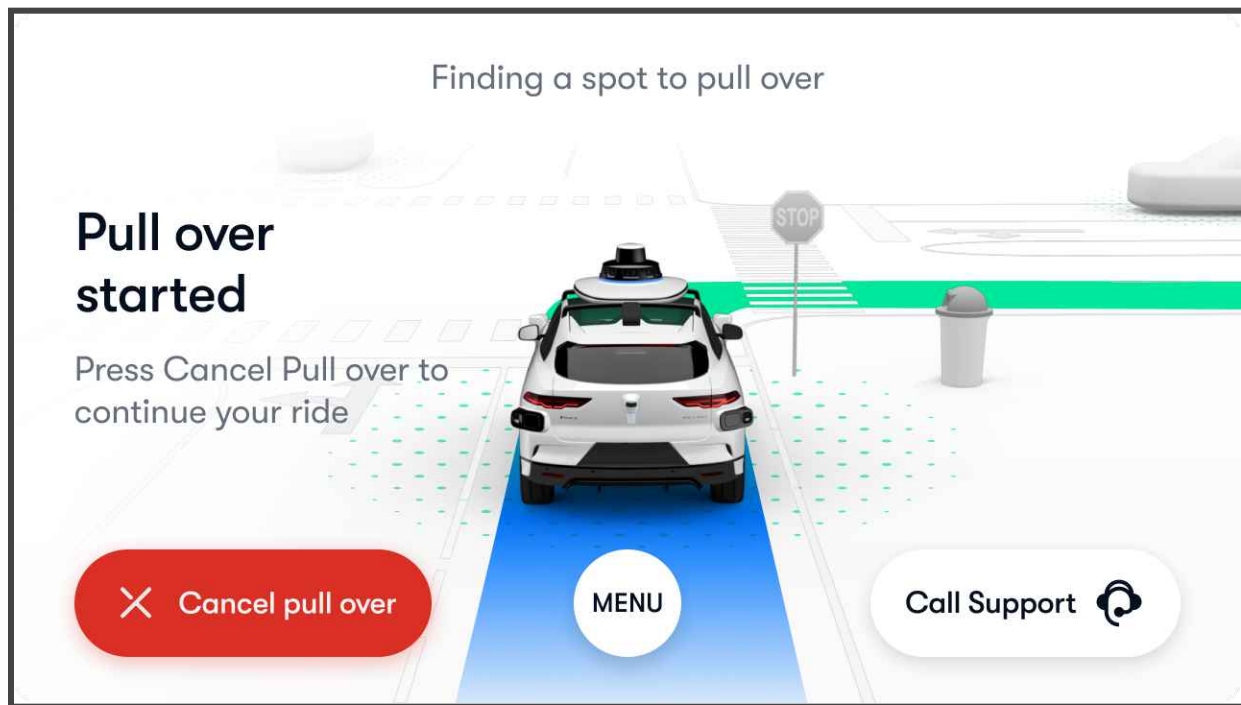


Fig. 12 Showing Pullover Button confirmation display on in-vehicle screen

In selecting and safely navigating pullovers, Waymo prioritizes rider and road user safety. The Waymo AV factors in compliance with applicable stopping, standing, and parking laws, the quality of the rider experience, and potential community impacts (e.g. congestion). We analyze various data points to select a pullover location that balances these considerations, based on real time conditions (e.g. open curb space, presence of other road users) and information from our detailed 3D maps (e.g. roadway speed limit). We use this same holistic approach to conduct safe pullovers under circumstances that are routine (e.g. rider-requested pickups and dropoffs), as well as those that are more infrequent (e.g. collisions and other events where the Waymo AV seeks to achieve a minimal risk condition).<sup>23</sup>

<sup>23</sup> 13 CCR Section 227.02(i) defines “minimal risk condition” as “a low-risk operating condition that an autonomous vehicle resorts to when either the automated driving system fails or when the human driver fails to respond appropriately to a request to take over the dynamic driving task.”

Once the vehicle is pulled over, it's always prudent for a rider to look out the window before opening the door — something we communicate to riders in our Seat-Back Safety Card (see Figure 4 above). In addition, Waymo's dooring prevention feature provides both visual and audible notifications to alert the rider to use caution when opening the door if a cyclist, scooter, or other fast-approaching road user is detected near the door.

Upon parking at the rider's dropoff location, the Waymo AV enhances the safe interaction of our riders with other road users, including pedestrians and cyclists, by displaying a de-boarding icon on the main ADS sensor module. Like the boarding icon described above, this display indicates to other road users that a rider is opening the door and exiting the vehicle.



Fig. 13 Rider De-boarding Notification Icon

- Contacting Rider Support. Riders are encouraged to contact Waymo's Rider Support team for 24/7 assistance, as described more fully in Part 5 *Waymo Rider Support* below.

## V. Waymo Rider Support

Waymo's Rider Support agents are trained to aid riders through unexpected scenarios and are available 24/7 to respond to rider questions and complaints. Waymo's Rider Support team provides essential and timely customer support for our AV passenger service and will respond to outreach from riders, or initiate contact if the Waymo AV's diagnostics signal such a need. Once notified, a Rider Support agent is assigned with live information about the state of the trip propagated in our Rider Support tool.

Whether a trip is in progress, planned, or already completed, riders can reach Rider Support via phone, chat, or email through the Waymo One app. During a trip, riders may also connect with Rider Support by pressing the Rider Support button on the in-vehicle screen to communicate via the vehicle's built-in two-way communication system. All riders, including those accompanying the Waymo One account holder, can use this latter method while riding with Waymo.



Fig. 14 Rider Support contact button on in-vehicle screen (zoomed in)

To allow for optimal routing of rider requests for assistance, in-vehicle and in-app Rider Support functions will allow riders to signal the need for urgent assistance, including by dialing 911 directly from the mobile app. This feature will function as shown below.

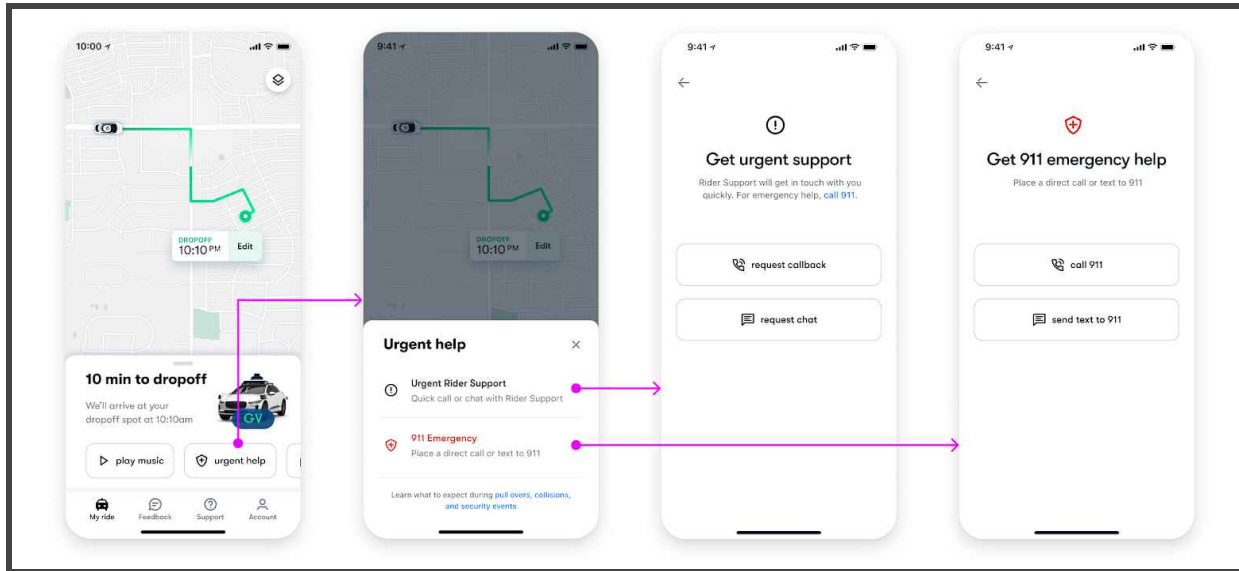


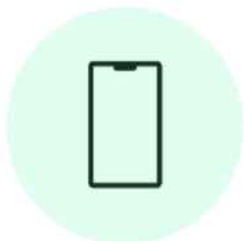
Fig. 15 In-app urgent support flow

The anticipated time to respond to passenger requests for contact communicated by calls and chats will vary based on the nature of the issue, with routine requests typically answered within 60 seconds, and urgent needs prioritized for a faster response. Inquiries sent by email to Rider Support are acknowledged within 24 hours. Agents make every effort to resolve concerns or issues raised by a rider during the initial communication and are supported by an escalation lead. Where further investigation is needed, agents escalate to our cross-functional team for further consultation and resolution. Escalations are meant to help resolve specific concerns, and also to flag learnings from these contacts for future service improvements.

Anyone (current and former riders, as well as members of the public) can reach out to Waymo using our “Contact Us” form available on our website ([waymo.com/contact](http://waymo.com/contact)). Communications received through this form are reviewed in a timely manner by our cross-functional community support team, with requests for assistance routed to Rider Support for an initial follow-up with the individual within 24 hours. We also occasionally may receive requests for assistance (e.g. from a rider with an account issue or question about a specific trip) through the Waymo One mobile app’s feedback function. These also are routed to Rider Support for timely resolution.



Every Rider Support contact generates a case record, which is categorized according to the nature of the issue raised (e.g. problem with Waymo account setup; request for Waymo service area expansion; additional time needed for pickup; promotions question). This process of categorization enables Waymo to provide uniform and consistent support to our riders, and allows us to monitor trends in rider reach-outs to identify opportunities for future service improvements. Case records are maintained in accordance with Section 6.01 of the Commission's General Order 157-E.



Waymo's Rider Support team is indispensable to providing a safe and reliable Waymo One experience. We staff our Rider Support team based on service levels, so as Waymo One and our ridership grow, so too will our team and our capacity to continue to meet and exceed our riders' expectations.

## **VI. Responding to Adverse Events**

Waymo prepares for events that interrupt a trip or present a safety risk for a rider. We have designed our driverless service to reduce the risk of these events and respond when they occur, as described below.

**A. Collisions and Unexpected Stops.** In the event that the Waymo AV's onboard software detects a potential collision or unexpected stop, Waymo's Fleet Response and Rider Support teams will be immediately notified. Waymo's Fleet Response team will review the scene using camera feeds from the AV and other signals to determine what's causing an unexpected stop, and to assist the AV to resolve it, if possible.<sup>24</sup> Rider Support checks on the status of the riders and, in the case of a collision, will assess whether there are injuries or circumstances requiring emergency medical assistance. If so, Rider Support will contact 911. Waymo's Roadside Assistance team will be promptly dispatched to the scene to communicate with law enforcement and other parties, assist in the exchange of vehicle information (e.g. insurance), and coordinate vehicle retrieval, as may be required.

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<sup>24</sup> Our Fleet Response Team does not operate our AVs remotely. Instead, if necessary under the circumstances, the team provides information that the AV uses in performing the dynamic driving task.

**B. Assaults and Harassment.** We work to make every Waymo AV a safe place to be. Engaging in harassing or threatening behavior while using our service (whether aimed at other riders, road users, or a member of the Waymo team) is strictly prohibited. If Rider Support is alerted to or observes such behavior during an active trip in our driverless service, Rider Support will end the trip to allow the vehicle to pull over at a safe location, and will call 911. Waymo will review any such event for potential deactivation of the offending rider's Waymo account.

**C. Rider Medical Events.** Waymo anticipates that a rider may experience a medical event (e.g. intoxication that renders a rider unresponsive or other health issue). If Rider Support is alerted to the event either through the in-car screen or mobile app buttons, or observes an apparent medical event occurring with a rider, agents are trained to quickly assist and assess the rider's needs, including to contact 911 to dispatch emergency services to the location of the Waymo vehicle.

**D. Unsafe Scenarios Outside of the Vehicle.** Waymo's tens of millions of miles of driving experience on public roads has given us firsthand familiarity with a broad range of potential unsafe scenarios that can arise outside of a vehicle. We also anticipate unsafe scenarios using structured hazard analysis methods. Unsafe scenarios include, but are not limited to, physical security events by hostile individuals (e.g. an attack on the vehicle), sideshows or other spontaneous, unsanctioned road closures, as well as fire and other natural disasters. Our ADS and operational processes are designed with such scenarios in mind, in order to safeguard those in and around the Waymo AV.

The first means of protecting against risks associated with unsafe conditions is to avoid them wherever possible. Waymo minimizes the likelihood of being involved in such situations by being able to redirect vehicles away from areas as we learn of hazards. For example, if one vehicle encounters unexpected flooding, all other vehicles in the fleet can be routed around the affected area.

In the event the Waymo AV encounters an unsafe scenario, the vehicle's core driving functionality helps protect against the risk of physical harm. For example, the Waymo AV can detect crowds of pedestrians and vehicles gathered for a public event to protect against a collision. In addition, the Waymo AV will signal for support from Waymo teams trained in incident response procedures to quickly address a triggering event, including to bring in law enforcement. Waymo supports our riders directly with the availability of 911 and urgent Rider Support (see Part V. *Waymo Rider Support* above).

Waymo works with law enforcement and first responders in the areas in which we operate. Our team includes a dedicated first responder specialist and we proactively conduct regular training sessions detailing best practices for safe interactions with the Waymo AV and how to quickly reach Waymo directly in the case of an emergency event.<sup>25</sup>

**E. Vehicle Tampering.** Waymo instructs riders not to touch the Waymo AV's sensors (e.g. lidar), vehicle controls (e.g. gear shift), or driving mechanisms (e.g. steering wheel). Upon detection that the AV's external sensors have been manipulated, Waymo's security controls will prompt the vehicle to achieve a minimal risk condition — for external tampering, that would typically mean the vehicle was already stationary and would remain so. If internal tampering is detected during a trip, Fleet Response will be alerted, the trip may be terminated, and the vehicle will come to a stop. Depending on the nature of the event, the rider may have their Waymo account deactivated or be reported to law enforcement authorities.

**F. Items Left Behind.** Riders who inadvertently leave items behind in a driverless AV may reach out to Rider Support (see Part V *Waymo Rider Support* above) to have the item retrieved and brought to a Waymo facility.

## **VII. Safe & Inclusive Service**

### **A. Accessibility**

Improving mobility is core to Waymo's mission as a company, and we are dedicated to improving independence and access through the broad deployment of our technology. To better understand rider needs, including riders with disabilities, we conduct targeted research studies and collect feedback from the trips we provide to members of the public. Waymo actively engages individuals and organizations spanning a breadth of access issues to better understand ways to improve accessibility for our riders, including through the Waymo Accessibility Network described below.

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<sup>25</sup> See Waymo's Law Enforcement Interaction Protocol for the Jaguar I-Pace vehicle.

- **Features and Service Improvements.** Our work is ongoing but already has generated features and service improvements to assist and accommodate riders of all abilities. These include the following:

<p><b>Honk Horn or Chime</b> When the car is stopped at pickup, riders can press a button in the app to honk the car’s horn or ring a distinctive chime sound. Riders can use the sound of the horn or chime to locate the car. Limits on the honk horn button prevent the horn from being honked too frequently and bothering bystanders.</p>	<p><b>Wheelchair Accessible Vehicles (WAV)</b> Using the Waymo app, SF riders can hail a ride in a WAV provided by a Waymo partner in conventional (not autonomous) ADA wheelchair accessible vans. Partner drivers are trained to industry-leading standards to work with disabled riders. Riders with mobility needs other than WAV can also hail these vehicles.</p>	<p><b>Minimize Walking Setting</b> Riders can select a setting to minimize walking, even if a shorter walk means the car may need to take a longer route and add to their overall trip time. This setting also makes it much less likely for the car to pull over on the opposite side of the street from where the rider requested.</p>
<p><b>Screen Reader Support</b> Our Android and iOS apps are regularly tested with Talkback and VoiceOver screen readers to ensure blind and low-vision riders can navigate them.</p>	<p><b>Assistive Audio</b> Riders can enable a setting that provides more audio cues and information throughout the ride (e.g. why the car is yielding) which is particularly helpful for those with vision disabilities.</p>	<p><b>Vehicle ID</b> Waymo riders can set a unique two-letter car ID and color, making it easier to distinguish their Waymo vehicle from others and confirm it’s their ride.</p>
<p><b>Long Walk Warnings</b> Before requesting a ride, riders are informed if a long walk will be required at the pickup or dropoff. This sets expectations and allows the rider to plan accordingly. If a rider is having trouble finding or getting to the car, a rider can request that Rider Support delays the vehicle’s departure.</p>	<p><b>Adaptive App Navigation</b> For riders using our iOS platform, we’ve built two navigation wayfinding experiences. The first integrates Google Maps walking directions into the Waymo One app. The latter is a compass that points in the direction of the vehicle providing distance, direction, and haptic cues.</p>	<p><b>Rider Support</b> Riders can connect with our Rider Support team over the phone, text chat, or email making assistance accessible to those with speech or hearing disabilities. Agents are trained in how to support riders with accessibility needs and can help riders with wayfinding, including by looking through the car’s cameras to understand the rider’s environment.</p>

Riders may adjust and tailor the accessibility settings in the Waymo One app in order to meet their needs. This includes a setting for riders to request a wheelchair accessible vehicle through the Waymo One app (as described in the chart above and shown in Figure 16 below).

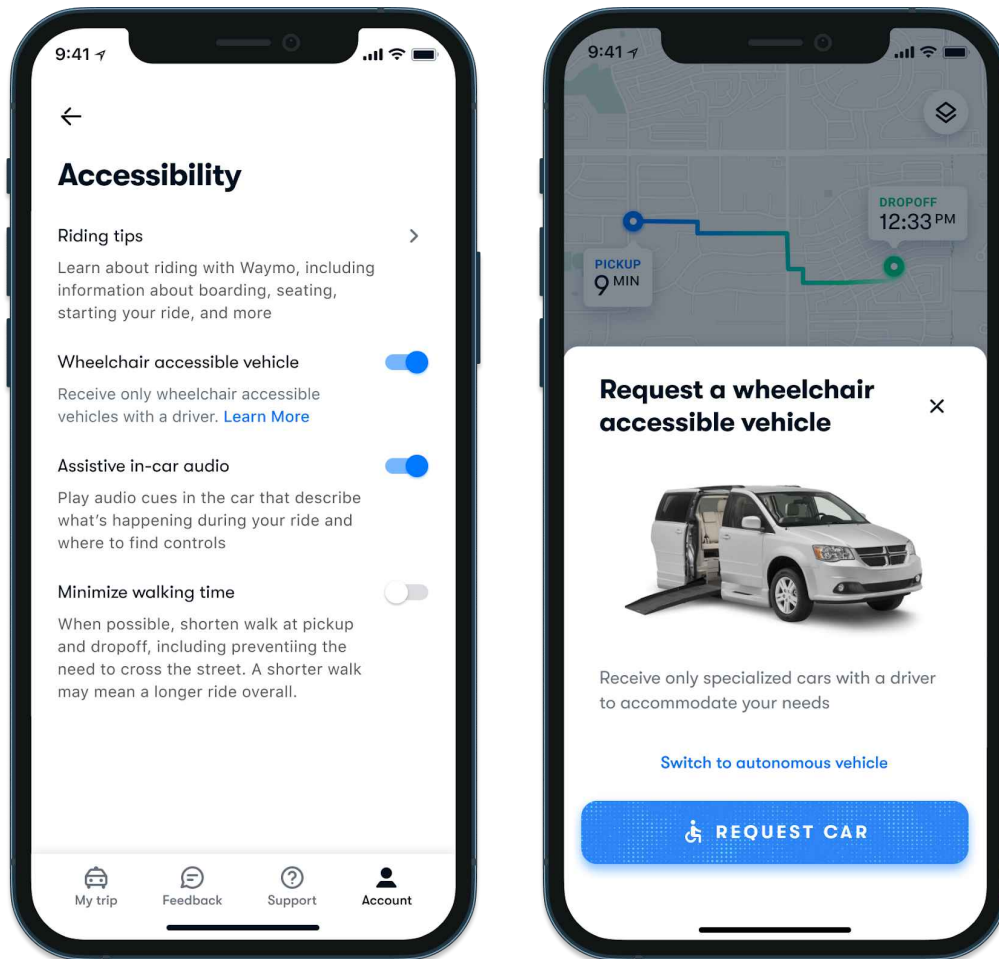


Fig. 16 In-app accessibility settings, illustrating WAV ride hailability

- **Engagement.** Waymo’s work to develop mobility solutions that work for riders of all abilities is accomplished in collaboration and learning with the disability community. We partner with organizations that advocate on behalf of different constituencies lacking adequate mobility options, including as part of the *Let’s Talk Autonomous Driving* campaign described in Part IV.A. *Public Engagement* above. Participating organizations include: San Francisco-based LightHouse for the Blind and Visually Impaired, one of the largest and most established comprehensive blindness organizations in North America; Independent Living Resource Center of San Francisco; Self-Help for the Elderly; Support for Families of Children with Disabilities; Curry Senior Center; Best Buddies California; Epilepsy Foundation of Northern California and more.

Waymo also continues to work directly with disability nonprofits in San Francisco to welcome wheelchair users into our ridership. Organizations that we engage with include: the Northern California Spinal Cord Injury Foundation (NorCal SCI); Independent Living Resource Center SF; and United Spinal Bay Area.

In October, Waymo launched the [Waymo Accessibility Network](#) to partner directly with organizations that support people of all ages living with physical, visual, cognitive, and sensory disabilities. The network was created to formalize and scale Waymo's longstanding collaboration with disability advocates, and facilitates the sharing of valuable feedback and perspectives with Waymo's product and user experience teams to shape the future of transportation.

- **Service Animals.** Service animals are always welcome to ride with Waymo. There is no need to notify us or bring any paperwork for a service animal to ride with us. Riders may take extra time at boarding to secure their service animal before starting their ride.

## **B. Minor Riders**

We require Waymo account holders to be at least 18 years of age, but minors who are accompanied by an adult are welcome to ride. If a minor requires a car seat or booster, their accompanying adult may bring their own, as indicated in the Waymo seat-back safety card (see Part IV.C. *Every Waymo Ride* above). Riders may take extra time at boarding to install a car seat before starting their ride.

Waymo has fostered - and immensely benefited from - years-long relationships with organizations that champion road safety for youth and families. Engagement is meant to help inform our service development, and also to increase awareness of these issues in the communities in which we operate. Our nationally recognized partner organizations include Mothers Against Drunk Driving (MADD), Students Against Destructive Decisions (SADD), and AAA Northern California, Nevada & Utah.<sup>26</sup>

Examples of road safety assets we've created include (1) a public safety announcement promoting child passenger safety,<sup>27</sup> created in partnership with AAA Northern California, Nevada & Utah; and (2) a road safety and AV curriculum for high school

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<sup>26</sup> Serves members in Alaska, Arizona, Northern California, Montana, Nevada, Utah, and Wyoming.

<sup>27</sup> See <https://www.ltad.com/news/how-to-keep-our-youngest-passengers-safe-on-the-road.html>.

students created in partnership with MADD and SADD and distributed to high school SADD chapters throughout the United States.



### C. Rail and Transit

Waymo AVs use detailed maps that incorporate dedicated transit lanes (e.g. bus and taxi lanes) as well as railway crossings and alignments, including those used by light and heavy rail vehicles. Our AVs are designed to respect the intended use of these roadway types and features. For example, the Waymo AV is designed to avoid driving in toll and bike lanes, where prohibited. The AV's behavior also is tailored to specific roadway features unique to rail and transit. For example, the AV is designed to avoid stopping on rail tracks, including when traversing intersections in heavy, slow-moving traffic.

Waymo conducts robust and methodical testing of our ADS, which includes assessing safety and traffic law compliance. Waymo's testing methods and approach to performance validation are detailed in our published white paper, *Waymo's Methodologies and Safety Readiness Determinations* (October 2020).<sup>28</sup> Waymo utilizes a variety of safety methodologies, which are supported by three types of system-level testing (simulation, closed-course driving, and public road driving), which are in turn supplemented by various forms of component and subsystem testing. These types of testing are in constant interaction; each complements and informs the others.

With respect to rail, Waymo AVs are designed to interact with the specific types of railway crossings, railway alignments, and railway vehicles it will encounter in driverless operations in Waymo's driverless ODDs. We conduct thorough testing for specific types of railway crossings, as well as specific individual rail crossings, where appropriate. In the design and testing process, we consider how railway features and trains differ from other types of roadway features and vehicles.

---

<sup>28</sup> Available at <https://waymo.com/safety/>

## VIII. COVID-19 Response



### COVID-19 Response Plan California Ride-Hail Operations

At Waymo, the health and safety of our riders, partners, and team members is a top priority. In response to the COVID-19 pandemic and in accordance with CPUC Resolution TL-19131 and applicable state and local law and guidance, Waymo implemented enhanced health and safety protocols in our passenger carrier service operations, Waymo One. These protocols, which pertain to Waymo vehicles, riders, partners, and team members, are intended to help to prevent the transmission of COVID-19 as described below.

Waymo actively monitors applicable guidance and will revise our protocols as may be necessary to maintain safe practices as conditions and requirements change.

#### **Vehicles: Enhanced Health and Safety Protocols**

Waymo has thoughtfully implemented enhanced protocols for vehicle maintenance that prioritize the health and safety of our riders. In addition to health screenings and vaccination requirements for the team servicing our fleet, our protocols include:



**Frequent vehicle cleaning:** Our vehicles are cleaned at the start of each shift and are disinfected routinely during the day with an emphasis on high contact surfaces. Vehicles that require additional care between rides are routed to our facilities for a full cleaning. Team members are trained in safe and uniform sanitization procedures, and are provided appropriate personal protection equipment.





**Cabin air flush:** Our vehicle's HVAC system automatically refreshes the cabin air after the completion of each trip.

### **Riders: Traveling Safely**

Our riders are an essential partner in doing all we can to protect the Waymo community. In order to keep our Waymo One service safe and on the road getting people to where they need to go, our riders can access our COVID-19 protocols in the Waymo One app. Trip protocols include the following:



**If you are sick please stay home:** If you have COVID-19, are experiencing symptoms that possibly may be COVID-19, or you've been in contact in the last 10 days with someone known to have COVID-19, please do not ride.



**Face coverings:** Riders are not currently required to wear face coverings but are encouraged to follow applicable guidance, which is subject to change.



**Keep your hands clean and minimize surface contact:** Riders may minimize surface contact by using the mobile app on their phone rather than the passenger screen or Help button in the vehicle.



**Keep the air flowing:** We encourage riders to roll the windows down slightly during your ride for added ventilation.



**Please keep us informed.** If riders have any questions or concerns, want to provide feedback, or if, within 10 days of riding with us, they test positive for COVID-19, are diagnosed with COVID-19, or start to experience COVID-19 symptoms, riders are encouraged to contact us immediately. Riders can get in touch with us at any time through the Rider Support tab in the Waymo One app.

//

## ATTACHMENT C

### **Plan for Notifying Passengers (Driverless AV Deployment)**

Passengers receiving service under the CPUC's Driverless AV Deployment Program will be notified that rides will be provided in driverless autonomous vehicles. Waymo will inform and seek confirmation from passengers that they understand and consent to riding in a driverless autonomous vehicle operating pursuant to the Commission's jurisdiction. We will do so by requiring those creating an account to ride with Waymo to acknowledge and agree to the following statement (as may be modified from time to time or combined with other CPUC operating authority, e.g. driverless pilot service) in the Waymo One onboarding flow:

*You will be a passenger in an autonomous vehicle. If your ride is taking place in California, you will be participating in driverless autonomous vehicle passenger service operated by Waymo pursuant to authority granted by the California Public Utilities Commission.*

More broadly, Waymo describes our autonomous vehicle passenger service using a variety of mediums, including our [website](#) and [blog](#). We use these and other platforms to educate the riding public about Waymo's incremental approach to delivering a fully autonomous experience in our [Waymo Driver](#)<sup>™</sup>-equipped vehicles, as more fully described in Waymo's Passenger Safety Plan (December 2022).


**ATTACHMENT D**

**Waymo CA DMV Deployment Permit Approval  
(2022 Amendment)**

Waymo holds an active AV Deployment Permit, originally issued by the DMV on September 30, 2021, and most recently amended on November 9, 2022.

CALIFORNIA STATE TRANSPORTATION AGENCY  
**DEPARTMENT OF MOTOR VEHICLES**  
POLICY DIVISION  
Autonomous Vehicles Branch  
P.O. BOX 825383  
SACRAMENTO, CA 94232-5383

GAVIN NEWSOM Governor



November 9, 2022

Mr. Dan Chu  
Waymo LLC  
1600 Amphitheatre Parkway  
Mountain View, CA 94043

Dear Mr. Chu:

On May 19, 2022, the California Department of Motor Vehicles received the amendment Application for Permit to Deploy Autonomous Vehicles on Public Streets (form OL 321) submitted by Waymo LLC. The amendment is approved, effective November 9, 2022.


This letter serves as authorization for Waymo's request to amend its existing Deployment Permit to include operations:

- (i) without a driver
- (ii) in heavy fog

Waymo LLC shall not deploy vehicles with any further changes as specified in California Code of Regulations, Title 13, Division 1, Chapter 1, Article 3.8 § 228.10(b) until an amended application is submitted and approved by the DMV.

If you have any questions, please contact me at (916) 417-1025.

Sincerely,



MIGUEL ACOSTA, Chief  
Autonomous Vehicles Branch

California Relay Telephone Service for the deaf or hard of hearing from TDD Phones: 1-800-735-2929; from Voice Phones: 1-800-735-2922

POL 1 (REV 02/2022) DMVWeb A Public Service Agency

**ATTACHMENT E**

**Attestation of Compliance with DMV Regulations**

Per Ordering Paragraph 7(b) of D.20-11-046 as modified by D.21-05-017, I hereby certify that to the best of my knowledge and belief, Waymo is in compliance with all California DMV regulations applicable to autonomous vehicles.

Executed on December <sup>12</sup>, 2022, at San Francisco, California.<sup>29</sup>

DocuSigned by:  
 \_\_\_\_\_

957C85A8F0EC427...  
David M. Iressier  
Deputy General Counsel  
Waymo LLC  
1600 Amphitheatre Parkway  
Mountain View CA 94043

---

<sup>29</sup> See the Waymo LLC Power of Attorney Declaration Form (Charter Party Carrier Authorities) effective September 26, 2022, delegating signature authority in respect of the CPUC's jurisdiction under Public Utilities Code Sections 5351-5445.

**ATTACHMENT F**

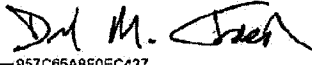
**Attestation of 30 days of Driverless Vehicle Operations**

In support of Waymo's Driverless AV Deployment Permit application, we provide this attestation of thirty (30) days of driverless autonomous vehicle operations on California public roads following the grant of Waymo's DMV AV Deployment Permit Amendment on November 9, 2022. At the present time, Waymo's fleet to be offered for driverless passenger carrier service in the Commission's Driverless AV Deployment Program will be the autonomously driven all-electric Jaguar I-PACE. Waymo hereby attests to the following:

- Having conducted thirty (30) days of operations using the Jaguar I-Pace vehicle platform, which is equipped with the Waymo Driver (our autonomous driving system) and is representative of Waymo's California fleet for driverless operations.
- Start date of actual operations: November 10, 2022
- Geographic location of operations in California: San Francisco, CA
- Times of day in operation during the 30-day period: Every hour of the day
- Number of hours per day in operation during the 30-day period: Up to 19 hours per day
- Statement and map of the DMV-approved AV Deployment permit ODD: See Attachment A of Waymo's CPUC Driverless Deployment Permit Application

Per Ordering Paragraph 7(f) of D.20-11-046 as modified by D.21-05-017, I hereby certify that the foregoing is true and correct.

Executed on December 12, 2022, at San Francisco, California.

DocuSigned by:  
  
057C65A8F0EC427...  
David M. Tressier  
Deputy General Counsel  
Waymo LLC

## **ATTACHMENT G**

### **Law Enforcement Interaction Plan for the Waymo Autonomously Driven Jaguar I-Pace (Deployment)**

Please note that this Law Enforcement Interaction Plan was previously provided to the Commission in connection with Waymo's 2022 Drivered AV Pilot Permit application (submitted October 2022 and approved November 2022).

See page G-8 of the attached Law Enforcement Interaction Plan for Waymo's Collision Response process as submitted to the CA DMV.

[Remainder Intentionally Left Blank]

# Waymo autonomously driven Jaguar I-PACE

Emergency response guide  
and law enforcement interaction protocol

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



©2022 Waymo LLC Updated May 2022



## Introduction

The Waymo fully autonomous Jaguar I-PACE is based on the Jaguar I-PACE.

This document includes material from the JLR First Responder Instruction Pack (X590 2021MY) and supplemental information related to Waymo's autonomous driving technology.

This guide is intended to be used by trained first responders and assumes a professional-level background in safely responding to emergencies, including those involving damaged vehicles.



P. 2



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## Waymo toll-free hotline for emergency responders

Waymo has established a toll-free 24-hour telephone hotline dedicated to allowing police, fire departments, and other first responders to communicate directly with Waymo’s professionally-trained specialists at any time during our vehicle testing and operation on public roads.

1-877-503-0840

We ask that emergency responders calling this hotline identify the numerical identifier of the vehicle in question, license plate, and any location information available.



# Identifying the Waymo fully autonomous vehicle

The Waymo fully autonomous Jaguar I-PACE can be easily identified by the white color, roof assembly, or front fender additions.

During fully autonomous testing and operation, Waymo's vehicles are fully autonomous at all times, and will not have any person in the driver's seat steering or otherwise controlling the vehicle.



# Identifying the Waymo fully autonomous vehicle

Each Waymo vehicle is identified by license plate, in addition to required identifiers in the jurisdiction (e.g., vehicle-for-hire badges).



## Location of in-vehicle documents

Two physical copies of vehicle owner information, vehicle registration, and proof of insurance are stored inside each driverless vehicle. Each of the following locations contains the same sets of documents, and either set of documents can be accessed in the event law enforcement requires this information.



In a container affixed to the front driver-side sun visor



In a container affixed to the front passenger-side sun visor

## Level of automation

**The Waymo vehicle is capable of fully autonomous operation.**

- It is validated for fully autonomous testing and operation.
- It is capable of performing the entire dynamic driving task within its operational design domain, as a Level 4 automated driving system under SAE International's "Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles," Recommended Practice J3016.
- It is capable of performing a safe stop, known as achieving a "minimal risk condition," without any expectation that a human will need to intervene.
- It is equipped with redundancies for critical systems, such as sensors, computing, steering and braking, and can automatically detect changes to the vehicle or the environment and determine an appropriate response to keep the vehicle, its passengers, and other road users safe.

## Operational design domain



**The Waymo vehicle is intended to operate in the following conditions:**

- On roadways including freeways, highways, city streets, and rural roads with posted speed limits up to 65 mph
- In parking lots
- At all times of day and night
- In light rain and fog



**Conditions that limit fully autonomous operations without a human driver include:**

- Inclement weather including heavy rain and snowy/icy conditions
- Flooded roadways
- Mountain roadways
- Off-road

## Operational design domain

**Waymo vehicles can only be operated without a human driver in specific geofenced areas, where they have been tested and validated to safely perform all the dynamic tasks of driving without human intervention.**

- Testing and deployment territory will be expanded incrementally over time via our rigorous testing and validation process.
- Information relating to these areas is provided by Waymo directly to state and local authorities, prior to any fully autonomous operation without a human driver.

# Operational design domain

- Commercial operations (deployment) **with a human driver** may occur anywhere within San Francisco county and a bordering portion of San Mateo county, in both incorporated and unincorporated areas, as shown in the map to the right
- Testing and deployment territory will be expanded incrementally over time via our rigorous testing and validation process.
- Information relating to these areas is provided by Waymo directly to state and local authorities, prior to any fully autonomous operation without a human driver.



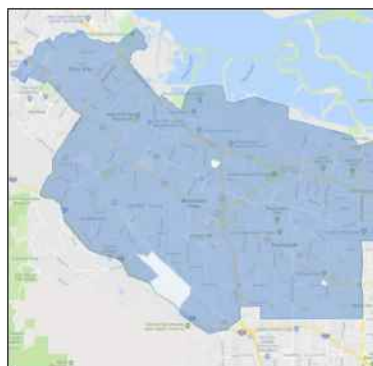
# Operational design domain

San Francisco and Daly City Geofenced Area:



Initial **testing and deployment without a human driver** within the San Francisco and Daly City geofenced area will exclude the areas marked in black. Waymo will notify state and local authorities prior to commencing testing or deployment without a human driver in these areas.

South Bay Geofenced Area:



The South Bay geofenced area for **testing without a human driver** includes all or portions of the cities of Mountain View, Palo Alto, Los Altos, Los Altos Hills, and Sunnyvale.



## Response to police and emergency vehicles

**The Waymo vehicle uses its sensors to identify police or emergency vehicles by detecting their appearance, sirens, and emergency lights.**

- The Waymo vehicle is designed to yield as appropriate to these emergency vehicles regardless of which direction they are headed.

**If a Waymo fully autonomous vehicle detects that a police or emergency vehicle is behind it and flashing its lights, the Waymo vehicle is designed to pull over and stop when it finds a safe place to do so.**

- The vehicle can unlock the doors and roll down the windows for Waymo's Rider Support team to communicate with law enforcement.
- Waymo's Rider Support specialists have protocols for interacting with any vehicle passengers in the event of the vehicle being pulled over or involved in a collision, by providing information through in-vehicle speakers, in-vehicle displays, and communicating with passengers through in-vehicle telecommunications capabilities.
- A Waymo support team will be dispatched to provide on-scene support, when needed, for passengers and first responders.



## Collision response

**The Waymo vehicle is capable of detecting that it was involved in a collision. In that event, the vehicle will brake until it reaches a full stop and immediately notify Waymo's Fleet Response specialists.**

- Waymo's Fleet Response will call 911 if the circumstances warrant (e.g., where there is a significant collision in which police may be needed because of injuries, vehicles blocking traffic, etc.).
- A Waymo support team will be dispatched to provide on-scene support for passengers and first responders.
- The Waymo vehicle will react differently depending on the collision severity. In the event an airbag is deployed, the base vehicle's electric propulsion system will be disabled.

Waymo Fully Autonomous  
Jaguar I-PACE

# Approaching, disabling, and towing



p. 15

## Ensuring the vehicle will not drive autonomously

The vehicle will not drive autonomously while any of the following are true:

- Any airbags are deployed
- Any door is open
- The vehicle is in "Park" (page 16)
- The Parking Brake is applied (page 17)

Open a door of the vehicle to prevent the vehicle from autonomously driving:

- Break a window if doors are locked and immediate entry to vehicle or ventilation of passenger compartment is necessary.
- Call Waymo ([1-877-503-0840](tel:1-877-503-0840)) to unlock the doors remotely if there is time, and there are no signs of battery heating, smoke, or fire.

Keep at least one door open until the base vehicle is turned off (page 19) or the base vehicle 12 V battery is disconnected (page 24).



Vehicles can roll or move regardless of autonomous driving state. Always use standard precautions including wheel chocks.

## Electronic shift control operation

To determine if the vehicle is in “Park” or the Parking Brake is applied, approach the vehicle from the driver’s side and check for:

- The letter “P” is displayed in center the instrument cluster display
- Red “P” (Park) indicator on the Electronic Shift Control

The Electronic Shift Control and Parking Brake cannot be manually controlled while the vehicle is in autonomous driving mode. See page 18 to disable autonomous driving mode.

**NOTE:** Base vehicle 12 V power must be functional to shift in or out of “Park.”



## Parking brake operation

The Parking Brake is automatically applied when the vehicle is shifted to “P.” To determine if the Parking Brake is applied, check if the red “Park” indicator is displayed on the left of the instrument cluster display. The Parking Brake switch is located on the switch pack between the steering wheel and the front driver’s side door.

**Operate as follows:**

- With the vehicle’s electrical system switched on, press the brake pedal, and pull the Parking Brake switch out to release the Parking Brake.
- Push the Parking Brake switch in to apply the Parking Brake. The “Park” indicator illuminates to confirm.

The Parking Brake cannot be manually controlled while the vehicle is in autonomous driving mode. See page 18 to disable autonomous driving mode.

**NOTE:** Base vehicle 12 V power must be functional to shift in or out of “Park” or apply or release the Parking Brake.





# Disabling autonomous driving mode

Emergency responders needing to disable autonomous driving mode should contact Waymo using one of the following methods:

- Call: 1-877-503-0840
- Or: **Activate in-vehicle Rider Support by pushing the "DISP" button in the center console.**

Identify yourself and request that the Waymo representative authorize the vehicle for manual mode. If calling the toll-free hotline, you will need to identify the vehicle by license plate and/or location.

Follow the Waymo representative's instructions, which will include pressing buttons on the steering wheel.

**NOTE:** Successful transition to manual mode can be confirmed by attempting to turn the vehicle on or off or change gears. If gears can be changed or the vehicle can be manually turned on or off, the vehicle is in manual mode and not in autonomous driving mode.



Call Rider Support



Disengage buttons. Use as directed by Rider Support

# Turning the vehicle off

The **READY / OFF** indicator in the instrument panel indicates when the vehicle is running (**READY**) or when it is off (**OFF**)

- **READY** when the vehicle is turned **ON**
- **OFF** when the vehicle's electrical system is switched on and the vehicle is **NOT ready to be driven**

**The start-stop button will not turn the vehicle off while autonomous driving mode is enabled.**

**To turn off the vehicle:**

1. Disable autonomous driving mode (page 18).
2. Push the start-stop button until "OFF" is displayed in the instrument panel.

**If the button does not turn the vehicle off:**

- Ensure autonomous driving mode has been disabled.
- Disconnect base vehicle 12 V battery (page 24).
- Disconnect the HV battery (page 25).



Ready / off indicator



Vehicle start-stop button

## Towing the vehicle

The recommended method for recovery or transportation of the vehicle is on a flatbed truck or trailer designed for that purpose.

- Make sure that the steering column is unlocked during vehicle recovery. The smart key must remain inside the vehicle and the vehicle's electrical system must be switched on.
- The vehicle should not be towed on all four wheels or with the front or rear wheels suspended. Doing so can result in serious damage to the vehicle.
- The recovery agent must activate the transmission park release before recovery commences.

**NOTE:** In emergency situations, push bumpers may be used to move the vehicle from the roadway, though sensor damage will likely occur.



## Opening the rear trunk

The rear trunk is locked during normal operation.

To access the trunk:

1. Disable autonomous driving mode (page 18).
2. Pull the exterior handle or press the liftgate button to the left of the steering wheel (see right).

**NOTE:** The rear liftgate latch is electrical and will be inoperable when in autonomous driving mode or if base vehicle 12 V power is removed.



Waymo Fully Autonomous  
Jaguar I-PACE

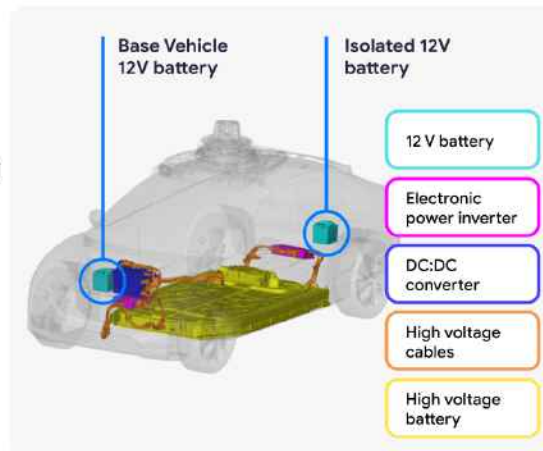
# Vehicle systems safety considerations



## Electrical system overview

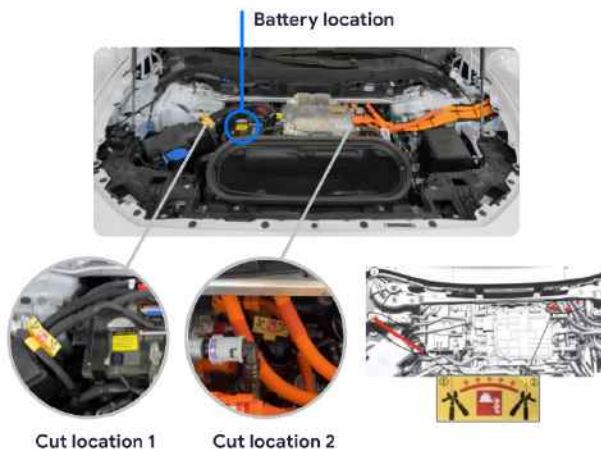
The I-PACE electrical system includes:

- A high voltage (HV) **battery pack** along the bottom of the vehicle.
- Two **electronic power inverters** that provide power to the Drive Units.
- Two **DC:DC converters** (under the hood) that provide all of the HV to 12 V power conversion on the platform.
- 12 V power that is supplied by the **base vehicle's 12V battery** (under the front hood) and a separate, **isolated 12V battery** (in the rear trunk) that powers components of the autonomously driven system.



## Disconnecting base vehicle 12 V battery

1. Before disconnecting 12 V power, open the hood, trunk, and all doors. Both hood release and liftgate button are located to the left of the steering wheel at the base of the lower dash panel (see page 21).
2. Remove the front compartment center trim panel to reveal the power electronics and the accessory 12 V system. The 12 V battery is to the left of the compartment.
3. Cut and remove a segment of 2 cables as illustrated:
  - a. **Cut location 1:** 12 V negative power cable.
  - b. **Cut location 2:** Positive 12 V power cable connecting the DC:DC converter to the battery.
4. Protect the cut ends from arcing against metal parts.

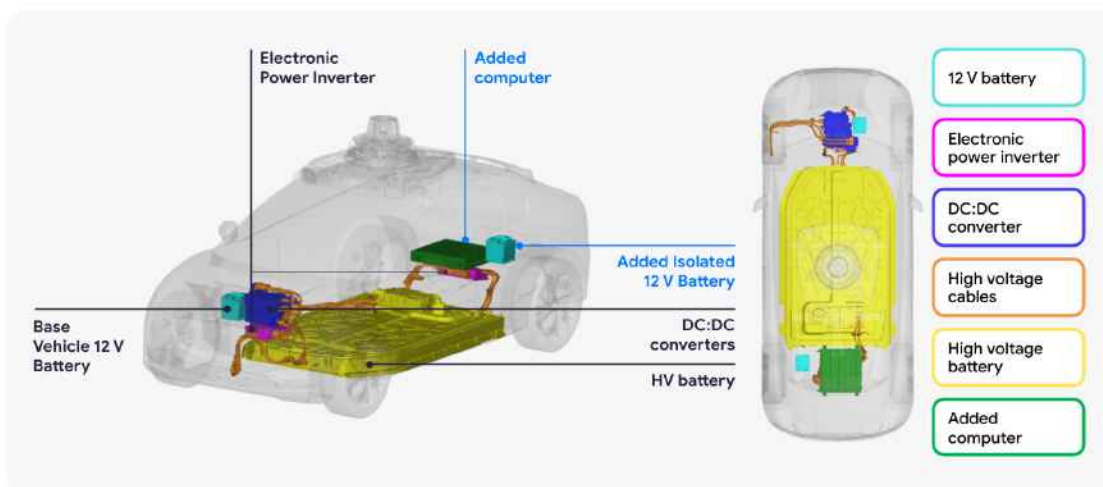


## Disconnecting HV battery

1. Lift the rear seat base from the front, this will reveal the foam battery cover.
2. Lift clear the foam insert, this gives access to the Manual Service Disconnect (MSD).
3. Rotate the key counterclockwise to the OFF position.
4. Remove the key.



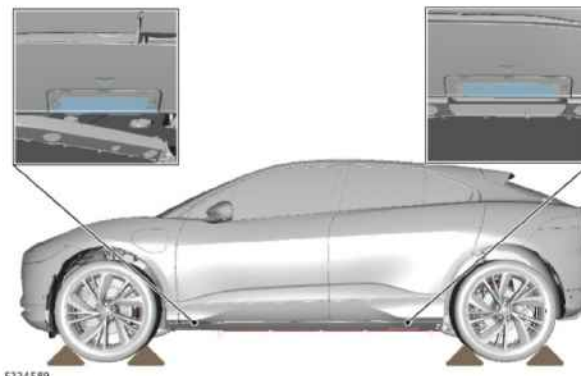
# Vehicle systems overview



## INFORMATION FROM JLR GUIDE

# Avoidance of roll away of the vehicle

- The vehicle may roll if the transmission does not lock or the Parking Brake is inoperable. The road wheels should be chocked to prevent unexpected movement.
- Vehicle lifting and jacking points can be found behind the sill trims as shown in the illustration.
- The jack or lift support must be positioned centrally on the locations shown to provide a safe vehicle weight distribution and avoid vehicle damage.



Make sure that no contact is made between the lifting equipment and the high voltage battery or any other high voltage component.

# Do Not Cut zones

The areas highlighted in **RED** show areas that must not be cut.

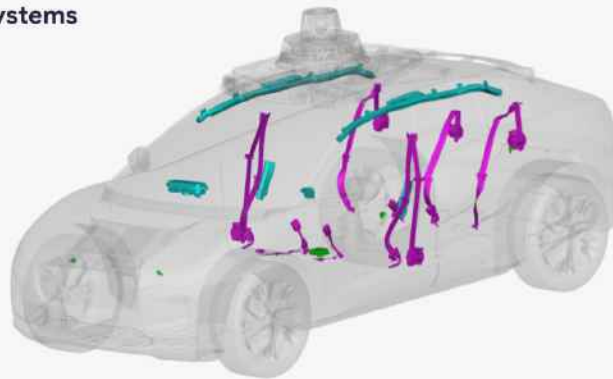
The sills must be supported during cutting and extrication procedures. If a ram must be deployed, place blocks under the sill around the area where force is applied. If a suitable jacking point cannot be located, support the sills and deflate the tires.



**NOTE:** The right C-pillar contains a hose that supplies windshield wiper fluid to the Roof Assembly. When cutting the right C-pillar, windshield wiper fluid may leak.

# Passive restraint device considerations

## Restraint systems



Airbags

Restraint

Sensors

## Additional information for fully or partially submerged vehicles

A Battery Electric Vehicle (BEV) that has experienced complete or partial submersion in water can be treated in the same manner as other vehicles, the vehicle body does not present an increased risk.

Persons handling the recovery of a BEV must wear appropriate PPE, as detailed by your local authority, until the High Voltage (HV) system has been correctly powered down.



## Additional information in case of a fire

Small vehicle fires that do not involve the High Voltage (HV) system can be treated with normal firefighting methods.

### High Voltage (HV) System Exposure

An Electric Vehicle (EV) battery involved in a fire, or exposed to high heat levels, will release toxic vapors.

#### These vapors include:

- Sulfuric acid
- Oxides of carbon
- Nickel
- Lithium
- Copper
- Cobalt

Responders must protect themselves with full **PPE** and **breathing apparatus** and consider other persons in the surrounding areas. The EV battery consists of lithium-ion cells. These cells are considered dry cells. If damaged, only a small amount of fluid can leak. Lithium-ion battery fluid is clear in color.

The High Voltage (HV) system has its own coolant, which is typically glycol based coolant. If the system is damaged, this orange coolant can leak out of the high voltage battery or surrounding components.

A damaged EV battery can create rapid heating of the battery modules. If you notice smoke coming from the EV battery or surrounding components assume the vehicle is **UNSAFE** and contact Emergency Services for further assistance.

### High Voltage (HV) Battery Fire

If the Electric Vehicle (EV) battery or components within the High Voltage (HV) system are subject to fire or high heat levels, the HV system must be treated as **UNSAFE** and therefore sufficient **PPE** must be worn and any contact with the vehicle is to be avoided. Areas exposed to fire or high heat must be treated using high volumes of water. **DO NOT** attempt to extinguish a HV system fire without sufficient water supply. Wait for the correct Emergency Services if required.

Battery fires can take up to 24 hours to extinguish. Consider allowing the battery to burn while protecting the surrounding areas.

# Hazards

## High voltage



**There is HV DC in the battery and associated components.** AC power may be present on the inverter and traction motors. Both should be considered hazardous.

**HV cables are ORANGE in colour.** Anything at the end of an orange cable should be treated as hazardous.

**DO NOT cut HV cables, battery case, or associated components.**

**Suitable PPE shall be worn.**

## Fire



**Fire in the battery is very unlikely, and the battery is contained in a sealed metal enclosure underneath the vehicle.** It will not normally be possible to get extinguishing media into the battery compartment.

**If the vehicle is on fire,** remove occupants from the vehicle and evacuate the area, RAISE THE ALARM to the Fire service.

**In the case of fire, HV fumes are likely to escape from the battery – leave a safe distance from vehicle.**



## ATTACHMENT H

### Disclosure to Passengers Regarding Collection and Use of Personal Information

Please note that the Privacy Policy below is the same as has been previously provided to the Commission, including with Waymo's Drivered Deployment Permit Renewal, submitted April 20, 2022, and most recently with Waymo's Drivered Pilot Permit Application, submitted October 20, 2022.

-----

# Waymo Privacy Policy

**Effective Date:** December 12, 2018

**Last Updated:** April 18, 2022

Use this guide to understand Waymo's privacy practices for the data we collect through our Waymo products and services.

Note: The Privacy Policy for the [Waymo.com website](#) is separate.

## Your choices

Waymo wants you to understand the choices you have over your personal data and how to exercise your rights.

You can:

- Review and edit account information and other activity through the "Account" section of the Waymo app
- [Delete your Waymo account](#) if you no longer want to use our service
- Adjust our ability to collect precise location from your mobile device by managing your device preferences or by uninstalling our app
- [Opt out of receiving promotional messages from Waymo](#)

**Note:** You can usually choose to set your browser to remove or reject browser cookies, but this may impact functionality.

[Read more about your rights if you live in California.](#)

## Information we collect

### Information you give us

We collect information that you provide directly to us, like when you:

- Provide or update account information
- Fill out a form, use interactive features
- Provide feedback
- Participate in a contest or promotion
- Request customer support
- Otherwise communicate with us

The types of information we collect include:

- Your name
- Contact information (including email, phone and physical address)
- Billing information (including payment method and billing address)
- Preferred trip locations (including names you provide for those locations)
- Information provided to our Rider Support (including via voice, email, or chat)
- Any other information you choose to provide

### Information we gather from your use of our products and services

In addition to the information you give us, we collect information about you when you use or interact with our products and services, including:

- **Usage data:** We collect usage data that includes trip history, buttons or links you click on our mobile app, in-vehicle interfaces, wait times for our vehicles, and other actions you take with our products and services
- **Location data:** We collect information about your location in a few different ways. When you take a trip, we collect the pickup and drop-off location and details about the vehicle's route. With your permission, we also collect the precise location of your mobile device. Device location information is always collected during a trip or whenever you use the app with location services enabled (even when you are not on a trip). We also collect your approximate location based on the IP address of the device you use to access our mobile app.
- **In-vehicle cameras and Rider Support interactions:** We record video inside the vehicle during trips. We only record audio during active voice calls with Rider Support. Learn more about our [camera and microphone use](#).
- **Device information:** We collect information about the device you use to access our app, including hardware model, operating system version, unique device identifiers, device event information (such as crashes, hardware settings, and the date and time of your request), and wireless and/or mobile network information (including phone number).
- **Log file data:** We collect log files when you use our mobile app, which include the type of browser you use, access times, pages viewed, IP address, and referrer URL of your request.
- **If you participate in Waymo surveys or research panels:** You can choose to provide demographic information, such as your age, gender, language, ethnicity (where allowed by

local law), size of household, disability status, education details, and employment information. Providing us with this information is completely voluntary and not required to access our products or services.

- **Data collection technologies:** We and our service providers use different technologies to collect information from our mobile apps and emails, including cookies and web beacons. Cookies are small data files stored on your hard drive or in device memory that help us improve our websites and your experience, see which areas and features of our websites are popular, and count visits. Web beacons (also known as “pixel tags” or “clear GIFs”) are electronic images that may be used in our products and services or emails and help deliver cookies, count visits, and understand usage and campaign effectiveness. For more information about cookies and how to disable them, see “Your Choices” below.
- **Vehicle sensor information:** Our vehicles have various sensors designed to enable them to operate autonomously. The sensors include external cameras, LiDAR sensors, radar sensors, and microphones. For more information about the data our vehicle sensors collect, please visit our [Help Center](#).

## Other sources

- We also collect information from other sources. For example, you must use a Google account to request a trip with our vehicles. Once you connect your Google account with your Waymo account, we will have access to the profile information associated with your Google account, including your name, email address, and profile picture. Please visit the “Your Choices” section below to learn more about managing your Waymo account and the link with your Google account.
- Third parties: We also collect information about you from other third parties, including identity verification services and publicly available sources

## How we use it

We use your information to:

- Provide, maintain, and improve our products and services, including to:
  - Fulfill your trip
  - Provide customer support
  - Perform testing and research
  - Develop new products and services
- Personalize services, advertisements, content, and features
- Communicate with you including marketing (which you can opt out of), service, and account messages, or other information we think will be of interest to you
- Analyze usage and trends
- Protect the rights, safety and property of Waymo and others
- Comply with applicable laws, regulations, legal process, or governmental requests
- Handle fraud, vehicle collisions, complaints, disputes and violations of our customer agreements
- Facilitate contests, sweepstakes, and promotions, and process and deliver entries and rewards

## What we keep

We will retain information we associate with your Waymo account, such as name, email and trip history, while your account remains active.

We may also retain certain information when required by law or for our other legitimate business purposes such as:

- Resolving disputes
- Conducting investigations
- Improving our products
- Addressing safety concerns
- Preventing fraud and enhancing customer safety

## How we share information

We don't sell your personal information to third parties, and we only share it in a few limited cases described below. We may also share aggregated or de-identified information, which cannot reasonably be used to identify you.

Waymo will not share your personal information with a third party unless one of the following applies:

- You give us or them consent
- They are performing a service for us, such as to process payments, conduct surveys, or send emails on our behalf
- We're involved in a merger, acquisition, reorganization or sale or transfer of some or all of our assets
- Other legal and business reasons when required, or to:
  - Comply with any applicable law, regulation, legal process, or governmental request
  - Enforce our customer agreements, including to investigate potential violations
  - Detect, prevent, or otherwise address fraud, security, or technical issues
  - Protect the rights, property, or safety of Waymo, our customers, or others, as required or permitted by applicable laws

**Note:** Some of our products let you share data to services provided by other companies. We don't control the data collection and use practices of these other services. To learn more, please visit the privacy policies of the companies that provide these services.

## We operate independently from Google

Google and Waymo are affiliated but independent companies under Alphabet, Inc. Waymo will not share personal information we collect through our products and services with Google for them to use for any purpose other than:

- With your consent
- In connection with providing services to Waymo
- As otherwise described above in our sharing section

# For California residents

The California Consumer Privacy Act (or CCPA for short), is designed to give California residents the ability to access their personal information, request that Waymo delete that information, or request to know more about the categories of personal information we process. California residents who exercise these rights will not receive any penalties or disparate treatment. If you have questions or requests related to your rights under the CCPA, you (or your authorized agent) can visit [this help page](#) or use the Support tab in the Waymo app while signed in to your account.

Waymo does not sell your personal information. We only [share your information](#) as described in this policy. This policy also explains the information Waymo collects and how Waymo [uses this information](#), which include “business purposes” under the CCPA.

The CCPA requires a description of data practices using specific categories. This table uses these categories to organize the information in this Privacy Policy.

<b>Categories of personal information we collect</b>	<b>Business purposes for which information may be used or disclosed</b>	<b>Parties with whom information may be shared</b>
<ul style="list-style-type: none"> <li>Identifiers, such as your name, phone number, email, and address, as well as unique identifiers tied to the browser, application, or device you’re using.</li> <li>Demographic information: If you decide to participate in Waymo research or surveys, you may choose to provide information, such as your age, gender, language, ethnicity (where allowed by local law), size of household, and disability status.</li> <li>Commercial information, such as your payment method and billing address.</li> <li>Internet, network, and other activity information, such as views, access times, and interactions with content and our apps; referrer URL when you use our products; the device you</li> </ul>	<ul style="list-style-type: none"> <li>Protecting against security threats, abuse, and illegal activity, such as to detect, investigate, prevent and address fraud, vehicle collisions, complaints, disputes, violations of our customer agreements and other illegal activity; and to protect the rights, safety and property of Waymo and others.</li> <li>Auditing and measurement: Waymo uses information for analytics and measurement to understand how our services and products are used. We may disclose aggregate information publicly and with certain partners, including for auditing purposes.</li> <li>Maintaining our services: Waymo uses information to ensure our services are working as intended,</li> </ul>	<ul style="list-style-type: none"> <li>Other people with whom you choose to share your information, like if you want us to send information about your trip to another person or Waymo customer.</li> <li>Third parties to whom you consent to sharing your information, such as services that integrate with Waymo services.</li> <li>Service providers, trusted businesses or persons that process information on Waymo’s behalf, based on our instructions and in compliance with our Privacy Policy and any other appropriate confidentiality and security measures.</li> <li>Law enforcement or other third parties, for the legal reasons described in <a href="#">How we share the information we collect</a>.</li> <li>Merger or acquisition: In</li> </ul>

<p>use to access our app, including hardware model, operating system version, unique device identifiers, device event information (such as crashes, hardware settings, and the date and time of your request); in-vehicle interfaces; and wireless and/or mobile network information.</p> <ul style="list-style-type: none"> <li>● Geolocation data, which may be determined by GPS, IP address, and other data from sensors on or around your device, depending in part on your device and app settings. With your permission, we also collect the precise location of your mobile device. We also collect pickup and drop-off location, details about the vehicle's route and device location information during a trip.</li> <li>● Audio, electronic, visual and similar information, such as your Google profile picture, video recorded inside the vehicle during trips, and audio recording during active voice calls with our support teams. Please visit our Help Center for more information.</li> <li>● Professional, employment, and education information: If you decide to participate in a survey, you may choose to provide education information and employment details. We also may collect employment details for users who participate in our trial and testing programs.</li> <li>● Other information you</li> </ul>	<p>such as tracking outages or troubleshooting bugs and other issues that you report to us.</p> <ul style="list-style-type: none"> <li>● Research and development: Waymo uses information to improve our services and to develop new products, features and technologies.</li> <li>● Use of service providers: Waymo shares information with service providers to perform services on our behalf, in compliance with our Privacy Policy and other appropriate confidentiality and security measures.</li> <li>● Communicate with you about service and account notices and features, offers, news and other information we think will be of interest to you.</li> <li>● Personalization: Waymo processes information, including online identifiers and information about your interactions with products and services, to personalize your experience, including any ads or other information you see when you use our products and services.</li> <li>● Facilitate contests, sweepstakes, and promotions: If you choose to participate, Waymo uses information to process and deliver entries and rewards.</li> <li>● Legal reasons: Waymo also uses information to satisfy applicable laws or regulations, and discloses information as required by regulation or in response to legal process</li> </ul>	<p>the event of a reorganization, merger, financing transaction, corporate reorganization, sale of company assets or acquisition, we may share any and all personal information we collect with the relevant third party.</p>
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<p>create or provide, such as when you fill out a form, use interactive features, provide feedback, participate in a contest or promotion, request customer support, create content, or otherwise communicate with us.</p> <ul style="list-style-type: none"> <li>• Inferences drawn from the above such as understanding frequently visited destinations, determining new or optimal drop-off and pickup locations, suggesting destinations, and personalizing your experience, including any ads or other information you see when you use our products and services.</li> </ul>	<p>or enforceable government requests, including to law enforcement.</p>	
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This policy applies to data collected by Waymo LLC and its subsidiaries. If you have questions, please contact us at [privacy@waymo.com](mailto:privacy@waymo.com).