



November 19, 2024

RE: 11/19 SFCTA Board Meeting - Agenda Item 12 - Autonomous Vehicles Update

Dear SFCTA Board:

Waymo is an autonomous driving technology company, with the mission to be the world's most trusted driver. Making it safer, more accessible, and more sustainable to get around; we are proud to offer our fully autonomous Waymo One ride-hailing service to San Francisco residents and visitors. Today, San Franciscans can take a ride in a Waymo vehicle equipped with our transformative automated driving system, the Waymo Driver™, from all corners of the city at any time of day. To deliver the high-quality service our riders expect, Waymo is putting safety first, working closely with San Francisco's first responders, and consistently developing new features and partnerships to enhance San Francisco's transportation network for more people.

Safety is at the core of Waymo's mission

In 2009, Waymo - originally launched as the Google self-driving car project - set out to develop the world's safest and most experienced driver. Over the last 15 years, we've autonomously driven tens of millions of miles on public roads and tens of billions of miles in simulation.

Earlier this year, we launched the [Waymo Safety Impact Hub](#). The Hub shows the Waymo Driver's impact on road safety by comparing our police-reported, any-injury-reported and airbag deployment crash rates to human benchmarks. The data to date indicates that the Waymo Driver is already [reducing traffic injuries and fatalities](#) in the places where we operate. Compared to human drivers, over 25 million fully autonomous (rider-only) miles driven through the end of July 2024, the Waymo Driver was involved in:

- 81% fewer crashes with airbag deployment;
- 72% fewer injury-causing crashes;
- 57% fewer police-reported crashes

The Safety Impact Hub sets a new standard for transparency and analysis, by providing data above what is required by regulators including vehicle miles traveled (VMT) and un-redacted National Highway Traffic Safety Administration collision reports – data points we know are important to the SFCTA. By using publicly available data and including additional data, the hub is designed to allow other researchers to replicate the results.



Waymo also recently [reconstructed](#) hundreds of crashes involving vulnerable road users (VRUs), and in doing so developed the *largest dataset* of its kind in the United States. Many incidents involving VRUs do not get reported to the police or insurance companies, and the U.S has limited VRU crash injury data collection in place compared to vehicle-to-vehicle collisions. This groundbreaking dataset will allow Waymo to better understand these risks and help inform the continued development of the Waymo Driver.

Waymo's San Francisco operations are conducted under the ongoing and active oversight of the California Department of Motor Vehicles (CA DMV), California Public Utilities Commission (CPUC), and the National Highway Traffic Safety Administration (NHTSA). Waymo is subject to the comprehensive requirements and operating conditions of these robust existing state and federal AV safety regulatory frameworks in making our transformative transportation service available to the public.

First responder training and emergency vehicle interactions

Waymo is committed to being a responsive partner to first responders and city staff to build trust and ensure safety. We meet regularly with San Francisco first responders and city transportation staff to share insights into our operations, especially with respect to our approach to safety. We conduct in-person training for San Francisco's first responders and seek their insights to help refine our technology and operations. Waymo's first responder team has trained 1,765 San Francisco first responders to date, with more trainings to come.

Waymo senior safety, engineering and product teams also meet regularly with the SFFD and SFPD leadership, as well as the Department of Emergency Management, California Highway Patrol, and other San Francisco agencies, to address their concerns and gain a deeper understanding of their needs. In these meetings, Waymo and emergency personnel have been able to facilitate a productive and constructive two-way flow of information, enabling SFFD and SFPD leadership to gain a clearer and more accurate understanding of how our technology operates in specific situations, and providing Waymo with valuable feedback that has been incorporated into improvements to the Waymo Driver when needed.

During these discussions, Waymo has also shared how our vehicles successfully navigate hundreds of interactions with emergency vehicles and emergency scenes on a daily basis, using our comprehensive sensor suite (lidar, audio detectors and radar) to detect and localize (i.e., determine how far away, from what direction, etc.) emergency vehicles and their flashing lights and sirens. We've also described how our prediction models are trained with emergency vehicle signals to help bolster this ability.



Building an inclusive future for transportation

Waymo is committed to shaping our technology and service to improve accessibility and equity in mobility, aligning with the stated priorities of the City of San Francisco.

Waymo has made it a priority to develop and update features that improve accessibility, starting from the moment a user opens a Waymo One app to hail a ride and throughout their entire journey. Some of our accessibility features, which we developed in partnership with accessibility advocates and through the US Department of Transportation's Inclusive Design Challenge include:

- Screen reader support that allows users who are blind to navigate the app and hear labels and buttons read out loud
- Pick-up and drop off long walk warnings and a setting that allows users to minimize walking time;
- Adaptive app navigation and turn by turn walking directions to help riders understand the distance and direction to the car using visual, audio and haptic cues in the app.
- Purpose-built car sounds which allow riders to trigger a distinct sound to help locate the car and orient riders towards the car.

We also make wheelchair-accessible rides hailable through the Waymo app. Waymo has proactively invested in making this available on the Waymo One app because we want to make mobility more accessible. Wheelchair-accessible rides are provided by a Waymo partner in conventional (not autonomous) ADA wheelchair accessible vans, and partner drivers are trained to industry-leading standards to work with disabled riders. Offering this service helps us capture key learnings about the rider experience to inform future accessibility efforts.

Enhancing sustainable mobility

Waymo is building a future where everyone can move safely and sustainably. This means expanding access to shared electric vehicles and supporting walkable, bikeable, and transit-rich communities.

In October, Waymo launched a [public transit credit pilot program](#) for our San Francisco and Peninsula riders. Riders who took a Waymo to or from select San Francisco and Peninsula public transit stations received a \$3.00 credit on their Waymo account that could be applied toward future rides. Many of our riders already use Waymo to connect to transit: In a recent survey, 36% of San Francisco riders said they have used Waymo One to connect to other forms of transit, like BART, Muni, or Caltrain. This pilot program will help us gather even more data and insights to better understand how Waymo One can serve as a first/last mile transportation



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solution. This is the first time that an AV company has created a public transit credit program with an all-electric ride-hailing service.

Waymo offers a shared EV fleet powered by 100% renewable energy through the Jaguar I-Pace vehicle. The energy Waymo sources from CleanPowerSF, a community choice energy program operated by the San Francisco Public Utilities Commission, is 100% renewable. New EVs can be expensive, but with Waymo, our riders do not need to worry about purchasing their own EV, solve for charging, or navigate complex purchase decisions to travel sustainably. Waymo makes it easier for the many people who can't afford their own electric vehicles to travel emissions-free using our all electric fleet. In doing so, San Francisco gains another zero-emission transportation option to help residents and visitors meet our shared climate goals - one that, by improving road safety, can also encourage more people to walk or bike where they need to go with confidence.

Waymo is excited to be in San Francisco. We're committed to ensuring that our Waymo One service integrates into the City's existing transportation system and supports the city's economic recovery, Vision Zero, and sustainability goals. We look forward to working constructively with the City of San Francisco to advance these shared values and objectives.

Thank you for the opportunity to provide these comments. We look forward to continued dialogue and conversation.

Sincerely,

A handwritten signature in black ink that reads "Michelle Peacock". The signature is fluid and cursive, with the first name being more prominent.

Michelle Peacock
Head of Global Policy, Waymo