

Date of Hearing: April 22, 2024

ASSEMBLY COMMITTEE ON TRANSPORTATION

Lori D. Wilson, Chair

AB 1777 (Ting) – As Amended April 16, 2024

SUBJECT: Autonomous vehicles

SUMMARY: Places various requirements on manufacturers of autonomous vehicles (AVs) by July 1, 2026. Specifically, **this bill:**

- 1) Requires an AV manufacturer to comply with the following by July 1, 2026:
 - a) Maintain a dedicated emergency response telephone line that is available for emergency response officials during all hours when an AV is on a public road at no cost to public agencies.
 - b) Make the remote human operator capable of disabling the AV, allow an emergency response official to move the AV, or move the AV as directed by an emergency response official.
 - c) Have a two-way voice communication device that enables emergency response officials that are near the vehicle to communicate effectively with a remote human operator who has situational awareness about the autonomous vehicle. The manufacturer should have the ability to ensure that the emergency response official is able to reach a remote human operator within 30 seconds.
 - d) Requires the two way communication device to be capable of communicating, at a distance no less than 100 feet in front of or behind the vehicle, and using methods that do not employ hazard warning lights that the AV has been disabled and the vehicle will remain stationary, a remote assistance session has been initiated and remote human operator is engaged, or the AV or remote human operator has received direction from an emergency response official and is complying with the direction given.
- 2) Provides that Department of Motor Vehicles (DMV) shall not renew, reinstate, or expand the service area of a permit unless the manufacturer certifies that they complied with everything described above in paragraph 1.
- 3) Requires the DMV to assign an entity to conduct a check of an AV model that is proposed for testing to ensure it responds appropriately to audio and visual cues, including emergency lights and sirens.
- 4) Authorizes an emergency response official to issue a geofencing message to a manufacturer.
- 5) Requires a manufacturer to direct an AV in the effected geofencing area to leave or avoid the area within two minutes of receipt of the geofencing message.
- 6) Requires a manufacturer, upon request by an emergency response official, to provide the official with the information that is necessary to send geofencing messages to the manufacturer.

- 7) Requires the emergency response official to notify the manufacturer, as soon as practicable, when the situation that gave rise to the geofencing message has been cleared.
- 8) Authorizes an emergency response official to issue a geofencing message to include, but not be limited to the following:
 - a) A vehicle collision occurred.
 - b) There is an impediment on a road.
 - c) The area is a construction zone.
 - d) The area is a crime scene.
 - e) There is a planned event and the area is being closed during the event.
- 9) Provides that if an AV does not have a person in the driver's seat and commits a traffic violation pursuant to this code that the citation should be issued to the manufacturer.
- 10) Provides that if an AV has a person in the driver's seat and commits a traffic violation while the AV technology is engaged that the citation should be issued to the manufacturer.
- 11) Provides if an AV has a person in the driver's seat and commits a traffic violation while the AV technology is not engaged that the citation should be issued to the driver.
- 12) Authorizes the holder of an AV permit to contest a citation.
- 13) Requires an AV manufacturer to remedy any technological error that resulted in a traffic violation within 60 days of a conviction.
- 14) Requires an AV company to report a collision involving an AV to DMV within five days of the collision.
- 15) Requires the collision report to include whether the AV technology was engaged within 30 seconds of the collision, and whether a safety driver was present during the collision, the latitude and longitude coordinates of the collision.
- 16) Requires a manufacturer of an AV with a permit to submit a quarterly report to DMV with the number of vehicles miles traveled by all AVs, the number of times an AV automatically stops on a public right-of-way when it detects that its ability to drive autonomously is impaired, or an operator fails to respond appropriately to a request to take over the dynamic driving task, and the vehicle identification numbers of all autonomous vehicles.
- 17) Authorizes a public agency to receive a copy of the collision data and the data be reported quarterly.
- 18) Authorizes DMV to assess incremental enforcement measures for a violation of this section, including restrictions on the geographic area, operating hours, roadway type, speed or other weather conditions an AV is permitted to operate in.

- 19) Requires DMV to send a notice to the manufacturer that includes a description of DMV's rationale and evidence supporting the determination.

EXISTING LAW:

- 1) Authorizes the operation of AVs on public roads for testing purposes under certain circumstances specified in DMV regulations. (Vehicle Code Section (VEH) 38750)
- 2) Defines "autonomous vehicle" to mean vehicle equipped with technology that makes it capable of operation that meets the definition of Levels 3, 4, or 5 of the Society of Automotive Engineers (SAE) International's Taxonomy and Testing of Autonomous Vehicles Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles, standard J3016 (APR 2021). (VEH 38750)
- 3) Defines "autonomous technology" to mean technology that has the capability to drive a vehicle without the active physical control or monitoring by a human operator. (VEH 38750)
- 4) States that an AV does not include a vehicle that is equipped with one or more collision avoidance systems, including, but not limited to, electronic blind spot assistance, automated emergency braking systems, park assist, adaptive cruise control, lane keep assist, lane departure warning, traffic jam and queuing assist, or other similar systems that enhance safety or provide driver assistance, but are not capable, collectively or singularly, of driving the vehicle without the active control or monitoring of a human operator. (VEH 38750)
- 5) Prohibits the operation of AVs on public roads for non-testing purposes unless the manufacturer of the vehicles submits an application to DMV that is approved pursuant to DMV regulations. (VEH 38750)
- 6) Requires DMV to approve an application submitted by a manufacturer for the operation of AVs for non-testing purposes if DMV finds that the applicant has submitted all information and completed testing necessary to satisfy that the AVs are safe to operate on public roads and the applicant has complied with all requirements specified in DMV regulations. (VEH 38750)
- 7) Authorizes DMV to impose additional requirements it deems necessary to ensure the safe operation of AVs if those vehicles are capable of operating without the presence of a driver inside the vehicle. (VEH 38750)

Existing DMV regulations:

- 1) Requires AV manufacturers to have a testing or deployment permit to operate an autonomous vehicle in California.
- 2) Restricts the testing and deployment of autonomous vehicles to vehicles under 10,001 pounds and excludes motorcycles.
- 3) Authorizes both the testing and deployment of AVs without a human operator inside the vehicle.

- 4) Requires an AV with a testing permit (but not a deployment permit) to report collisions to DMV within 10 days of the collision if the collision resulted in damage of property or in bodily injury or death if they have a testing permit.
- 5) Requires AVs with a testing permit (but not a deployment permit) to report disengagements on an annual basis.

Existing federal regulations:

- 1) Requires AVs or level 2 advanced driver assistance systems to report crashes within five calendar days.

FISCAL EFFECT: Unknown

COMMENTS: This bill seeks to remedy several issues involving AVs that have arisen in San Francisco, including communication with first responders, and citations. This bill also imposes further data requirements on AVs. The author's office is continuing to work on this bill with public safety officials in San Francisco, San Francisco Metropolitan Transportation Agency (SFMTA), and AV manufacturers to address a variety of public safety issues that have arisen in the City of San Francisco with AV testing.

According to the author, "The autonomous vehicle (AV) industry is still emerging, potentially positioning California as a leader in this field. After proper permitting through the DMV, companies are currently allowed, on a limited basis, to deploy robo-taxis and pick up passengers in cities like San Francisco. Such testing periods provide valuable information and help identify necessary parameters of operation. We've learned, thus far, that the absence of a human driver means safety and accountability must be a priority. AB 1777 strikes a balance between providing a service to our residents and ensuring public safety. This legislation would treat driverless cars as if there was a real person behind the wheel. Traffic violations and accidents would be subject to the same consequences, such as citations; and there must be a way for an emergency responder to communicate with the AV company. Data from incidents must also be reported to the state so that problems are transparent and can be addressed. Without slowing innovation, AB 1777 would achieve a higher safety standard for both the customers and the drivers sharing the road with an AV."

In 2012, the Legislature passed SB 1298 (Padilla), Chapter 570 which permitted AVs to operate on public roads for testing by a driver under certain conditions. In 2014, DMV released regulations to allow for testing AVs with a test driver, and in April 2018, DMV finalized regulations for the testing and deployment of AVs on public roads without a driver. 36 companies currently have a testing permit with a driver (down from a high of 58), and six companies have received a permit for testing without a driver. Three companies have received a deployment permit without a human driver. One company has a deployment permit for a level three AV, which requires a human operator. One or two companies currently have a deployment permit. One company, Cruise, has lost both its deployment permit and its permit to test without a human operator. Waymo is currently the only autonomous vehicle company authorized to charge fares for its services. Waymo is operating both in the Bay Area and Los Angeles.

Communication with AVs: San Francisco has encountered several issues over the last several years with AVs operating in the city. For example, in January 2023, the San Francisco County Transportation Authority asked the California Public Utilities Commission to reject Waymo's

request to allow commercial deployment throughout the city. The letter notes a series of 9-1-1 calls that the city had received. The letter states “Managers in the City’s Department of Emergency Management began to notice several calls to 9-1-1 from people who witnessed or were affected by driverless AVs obstructing travel lanes. Sometimes these AVs caused extended traffic backups. Callers also complained of erratic driving (including signaling in one direction while moving in the other direction) or a Cruise AV blocking a transit vehicle. In other cases, callers reported evasive maneuvers by other road users such as driving on a sidewalk to get around a blockage caused by a disabled AV. The duration of these unplanned AV stops obstructing travel lanes appeared to range from minutes (extending through many traffic light cycles) to hours. Additional incidents were posted on social media or reported by the media. The number of reported incidents is likely a fraction of the total unplanned stops because most are reported during late night hours when few people are on the streets to notice them and because many people would not think to call 9-1-1 in these circumstances....Unfortunately, the AV failure incidents reported by the public have been significantly concentrated on streets of great importance in the City’s transportation network: downtown streets, streets with transit service, streets on the bike network, intersections, and streets on the City’s High Injury Network (the 12% of San Francisco streets that account for more than 68% of severe or fatal injury crashes).”

In addition to the events described above, there have been documented incidents where AVs have driven away from law enforcement officers who have stopped them. In June of 2023, a Cruise vehicle came to a complete stop in the middle of a road, blocking emergency vehicles responding to a mass shooting event.

This bill imposes several requirements on AVs to better effectuate communication between AVs and emergency responders. This bill requires an AV manufacturer to have an emergency response line for cities to call, a two-way communication device on the vehicle, and the ability for a remote operator to take control of the vehicle and move it in case the vehicle gets stuck.

If the manufacturer does not comply with these provisions of the bill, DMV is authorized to not permit the renewal or expansion of an existing permit. Testing permits expire every two years. Deployment permits do not expire.

The bill also requires AVs to be controlled by a remote operator so a vehicle can be safely removed.

Incomplete data on AV incidents. The incidents described above by San Francisco were only known to them because of 9-1-1 calls and were not reported to DMV. This is because DMV only requires disengagement and collision reports for vehicles with a testing permit, but not a deployment permit. Companies also do not consider disengagements where a human operator is not present in the vehicle as a reportable disengagement under DMV regulations, allowing AV companies using remote operators to take over driverless vehicles to avoid reports to the DMV about disengagements. This has led to DMV not having full information about incidents that AVs are involved in.

To address this issue, this bill requires collision reporting and a quarterly report to DMV with the number of vehicle miles traveled by all AVs, the number of times an AV automatically stops on a public right-of-way when it detects that its ability to drive autonomously is impaired, or an operator fails to respond appropriately to a request to take over the dynamic driving task, and the vehicle identification numbers of all autonomous vehicles.

Issuance of citations. There has been an open question by the San Francisco Police Department on whether they can issue a citation for a moving violation of an AV and to whom can they issue it. This bill provides that a citation may be issued to an AV manufacturer for a moving violation if the AV technology was engaged, regardless of whether there was a human operator in the vehicle. If the technology was not engaged the citation goes to the driver.

Geofencing to limit AVs to specific areas. Geofencing is a virtual perimeter for a real-world geographic area. They have become increasingly common in the transportation world as a tool to limit the travel of certain vehicles. Cities have imposed geofencing requirements on motorized scooters, for example, to prohibit their use in areas of the city where they may not be appropriate. DMV permits for AVs have limited operating domains on where they can operate. A company can use geofencing to comply with their operating domain to ensure the AV does not travel outside of the city.

This bill requires AVs to respond to geofencing orders from emergency responders within two minutes. This could provide multiple benefits both to the cities AVs are operating in and manufacturers. The geofencing messages could help make AVs more aware of road closures or emergencies where they should not operate.

DMV certification of AV response to emergency lights. In August of 2023 a Cruise AV got into a collision with a fire truck with its emergency lights on within a week of receiving approval to operate for profit in San Francisco. Emergency responders have expressed concerns about the AV failing to yield to the emergency vehicle. AVs self-certify that they are capable of following all of the rules of the road, which would include responding to emergency lights. DMV did not take action against Cruise after this incident for potentially violating its permit. However, based on conversations with DMV, Cruise did voluntarily half their fleet in San Francisco

This bill requires an AV to be certified by an entity picked by the DMV to check to see if the vehicle is capable of responding to emergency lights.

Actions against an AV manufacturer: Existing law only gives DMV a singular tool for regulating AVs—to remove their operating permit. To remedy this “all-or-nothing approach, this bill authorizes DMV to assess incremental enforcement measures for a violation, including restrictions on the geographic area, operating hours, roadway type, speed, or other weather conditions an AV is permitted to operate in.

Where is NHTSA? The National Highway Traffic Safety Administration (NHTSA) has the authority to mandate uniform safety standards on new vehicles, such as shoulder-lap belts, collapsible steering columns, shatter proof windshields, and more recently, backup cameras. The National Traffic and Motor Vehicle Safety Act explicitly prohibits states from imposing vehicle safety requirements that are not identical to existing federal law. Specifically, the act states: “When a motor vehicle safety standard is in effect under this chapter, a State or a political subdivision may prescribe or continue in effect a standard applicable to the same aspect or performance of a motor vehicle or motor vehicle equipment only if the standard is identical to the standard prescribed under this chapter.” NHTSA has not imposed any safety requirements specific to AVs. They have passed limited exemptions to certain requirements on existing AVs.

Committee comments: This bill is a work in progress. The bill imposes a variety of safety features for AVs, however, all of these provisions are potentially preempted by federal law or may become preempted by federal law, as NHTSA, not the state of California, has the authority to impose safety requirements on vehicles. These provisions may not make sense for all AVs. For example, under the provisions of this bill, Mercedes Benz or any other manufacturer developing level 3 AV technology would be required to have a two-way communication device, a remote operator that can take control of the vehicle, and a dedicated line for law enforcement to communicate with even though a human is behind the wheel of the car and capable of all of those actions.

Even if the provisions above ultimately are not preempted by federal law, they are only enforceable upon the renewal of a permit or an expansion of a permit. While testing permits do expire every two years, deployment permits do not. This would only make these provisions of the bill enforceable, therefore, if the AV company was seeking to expand their authorization to operate beyond the service area of their existing permit.

DMV regulations require a vehicle to self-certify that they are capable of following all of the rules of the road to get a deployment permit. This bill requires third-party certification for a single rule of the road- the ability to respond to emergency lights. Singling out one rule over others for the lack of certification imposes an unnecessary burden. DMV can and should suspend permits if evidence emerges that the self-certification was not correct. Under this bill, DMV could also limit a vehicle's operating domain or speed if an issue is corrected. The author may wish to consider also permitting DMV to limit the number of vehicles that can operate, as Cruise voluntarily did when their vehicle may have failed to respond to an emergency vehicle.

AB 3061 (Haney) of 2024, and AB 2286 (Aguiar-Curry) of 2024, which passed out of this committee, have several conflicting provisions with this bill. AB 3061 authorizes DMV to fine companies for failing to turn over data. This bill does not. This bill requires AVs to report the number of times an AV automatically stops on a public right-of-way when it detects that its ability to drive autonomously is impaired, or an operator fails to respond appropriately to a request to take over the dynamic driving task (information that would be highly valuable). AB 3061 does not require that reporting. AB 3061 and AB 2286 require disengagement reports for deployed vehicles. This bill does not. AB 3061 requires collision data and disengagement reports to be posted online (something that is current practice). This bill only requires the data points to be shared with public agencies. This bill requires vehicle miles traveled data to the DMV every quarter. It is unclear what value this data would have to the DMV.

Should this bill, AB 3061, and AB 2286 continue to move through the process, the authors and the Legislature may want to reconcile the differences between these three bills on what data should be collected and what should happen if DMV does not receive the data.

This bill makes it clear that an autonomous vehicle manufacturer is liable for a citation when a vehicle is found in violation of the Vehicle Code. Moving violations and other Vehicle Code offenses come with negligent operator points. Negligent operator points both affect insurance rates and lead to the suspension of a person's driver's license. It is unclear how a negligent operator point would apply to an AV. Further, the vehicles have self-certified they are capable of following all of the rules of the road, so a citable offense would, in theory, be proof of a violation of their operating permit. This bill requires a manufacturer within 60 days of a conviction to fix

any flaw that resulted in a violation. However, it is unclear what, if anything should happen if an AV fails to come into compliance with this requirement.

Related Legislation: AB 2286 (Aguiar-Curry) of 2024 restricts an AV with a gross vehicle weight (GVW) of 10,001 pounds or more from being operated on public roads for testing purposes, transporting goods, or transporting passengers without a human safety operator physically present in the AV at the time of operation. That bill passed out of this committee and is pending before Communications and Conveyance Committee.

AB 3061 (Haney) of 2024 requires the manufacturers of autonomous vehicles (AVs) to report to the Department of Motor Vehicles (DMV) any vehicle collision, traffic violation, or disengagement, or the assault or harassment of any passenger or safety driver that involves a manufacturer's vehicle in California starting July 31, 2025. That bill passed out of this committee and is pending before Communications and Conveyance Committee.

SB 915 (Cortese) of 2024 requires local authorization for an AV commercial passenger service to operate within its limits. That bill is pending before Senate Local Government Committee.

AB 96 (Kalra), Chapter 419, Statutes of 2023 requires a public transit employer to provide written notice to an exclusive representative of the workforce affected by autonomous transit vehicle technology, and that collective bargaining commence within a certain timeframe, among other provisions.

AB 316 (Aguiar-Curry) of 2023 was substantially similar to AB 2286. That bill was vetoed by Governor Newsom.

AB 2441 (Kalra) of 2022 would have required a public transit district to provide written notice to an exclusive representative of the workforce affected by autonomous transit vehicle technology, among other provisions. That bill was vetoed by the Governor.

SB 336 (Dodd) of 2019 would have required a transit operator on every fully-automated transit vehicle until January 1, 2025. That bill died in this committee.

AB 1141 (Berman) of 2017 would have required DMV to adopt regulations setting standards for AVs operating freight by September 30, 2018. That bill died in Assembly Communications and Conveyance Committee.

SB 1298 (Padilla), Chapter 570, Statutes of 2012 established conditions for the operation of AVs upon public roadways.

REGISTERED SUPPORT / OPPOSITION:

Support

Mission Street Neighbors
San Francisco County Transportation Authority
San Francisco Taxi Workers Alliance
Four Individuals

Opposition

None on file

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