
SENATE COMMITTEE ON ENVIRONMENTAL QUALITY

Senator Allen, Chair

2019 - 2020 Regular

Bill No: SB 59
Author: Allen
Version: 4/1/2019
Urgency: No
Consultant: David Ernest García

Hearing Date: 4/24/2019
Fiscal: Yes

SUBJECT: Autonomous vehicle technology: Statewide policy

DIGEST: This bill requires the Governor's Office of Planning and Research (OPR), in coordination with the State Air Resources Board (ARB) to convene an autonomous vehicle (AV) interagency working group to guide policy development for autonomous passenger vehicles pursuant to specific principles, and report to the Legislature no later than January 1, 2021.

ANALYSIS:

Existing law:

- 1) Establishes the ARB as the air pollution control agency in California and requires ARB, among other things, to control emissions from a wide array of mobile sources and coordinate, encourage, and review the efforts of all levels of government as they affect air quality.
- 2) Establishes OPR as the comprehensive state-planning agency, including, but not limited to, transportation issues facing the state.
- 3) Defines AV as any vehicle equipped with autonomous technology that has been integrated into that vehicle, and allows operation of an AV with the presence of a driver on California public roads upon the California Department of Motor Vehicle's (DMV) approval with specified manufacturer certification and vehicle capabilities.
- 4) Provides that the DMV may impose additional requirements on vehicles capable of operating without a driver and that the DMV may require the presence of a driver in the driver's seat if necessary for safety.

This bill:

- 1) Makes findings and declarations.
- 2) Requires OPR, in coordination with ARB, to convene an autonomous vehicle interagency working group to guide policy development for autonomous passenger vehicle technology, as specified, with the following membership:
 - a) The Transportation Agency.
 - b) The Department of Transportation.
 - c) The Department of Motor Vehicles.
 - d) The Governor's Office of Business and Economic Development.
 - e) The Strategic Growth Council.
 - f) Representatives of local government as determined by OPR.
 - g) Any additional relevant organizations identified by OPR.
- 3) Requires, on or before January 1, 2021, the working group to submit to the Legislature recommendations, as specified, that ensure passenger AVs support the state's efforts to reduce greenhouse gas (GHG) emissions and criteria air pollutants, reduce traffic congestion and vehicle miles traveled, encourage efficient land use, and improve safety and access to mobility and economic opportunities for all Californians.
- 4) Provides specified principles to guide the working group.

Background

- 1) *Autonomous vehicles in California.* In 2012, SB 1298 (Padilla) established conditions for the operation of automated vehicles (AV) in California. In 2014, the DMV adopted regulations for the testing of AVs on public roads requiring a test driver and established an application and approval process for a testing permit. As of April 1, 2018, there are 52 manufacturers that have this permit. In early 2018, the DMV adopted regulations for testing AVs without a driver at the wheel and for deployment of AVs in California. DMV began accepting applications for these permits on April 1, 2018.

- 2) *Levels of Automation.* In September 2016, the National Highway Traffic Safety Administration (NHTSA) released its federal policy on automated vehicles. NHTSA emphasized the importance of highly automated vehicles (HAVs) in reducing traffic fatalities in the United States. In 2015, over 35,000 people died in traffic crashes, representing a 7.2% increase year-over-year, the largest increase since 1966. They cite that 94% of car crashes are associated with human choice or error, presenting a major opportunity for HAVs to save lives.

NHTSA's policy release provided Vehicle Performance Guidelines for Automated Vehicles, a Model State Policy framework, clarification of NHTSA's current regulatory tools, and the identification of potential new tools and authorities to aid the safe deployment of HAVs. NHTSA also adopted the Society of Automotive Engineers International (SAE) definitions for levels of automation (see below), ranging from SAE Level 0 (no automation) to SAE Level 5 (full automation under all conditions). Level 2 vehicles may include partially automated features such as lane assist and adaptive cruise control but still require the full engagement of the driver. HAVs are considered to be SAE Levels 3-5, which are the levels of automation this bill addresses.

Level 0	No Automation	Driver is in full control at all times
Level 1	Driver Assistance	A driver assistance system controlling either steering or acceleration/braking using some info about environment as driver controls all other aspects
Level 2	Partial Automation	One or more driver assistance systems of both steering and acceleration/braking using some info about environment as driver controls all other aspects
Level 3	Conditional Automation	Automated driving system performing all aspects of dynamic driving task with expectation that a driver is ready to take control when prompted
Level 4	High Automation	Automated driving system performing all aspects of driving task in certain conditions even if the driver does not respond when prompted
Level 5	Full Automation	Full-time performance of all aspects of the driving task in all conditions, can be managed by a human driver

Comments

- 1) *Purpose of Bill.* According to the author, “SB 59 will ensure California plans responsibly for the potential wide-scale introduction of autonomous vehicles to prevent this innovative new technology from adding to our serious climate, clean air, and traffic challenges. Autonomous vehicles can significantly improve how Californians get around including by increasing safety. However, if not planned for deliberately, this new transportation mode could exacerbate our already daunting mobility problems leading to more traffic congestion and air pollution. Numerous institutions are studying the potential impacts of AVs. Several recent studies found that because AVs make travel less onerous, their widespread adoption could increase vehicle travel by 15 to 60 percent. A recent experiment conducted by UC Davis, UC Berkeley, and Georgia Tech mimicked life with an AV (by providing each participating household with a chauffeur.) That experiment saw households travel 83 percent more miles per week, with more than a fifth of the vehicle trips carrying no passengers.

“SB 59 calls on the Office of Planning and Research to convene an Autonomous Vehicles Smart Planning Task Force to develop recommendations to ensure that the deployment of autonomous vehicles supports our state’s environmental and equity goals instead of hindering them. Unless we develop carefully considered policies, the promise of autonomous vehicles leading to a better quality of life, could instead result in unintended consequences that exacerbate our already daunting challenges.”

- 2) *Uncertainty about AVs.* AVs have the potential to transform every sector of transportation. However, much is uncertain about these impacts. AVs could replace transit trips, or it could provide better first- and last-mile connectivity to increase transit use. AVs could enhance vehicle safety by removing human error from the driving task and improve access to mobility for many people.

On the other hand, AVs could create more congestion and sprawl as it becomes more convenient to live farther and farther from typical destinations. For example, someone who wanted to live near Lake Tahoe, but works in downtown San Francisco, could use the 4+ hour car trip (even longer with rush hour traffic) to work while in transit. Additionally, AV owners could send their cars on passenger-less trips to avoid paying for parking, which would increase traffic congestion, as well as GHG and air pollution emissions from vehicles on the road that are not Zero Emission Vehicles (ZEVs). It is important to note that such “ghost trips” by AV ZEVs would not only increase GHG and air

pollution emissions from the other cars on the road, ZEVs themselves are not truly emission free because the source of their fuel is not GHG- or pollution-free.

For example, although a fully battery electric vehicle does not emit GHGs or air pollution from its tailpipe, the electricity in California is not GHG- or pollution-free. The Union of Concerned Scientists (UCS) calculated both power plant emissions and emissions from the production of coal, natural gas and other fuels power plants use based on data released in February 2018. UCS determined that the average battery electric vehicle in California gets the equivalent of 109 MPG, which is far cleaner than any gasoline-powered vehicle, but undeniably not GHG- or pollution-free. Therefore, even if all AVs in California are ZEVs, vehicles sent on ghost trips would still increase traffic, GHG emissions, and air pollution, and would do so at a cost less expensive to the vehicle owner than paying for an all-day parking spot in most metropolitan centers.

As such, the state should not ignore the very real harms of AV ghost trips, even when those AVs are ZEVs.

Currently, the Legislature has limited understanding of how to plan for a “driverless” world. More recently, support for AVs has been tempered by highly publicized accidents and misuse of AV technology (such as a person sleeping in the driver seat of their vehicle as the car drives autonomously on the freeway).

- 3) *Policy Coordination Needed.* The UC Davis Institute of Transportation Studies (ITS) recently issued a series of policy briefs characterizing AVs as one of the three “revolutions” in transportation, along with electrification and shared mobility (i.e., the shared use of a vehicle on as-needed basis). According to ITS, these must happen concurrently in order to bring about increased access to mobility, more affordable transportation, and major reductions in GHG emissions.

However, if there is just automation without shared mobility or electrification (e.g., people primarily riding in personal, gas-powered AVs), then California could end up in a future of more vehicle miles traveled, more vehicles on the road, more sprawl, and more GHG emissions and energy use. ITS states that achieving all three revolutions together will require unprecedented levels of policy support.

Related/Prior Legislation

SB 336 (Dodd; 2019) requires an on-board employee when public transit agencies deploy autonomous transit vehicles. This bill is pending in the Senate Transportation Committee.

SB 936 (Allen; 2018) would have required OPR to convene an Autonomous Vehicles Smart Planning Task Force. This bill died in the Senate Appropriations Committee.

SB 802 (Skinner, 2017) would have established the Emerging Vehicle Advisory Study Group to review and advise the Legislature on policies pertaining to new types of AVs operating in California. SB 802 died in the Assembly Appropriations Committee.

SB 145 (Hill, Chapter 725, Statutes of 2017) removed a provision that required the Department of Motor Vehicles (DMV) to notify the Legislature upon receipt of an application to operate an autonomous vehicle capable of operating without the presence of a driver and removed a 180-day delay of an approved application.

AB 1592 (Bonilla, Chapter 814, Statutes of 2016) authorized a pilot program by the Contra Costa Transportation Authority to test autonomous vehicles without a driver, steering wheel, brake pedal or accelerator.

SB 1298 (Padilla, Chapter 570, Statutes of 2012) established rules for the operation of autonomous vehicles on public roads.

DOUBLE REFERRAL:

This measure was heard in Senate Transportation Committee on April 9, 2019, and passed out of committee with a vote of 10-1.

SOURCE: CALSTART
Union of Concerned Scientists

SUPPORT:

California Electric Transportation Coalition
Center for Climate Change and Health
Community Environmental Council
Fossil Free California

Sierra Club California
Transform

OPPOSITION:

TechNet

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