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Senate Bill 706 (Substitute S-2 as passed by the Senate)
Sponsor: Senator Ken Horn
Committee: Economic and Small Business Development

Date Completed: 3-31-22

RATIONALE

Many automakers plan to increase their production of autonomous vehicles, which are vehicles capable of operating to varying degrees without a driver. Given the expected increase in autonomous vehicle production, the Society of Automotive Engineers created preliminary standards for the vehicles, establishing five levels of autonomous driving: levels one and two require an active and engaged driver; level three requires almost no human interaction, except in certain circumstances; and levels four and five do not require any human interaction. In the development of level four and five autonomous vehicles, the concept of a connected and autonomous vehicle (CAV) has emerged. A CAV is a vehicle that communicates with roadways and surrounding infrastructure, allowing it to map out an optimal route or understand the flow of traffic, among other things.

According to the Michigan Department of Transportation (MDOT), the CAV concept could involve three systems: the equipment installed in a CAV that allows for communication with other vehicles; the equipment installed in smart infrastructure that allows for communication between a CAV and the infrastructure; and the network that generally allows for the communication. In 2020, MDOT sought a private industry partner to advance the development of a CAV corridor, also known as an automated vehicle roadway, which would involve the creation of lanes purposefully built for CAVs. The Department selected Cavnue, a company that focuses on the development of infrastructure for automated vehicle roadways, and Cavnue has since begun a feasibility analysis for the project (see **BACKGROUND**). Some people believe that the project would benefit from a statutory framework. Accordingly, it has been suggested that MDOT be allowed to designate a segment of a roadway under its jurisdiction as an automated vehicle roadway and to establish certain requirements on the roadway.

CONTENT

The bill would amend the Michigan Vehicle Code to do the following:

- **Allow the Michigan Council of Future Mobility to conduct, or contract with a third-party vendor to conduct, a study to analyze the impact that the development, construction, or implementation of an automated vehicle roadway, automated vehicle roadway system, or related infrastructure would have on the State in the location that the roadway, system, or other infrastructure was deployed.**
- **Allow MDOT to designate a segment of a roadway under its jurisdiction as an automated vehicle roadway, to require a user fee for the use of the roadway or a lane within it, and to enter into an agreement with an automated vehicle roadway system provider for construction and operation of an automated vehicle roadway system.**
- **Specify that the bill would supersede all local ordinances that regulated automated vehicle roadway systems, automated vehicle roadways, automated vehicle roadway lanes, or automated vehicle roadway system providers, except certain local ordinances.**

- **Allow MDOT to promulgate rules to implement the mechanisms to monitor a segment of roadway that had been designated as an automated vehicle roadway or a lane or ramp of an automated vehicle roadway that had been designated as an automated vehicle roadway lane and to enforce violations of the bill's requirements.**
- **Prohibit an operator of a motor vehicle or automated motor vehicle from operating a motor vehicle or automated motor vehicle on an automated vehicle roadway or automated vehicle roadway lane without complying with the user fee requirement and other requirements prescribed by the bill.**
- **Specify that a violation of the bill's requirements would be a civil infraction.**
- **Allow MDOT to promulgate rules to implement monitoring mechanisms for a segment of roadway that had been designated as an automated vehicle roadway and to enforce violations prescribed by the bill.**
- **Delete language providing for the creation of the Michigan Council on Future Mobility.**

Definitions

The bill would define "automated vehicle roadway" as a segment of a roadway that has been designated by MDOT for an automated vehicle roadway system. "Automated vehicle roadway system" would mean a hardware and software system that is capable of facilitating the deployment and operation of an automated motor vehicle or a vehicle equipped with varying levels of automated technology while traveling through a segment of roadway that has been designated for such a system by MDOT. "Automated vehicle roadway lane" would mean any lane or ramp on an automated vehicle roadway designated for the exclusive use of motor vehicles by MDOT as provided by the bill.

"Automated vehicle roadway system provider" would mean an entity that designs, installs, constructs, operates, or maintains an automated vehicle roadway system.

Automated Vehicle Roadway Study

Under the bill, the Michigan Council of Future Mobility and Electrification could conduct, or contract with a third-party vendor to conduct, a study that analyzed the impact that the development, construction, or implementation of an automated vehicle roadway, automated vehicle roadway system, or related infrastructure would have on labor and employment in areas within the State where an automated vehicle roadway, automated vehicle roadway system, or related infrastructure was developed, constructed, or implemented.

Automated Vehicle Roadway Designation

Under the bill, MDOT could do all the following:

- Designate a segment of a roadway under its jurisdiction as an automated vehicle roadway.
- Designate a lane or ramp of an automated vehicle roadway as an automated vehicle roadway lane.
- Require a user fee for the use of an automated vehicle roadway or automated vehicle roadway lane.

In addition, MDOT could enter in an agreement with an automated vehicle roadway system provider for the design, construction, manufacture, operation, maintenance, or management of an automated vehicle roadway system for a designated automated vehicle roadway or automated vehicle roadway lane. As part of the agreement, MDOT would have to include a provision authorizing the automated vehicle roadway provider to establish and collect user fees for the use of the automated vehicle roadway or automated vehicle roadway lane. An automated vehicle roadway system provider could use the fees to properly design, construct, manage, operate, or maintain its automated vehicle roadway system.

The bill specifies that if MDOT designated a segment of roadway as an automated vehicle roadway or a lane or ramp of an automated vehicle roadway as an automated vehicle roadway lane, the roadway, lane, or ramp could be subject to requirements established by MDOT as a condition for use and the roadway, lane, or ramp could be reserved for the exclusive use of motor vehicles as determined by MDOT.

The bill also specifies that the provisions above would supersede all local ordinances that regulated automated vehicle roadway systems, automated vehicle roadways, automated vehicle roadway lanes, or automated vehicle roadway system providers, except that a local unit of government could adopt an ordinance or enforce an existing ordinance that did not conflict with these provisions.

The Code specifies that, when engaged, an automated driving system allowing for operation without a human operator is considered the driver or operator of a vehicle for purposes of determining conformance to any applicable traffic or motor vehicle laws and is deemed to satisfy electronically all physical acts required by a driver or operator of the vehicle. The bill specifies that an automated vehicle roadway system provider would not be an operator of a vehicle.

User Requirements on an Automated Vehicle Roadway

Under the bill, when a roadway had been designated as an automated vehicle roadway or a lane or ramp as an automated vehicle roadway lane, the following would have to apply:

- If a user fee were required, the user fee would have to be paid.
- The motor vehicle would have to comply with any applicable requirements prescribed by MDOT as allowed under the bill.

The bill specifies that the requirements above would apply in addition to other existing rules or regulations governing the use of an automated vehicle roadway or automated vehicle roadway lane that were not inconsistent the requirements.

The bill also would allow MDOT to promulgate rules to implement the mechanisms to monitor a segment of roadway that had been designated as an automated vehicle roadway or a lane or ramp of an automated vehicle roadway that had been designated as an automated vehicle roadway lane and to enforce violations of the requirements described above.

Violations on an Automated Vehicle Roadway

Under the bill, an operator of a motor vehicle or automated motor vehicle could not operate a motor vehicle or automated motor vehicle on an automated vehicle roadway or automated vehicle roadway lane without complying with the user fee requirement and other requirements prescribed by the bill. A person that violated these requirements would be responsible for a civil infraction and could be fined as provided by the Code.

The Code prescribes certain rules and restrictions depending on the number of lanes on a roadway or certain lane designations. It specifies that a person who violates these rules and restrictions is responsible for a civil infraction. This penalty also would apply to a person who violated the requirements to pay a user fee and comply with any applicable requirements as described above. In addition, the bill specifies that a person who violated the rules and restrictions prescribed by the Code and the requirements prescribed by the bill could be fined as provided by the Code.

"Minimal Risk Condition"

A manufacturer of automated driving systems or upfitter must ensure that all of a list of circumstances exist when researching or testing the operation, including operation without a human operator, of an automated motor vehicle or any automated technology or automated driving system installed in a motor vehicle upon a highway or street. This includes that a person

authorized by the manufacturer can monitor the vehicle's performance while it is being operated on a highway or street in this state and, if necessary, promptly take control of the vehicle's movements. If the individual does not, or is unable to, take control of the vehicle, the vehicle must be capable of achieving a minimal risk condition.

"Minimal risk condition" would mean the ability of an automated motor vehicle, upon experiencing a failure of its automated driving system that renders the automated motor vehicle unable to perform the dynamic driving task, to bring the vehicle to a stop in a reasonably safe location for the vehicle and any human operator.

MCL 257.2b et al.

BACKGROUND

According to MDOT, the Cavnue "project envisions connecting Detroit, Ann Arbor along with key communities and destinations along Michigan Avenue and Interstate 94 in Wayne County and Washtenaw County with an innovative infrastructure solution that allows for a mix of connected and autonomous vehicles, traditional transit vehicles, shared mobility, and freight and personal".¹ Currently, Cavnue is undertaking a feasibility analysis for the project. The first phase of the project would be a "collaborative piloting, planning, and development period lasting 24 months to test technology and infrastructure, conduct analysis and community outreach, and establish a viable vision for the project".² If the project passed the feasibility analysis and the initial 24-month period, construction and implementation phases would ensue.

ARGUMENTS

(Please note: The arguments contained in this analysis originate from sources outside the Senate Fiscal Agency. The Senate Fiscal Agency neither supports nor opposes legislation.)

Supporting Argument

The introduction of automated vehicle roadways in Michigan could improve the State's current and future transportation priorities. For example, MDOT prioritizes traffic safety and the reduction and elimination of traffic fatalities in the State through initiatives such as Towards Zero Deaths (TZD), a statewide safety campaign in coordination with the Michigan State Police. However, according to Michigan Traffic Crash Facts, a website that provides annual official Michigan crash data, 1,083 people died as a result of a fatal car crash in 2020, an increase from previous years. Information from the TZD initiative indicates that driver behavior factors into nearly 90 percent of all fatal crashes. Given the effect of driver behavior on fatal crashes, CAVs and automated vehicle roadways could contribute to the reduction or elimination of traffic fatalities by removing the factor of driver behavior from driving.

An automated vehicle roadway also would improve the priority of public transit in the State. Michigan's history as an auto-manufacturing State has encouraged a trend of personal vehicle ownership, which has created significant gaps in public transit for communities and regions. Personal vehicle ownership is not feasible for some individuals for reasons such as age, disability, or income constraints. According to Cavnue, the automated vehicle roadway between Detroit and Ann Arbor would begin operations with connected buses and shared mobility vehicles. These increased opportunities for public transit in the Cavnue project would lead to the immediate increase in regional public transit and the potential for additional interest and implementation of public transit in further automated vehicle roadway projects.

Though automated vehicle roadways could improve these and other State transportation priorities, the scale of automated vehicle roadways could inhibit their development. Automated vehicle roadways require a significant amount of planning, coordination, and financial commitment on the

¹ "Connected and Automated Vehicles Corridor", <https://www.michigan.gov>. Retrieved 02-04-2022.

² "Michigan Project", <https://www.cavnue.com>. Retrieved 02-04-2022.

part of many stakeholders, as evidenced by the 24-month first phase of the Cavnue project that will focus on planning, concept development, and preliminary design. The State currently lacks a comprehensive policy for the implementation of automated vehicle roadways; without that policy, stakeholders could hesitate to commit to a project, which could reduce the likelihood of the project and its associated benefits coming to fruition. Allowing MDOT to implement a regulatory framework for automated vehicle roadways would improve the immediate and future feasibility of these projects in Michigan.

Opposing Argument

When an autonomous vehicle drives on a normal roadway, using sensors to maneuver through its environment, it is operating the vehicle. However, autonomous vehicle operation on an automated vehicle roadway is fundamentally different. An automated vehicle roadway effectively manages traffic by communicating with each CAV on the roadway. All CAVs send data to the smart infrastructure, and that smart infrastructure uses the data to understand the current traffic load and manage each CAV on the roadway. On an automated vehicle roadway, the roadway itself is the operator as it controls the speed and proximity of each CAV. Under the bill, an automated roadway system provider would not be considered the operator of a vehicle, but this provision would not agree with the reality of operations on an automated roadway system. Establishing who is the operator of the CAV on an automated roadway system is important for liability purposes if a person is injured or killed on the roadway. By specifying that an automated roadway system provider would not be the operator of a vehicle, the bill would remove a portion of the operating liability that should be assumed by the provider and fail to protect those who could be injured or killed on the roadway.

Legislative Analyst: Tyler VanHuyse

FISCAL IMPACT

The bill would not necessarily have a fiscal impact on MDOT because its language is permissive. The Department could incur costs and expenses to designate or create new highway lanes for automated vehicles; however, it would not have to if it took no action.

Otherwise, the bill could have a positive fiscal impact on State and local government. The bill would allow for the imposition of civil fines for various violations. Revenue collected from civil fines is used to support local libraries. Additionally, \$10 of any civil fine would be deposited into the State Justice System Fund. The Fund supports justice-related activities across State government in the Departments of Corrections, Health and Human Services, State Police, and Treasury. The Fund also supports justice-related issues in the Legislative Retirement System and the Judiciary. The amount of revenue to the State or for local libraries is indeterminate and would depend on the actual number of violations (provided the basis for those violations was established).

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This analysis was prepared by nonpartisan Senate staff for use by the Senate in its deliberations and does not constitute an official statement of legislative intent.