

The Florida Senate
BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By: The Professional Staff of the Committee on Rules

BILL: CS/CS/SB 1620

INTRODUCER: Rules Committee; Transportation Committee; and Senator Brandes

SUBJECT: Autonomous Vehicles

DATE: April 20, 2021

REVISED: _____

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Price	Vickers	TR	Fav/CS
2.	Hackett	Ryon	CA	Favorable
3.	Price	Phelps	RC	Fav/CS

Please see Section IX. for Additional Information:

COMMITTEE SUBSTITUTE - Substantial Changes

I. Summary:

CS/CS/SB 1620 revises the definition of the term, “autocycle.” Additionally, the bill defines the term “low-speed autonomous delivery vehicle” as a fully autonomous vehicle that meets the current federal definition. The bill authorizes such vehicles to operate only on streets or roads where the posted speed limit is 35 miles per hour or less but are not prohibited from crossing a road or street at an intersection where the road or street has a posted speed limit of more than 35 miles per hour. A low-speed autonomous delivery vehicle may operate on a street or road with a posted speed limit of more than 35 miles per hour, but no more than 45 miles per hour, under certain conditions.

The bill sets out equipment requirements for such vehicles and provides that the new provisions are superseded by any conflicting federal regulations. The bill also establishes insurance coverage requirements for such vehicles. The provisions of any motor vehicle equipment laws or regulations of this state, relating to or supporting motor vehicle operation by a human driver but not relevant for an automated driving system, are rendered inapplicable to fully autonomous vehicles designed to be operated *exclusively* by the automated driving system for *all* trips.

The bill also makes conforming revisions made necessary by the above provisions.

The fiscal impact to state and local revenues is indeterminate. See the “Fiscal Impact Statement” below for details.

The bill takes effect July 1, 2021.

II. Present Situation:

Autocycles

According to the National Conference of State Legislatures, the National Highway Traffic Safety Administration (NHTSA) does not currently have a vehicle classification for autocycles. At the federal level, autocycles fall under the definition of “motorcycle” and must generally comply with applicable motorcycle manufacturing and safety standards. States are making efforts to define “autocycles,” address safety requirements and passenger restrictions, and regulate operator licensing and operation of autocycles on roadways.¹

Current Florida law defines the term “autocycle” to mean “a three-wheeled motorcycle² that has two wheels in the front and one wheel in the back; is equipped with a roll cage or roll hoops, a seat belt for each occupant, antilock brakes, a steering wheel, and seating that does not require the operator to straddle or sit astride it; and is manufactured in accordance with the applicable federal motor vehicle safety standards in 49 C.F.R. part 571 by a manufacturer registered with the [NHTSA].”³

Low-Speed Autonomous Delivery Vehicles

Convenient delivery of goods to households is increasingly popular, particularly so in the current pandemic. New types of vehicles designed specifically for such purposes are emerging. One such vehicle is produced by Nuro, Inc., based in California,⁴ which produces a vehicle called the R2X. Nuro indicates the vehicle is about half the width and weight of a typical car.⁵

As described by the National Highway Traffic Safety Administration (NHTSA),⁶ the R2X is a highly automated low-speed, electrically-powered delivery vehicle designed to carry cargo exclusively (everything “from dinner to dry cleaning”⁷) and operate without a human driver. The vehicle has no occupant compartments, designated seating positions, or manual controls for driving the vehicle. The R2X is equipped with a system that allows a remote operator to take over the driving functions of the vehicle.⁸

¹ See National Conference of State Legislatures, *Transportation Review: Autocycles*, Lambert, S. and Shinkle, D., April 2017, available at <https://www.ncsl.org/research/transportation/transportation-review-autocycles.aspx> (last visited March 16, 2021).

² “Motorcycle” is defined in s. 316.003(45), F.S., as “any motor vehicle having a seat or saddle for the use of the rider and designed to travel on not more than three wheels in contact with the ground. The term includes an autocycle, but does not include a tractor, a moped, an electric bicycle, or any vehicle in which the operator is enclosed by a cabin unless it meets the requirements set forth by the National Highway Traffic Safety Administration for a motorcycle.”

³ Section 316.003(2), F.S.

⁴ See Nuro, *About*, available at [Nuro — About](#) (last visited March 8, 2021).

⁵ See Nuro, *Delivery Safety: Nuro’s Approach*, at p. 9, available at [delivering_safety_nuros_approach.pdf \(squarespace.com\)](#) (last visited March 8, 2021).

⁶ See Federal Register, Volume 85, No. 28, Tuesday, February 11, 2020, available at [Federal Register :: Nuro, Inc.; Grant of Temporary Exemption for a Low-Speed Vehicle With an Automated Driving System](#) (last visited March 8, 2021).

⁷ Nuro, available at [Nuro — Product](#) (last visited March 8, 2021).

⁸ NHTSA notes its understanding that the remote operator system is a “fallback” safety feature and is not a primary means of controlling the system. *Id.* at p. 1.

Federal law defines “low-speed vehicle” to mean a motor vehicle:

- That is 4-wheeled,
- Whose speed attainable in 1 mile is more than 20 miles per hour and not more than 25 miles per hour on a paved level surface, and
- Whose gross vehicle weight rating is less than 3,000 pounds.⁹

Federal regulations in 49 C.F.R. s. 571.500 require each low-speed vehicle to be equipped with:

- Headlamps,
- Front and rear turn signal lamps,
- Taillamps,
- Stop lamps,
- Reflex reflectors: one red on each side as far to the rear as practicable, and one red on the rear,
- An exterior mirror mounted on the driver's side of the vehicle and either an exterior mirror mounted on the passenger's side of the vehicle or an interior mirror,
- A parking brake,
- A windshield that conforms to a specified Federal Motor Vehicle Safety Standard (FMVSS) relating to glazing.
- A vehicle identification number.
- Seat belt assemblies that comply with a specified FMVSS.
- Specified rear visibility requirements relating to back-up cameras.
- An alert sound necessary for pedestrians to detect and recognize the vehicle.

Temporary Exemption from Federal Motor Vehicle Safety Standards

The National Traffic and Motor Vehicle Safety Act¹⁰ grants the U.S. Department of Transportation (USDOT) broad authority to exempt motor vehicles from an FMVSS or bumper standard on a temporary basis under specified terms and conditions.¹¹ The USDOT Secretary has delegated this authority to NHTSA.¹²

Pursuant to that authority, NHTSA has granted at least one company, Nuro, *temporary* exemptions from three of the low-speed vehicle equipment requirements in 49 C.F.R. s. 571.500.¹³ The exemptions are from the following equipment requirements listed above:

- The exterior and interior mirror requirement.
- The windshield glazing requirements.
- The rear visibility requirements (relating to backup camera “linger time”).

The exemption was granted under a number of terms and conditions and authorizes Nuro to produce 2,500 of the exempted R2X vehicles during any 12-month period of the exemption, or a

⁹ 49 C.F.R. 571.3.

¹⁰ 49 U.S.C. 310 *et seq.*

¹¹ 49 U.S.C. 30113.

¹² 49 C.F.R. 1.95.

¹³ See Federal Register, Volume 85, No. 28, Tuesday, February 11, 2020, available at [Federal Register :: Nuro, Inc.; Grant of Temporary Exemption for a Low-Speed Vehicle With an Automated Driving System](#) (last visited March 8, 2021).

maximum of 5,000 exempted vehicles over the full two-year period of the exemption. The exemption expires on February 10, 2022.

Autonomous Vehicles

Federal Policy and Guidance

In October of 2018, the USDOT began releasing federal guidance for automated driving systems, building on previous policy and adopting an industry standard to ensure consistency in taxonomy usage. The standard sets out levels of vehicle automation, ranging from Level 0 (no automation) to Level 6 (full automation). The USDOT has since issued additional guidance, involving the work of multiple stakeholders, in periodic publications intended to lay the groundwork for deployment of automated vehicles and technology.¹⁴ The latest guidance comes in the form of an *Automated Vehicles Comprehensive Plan*,¹⁵ the goals of which are summarized by the USDOT as follows:

- Promote Collaboration and Transparency – USDOT will promote access to clear and reliable information to its partners and stakeholders, including the public, regarding the capabilities and limitations of ADS.¹⁶
- Modernize the Regulatory Environment – USDOT will modernize regulations to remove unintended and unnecessary barriers to innovative vehicle designs, features, and operational models, and will develop safety focused frameworks and tools to assess the safe performance of ADS technologies.
- Prepare the Transportation System – USDOT will conduct, in partnership with stakeholders, the foundational research and demonstration activities needed to safely evaluate and integrate ADS, while working to improve the safety, efficiency, and accessibility of the transportation system.¹⁷

The USDOT is seeking public comments on the plan, with the comment period ending on March 22, 2021. Thus far, only guidance has been issued. No federal statutes or rules specifically applicable to automated vehicles are currently in place.

Current Florida Autonomous Vehicle Law

Definitions

Current law defines the following relevant terms:

- “Automated driving system” means the hardware and software that are collectively capable of performing the entire dynamic driving task of an autonomous vehicle on a sustained basis, regardless of whether it is limited to a specific operational design domain.
- “Autonomous vehicle” means any vehicle equipped with an automated driving system.
- “Dynamic driving task” means all of the real-time operational and tactical functions required to operate a vehicle in on-road traffic within its specific operational design domain, if any,

¹⁴ USDOT, *USDOT Automated Vehicles Activities*, “ADS 2.0 Activities,” “AV 3.0 Activities,” and “AV 4.0 Activities” tabs available at <https://www.transportation.gov/AV> (last visited March 7, 2021).

¹⁵ Available at [Automated Vehicles Comprehensive Plan | US Department of Transportation](#) (last visited March 7, 2021).

¹⁶ “Automated driving systems.” See discussion of current Florida definitions on p. 2 of this analysis.

¹⁷ *Id.*

excluding strategic functions such as trip scheduling and selection of destinations and waypoints.

- “Fully autonomous vehicle” means a vehicle equipped with an automated driving system designed to function without a human operator.
- “Operational design domain” means a description of the specific operating domain in which an automated driving system is designed to properly operate, including, but not limited to, roadway types, speed ranges, environmental conditions such as weather and time of day, and other domain constraints.¹⁸
- “Teleoperation system” means the hardware and software installed in a motor vehicle which allow a remote human operator to supervise or perform aspects of, or the entirety of, the dynamic driving task.
- “Remote human operator” means a natural person who is not physically present in a vehicle equipped with an automated driving system who engages or monitors the vehicle from a remote location. A remote human operator may have the ability to perform aspects of, or the entirety of, the dynamic driving task for the vehicle or cause the vehicle to achieve a minimal risk condition. A remote human operator must be physically present in the United States and be licensed to operate a motor vehicle by a United States jurisdiction.¹⁹
- “Minimal risk condition” means a reasonably safe state, such as bringing the vehicle to a complete stop and activating the vehicle’s hazard lamps.²⁰

A remote human operator must be physically present in the United States and be licensed to operate a motor vehicle by a United States jurisdiction.

Operation and Compliance with Traffic and Motor Vehicle Laws

A licensed operator is not required to operate a fully autonomous vehicle, and such vehicle may operate in this state regardless of whether a human operator, or any human at all, is physically present in the vehicle. For purposes of state uniform traffic control, the automated driving system, when engaged, is deemed the operator of an autonomous vehicle, regardless of whether a person is physically present in the vehicle while the vehicle is operating with the automated driving system engaged.²¹ If the autonomous vehicle is fully autonomous, it must be able to achieve a minimal risk condition if a failure of the automated driving system occurs which renders that system unable to perform the entire dynamic driving task relevant to its intended operational design domain.²²

The existing requirement for a driver’s license does not apply when a fully autonomous vehicle is operated with the automated driving system engaged and without a human operator.²³ No registration statute specific to autonomous vehicles exists in current law; autonomous vehicle owners pay the same license tax as for any other vehicle, generally based on vehicle type and

¹⁸ Section 316.003(3), F.S.

¹⁹ Section 316.003(90), F.S.

²⁰ Section 319.145(2), F.S.

²¹ Section 316.85, F.S.

²² Section 319.145, F.S.

²³ Section 322.015, F.S.

weight.²⁴ The owner or registrant of a fully autonomous vehicle (which is not a transportation network company) must have automobile insurance:

- In the amount of \$1 million because of bodily injury to, or death of, one person in any one crash.
- Subject to such limits for one person, in the amount of \$1 million because of bodily injury to, or death of, two or more persons in any one crash.
- In the amount of \$1 million because of injury to, or destruction of, property of others in any one crash.²⁵

An autonomous vehicle or a fully autonomous vehicle equipped with a teleoperation system may operate without a human operator physically present in the vehicle when the teleoperation system is engaged and, if so equipped, is exempt from certain duties and a prohibition relating to vehicle operation on a *driver* in ch. 316, F.S., such as the duty to provide information and render reasonable assistance in a crash, the duty to give notice of the crash to appropriate law enforcement, and the prohibition against leaving an unattended motor vehicle without first setting the brake.²⁶

An autonomous vehicle registered in this state must meet all of the following requirements:

- When required by federal law:
 - Have been certified in accordance with federal regulations in 49 C.F.R. part 567 as being in compliance with applicable federal motor vehicle safety standards.
 - Bear the required certification label or labels including reference to any exemption granted under applicable federal law.
- Be capable of being operated in compliance with the applicable traffic and motor vehicle laws of this state, regardless of whether the vehicle is operating with the automated driving system engaged.

Current Florida Low-Speed Vehicle Law

Definitions

Current Florida law defines “low-speed vehicle,” to mean any four-wheeled vehicle whose top speed is greater than 20 miles per hour but not greater than 25 miles per hour, including, but not limited to, neighborhood electric vehicles. Low-speed vehicles must comply with the safety standards in 49 C.F.R. s. 571.500 and s. 316.2122, F.S.²⁷

Operation and Compliance with Traffic and Motor Vehicle Laws

The operation of a low-speed vehicle on any road in this state is authorized with the following restrictions:

- A low-speed vehicle or mini truck may be operated only on streets where the posted speed limit is 35 miles per hour or less but is not prohibited from crossing a road or street at an intersection where the road or street has a posted speed limit of more than 35 miles per hour.

²⁴ See s. 320.08, F.S.

²⁵ Section 627.749(3), F.S.

²⁶ The exemptions are contained in ss. 316.062(5), 316.063(4), 316.065(5), 316.1975(3), and 316.303(1), F.S.

²⁷ Section 320.01(41), F.S.

- A low-speed vehicle must be equipped with headlamps, stop lamps, turn signal lamps, taillamps, reflex reflectors, parking brakes, rearview mirrors, windshields, seat belts, and vehicle identification numbers.
- A low-speed vehicle or mini truck must be registered and insured in accordance with s. 320.02, F.S.,²⁸ and titled pursuant to ch. 319, F.S.²⁹
- Any person operating a low-speed vehicle or mini truck must have in his or her possession a valid driver license.
- The FDOT, counties, and municipalities, if necessary in the interest of safety, may prohibit the operation of low-speed vehicles on any road under their respective jurisdictions.³⁰

For purposes of seasonal delivery personnel, a low-speed vehicle, under certain restrictions for package size and weight, annually from midnight October 15 until midnight January 31 may operate on any public road within a residential area with a posted speed limit of 35 miles per hour or less. The vehicle must be:

- Marked in a conspicuous manner with the name of the delivery service;
- Equipped with, at a minimum, the equipment required under s. 316.212(6), F.S.
- Equipped with head lamps and tail lamps, in addition to the safety requirements in s. 316.212(6), F.S., if operated after sunset.³¹

These low-speed vehicles are presumably operated by a human driver and not autonomous.

The license tax for an electric low-speed vehicle is the same as that prescribed for any other vehicle, generally based on vehicle type and weight.³² Low-speed vehicles must have a license plate that complies with the requirements of s. 320.06, F.S., relating to plate symbols and numbers and renewal and replacement, etc.

III. Effect of Proposed Changes:

Section 1 amends s. 316.003, F.S., revising the definition of “autocycle” by clarifying that the required antilock brakes must meet the requirements of Federal Motor Vehicle Safety Standard No. 122 relating to such brakes, revising the requirement for a steering “wheel” to a steering “mechanism.” Additionally, the bill adds a new definition of “low-speed autonomous delivery vehicle,” meaning a fully autonomous vehicle that meets the definition of a low-speed vehicle in the Code of Federal Regulations.³³

²⁸ That section requires every owner or person in charge of a motor vehicle that is operated or driven on the roads of this state to register the vehicle in this state. Florida’s Financial Responsibility Law requires minimum amounts of liability coverage of \$10,000 in the event of bodily injury to, or death of, one person, \$20,000 in the event of injury to, or death of, two or more persons, and \$10,000 in the event of damage to property of others, or \$30,000 combined policy. *See* s. 324.022, F.S. In addition, personal injury protection must provide a minimum benefit of \$10,000 for bodily injury to any one person who sustains an emergency medical condition, which is reduced to a \$2,500 limit for medical benefits if a treating medical provider does not determine an emergency medical condition existed. *See* s. 627.736(1), F.S.

²⁹ That section provides for applications for and issuance of certificates of title for every motor vehicle to be registered and licensed under the laws of this state.

³⁰ Section 316.2122, F.S.

³¹ Section 316.2126(3), F.S.

³² *Supra* note 24.

³³ *Supra* note 9.

Section 2 amends s. 316.2122, F.S., currently applicable to low-speed vehicles (and mini trucks) on specified roadways. The bill authorizes an LSADV to operate on any road with the following restrictions:

- An LSADV may operate only on streets or roads where the posted speed limit is 35 miles per hour or less but is not prohibited from crossing a road or street at an intersection where the road or street has a posted speed limit of more than 35 miles per hour.
- An LSADV may operate on a street or road with a posted speed limit of more than 35 miles per hour, but no more than 45 miles per hour, if:
 - The vehicle travels no more than 1 continuous mile on such a street or road, but the vehicle may travel in excess of 1 continuous mile if authorized by the entity with jurisdiction over the street or road;
 - The vehicle operates exclusively in the right lane, other than for the purpose of completing a turn; and
 - On a two-lane street or road where overtaking and passing another vehicle is unsafe because of traffic moving in the opposite direction or because of other unsafe conditions, and five or more vehicles are formed in a line behind the LSADV, the autonomous delivery vehicle exits the roadway wherever a sufficient area for a safe turn-out exists, to permit the vehicles following to proceed.

An LSADV must be equipped with headlamps, stop lamps, turn signal lamps, taillamps, reflex reflectors, and vehicle identification numbers. This provision conflicts with the federal equipment requirements³⁴ for low-speed vehicles discussed above. However, the bill provides that federal regulations adopted by NHTSA³⁵ supersede this provision. Because this provision is superseded by the equipment requirements of the federal regulations, only those vehicles that comply with the federal equipment requirements, or entities with vehicles that are granted an exemption from the requirements, are therefore authorized to operate under the restrictions set out above.

An LSADV must be covered by a policy of automobile insurance providing the following coverage:

- Primary liability coverage of at least \$1 million for death, bodily injury, and property damage.
- Minimum personal injury protection benefits required under current law.³⁶
- Uninsured and underinsured vehicle coverage.³⁷

Under the bill, the coverage requirements may be satisfied by automobile insurance maintained by the owner of an LSADV, the owner of the teleoperation system, the remote human operator, or a combination thereof.

³⁴ 49 C.F.R. s. 571.500.

³⁵ NHTSA, the National Highway Traffic Safety Administration, is a part of the USDOT. See USDOT, *U.S. Department of Transportation Administrations*, available at [U.S. Department of Transportation Administrations | US Department of Transportation](https://www.transportation.gov/department) (last visited March 7, 2021).

³⁶ *Supra* note 25.

³⁷ Uninsured and underinsured motorist coverage generally provides the policyholder with benefits if the at-fault driver does not have sufficient bodily injury coverage. The limits of coverage must generally be not less than the limits of bodily injury liability insurance purchased by the named insured, or such lower limit complying with the rating plan of the company selected by the insured. See s. 627.727, F.S.

These insurance requirements are identical to those for fully autonomous vehicles used in the passenger-transportation arena. Should an LSADV be involved in an incident involving an uninsured or underinsured motorist, the LSADV policy would provide benefits to the at-fault party.

The bill preserves the existing authority of the FDOT, counties, and municipalities, if necessary in the interest of safety, to prohibit the operation of low-speed vehicles (and by definition, LSADVs) on any road under their respective jurisdictions.

Section 3 amends s. 316.215, F.S., rendering the provisions of any motor vehicle equipment laws or regulations of this state, relating to or supporting motor vehicle operation by a human driver but not relevant for an automated driving system, inapplicable to fully autonomous vehicles designed to be operated *exclusively* by the automated driving system for all trips. To the extent that any unidentified conflict with federal law exists or arises, this provision may result in unintended consequences.

Sections 1, 4, and 5 amend ss. 316.003(62), 316.306(3)(a), and 655.960(1), F.S., respectively, to conform cross-references made necessary by the bill's revisions.

Section 6 provides the bill takes effect July 1, 2021.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. State Tax or Fee Increases:

None.

E. Other Constitutional Issues:

None identified.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

Indeterminate. Persons required to title, register, and insure the subject vehicles will incur expenses doing so. However, the number of such vehicles deployed or planned for deployment in Florida is unknown.

C. Government Sector Impact:

Indeterminate. The number of such vehicles deployed or planned for deployment in Florida is unknown.

VI. Technical Deficiencies:

None.

VII. Related Issues:

The DHSMV notes the following issues:³⁸

- The definition does not express that the vehicle is authorized solely for the delivery of goods and without passengers.
- The portion of the bill deeming motor vehicle equipment laws or regulations inapplicable to fully autonomous vehicles is vague and subject to a variety of interpretations.
- Safety concerns arise in the context of these vehicles crossing streets with speed limits greater than 35 miles per hour, given that their required maximum speed is 25 miles per hour.

Enforcement of the bill's provisions may prove difficult for law enforcement. Whether *any* vehicle currently complies with the provisions of the bill is presently unknown. However, with no human in the vehicle, law enforcement may have difficulty even investigating such compliance.

VIII. Statutes Affected:

This bill amends the following sections of the Florida Statutes: 316.003, 316.2122, 316.215, 316.306, and 655.960.

IX. Additional Information:

- A. **Committee Substitute – Statement of Substantial Changes:**
(Summarizing differences between the Committee Substitute and the prior version of the bill.)

CS/CS by Rules on April 20, 2021:

³⁸ DHSMV analysis of SB 1620 (2020), and Email from DHSMV, March 8, 2021, on file with Senate Committee on Community Affairs.

The CS revises the definition of the term, “autocycle,” by clarifying that the required antilock brakes must meet the requirements of a specified Federal Motor Vehicle Safety Standard relating to such brakes. It also revises the requirement for a steering “wheel” to a steering “mechanism.”

CS by Transportation on March 20, 2021:

The CS establishes insurance coverage requirements for LSADVs.

B. Amendments:

None.