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Report to the Joint Standing Committee on Transportation

130th Legislature

Final Report of the Autonomous Vehicle Commission

March 18, 2022

Introduction

In April 2018, the Commission on Autonomous Vehicles was established by the 128th Maine Legislature. The commission was created to coordinate efforts among state agencies, and knowledgeable stakeholders, in an effort to develop a process which would allow an autonomous vehicle tester to demonstrate and deploy - for testing purposes - an automated driving system on a public way.

Resolve 2017, c. 46, directed the Maine Department of Transportation (MaineDOT) to submit an initial written report on the progress of the Autonomous Vehicle Commission to the committee having jurisdiction over transportation matters by January 15, 2020. The resolve also requires the Commissioner of Transportation to submit a final written report that includes findings and recommendations, including any suggested legislation.

Below you will find the final report on the status of the Commission on Autonomous Vehicles.

Report

The Commission is comprised of representatives from the Secretary of State, Bureau of Public Safety, State Police, Department of Health and Human Services, Bureau of Insurance, Maine Turnpike Authority, Greater Portland Metro, Maine Motor Transport Association, University of Maine, and the City of Portland. The Commission is chaired by MaineDOT.

The Commission met seven times in 2019 to draft rules for potential pilot projects that would allow the use of autonomous vehicles (AVs). (*See Appendix A for Autonomous Vehicle Pilot Project Rules*)

The Commission determined that an AV pilot project will only be authorized through an application and permitting process. The application process requires information about the entity or entities requesting a permit, including the applicants experience with AVs, financial status, safety record of the AV to be tested and the names and applicable records of all drivers. The rules allow for an AV to be tested without a driver if the Commission concludes the pilot project will be operated in a safe manner. The Commissioner of Transportation, the Secretary of State and the Commissioner of Public Safety make the final determination to issue a permit for a pilot project. A permit can be revoked due to safety concerns, should they arise.

Since the creation of the rules and application, none have been filed with the department to establish a pilot project. It is for this reason that MaineDOT does not have any findings to report back to the committee, nor do we have any legislation recommendations at this time.

MaineDOT will remain ready to work with any entity that is interested in applying for an Autonomous Vehicle Pilot Project.

17 Department of Transportation

229 Office of the Commissioner

Chapter 800: Autonomous Vehicle Pilot Program Rules

Summary: H.P. 1204 - L.D. 1724, a RESOLVE, “*To establish the Commission on Autonomous Vehicles and To Allow the Testing, Demonstration and Deployment of Automated Driving Systems,*” (hereinafter referred to as “the Resolve”) was enacted by the 128th Maine Legislature in April 2018. Section 2 of the Resolve states that, “...the Commissioner of Transportation shall adopt rules, in consultation with the Department of Public Safety and the Department of the Secretary of State, to establish a process to evaluate and authorize an autonomous vehicle tester to demonstrate and deploy for testing purposes an automated driving system on a public way.” These rules describe the Autonomous Vehicle Pilot Project Program and the process by which an autonomous vehicle tester may apply to demonstrate and deploy an automated driving system on a public way in the state of Maine for testing purposes. These rules are intended to ensure, to the greatest extent possible, the safe and lawful conduct of autonomous vehicle Pilot Projects undertaken in Maine.

Section 1. Definitions

Automated Driving System (“ADS”): The hardware and software that are collectively capable of performing the entire dynamic driving task on a sustained basis, regardless of whether the task is limited to a specific Operational Design Domain. “Automated Driving System” is used specifically to describe a Level 3, 4 or 5 driving automation system in accordance with standards and specifications outlined in standard J3016, adopted by the Society of Automotive Engineers in September 2016.

ADS-Equipped Vehicle: A vehicle equipped with an automated driving system that has the capability to operate at Level 3, 4 or 5.

ADS-Equipped Vehicle Tester (“Tester”): A vehicle manufacturer, institution of higher education, fleet service provider or automotive equipment or technology provider that tests ADS-Equipped vehicles.

ADS-Equipped Vehicle Manufacturer: A person or entity that builds or sells ADS-Equipped Vehicles or that develops or installs automated driving systems in motor vehicles not originally built as ADS-Equipped Vehicles.

Commission on Autonomous Vehicles (“Commission”): A Commission established by the Resolve to coordinate efforts among state agencies and knowledgeable stakeholders to inform the development of a process to allow an autonomous vehicle tester to demonstrate and deploy for testing purposes an ADS on a public way.

Dynamic Driving Task: The real-time operational and tactical functions required to operate a vehicle in on-road traffic within its specific operational design domain, if any,

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

Executive Council on ADS-Equipped Vehicles: A Council comprised of the Commissioner of Transportation, the Secretary of State, and the Commissioner of Public Safety. The Executive Council is a decision-making body that may authorize a proposed project to proceed, authorize a proposed project to proceed with conditions, deny the project authorization to proceed, or require additional information.

Operational Design Domain (“ODD”):The ADS Equipped Vehicle Manufacturer’s definition of the conditions under which the ADS, or the differing automated components thereof, are intended to operate with respect to roadway types, geographical locations, speed, range, lighting conditions for operation (day and/or night), weather conditions, and other operational domain constraints.

Pilot Project: As used in these rules, Pilot Project refers to a project to be conducted by a Tester. In this context, a Pilot Project is a small-scale, preliminary project conducted to evaluate the feasibility, cost and benefits of an autonomous vehicle concept prior to full-scale implementation of an Automated Driving System. A Pilot Project is an actual implementation of the driving automation system, with real transportation customers, on a limited scale and under specified conditions. Customer feedback would be expected to yield information to the Tester, to host community(ies) and to the commission, to help identify any information for system validation and improvement of the driving automation system, and any other issues that should be addressed.

Responsible Vehicle Operator (“Operator”): As used in these rules, Operator means the individual who is responsible for the safe and lawful operation of an ADS-Equipped Vehicle and its Automated Driving System on public ways, whether that individual is inside of, or outside of, the vehicle; is physically controlling the steering, acceleration, braking, and stopping of the vehicle; is controlling these actions of the vehicle remotely; or is prepared to take control of the vehicle when the automated driving system performs unsafely or inappropriately or fails in any way.

Section 2. Commission on Autonomous Vehicles: Membership and Duties Related to the Autonomous Vehicle Pilot Program

A. Membership: The Commission will consist of at least 11 members, including:

- The Commissioner of Transportation or designee, who serves as chair
- The Secretary of State or designee from the Bureau of Motor Vehicles
- The Commissioner of Public Safety or designee from the Bureau of State Police
- The Chief Information Officer or designee, Office of Information Technology
- A representative of the Bureau of Highway Safety
- A representative of the Bureau of Insurance
- A representative of the Office of Aging and Disability Services
- The Executive Director of the Maine Turnpike Authority or designee
- One member with expertise in autonomous vehicle technologies
- One member representing a nonprofit transit provider
- One member representing the motor carrier industry

- Other appointments as necessary, by the Chair

B. Duties of the Commission: Among the primary duties of the Commission specific to these Rules is the responsibility to inform the Commissioner of Transportation, the Department of Public Safety and the Department of the Secretary of State regarding establishment of a process to evaluate and authorize a Tester to demonstrate and deploy for testing purposes an Automated Driving System on a public way. The Commission will serve as an advisory body that will receive applications to conduct prospective Pilot Projects, evaluate such applications with respect to the factors in which the state has interest and jurisdiction, and develop and provide recommendations to the Executive Council.

Section 3. Application Process

A. Who Can Apply: Testers may apply for a permit to test an ADS-Equipped Vehicle under these Rules.

B. Application: Prospective Testers who wish to apply for a permit must complete and submit an application to the Commission. The application can be found at [website](#). In developing its recommendations to the Executive Council, the Commission will require information from the prospective Tester as follows:

1. Tester/Applicant Information

- a. Tester name
- b. Address
- c. Mailing address (if different from address)
- d. Principal point-of-contact for testing (lead person)
 - i. Name
 - ii. Title
 - iii. Telephone number
 - iv. Email address
- e. Physical presence in the state of Maine or elsewhere
 - i. Name
 - ii. Telephone number
 - iii. Address
 - iv. Email address
 - v. Evidence of the financial capacity of the Tester. Applicants must have financial resources sufficient to develop, launch and sustain a Pilot Project, and to adjust to any changes in conditions that occur or steps that may be necessary to conduct and complete the project.

2. Safety Driver Information (List All Applicable Employees, Contractors, and Designees)

- a. Legal name
- b. Driver license number
- c. State or country issued
- d. Driving record

- e. Description of safety training
- f. Provide a background check

3. Vehicle Information (List All Applicable Test Vehicles)

- a. License plate number
- b. State issued
- c. VIN
- d. Year, make & model
- e. Proof of current registration
- f. Current motor vehicle inspection date

Note: The State of Maine recognizes the registration, title, and plate issued by another titling jurisdiction for purposes of testing.

4. Description of Prospective Pilot Project:

- a. Purpose, including transportation needs it will address and aspects of the ADS that are being tested
- b. Description of the operational design domain including:
 - i. Geographic boundaries (geo-fencing).
 - i. Time of day (daytime, nighttime).
 - ii. Weather conditions.
 - iii. Road typologies and speeds (functional classification, single or multiple lanes, minimum and maximum operating speeds) .
 - iv. Situational constraints (construction and active work or school zones signalized intersections, unprotected left turns, non-signalized crosswalks, rotaries and roundabouts, areas where pedestrians tend to cross non-channelized, other).
- c. Identification of any partners in the development and operation of the Pilot Project (e.g., municipalities, other governmental entities, or other public institutions).
- d. Proposed time frame and duration of the Pilot Project.
- e. Proposed routes and specific roadways of the Pilot Project.
- f. Characterization of the type of fallback (e.g., natural human Operator in the vehicle, a natural human Operator controlling the vehicle remotely, or other type of administrator of a fully automated driving system).
- g. Explanation of whether a natural human Operator will be present in the vehicle, and if not, why a human presence is not necessary.
- h. Description of how the Tester (and partner entities, if applicable) will reach out to and educate members of the public about safety around ADS Equipped Vehicles.

5. Safety and Risk Mitigation:

- a. A detailed account of the safety record, including any crash history and subsequent fixes, of the ADS Equipped Vehicle intended to be used in Pilot Project and associated automated driving system prior to commencement of the Pilot Project in Maine.
 - b. A description of public safety precautions that will be taken during the Pilot Project to ensure the safety of the public.
 - c. A description of any previous Pilot Projects or live implementation of the pilot-project vehicle and associated automated driving system, including customer feedback, if any, and noting any difficulties identified or encountered in any prior activities.
 - d. A detailed description of a first responder interaction plan addressing how state, county or municipal law enforcement officials and emergency response personnel will be informed and educated about the Pilot Project, including instructions about how to proceed if unsafe or obstructive conditions occur. *A description on how first responders can disable the vehicle in an emergency must be included.*
 - e. In lieu of the requirement of sections 5(a) through 5(d), above, a Tester may submit with the application a copy of his Voluntary Safety Self-Assessment as submitted to the National Highway Traffic Safety Administration.
- 6. Insurance:** Tester must demonstrate financial ability to satisfy a judgment for damages for personal injury or property damage of at least \$5 million per occurrence. This requirement may be met by submitting to the Commission, proof of liability insurance, self-insurance or a surety bond of at least five million dollars for damages by reason of bodily injury, death or property damage caused by a fully autonomous vehicle.
- 7. Data Collection:** Description of what data will be collected, how it will be used, how privacy is protected, and how security is maintained, including customer feedback in the conduct of the Pilot Project and crash data.
- 8. Partnership with Municipalities, Other Government Entities, or Other Public Institutions or Operating within State Defined Compacts or on Local Roads:** Municipalities, other government entities, or other public institutions may wish to partner with a Tester to conduct a Pilot Project within local jurisdictions or realms of authority. In such cases, the Tester and partner entity(ies) must enter into a multi-party Memorandum of Understanding (MOU) to confirm and memorialize a commitment of support from appropriate local elected officials or appropriate authorities from other partner entities. A copy of the MOU shall be included with the application.
- 9. Submittal of the Application:** The application shall be submitted to the Chief Engineer of MaineDOT at 16 State House Station, Augusta, Maine 04333-0016 or submitted electronically at [website](#). The Chief Engineer will send back a notice of the date the application is considered complete or request additional

information as needed. Once the application is complete the Commission will review the application.

Section 4. Testing Authorization Process

Upon receipt of a complete application for a Pilot Project, the Commission will review the application and render a recommendation to the Executive Council within 30 calendar days. The Executive Council will decide within 14 calendar days if the Pilot Project is approved or denied. MaineDOT will inform the applicant of the Executive Council's decision as to whether it will issue a permit for a Pilot Project with or without conditions (by certified letter or email.) The decision of the Commission may also deny a permit or require additional information from the applicant. If clarification is needed before a permit can be issued, the certified letter and/or email shall outline the additional information that is necessary for the Executive Council to proceed with consideration of the Pilot Project. If the application for a permit is declined, the certified letter and email shall provide a written explanation of the reason(s) why the application was declined and provide an opportunity for the prospective Tester to meet with the Commission. The prospective Tester may resubmit the application and receive reconsideration from the Commission if the revised application includes substantive changes. If the application for a permit is denied outright, the applicant has 14 days from the date of notification of the denial to appeal the decision to the Executive Council.

Permits are valid for one year from the date of issuance and will be generated by the Bureau of Motor Vehicles. Permits must be kept with the ADS-Equipped Vehicle at all times.

- A. Modification to Permit:** After receiving a permit authorizing it to proceed, the Tester shall electronically notify the Commission if there are modifications in the testing program or to the ODD such that the submitted Application no longer accurately or adequately describes the scope of the testing program. The Tester should stop testing immediately until these changes are confirmed and approved by the Commission
- B. Renewals:** Annual renewals are allowed. The Tester shall notify the Commission in writing if it wishes to continue with the testing program. If substantial changes are being made to the testing program, the Commission may require a new application. The Tester must be in compliance with "Section 6. Data Reporting" and "Section 7. Crash Reporting" for the Commission to move forward on a renewal request.

Section 5. Suspension or Revocation of Authorization to Conduct a Pilot Project

In accordance with the Resolve, the Commissioner of Transportation may immediately suspend or revoke a permit previously conferred to a Tester to conduct testing of an ADS if the Commissioner of Transportation, in consultation with the Commissioner of Public Safety and the Secretary of State, determines that testing poses a risk to public safety or that the operator or Tester fails to comply with the requirements as established by rule adopted pursuant to subsection 1.

- A. Reinstatement of Testing Authorization:** Upon the suspension or revocation of a permit, the Tester shall be entitled to request reinstatement. The Tester must establish to the Executive Council's satisfaction that it has taken appropriate action to correct any deficiencies that caused the suspension or revocation that the Tester can provide evidence that the ADS was not at fault, or that the issue that caused the revocation has been satisfactorily resolved. Upon such evidence, the Executive Council will consider reinstatement of the permit.
- B. Temporarily Restricting Testing:** The Commissioner of Transportation reserves the right to request Testers temporarily prohibit or restrict testing on select trafficways or statewide during certain circumstances. The Commission shall notify the Tester, with as much notice as practicable, about how, where, and when testing should be prohibited or restricted. To the extent practicable, the Commission shall contact all applicable Testers to explain the reasons for the restriction prior to issuance and will consider any specific Tester proposals to continue safe operations during the restriction period. When ADS Testing is no longer prohibited on a trafficway, the Commission shall notify the Testers within one (1) business day by telephone or email.
- C. Emergencies:** Include but are not limited to extreme weather and declared emergencies. During emergencies, ADSs will only be prohibited if there are active restrictions for other classes of vehicles. To ensure safety, all ongoing testing should be concluded before the date and time specified in the notice.
- D. Special Events:** Includes but are not limited to, dignitary visits, major conventions/summits, and superload movements. Only special events with potential dynamic closures and/or safety/security concerns will be considered for temporary prohibition or restricted testing. The Commission shall provide at least one (1) days' notice to the Tester. To the extent possible, the Commission shall attempt to provide three to five (3 to 5) days' notice. Notice shall be provided by email and telephone.
- E. Safety Restrictions:** Include but are not limited to the following:
- a. The Tester may not operate in complex and/or irregular work zones.
 - b. The Tester may not operate in a local municipality, city, or operating agency that has requested a temporary prohibition or restriction on the testing of an ADS for emergencies, special events or safety concerns, as defined above by contacting the Commissioner of Transportation or his designee. The Commission shall consider the request, and if the Commission determines that the requested prohibition or restriction is necessary and justified to address a safety concern, the Commission will notify the ADS Tester within the applicable window of time stated in Sections 7(B)-(D).
 - c. The Tester may not allow an ADS Equipped Vehicle to be driven by an Operator who has received a traffic violation or is arrested for operating under the influence or any other criminal charge.

The above restrictions do not apply to ADS Equipped Vehicles being manually operated by the safety driver.

Section 6. Data Reporting

The Tester shall submit annually to the Commission a report describing the ADS driving behavior and travel routes, the degree of success of the project in achieving its goals, difficulties encountered, including safety or traffic-related incidents, lessons learned, any known, future plans related to the Pilot Project within the testing geography, and any additional data requested by the Commission.

Section 7. Crash Reporting

The Tester shall give notification of the occurrence of any crash in Maine originating from the operation of an ADS-Equipped Vehicle on trafficways that results in the damage of property, serious bodily injury or death within a reasonably practicable timeframe, but in no case to exceed five 5 days of any incident.

Notifications required under this section shall be reported to The Maine Department of Transportation (address or email)

The Tester will provide:

- Name of Tester
- Location of the crash
- Date and time of the crash
- Description of the incident and any damages and/or injuries incurred name and title of ADS Equipped Vehicle representative reporting the crash
- Incident or accident report number, if applicable
- Name of the investigating party

As the investigation progresses, the Tester shall keep the Department of Transportation and Department of Public Safety abreast of new information as it becomes available.

Section 8. Report from the Commissioner

No later than January 15, 2022, the Commissioner of Transportation must submit a final written report that includes findings and recommendations, including suggested legislation, for presentation to the Joint Standing Committee on Transportation, having jurisdiction over transportation matters.

STATUTORY AUTHORITY: 128TH MAINE LEGISLATURE
CHAPTER 46 - RESOLVES

EFFECTIVE DATE:

April 1, 2019 -