AHEAD OF THE CURVE

ONTARIO'S AUTOMATED VEHICLE PILOT PROGRAM





MINISTRY OF TRANSPORTATION ONTARIO SEPTEMBER 2020





Purpose

To provide an overview of Ontario's framework for testing automated vehicles on public roads.



Governmental Responsibility

Federal	Provincial/Territorial	Municipal
 Setting and enforcing compliance with Motor Vehicle Safety Standards for new motor vehicles. Investigating and managing the model and managing the 	 Testing/licensing human drivers and registering motor vehicles. Enacting and enforcing traffic laws and regulations (including trials). 	 Enacting and enforcing bylaws. Managing public transportation and mobility.
recall and remedy of non- compliances and safety-related motor vehicle defects nationwide.	 Adapting infrastructure to support AV deployment. 	• Advocating for and accommodating testing.
 Setting and enforcing compliance with technical standards related to wireless technologies integrated in vehicles and roadside infrastructure 	 Conducting safety inspections. Regulating motor vehicle insurance and liability. 	 Enforcing traffic laws and regulations. Adapting infrastructure to support

- Public education on motor vehicle safety issues.
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AV deployment.



January 1, 2016: Ontario became the first Canadian jurisdiction to regulate the testing of connected and automated vehicles (CAVs) on public roads.

January 1, 2019: Ontario introduced three enhancements to the AV pilot regulation, in order to keep pace with technological advancements.

These enhancements include:

- 1. Allowing the testing of driverless AVs as part of the pilot, under specific conditions to ensure safety;
- 2. Allowing the testing of cooperative truck platoons as part of the pilot, under specific conditions to ensure safety; and
- 3. Excluding from the pilot conditionally automated vehicles (Society of Automotive Engineers (SAE) Level 3), if they are originally manufactured with a driving automation system, and eligible for sale in Canada

Program Participants

Aptiv **Carleton University** Continental EasyMile Gatik Al Magna QNX Uber University of Toronto University of Waterloo X-Matik

Pilot Program Conditions

Level 0 – no automation Level 1 – driver assistance	GENERAL REQUIREMENTS	Effective Jan. 1, 2016; amended Jan. 1, 2019 10-year pilot program Restricted to testing purposes only Applicants must complete & submit AV application to MTO and keep an approved copy in the vehicle as this constitutes acceptance into the pilot program Vehicles with SAE level 3 technology included if retrofitted with an automated driving system		Driver must remain seated in the driver's seat at all times monitoring the safe operation of the AV and be capable of taking over immediate manual control – unless approved for driverless testing Current Highway Traffic Act (HTA) rules of the road and penalties apply Penalties in HTA s. 228(8) also apply to violations of the pilot regulation (fine of \$250 – \$2,500)
Level 2 – partial automation	ELIGIBILITY/ DRIVER QUALIFICATION	 Only vehicles manufactured and equipped by recognized par Original Equipment Manufacturers Technology Companies Academic/Research Institutions Component and Systems Manufacturers Driver must hold a valid licence for the class of vehicle (A, B, C, valid international driver's permit Participant must have liability insurance of at least \$5 million, or passengers, \$8 million	D, E, F	or G), a valid licence from another jurisdiction, or a
Level 4 – high automation Level 5 – full automation	VEHICLE TECHNOLOGY/ EQUIPMENT	Permitted: passenger, street cars and commercial vehicles New vehicles Must be in good working order registered and plated equip disengages Must specify the actions, design choices and measures they have accounted for cybersecurity risks, as they might impact road so vehicles must comply with any requirements of the Canadian of for the vehicle's year of manufacture	oped v ive tak ifety.	with an alert to notify the driver when AV system sen to ensure the vehicles they plan to test have
	DATA REQUIREMENTS	Must report collision involving an AV no later than 10 days after Must provide the Ministry will an up to date list of vehicles partic Must provide the Ministry with an annual report using template	, ipatin	g in the pilot at all times

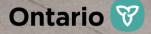
Driverless Vehicle Conditions

GENERAL	Effective January 1, 2019
REQUIREMENTS	Applicants (including existing pilot participants) must complete & submit AV application to MTO and keep an approved copy in the vehicle in a visible location as well as by the remote operator
	Effective July 1, 2019, pilot participants must submit a completed annual reporting form one month after the end of the reporting year
DECLARATIONS	Applicant must declare that the technology is safe and effective based on satisfactory results from prior testing (e.g., closed course)
	Applicant must declare the operational design parameters of the vehicle (e.g. maximum speed, weather conditions)
	Upon request from MTO, applicant must provide tangible evidence of the vehicle's ability to effectively and lawfully interact with traffic
	Applicant must accept full liability
VEHICLE TECHNOLOGY/ EQUIPMENT	Vehicle must have a direct oversight function capable of bringing the vehicle to a safe stop (e.g., a trained passenger with access to a switch that stops the vehicle or a remote operator)
EQUIFMENT	Must have vehicle signage indicating that the vehicle is self-driving
ALERT RELEVANT AUTHORITIES	Applicant must provide to MTO, municipalities and relevant authorities a law enforcement and work zone interaction plan prior to testing
	Participant must alert the impacted municipality and/or regional municipality prior to testing
	If testing on a provincial highway, prior approval from MTO is required

Platooning

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MTO has created a Cooperative Truck Platoon Pilot to evaluate the safety and practicality of this technology, including compatibility with existing road users and infrastructure.



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Platoon Pilot Conditions

Driver QualificationsDriver in each vehicle; valid Class A, C or D driver's licence (with Z (air brake) endorsement as applicable); 5 years truck driving experience; trained by technology providerCarrier QualificationsCarriers with 'Conditional' or 'Unsatisfactory' Carrier Safety Ratings may not qualify; minimum \$5M liability insurance coverage; 5 years trucking experienceVehicle Configuration TypesCertain vehicle configuration types not permitted; vehicle weights and dimensions as set-out in O.Reg 413/05 [Schedule 1 &19-25]; lead vehicle must be the heaviest
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Cooperative Truck PlatoonMaximum of 3 vehicles permitted within the platoon; following distance between platooning vehicles must be at a minimum of 20 metres (65.6 feet), or a minimum of 1.7 seconds following distance, whichever the greater; requirement to disengage platooning technology in certain situations (e.g. allow vehicles to merge)
Safe Operation & InclementWhere practical, travel in the right-most lane; report to any Truck Inspection Station as required; accompaniment by well- signed pilot/escort vehicles; must not operate in Winter Road Conditions
Areas of Operation Carriers must receive approval from MTO in advance of their intended testing and provide details; the Cooperative Truck Platooning Network generally consists of controlled access, multi-lane, divided highways including connecting ramps
Cargo Restrictions & Special Equipment RequirementsMust not carry placarded dangerous goods, livestock or special provision loads; functioning ADAS and V2V systems and air brakes; audible and visual alert for disengagement or other issue; braking systems must be fully inspected
Rear Signage Sign must be displayed on the rear of all platooning vehicles
Data Collection Requirements Record of each trip including location/date/time/distance etc; report collision within 10 days; annual reports; 6 month touchpoint conversations with MTO
HTA ExemptionsDisplay screens, handheld wireless communication device; following too closely, careless driving – only when platooning technology engaged, to facilitate the close proximity of the vehicles



Pilot Regulation: Ontario Regulation 306/15

MTO Website – AV Pilot: http://www.mto.gov.on.ca/english/vehicles/automated-vehicles.shtml

MTO Website – Platooning Pilot: http://www.mto.gov.on.ca/english/trucks/cooperative-truck-platooning.shtml



Resources

Contact Information

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