UN ESCAP

Navigating the Future: Regional Conference on Autonomous Vehicles in Asia and the Pacific

Preparing for Autonomous Vehicles

A municipal perspective from Toronto

Rahmatullah Sherzai | Project Manager, Strategic Policy & Initiatives
Transportation Services, City of Toronto

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What are Toronto’s main interests

City of Toronto has a direct interest in public safety, first-responder interaction, transit reliability, and keeping traffic moving as these technologies arrive.



Safety

Behaviour around pedestrians, cyclists and other vulnerable road users.



First responders' interaction

Protocols on interacting with first responders in an emergency or system failure.



Transit interaction and Congestion

LRTs, transit priority lanes, stop zones, shared corridors, and Impacts on Congestion



Accountability

Who answers to the public when something goes wrong on a City street.



Curbside management

Stopping, loading and pick-up behavior on shared curb spaces.

Toronto’s focus is less on the technology and more on how it behaves within the City’s transportation system.

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The Regulatory Framework

The Province regulates

- Transportation Regulations (e.g., Highway Traffic Act)
- Driver's licensing and legal responsibility
- Authorisation of on-road pilots
- Automated Vehicle operation permit
- Rules of the road and enforcement

The City operates

- The streets, pedestrian zones, bike lanes, and their condition
- Construction zones, closures and detours
- Traffic control and on-street direction
- Emergency response and incident scenes
- Traffic Congestion

The level of government that carries the day-to-day operational consequences is not the level that sets the rules. Most local governments in North America do not have regulatory authority over Automated Vehicles.

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2015 to 2026: Toronto's Journey

2015

Early preparedness

Build internal awareness, identify the potential impacts, and establish a coordinated City position.

2016-2026

Theory became practice

Real deployments (Toronto's AV Shuttle) and elsewhere generated operational evidence and new concerns & questions.

2026

Updating the approach

Revisiting assumptions and approach on, safety, engagement, data, cybersecurity and impact on Toronto street.

Much of what was theoretical a decade ago, now has been experienced in different cities—leading to operational evidence, new issues, and demand for policies around them.

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The main questions Cities need to ask

- How do automated systems behave around pedestrians and cyclists in dense conditions?
- How do they read a construction zone where the road geometry has temporarily changed?
- How do they respond when a person is directing traffic?
- How they interact with LRTs (streetcars), transit priority and stop zones?
- What happens in conditions the road rules do not describe (e.g., Emergency science, Festivals, Parades)?
- What operational information does a city need from AV operators to manage its own streets despite these technologies?

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Work zones and law enforcement interaction

City environments and operation realities can change in an hour. Cities must deal with how an automated system interprets and responds to those conditions and people.

Work zones

- Temporary road conditions
- Lane closures and detours
- Temporary signage and markings
- Flagging and manual control

Enforcement & control

- Communication protocols
- Officer-directed traffic
- Emergency incident scenes
- 911 contacts and reasons
- Interpreting the ambiguity

Human interaction

- Traffic agents
- Construction personnel
- First responders
- Transit personnel
- School crossing guards

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What other jurisdictions have observed

These are documented interaction failures reported in cities where automated vehicles are already operating.

- **Passing a school bus with its stop arm extended**
- **Entering active emergency and incident scenes**
- **Absent or delayed recognition of direction by authorized personnel**
- **No agreed communication protocol for first responders**

This is why Toronto is updating its *Guidelines for Work Zone and Law Enforcement Interaction Plans* to reflect current realities to proactively establish expectations and standard protocols before deployment.

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Where Toronto is today

Toronto is preparing, responding, and focusing on public interest rather than deploying the tech.



Monitoring

Tracking deployments and operational incidents in other jurisdictions.



Coordinating

An interdivisional working group aligns positions across City divisions.



Documenting

Engaging with AV operators, other jurisdictions International bodies, and academic institutions for research and preparedness



Learning in practice

Learning from the AV pilots approved by the Ministry and occurring at the city of Toronto (AV Shuttle, Magna Pilot)

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Where our perspectives may differ

The framing I have described is shaped by a North American context. I would genuinely like to hear where it does not translate, and what you would do differently to prepare based on different assumptions.

A Toronto assumption	Other possible realities
Private vehicles and ride-hailing arrive first	In many cities, freight, buses or two-wheelers may be the first practical application
Regulatory authority sits above the city	Some local governments hold more direct authority — or considerably less
Street conditions are documented and stable	Informal street use and mixed traffic may make interaction questions much harder
Public trust is built through disclosure	Trust may rest on different institutions and different expectations entirely

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Our objective is that any future deployment aligns with public safety, accessibility, accountability, and the broader needs of the city.

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Thank you!

Q & A

Rahmatullah Sherzai
Transportation Services, City of Toronto
Rahmatullah.Sherzai@toronto.ca

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