

2. Low-Speed Vehicles (LSV) Pilot Project

Projet pilote relatif aux véhicules à basse vitesse (VBV)

COMMITTEE RECOMMENDATIONS

That Council approve:

1. Approve the Low-Speed Vehicles (LSV) Pilot Project, as detailed in this report; and,
2. Approve the proposed Low-Speed Vehicles By-law, attached as Document 1, and as outlined in this report

RECOMMANDATIONS DU COMITÉ

Que le Conseil:

1. Approuve le projet pilote relatif aux véhicules à basse vitesse (VBV), comme le précise le présent rapport;
2. Approuve le Règlement municipal sur les véhicules à basse vitesse proposé, comme le précisent le présent rapport et le document 1 ci-joint.

DOCUMENTATION

1. Philippe Landry, Director, Traffic Services Department, Transportation Services dated September 24, 2021 (ACS2021-TSD-TRF-0004).

Philippe Landry, Directeur, Services de la circulation, Direction générale des transports, daté le 24 septembre 2021 (ACS2021-TSD-TRF-0004) .

2. Extract of draft Minutes, Transportation Committee, October 6, 2021

Extrait de l'ébauche du procès-verbal du Comité des transports, le 6
octobre 2021

SUBJECT: Low-Speed Vehicles (LSV) Pilot Project

File Number ACS2021-TSD-TRF-0004

Report to Transportation Committee on 6 October 2021

and Council 13 October 2021

**Submitted on September 24, 2021 by Philippe Landry, Director, Traffic Services,
Transportation Services**

**Contact Person: Omar Choudhry, Project Lead Transportation System
Management, Transportation Services**

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Ward: City Wide

OBJET : Projet pilote relatif aux véhicules à basse vitesse (VBV)

Dossier : ACS2021-TSD-TRF-0004

Rapport au Comité des transports

le 6 octobre 2021

et au Conseil le 13 octobre 2021

**Soumis le 24 septembre 2021 par Philippe Landry, Directeur, Services de la
circulation, Direction générale des transports**

**Personne ressource : Omar Choudhry, Chef de projet, Gestion du réseau de
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Quartier : À l'échelle de la ville

REPORT RECOMMENDATION(S)

That Transportation Committee recommend that City Council:

- 1. Approve the Low-Speed Vehicles (LSV) Pilot Project, as detailed in this**

report; and,

2. **Approve the proposed Low-Speed Vehicles By-law, attached as Document 1, and as outlined in this report.**

RECOMMANDATION(S) DU RAPPORT

Que le Comité des transports recommande au Conseil municipal ce qui suit :

1. **Approuver le projet pilote relatif aux véhicules à basse vitesse (VBV), comme le précise le présent rapport;**
2. **Approuver le Règlement municipal sur les véhicules à basse vitesse proposé, comme le précisent le présent rapport et le document 1 ci-joint.**

BACKGROUND

On July 1, 2017, the Provincial Government of Ontario (the Province) launched a new 10-year pilot program to evaluate the use of low-speed vehicles as part of new legislation ([O.Reg. 215/17](#)) under the *Ontario Highway Traffic Act (HTA)*. The Ontario Ministry of Transportation is seeking information to develop a permanent framework for these vehicles that maintains road safety while promoting innovation and mobility options. Municipalities have the option to enact a by-law that permits the operation of these vehicles within the jurisdiction.

Low-speed vehicles are capable of transporting people or goods safely, efficiently and in an environmentally friendly manner at a maximum speed of between 32 and 40 kilometres per hour. Sometimes referred to as neighbourhood electric vehicles, low-speed vehicles are electric-powered vehicles that are restricted to operating on roads with a maximum posted speed limit of 50 kilometres per hour, which often limits them to urban areas and contained neighbourhoods. It is important to note that this category of vehicle does not include automated or autonomous vehicles, so a driver is always present and in control of the vehicle.

The City seeks to enable effective mobility through a sustainable, accessible and connected city transportation system and which also sets targets to lower community greenhouse gas (GHG) emissions. These electric low-speed vehicles provide an opportunity to reduce greenhouse gas emissions and offer new alternative mobility options in local neighbourhoods. By joining this provincial pilot program and enacting

the Low-Speed Vehicle By-law (Document 1), the City will continue to support innovation and economic opportunities for local and Canadian companies to research, test, demonstrate and deploy these new transportation alternatives in Ottawa.

DISCUSSION

Low-speed vehicles (LSVs) have been seen and used in the past as golf carts or people movers in airport terminals, and retirement and resort communities. However, innovations in battery and electric motor technologies are opening up new opportunities for the development of electric vehicles that can operate for longer periods of time, transport more goods and run more efficiently. As a result, a new class of vehicles is being developed to serve local transportation needs on a micro, or neighbourhood, level.

In recognition of these advancements and building on a previous program between 2006 and 2015, the Province launched a 10-year pilot program in July 2017 to evaluate the use of LSVs as part of new legislation (*O.Reg. 215/17*) under the *Ontario Highway Traffic Act (HTA)*. The purpose of the pilot program is to collect information that will allow the Ontario Ministry of Transportation to develop a permanent framework for LSVs. Municipalities that wish to participate in the pilot are required to enact a by-law that permits the operation of these vehicles within their jurisdiction.

A low-speed vehicle is capable of transporting people or goods safely, efficiently and in an environmentally friendly manner, but given their slower operating speeds, they are most typically designed for protected and controlled environments. British Columbia allows “neighbourhood zero-emission vehicles” to operate on public roads under certain conditions. Similarly, Quebec allows operation of these vehicles and Purolator Courier has been testing one low-speed vehicle in their Montreal deployment and has expressed interest in expanding this LSV testing program to Ottawa. Two examples of these vehicles for commercial use are found in Figure 1.



Figure 1 - KARGO XL Model Low-Speed Vehicle (Left) and Tropos/Cubex ABLE XR Model (Right)

Current commercial cargo versions of the LSV are capable of carrying between 1,000 to 3,000 pounds, depending on the operating environment. They are typically built on either a steel or aluminum chassis. Their operating range is between 80 and 200 kilometres, depending on battery size/configuration, thus making them capable of full-day operations within the limited area of operation they exist in. With different form factors available, municipalities in Europe may use LSVs for minor road and path repairs, or garbage collection in densely populated areas and neighbourhoods with narrow streets. For courier companies, the cargo capacity is approximately 70 to 80 parcels, which covers most of a typical day's deliveries.

For passenger versions, these LSVs can range from two-seater vehicles that appear similar to the Mercedes-Benz line of Smart vehicles and the Renault Twizy to the six-seater GEM e6 model from Polaris with three doors on each side of the vehicle as shown in Figure 2. More prominently used in southern US states, resort locations and in Europe, there will be a wide variety of potential commercial, cargo and passenger type vehicles that could be tested and deployed.



Figure 2 – Polaris e6 without doors (left) and Renault Twizy (right)

The Province made slight modifications to the regulation on July 30, 2021 to encourage participation of jurisdictions and further LSV innovation. Earlier this summer, jurisdictions in the Niagara region (Haldimand County) and Lambton Shores along Lake Huron enacted by-laws to enable LSVs on public roads, with Haldimand County procuring two personal use LSVs for various fleet patrolling efforts within the urban boundary.

Due to the speed and operating requirements described above, the deployment of LSVs is often limited to urban areas and contained neighbourhoods that have roads with lower speed limits. Outside of the urban core, they must often be transported into/out of a neighbourhood area by flatbed truck due to the restrictions on the posted road speed limit of 50 km/hr on which they can operate. It is important to note that this category of vehicle does not include automated or autonomous vehicles, so an operator is always present and in control of the vehicle. Golf carts, all-terrain vehicles (ATVs) and similar off-road vehicles do not qualify as a low-speed vehicle for the purposes of this pilot project

Invest Ottawa anticipates the Area X.O facility will fast become a testing ground for this type of vehicle and that providing “real-world” testing environments in Ottawa will be an economic driver for the region. One company has already approached Invest Ottawa seeking to test LSVs both within the private test facility and conduct a few days of driving on local City streets next spring.

Low-Speed Vehicle Regulations

Under the provincial regulation, there are several conditions that must be met, including:

- The LSV must be electric and have four wheels;
- The LSV must have a maximum speed of between 32 and 40 km/hr;
- Allowed to only operate on roads with a speed limit of up to 50 km/hr;
- Travel through controlled intersections where the speed limit of the cross street is not greater than 80 km/hr;
- Must include a slow-moving vehicle sign at the rear of the vehicle;
- Vehicles must not carry more occupants than seating positions in the vehicles;
- No sidecars or trailers are permitted for use on a LSV; and
- Must meet federal motor vehicle standards.

Additionally, the driver of an LSV must have a full G class driver's license or higher, have automobile insurance that meets provincial *Compulsory Automobile Insurance Act* requirements, comply with all the *Ontario Highway Traffic Act* rules and must not carry a child passenger younger than eight (8) years old. LSVs have fewer safety features than regular passenger vehicles and do not meet all the requirements of a regular passenger car. However, LSVs are required to meet the *Federal Motor Vehicle Safety Regulations (MVSR) Schedule III* requirements and be registered with Service Ontario.

It is also important to note that Transport Canada is implementing new requirements, starting in 2023, to require all hybrid and electric passenger cars, multi-purpose passenger cars, trucks, buses, and low-speed vehicles with a gross vehicle weight rating (GVWR) of 4,536 kg or less to include continuous sound emitters when travelling below a given speed threshold, as a safety feature in support of the accessibility community.

Ensuring Safe Operations

While the support of innovation is important, ensuring the safety of all vehicles on our roadways is paramount. All parties who are seeking to deploy LSVs in Ottawa will be required to provide information, including the location/routes, dates, times and operating conditions under which the LSV shall operate, to the Director, Traffic Services, or their designate, for approval. The information provided will be the basis for evaluating the deployment and enable Traffic Services to require either modification to the operating

plans or inclusion of safety considerations. All applications to operate a LSV will be evaluated for any geographic and seasonal considerations that may impact the safe operations of these vehicles.

Operators of LSVs shall be required to furnish, as evidence, their approved plan of operation from the City of Ottawa, registration of the LSV with Service Ontario, and proof of insurance upon reasonable request by a police officer.

All requirements previously referenced pertaining to the operation of LSVs are included within the proposed Low-Speed Vehicles By-law as presented in Document 1. Enactment of this by-law is needed to permit the operation of these vehicles within the municipality of Ottawa.

To ensure that neighbourhoods are informed of the pending presence of these vehicles being deployed, a meeting will be organized between Traffic Services, the LSV deployment proponent and the local Ward councillor(s). The Accessibility Advisory Committee and other accessibility stakeholders will also be informed of the pending application. Any public notifications required to alert the public about LSVs operating in the area will be the responsibility of the LSV deployment proponent and they will be responsible for the cost of implementing any roadway signage required by the Director, Traffic Services, for approval of the LSV application.

FINANCIAL IMPLICATIONS

There are no financial implications associated with the recommendations of this report.

LEGAL IMPLICATIONS

There are no legal impediments associated with Committee and Council's approval of the recommendations of this report.

ADVISORY COMMITTEE(S) COMMENTS

Please see Document 2: Accessibility Advisory Committee Motion EN/FR (September 21, 2021) for further details on the Accessibility Advisory Committee's comments pertaining to this report.

CONSULTATION

Low-speed vehicle deployment projects will occur as a result of proponents approaching the City, however the scope and location of these are unknown at this time. To ensure that neighbourhoods are aware of the presence of these vehicles being deployed, a meeting will first be organized between Traffic Services, the LSV deployment proponent and the local Ward Councillor(s). The Accessibility Advisory Committee and other accessibility stakeholders will also be informed of the pending application. Various methods of notification and signage may be used to alert the public about LSVs operating in the area. Ottawa Police Service will also be notified of pending proponent deployments.

Traffic Services will seek feedback from residents and provide opportunities for comment through online surveys and email during the pilot program, in order to submit required information to the Province regarding use of LSVs and their acceptance by the public. Online and frequently asked question materials will be prepared for use by City staff, the public and LSV proponents to understand procedures and policies within the City of Ottawa for LSV deployments.

Internal Stakeholders:

Traffic Services staff solicited feedback from internal stakeholders with vested interest in the transportation network as part of this report. Each agency or subject matter expert was provided a copy of the draft Low-Speed Vehicle By-law seeking their feedback. Stakeholders were also provided an opportunity to meet with the project team following their review to discuss potential issues/ideas.

Internal Stakeholders included:

- Transportation Services Department;
- Emergency and Protective Services Department;
- Innovative Client Services Department; and,
- Ottawa Police Service.

Traffic Services also solicited feedback from the Accessibility Advisory Committee (AAC) on September 21, 2021. On this date, a presentation was given to update AAC

members on the Low-Speed Vehicles initiative and to seek feedback on the City's participation in the provincial pilot program. Committee members expressed interest in the opportunities of the innovative mobility solution as well as in staff's encouragement of innovation in inclusive and accessible design. They also expressed safety concerns related to the quiet nature of electric vehicles. At this meeting, the AAC passed a motion pertaining to the Low-Speed Vehicles Pilot Project Report. Please see attached Document 2: Accessibility Advisory Committee Motion EN/FR (September 21, 2021).

ACCESSIBILITY IMPACTS

Electric vehicles emit minimal sound which makes it difficult to identify a vehicle in motion, or that is temporarily stopped. Regulations currently exist in the EU (which adopted *UN Regulation 138*) and United States for electric automobiles to emit a continuous sound when travelling under 20 kilometres per hour and 32 kilometres per hour, respectively. Transport Canada is implementing new requirements, starting in 2023, to require hybrid and electric passenger cars, multi-purpose passenger cars, trucks, buses, and low-speed vehicles to include continuous sound emitters that meets either the UN or US regulations as a safety feature in support of the accessibility community. City staff will be working with proponent LSV operators to test various technologies to equip these vehicles with the capability to produce continual sound when in motion.

Furthermore, through Traffic Services' continuous engagement and consultation opportunities with other levels of government, concerns regarding accessibility issues, especially that of the absence of sound emitters, will be brought forward.

City staff are committed to ensuring that the feedback of the Accessibility Advisory Committee and accessibility stakeholders is considered during the execution of the Low-Speed Vehicle Pilot Project with the goal of reducing barriers to persons with disabilities.

ASSET MANAGEMENT IMPLICATIONS

There are no asset management implications from this report.

CLIMATE IMPLICATIONS

The pilot aligns with the City's Climate Change goals by offering a low greenhouse gas

transportation option.

INDIGENOUS GENDER AND EQUITY IMPLICATIONS

There are no Indigenous, Gender and Equity implications from this report.

RISK MANAGEMENT IMPLICATIONS

The electric vehicle and low-speed vehicle landscape and regulatory environment is rapidly changing, and new use cases and form factors are continuously being developed. As such, there are risks that new concepts will be introduced that could deviate from desired goals and objectives of the City of Ottawa.

Demonstrated leadership regarding innovation, through the City's financial support of Area X.O, and in environmental stewardship are key drivers for the economic growth of the region. While being one of the first municipalities to enable LSVs to operate bears some risk, not enabling or taking advantage of the opportunity to attract companies and investment into a growing market equally carries a risk to the City's image.

By requiring applicants to use LSVs in Ottawa to receive approval from the Director, Traffic Services, or their designate, a measure of controlling access to the public roadway is present and forms part of the risk mitigation strategy while meeting Council Priorities.

RURAL IMPLICATIONS

Provincial legislation that permits the operation of these vehicles restricts their use to roadways with a posted speed limit of no more than 50 kilometres per hour and to only passing through controlled intersections with a posted speed limit no greater than 80 kilometres per hour. This limits their use primarily to urban areas and potentially rural villages.

TECHNOLOGY IMPLICATIONS

There are no technology implications in this report.

TERM OF COUNCIL PRIORITIES

The report aligns with the following City of Ottawa 2019 – 2020 Strategic Plan Priorities:

- **Integrated Transportation:** Enable effective mobility through a sustainable, accessible and connected city transportation system; and,
- **Environmental Stewardship:** Grow and protect a healthy, beautiful and vibrant city that can adapt to change.

SUPPORTING DOCUMENTATION

Document 1: Proposed Low-Speed Vehicles By-law

Document 2: Accessibility Advisory Committee Motion EN/FR (September 21, 2021)

DISPOSITION

Upon Council approval of this report, staff in Traffic Services will work with necessary stakeholders to implement the Low-Speed Vehicles Pilot Project. Staff will also work with Legal Services to finalize and complete the steps to enact the proposed Low-Speed Vehicle By-law, and to seek, where applicable, the approval of the associated set fines imposed.