



Submitted February 20, 2008

A response to proposed  
"Regulations Amending the Motor Vehicle  
Safety Regulations (Low-speed Vehicles)"  
As published in Canada Gazette  
Part I, Vol. 141, No. 51  
December 22, 2007  
(pages 3545-3552).

This document is also available at [www.evco.ca](http://www.evco.ca)

The Electric Vehicle Council of Ottawa  
is a non-profit, incorporated organization  
dedicated to promoting the use of electric vehicles  
in applications where they are appropriate.

Electric Vehicle Council of Ottawa  
P.O.Box 4044, Station "E"  
Ottawa, ON, Canada  
K1S 5B1  
[www.evco.ca](http://www.evco.ca)

## 1.0 SUMMARY

The Electric Vehicle Council of Ottawa (EVCO) is very concerned that the proposed changes to the Low-Speed Vehicle (LSV) regulations will have the effect of eliminating the operation of LSVs on public roads throughout Canada.

Specifically the wording “...is designed for use primarily on streets and roads where access and the use of other classes of vehicles are controlled by law or agreement” will create undue barriers to their adoption in the very markets in which they are specifically designed for use - that is in urban mixed traffic environments.

EVCO believes that the proposed changes:

- limit consumer choice for sustainable, alternative, zero emission vehicles
- misrepresent the inherent safety that is possible with LSVs
- remove choice from those provinces that wish to promote alternative forms of transportation such as a LSVs
- remove authority from the provinces to legislate the use of LSVs for on-road use
- place undue barriers on provinces such as British Columbia that already allows the use of LSVs on public roads

EVCO takes the position that rather than restricting the use of LSVs the regulations should be amended to encourage and enable the use of LSVs on the majority of low speed streets throughout Canada.

EVCO suggests the following changes to the proposed regulations:

- eliminate the restrictive and ambiguous wording "...where access and the use of other classes of vehicles are controlled by law or agreement" from the proposed regulations
- allow use on all roads where speed of other traffic is limited to 50km/h
- consider improved occupant restraint standards
- implement other recommended changes to the proposed regulations as outlined in this document

LSVs will give Canadians a low-cost, low environmental impact option to today's expensive automobiles that are powered by greenhouse-gas emitting internal combustion engines. Electric vehicles are inherently quiet, clean and efficient. Low speed electric vehicles that operate at low speeds consume even less energy and offer further advantages including reduced cost, improved safety and lower impacts on municipal infrastructure.

Restricting LSVs to limited, planned and controlled environments will mean that these vehicles will never be practical for average Canadians. Such restrictive regulations will stifle Canadian innovation in electric vehicle development and will ensure that Canada's greenhouse gas emissions continue to rise.

## **2.0 Restricting access of LSVs to controlled environments is inappropriate**

**Note:** This section of the regulations is the most problematic and requires significantly more thought and analysis than has been allocated to it in the regulations. While EVCO has substantive input in this area, time and resource limitations prevent us from presenting a comprehensive explanation in this document. We welcome the opportunity to explore this issue further with you and encourage you to give more thought to the concept of mixed use traffic.

The term "mixed use" traffic is undefined and vague at best, and at worst is mis-leading. All modern traffic environments have a mix of the following types of traffic: pedestrian, cyclist, motorcycle, scooter, passenger car, passenger truck, auto bus, construction equipment, tractors, transport truck.

Even "closed environments" such as university campuses, airports, gated communities and provincial parks typically allow all classes of vehicles. (Occasionally there may be a closed environment that does not allow large trucks).

Passenger carrying cars and trucks (SUVs, buses) are seen on all environments including provincial parks where LSVs are currently undergoing pilot testing in Ontario.

All of Transport Canada's own testing of safety and effectiveness of LSVs (TP 13942E) took place on roads with mixed traffic and with no reported safety issues. In fact, LSVs have operated in BC for over a half-decade in mixed traffic with no reported fatalities or injuries or even any reported problems.

Exceptions to mixed traffic are only found on certain restricted-access divided highways with high speed limits. In these cases pedestrians, bicycles and other low speed vehicles are denied. LSVs should be restricted from these highways too.

Recommendation:

- Remove suggestions that low-speed vehicles can only be used in controlled access environments
- Allow their use on public roads while restricting them from highway use.

EVCO welcomes the opportunity to meet with regulators to discuss this issue further. We are able to provide far more justification and background on safety items than is possible in this document.

## **3.0 Provide standards for occupant restraint**

Many of the stated objections to the operation of LSVs on regular roads are the result of regulations not adequately dealing with the issue of occupant restraint standards. This is despite section S5(10) of TSD 500 that specifies that "...a Type 1 or Type 2 seat belt assembly shall conform to section 209 of this Schedule."

Simple, inexpensive and effective occupant restraints are possible with existing and common technology. Implementing such basic safety standards would go a long way to removing opposition to LSV use in mixed traffic based on arguments of occupant safety. Such standards would not be onerous

for manufacturers to meet even if they are not required in other jurisdictions.

Recommendation:

- consider standards for occupant restraints

#### **4.0 Allow small trucks**

The proposed Regulations would introduce new wording that would, for the first time, allow small trucks to be classified as LSV. EVCO agrees with this proposal.

Recommendation:

- Allow small trucks in the LSV category

#### **5.0 Slow-moving vehicle emblem is not required**

The proposed Regulations require the mandatory and permanent marking of the slow-moving vehicle emblem on LSVs. EVCO believes that this is a provincial matter and should not be a requirement of LSV design. Nothing in the LSV definitions would prevent provinces from enacting their own regulations.

Transport Canada's own pilot study of LSVs (TP 13942E) found that the slow-moving vehicle emblem is not a necessary safety requirement and discusses several equally effective alternatives.

Some LSMs may also be used in areas that are not subject to provincial highway act rules and thus would not require this emblem.

Recommendation:

- Remove proposed requirement for permanent slow-moving vehicle emblem
- Allow provinces to require emblem if desired
- Encourage (but do not require) manufacturers to allow space for emblem on vehicles
- Allow manufacturers to develop alternate signs for their vehicles similar to those discussed in TP 13942E

#### **6.0 Proposed speed control regulations are not practical**

The proposed Regulations require that LSVs may not be modifiable for operation at higher speeds and that temporary speed limiting devices would not be allowed. While well-intentioned, the proposed solution is not practical and ignores existing electronic control technologies.

The proposed solution is to "identify the power train for the LSV as a device originally designed to power this kind of vehicle." Since LSVs must be able to maintain 32km/h by regulation, it is unrealistic to expect this performance in a drivetrain that is also designed to inherently go no faster than 40km/h. The performance deficits in designing a drivetrain that goes no faster than 40km/h in all conditions

would result in a vehicle that drops speed dramatically when climbing hills.

Modern electronic motor controllers are available that allow sufficient vehicle performance in all conditions while also limiting top speed, without being considered "temporary" controls. They are sufficiently sophisticated that tampering and/or modifications would be difficult or impossible for a common user.

Recommendations:

- Remove proposed requirement for drivetrains with inherent top speed
- Allow electronic controllers to regulate maximum speeds of LSVs
- replace wording

"is powered by an electric power train (an electric motor and, if present, a transmission) that is designed to allow the vehicle to attain a speed of 32 km/h but not more than 40 km/h in a distance of 1.6 km on a paved level surface"

with

"is powered by an electric power **system** (an electric motor, **motor controller** and, if present, a transmission) that is designed to allow the vehicle to attain a speed of 32 km/h but not more than 40 km/h in a distance of 1.6 km on a paved level surface"

## **7.0 Fuel restrictions eliminate fuel cell options and some safety devices**

The proposed Regulations "does not use fuel as an on-board source of energy" are clearly intended to reduce emissions by eliminating the option of using an on-board internal combustion engine. While the intent is commendable the proposed wording will cause other unintended problems.

Eliminating the option to carry any fuel on board would eliminate the option for future developments in technologies including fuel cells. Fuel cells use an on-board energy source (like hydrogen) as a fuel. Fuel cells however have no emissions other than water and are thus a clean emission-free alternative that meets the intent of these regulations. The proposed wording would unintentionally eliminate these technological options.

In addition removing the "fuel" option also ignores a crucial safety element - that of windshield defogging and visibility on northern climates. Many electric vehicles over the years have used very small reservoirs of fuel to power gas-fired windshield heaters. In operation the emissions of these devices is vanishingly small while providing an essential safety option.

Recommendation:

- Remove the current requirement "produces no emissions"
- Remove the proposed new requirement: "does not use fuel as an on-board source of energy."
- Replace with language that eliminates the use of any "internal combustion engine"

## **8.0 Definition of LSV should not be altered to claim "controlled access" only**

The proposal claims that the original reason for establishing the LSV class, was to allow their use only in limited, planned and controlled environments. EVCO does not agree with this claim. The proposal sets a dangerous precedent to try and re-write the history of these regulations.

Canadian manufacturers of LSVs also do not agree with this claim.

Limiting LSVs to "controlled" environments could mean that Canadians may never have LSVs on public roads. Such regulations which are too restrictive will discourage the public from using this low polluting and quiet mode of transportation, especially in urban environments.

While some of the earliest examples of slow electric vehicles were converted golf carts these vehicles are not representative of true Low-Speed Vehicles as defined in current regulations (Technical Standards Document No. 500, Low-speed Vehicles - TSD 500). Even the US Federal Motor Vehicle Safety Standard No. 500 (49 CFR 571.500) acknowledges the clear distinction between between golf carts and current LSVs that meet safety standards.

All modern manufacturers of LSVs (specifically the Canadian manufacturers ZENN and Dynasty) make it clear that their vehicles are originally designed and manufactured specifically for use in common limited speed urban on-road environments.

Recommendation:

- Remove wording "...where access and the use of other classes of vehicles are controlled by law or agreement."

## **9.0 LSVs are safe and efficient sustainable transportation choices for Canadians**

When compared to larger faster vehicles, LSVs impose less risk to other road users. LSVs also provide greater protection to their drivers than other existing low-speed options such as bicycles, scooters and motorcycles.

Transport Canada's own studies showed that LSVs have good acceptance with the public. (TP 13942E) available at <http://www.tc.gc.ca/tdc/summary/13900/13942e.htm>

Full report at <http://www.tc.gc.ca/tdc/publication/pdf/13900/13942e.pdf> (59 pages)

Low-Speed Vehicles are:

- safe
- quiet
- free from green-house gas emissions
- good for the environment
- greatly reduces the green-house gases and other pollutants associated with gasoline powered vehicles.

Low-Speed Vehicles have the potential to:

- help Canada meet its GHG emissions targets
- reduce localized air pollution in congested major cities
- provide low-cost environmental transportation options

LSVs produce no pollutants at point of use and therefore would help in Canada's drive to improve vehicle emission standards. Much of Canada's electricity comes from renewable sources such as hydro and wind. The arguments for clean alternatives to gas cars are clear.

### **10.0 Other LSVs already operate safely in mixed traffic on our roads**

LSVs have been shown to integrate well with other low-speed traffic that is currently on our roads in 50km/h or lower environments. There is no evidence to indicate that there are any safety deficits inherent in a low speed vehicle design. Indeed there are many safety advantages that are inherent to a vehicle that travels at reduced speeds and is prevented from high speeds.

Other low-speed vehicles presently operate safely in mixed traffic on our existing roads. These include bicycles, electric bikes, mopeds, limited-speed motorcycles and motorcycles. Pedestrians also walk on these same roads. Providing a safe environment for other road users is a further advantage of low-speed vehicles.

Transport Canada has not provided any evidence of any lack of safety that is inherent to LSV class vehicles.

LSV safety standards are defined by Technical Standards Document No. 500, Revision 1 — Low-Speed Vehicles available at: [http://www.tc.gc.ca/roadsafety/mvstm\\_tsd/tsd/5000rev1\\_e.htm](http://www.tc.gc.ca/roadsafety/mvstm_tsd/tsd/5000rev1_e.htm)

### **11.0 LSVs have been successfully integrated in other jurisdictions**

LSVs are used widely throughout the USA in mixed traffic and low speed environments. They also have an excellent safety record in Europe.

- Currently, 43 US states allow LSVs on roads not exceeding 40km/h. Washington and Montana allow LSVs to travel at speeds up to 55km/h.
- In Canada, British Columbia allows LSVs on public roads. There have been no reported accidents with any LSVs in B.C.
- In addition Ontario currently allows use of LSVs in selected provincial parks under a pilot project. There have been no reported problems with them incorporating into mixed traffic in Ontario pilot project.
- Transport Canada also conducted an extensive pilot project in St. Jerome on public roads and issued a report - "Assessment of Low-Speed Electric Vehicles in Urban Communities: Pilot project" (TP 13942E) available at: <http://www.tc.gc.ca/tdc/publication/pdf/13900/13942e.pdf>
- There is no evidence that in either USA or Canada that LSVs have been involved in a disproportional rate of roadway accidents, nor have injuries or fatalities been unusual.

- Occupants of LSVs have far more protection from collisions than occupants of motorcycles and scooters.
- Global Electric Motorcars has not reported a single traffic-related death in their vehicles in over 10 years of service in mixed use and controlled environments in the USA. (over 30,000 LSVs in operation)
- Public accident reports in France show that Vehicles similar to LSVs are safer in terms of injuries than public transport.

## **12.0 Effects on Canadian Industry**

Canadian manufacturers of electric vehicles are at the leading-edge of a wave of alternative vehicles. Appropriate regulations must be in place to encourage and support these innovative businesses. Restricting the use of low-speed vehicles will effectively destroy Canadians businesses in this area and stifle any further growth in this sector.

Restrictions such as those presently proposed will send a clear signal that Canadian electric vehicle industry should re-locate to other countries. This will eliminate economic opportunities for Canadian businesses that manufacture and/or develop, support, service these vehicles and components.

Canadian manufacturers of electric vehicles may be forced out of business due to these proposed regulations. Meanwhile the Canadian public would be denied low-cost, low-impact transportation alternatives.

## **13.0 Consultation**

EVCO acknowledges that Transport Canada conducted nominal consultations prior to developing these regulations.

While EVCO was not consulted previously we request that Transport Canada recognize EVCO as a stakeholder group and invite EVCO to all future consultations on the issue of LSVs.

As a non-profit volunteer organization we are willing and able to discuss proposed policies on electric vehicles and their use. EVCO members have a tremendous depth of knowledge with respect to electric modes of transportation and are always willing to share their expertise.

EVCO also recommends further in-depth and formal consultations with Canadian LSV manufacturers and stakeholder groups. These groups would include electric vehicle associations, urban planners, environmental groups, municipalities and ordinary Canadian citizens.

## **14.0 Electric Vehicle Council of Ottawa (EVCO)**

EVCO is a non-profit, incorporated organization dedicated to promoting the use of electric vehicles in applications where they are appropriate.

EVCO members meet on the last Monday of the month at 7:00 pm at the Canada Science and Technology Museum in Ottawa. Meetings are open to the public and we invite Transport Canada staff to attend any one of our meetings to learn more about developments in electric vehicle technology.

EVCO's web site is at [www.evco.ca](http://www.evco.ca)