Memo

City of Kelowna

Date: July 20, 2010

File: 1350-90

To: City Manager

From: R. Cleveland, Director, Infrastructure Planning w/B. Oliveira and M.Tripathi, Engineering Traffic Technicians

Subject: Electric Cars - Neighbourhood Zero Emission Vehicles (NZEV)

Recommendation:

THAT Council directs staff to report back with strategies to reduce car dependency in Kelowna and to improve Kelowna's rating for injuries and fatalities per vehicle kilometer;

AND THAT Council directs staff to return with a bylaw for the operation of neighbourhood zero emission vehicles when circumstances are more supportive of their safe operation in Kelowna.

Purpose:

The following Council Resolution was approved at the October 19, 2009 A.M. regular meeting (SR 155512, 155513, and 155513):

> THAT Council direct staff to investigate the impact of having speed zones for electric cars and report back to Council;
>
> AND THAT Council direct staff to investigate ways to accommodate electric cars and to consider incentives for people who purchase electric cars;
>
> AND THAT Council direct staff to report back on the impact of electric cars on new developments;
>
> AND FURTHER THAT Council direct staff to investigate options for public parking areas in order to accommodate electric cars.

Background:

Although fully electric vehicles that comply with all federal safety regulations are under development for market within a year or so, there is another class of low speed, short range vehicles currently available for use on some municipal roads. The Federal Motor Vehicle Safety Act defines a Low Speed Vehicle (LSV) as a vehicle that is designed for use on regulated roads, travels on 4 wheels, is powered by an electric motor and does not use fuel as a source of energy, attains a speed of 32-40 km/h and weighs less than 1361 kg. It also requires specific but limited operating and safety equipment (see Annex 1).

On June 6, 2008 the BC Motor Vehicle Act Regulations were amended to include the definition for a Neighborhood Zero Emission Vehicle (NZEV) which is an LSV registered, licensed and insured through ICBC. Through the amendment, the Ministry of Transport gave municipalities the authority to create a by-law which would allow NZEVs on streets with speed limits above 40km/h but no greater than 50km/h (see Annex 1).

NZEVs have been developed for urban, recreational and light commercial markets such as planned and gated communities, destination resorts, industrial complexes and universities, but recently are finding there way onto municipal streets. Municipalities that have amended by-laws include Vancouver, Port

Coquitlam, Whistler, Oak Bay, Colwood, Esquimalt, Burnaby, Qualicum Beach, Sidney, and Penticton. Although municipalities have adopted policies and/or bylaws to allow NZEVs, the uptake for NZEVs so far has been low.

The key operating implications of the provincial regulations are:

- NZEVs would need to occupy the right hand lane except when passing or turning left;
- NZEVs would be permitted to cross higher speed roads but not travel along them;
- NZEVs would NOT need to display a "slow moving vehicle" emblem;
- NZEV operators must have a valid motor vehicle driver's licence.

The key incentives for using NZEVs are:

- Reduced GHG emissions: Vehicles currently account for about 57% of the total community GHG emissions in Kelowna. This is high relative to other jurisdictions in BC. All available alternatives to the reduction of GHG emissions generated through transportation are worthy of consideration. Although it is true that the operational GHG emissions of NZEVs are zero, it is important to ensure that the recharging electricity used in the batteries is generated using renewable sources. Electricity generated from fossil fuels is likely to create an even larger carbon footprint than the same propulsion energy generated from the direct use of fossil fuels.

- Reduced transportation cost: in that most trips (by number) are local commutes, and most could be made with NZEVs, the total cost of commuter miles traveled is less using an NZEV over conventional vehicles; this is especially relevant to the household with several vehicles where a choice is possible.

- Impact on public infrastructure: Smaller, lighter vehicles have a reduced impact on pavement and create less noise pollution for fronting properties.

The network of roads with current speed limits where NZEVs could be permitted in Kelowna is sufficient to provide good access from residential areas to town centres, as well as between town centres. Provincial legislation prohibits NZEVs on Benvoulin, Gordon, Clement between Clifton and Spall, Springfield between Dilworth and Hwy #33, as well as the entire length of Hwy #97 and Hwy #33. Reducing the speed limit on arterials with posted speed limits in excess of 50kph is not be required in the near term to provide NZEVs with reasonable access to all areas of the City.

Incentives that could be considered to encourage the use of NZEVs include:

1. Provide free parking: The eco-pass program provides free parking to fuel efficient vehicles such as hybrids and Smart cars. This does entail reduced revenues which could be offset through a number of measures such as (a) modest increases in parking rates for regular vehicles and/or (b) sun-setting specific vehicles from the program once they have achieved 'market acceptance' and the incentive has done its job, or (c) sun-setting specific vehicles from the program after a specific length of time such as two years. A measure for 'market acceptance' could be proposed to Council in a separate report.

   It is suggested that there would be no need to designate any public parking spots in the near term for NZEVS given the potential impact of other incentives.

2. Provide public re-charging facilities in town centres at designated parking spots. It cannot be assumed that NZEV drivers will have access to utility outlets at their place of residence. If public re-charging facilities are provided, it is important to also provide assurance that recharging facilities provide "green" power and pay "green" power rates; otherwise the GHG emissions of driving are simply transferred from the vehicle to an electrical power plant that uses fossil fuels. Re-charging facilities could be subsidized by the City until such time as there was a market demand for this service on a user-pay basis. Council could consider future capital and operating budgets for electric recharging facilities in the context of the Bernard Avenue Revitalization and other new prominent urban public facilities (e.g. RCMP detachment, District Recreation Parks, City owned parkades) and for City employees at major operating buildings (City Hall, City Yards, Park Yards,

Glenmore Landfill, etc.).

3. Provide private re-charging facilities in new residential, commercial and industrial developments. Currently, electric utility outlets are required in single family residential garages. There are no requirements for plug-ins associated with parking facilities for multi-residential developments, commercial and industrial parking facilities. Staff could return with further recommendations on appropriate changes to the Zoning Bylaw. It is expected that owners of existing establishments will be inclined to provide electric re-charging facilities once there is sufficient market demand.

4. Provide appropriate signage and information to direct NZEV drivers to permitted roads and recharging facilities. Council could consider future capital and operating budgets to make and post "No NZEV" signs on the few roads in Kelowna that have posted speeds in excess of 50 km/h.

5. Increase the availability of NZEVs for purchase. Staff will inform NZEV dealers of a new market opportunity in Kelowna if Council should pass bylaw amendments permitting NZEVs.

NZEVs are not built with safety engineering features such as airbags and impact absorbing bumpers that are found in typical modern motor vehicles, making them and their passengers more vulnerable to damage in traffic collisions with larger vehicles. According to the Transportation Association of Canada:

- Kelowna has the highest per capita ownership of light duty vehicles and the second highest per capita ownership of heavy duty vehicles in Canada, making NZEVs particularly vulnerable.
- Kelowna is the most car dependent jurisdiction in Canada (expressed as a ratio of SOV modal split and light duty vehicle ownership)
- Kelowna has the third highest rate of injuries and fatalities per vehicle km traveled in Canada

A detailed report completed by the Ontario Ministry of Transportation & the National Research Council of Canada released in 2008 indicated that there were much higher risks of injury and fatality when NZEVs were involved in collisions with conventional vehicles (see especially points 4a-4d in Annex 2).

These poor statistics indicate that NZEVs and their drivers would be particularly vulnerable in Kelowna relative to other municipal jurisdictions. The RCMP considers the NZEV a new category of "vulnerable road users", along with motorcycles and bicycles. Currently the RCMP does not have the resources to enforce moving traffic violations to protect NZEVs. Increased enforcement capacity could involve additional RCMP officers. Another potential solution would be to revise the Traffic Bylaw to grant City Bylaw officers the power to enforce moving traffic infractions. This change would require the authorization of the Attorney General. A more in depth review of this proposal is needed, including financial impact, resource requirements and liability issues before making recommendations. Staff could report back to Council upon further analysis and completion of the Protective Services review currently being chaired by the General Manager, Corporate Sustainability.

Although NZEVs represent a step toward a cleaner, more sustainable city and a targeted action to mediate climate change through the reduction of GHG emissions, and their introduction in other communities is accelerating, their introduction into Kelowna is not recommended until the issues of car dependency and traffic safety are addressed. It is recommended that staff analyze the reasons for these issues and recommend solutions as a high priority. In addition, zero-emission LSVs with comparable safety, speed and winter drivability capabilities similar to those of fuel powered vehicles will be available & affordable in the near future. If so, this would represent a more direct route to sustainability for Kelowna.

Internal Circulation:
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Existing Policy
Traffic Bylaw No. 8120 currently makes no specific provisions for NZEVs.

Financial / Budgetary
There are no financial implications for enacting the bylaw. There will be minor financial implications for future initiatives to provide public electric recharging stations, additional street signage, and an evaluation of the impact of this bylaw amendment.

External Agency/Public Comments
The RCMP indicates that the expected enforcement necessary to regulate compliance with this new group or "vulnerable road users" exceeds their current resource capacity without detracting from other traffic priorities. The extent of new resources would be dependent upon the scale of uptake in NZEVs and their actual vulnerability.

ICBC licenses and insures LSVs/NZEVs that are used in accordance with Division 24 of the Motor Vehicle Act Regulations. Given the very small number of LSVs in BC's vehicle fleet, ICBC does not have sufficient BC data to rate these vehicles as a unique class of vehicle and therefore includes them in the broad grouping of regular passenger vehicles. Within that insurance rating category, ICBC will insure vehicles for use on a highway in accordance with the municipality's bylaws and Division 24 of the Motor Vehicle Act Regulations.

ICBC does not have a specific position regarding Municipal bylaws other than to note that ICBC encourages municipalities to learn as much as possible about the unique nature of LSVs and fully explore legal issues around their use prior to allowing these vehicles on roadways above 40 km/h.

ICBC recommended that in determining where to allow LSVs on municipal roads, municipalities should take into consideration Transport Canada's position on LSVs intended use given the operating characteristics of LSVs and the fact that LSVs are required to meet only about 4 of 40 safety requirements normally in place for vehicles that use public roads in an unrestricted fashion.

In November 2008, Transport Canada (TC) released the crash test results for LSVs which demonstrate objectively the risks inherent in LSVs and highlights that the choice of where these vehicles should operate should be made carefully. TC noted that "LSV safety standards do not match the safety standards of conventional larger, heavier motor vehicle classes that travel our public roads. This poses a real threat to people inside LSVs, if they are operated on public roads."

In 2008 the Province of Ontario released a study that they commissioned the National Research Council of Canada to conduct respecting the safety and use of LSVs in an urban environment (www.mto.gov.on.ca/english/dandv/vehicle/emerging/lsvtechreport.pdf) (see Annex 1).

One note of consideration is that some report that tens of thousands of LSVs have been used without incident on US roads where they are allowed in 25 and 35 mph zones. Transport Canada has highlighted in their information to the public in relation to LSVs that "Transport Canada has been unable to substantiate claims made by other parties regarding LSV safety history due to a lack of supporting documentation. The U.S. does not track statistics specifically for LSVs. These vehicles are instead included in the 'other' category, making it impossible to track actual numbers. It is worth noting that this 'other' category has had a steady fatality increase since 1998, when the vehicle class was created, while passenger car fatalities have decreased." More information from Transport Canada on LSVs can be found at: www.tc.gc.ca/roadsafety/tp2436/rs200803/menu.htm.

Alternate Recommendation

THAT Council gives reading consideration to Bylaw 10398 being Amendment No. 17 to Traffic Bylaw No. 8120 regarding "neighbourhood zero emission vehicles" (NZEVs) (see Annex 3);

AND THAT Council direct staff to invite dealers to showcase NZEVs at the fourth reading of the proposed Byalw;

AND THAT "neighbourhood zero emission vehicles" be issued free "eco-pass" parking permits for on-street metered parking spots until such time that NZEVs have achieved reasonable market acceptance;

AND THAT Council directs staff to provide an administrative mechanism to determine when eco-pass incentives are no longer required to promote fuel-efficient vehicles'

AND THAT Council directs staff returns to Council with recommendations regarding revisions to the City of Kelowna Zoning Bylaw 8000 to require electric recharging facilities in new multi-residential, commercial and industrial developments.

AND THAT Council directs staff to submit capital and operating budgets for electric recharging facilities in key public locations, and for appropriate highway signage

AND FURTHER THAT Council directs staff including Bylaw Services, together with ICBC, the RCMP and, to monitor the use and impact of NZEVs in Kelowna and submit an analysis of the success of the program for Council consideration in 36 months.

Considerations not applicable to this report:

Financial / Budgetary
Legal/Statutory Authority
Legal/Statutory Procedural Requirements
Personnel Implications
Community & Media Relations Comments

Submitted by:

R. Cleveland, Director, Infrastructure Planning

Approved for inclusion: J. Paterson, General Manager

Attachments:

Annex 1: Research summary of *Safe Integration of Electric Low Speed Vehicles on Ontario's Roads in Mixed Traffic by* Ontario Ministry of Transportation & the National Research Council of Canada
Annex 2: Background information on relevant sections of the Motor Vehicle Safety Act (Canada) and the Motor Vehicle Act Regulations BC
Annex 3: Bylaw No. 10398

cc: R .Westlake, Director Regional Services
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RCMP
ICBC

APPENDIX B

Vol. 142, No. 16 — August 6, 2008

Registration

SOR/2008-229 July 28, 2008

MOTOR VEHICLE SAFETY ACT

Regulations Amending the Motor Vehicle Safety Regulations (Low-speed Vehicles)

P.C. 2008-1336 July 28, 2008

Whereas, pursuant to subsection 11(3) of the *Motor Vehicle Safety Act* (see footnote a), a copy of the proposed *Regulations Amending the Motor Vehicle Safety Regulations (Low-speed Vehicles)*, substantially in the annexed form, was published in the *Canada Gazette*, Part I, on December 22, 2007 and a reasonable opportunity was afforded to interested persons to make representations to the Minister of Transport, Infrastructure and Communities with respect to the proposed Regulations;

Therefore, Her Excellency the Governor General in Council, on the recommendation of the Minister of Transport, Infrastructure and Communities, pursuant to subsection 11(1) of the *Motor Vehicle Safety Act*[a], hereby makes the annexed *Regulations Amending the Motor Vehicle Safety Regulations (Low-speed Vehicles)*.

REGULATIONS AMENDING THE MOTOR VEHICLE SAFETY REGULATIONS (LOW-SPEED VEHICLES)

AMENDMENTS

1. The definitions "low-speed vehicle", "motorcycle", "three-wheeled vehicle" and "truck" in subsection 2(1) of the *Motor Vehicle Safety Regulations* (see footnote 1) are replaced by the following:

"low-speed vehicle" means a vehicle, other than a restricted-use motorcycle or a vehicle imported temporarily for special purposes, that

(*a*) 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,

(*b*) travels on four wheels,

(*c*) 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,

(*d*) does not use fuel as an on-board source of energy, and

(*e*) has a GVWR of less than 1 361 kg; (*véhicule à basse vitesse*)

"motorcycle" means a vehicle that is of the subclasses enclosed motorcycle, open motorcycle, limited-speed motorcycle or motor tricycle, and

(*a*) is designed to travel on not more than three wheels in contact with the ground,

(*b*) has a minimum wheel rim diameter of 250 mm, and

(*c*) has a minimum wheelbase of 1 016 mm,

but does not include a power-assisted bicycle, a restricted-use motorcycle, a passenger car, a truck, a multi-purpose passenger vehicle, a competition vehicle, a vehicle imported temporarily for special purposes or a three-wheeled vehicle; (*motocyclette*)

"three-wheeled vehicle" means a vehicle, other than a competition vehicle, an antique reproduction vehicle, a motorcycle, a restricted-use motorcycle, a trailer or a vehicle imported temporarily for special purposes, that

(*a*) is designed to travel on three wheels in contact with the ground,

(*b*) has no more than four designated seating positions, and

(*c*) has a GVWR of 1 000 kg or less; (*véhicule à trois roues*)

"truck" means a vehicle designed primarily for the transportation of property or special-purpose equipment, but does not include a competition vehicle, a crawler-mounted vehicle, a three-wheeled vehicle, a trailer, a work vehicle, a vehicle imported temporarily for special purposes, a vehicle designed for operation exclusively off-road or a low-speed vehicle; (*camion*)

2. Item 205 of Schedule III to the Regulations is replaced by the following:

Column I	Column II	Column III Classes of Vehicles				
			Motorcycle			
Item (CMVSS)	Description	Bus	Enclosed Motorcycle	Open Motor-cycle	Limited-speed Motorcycle	Motor Tricycle
205	Glazing Materials	X	X	X	X	X

Column I	Column II	Column III Classes of Vehicles				
Item (CMVSS)	Description	Restricted-use Motorcycle	Multi-purpose Passenger Vehicle	Passenger Car	Snow-mobile	Snow-mobile Cutter
205	Glazing Materials		X	X		

Column I	Column II	Column III Classes of Vehicles					
Item (CMVSS)	Description	Trailer	Trailer Converter Dolly	Truck	Vehicle Imported Temporarily for Special Purposes	Low-speed Vehicle	Three-wheeled Vehicle
205	Glazing Materials	X		X		X	X

3. Section 500 of Schedule IV to the Regulations is replaced by the following:

(1) Every low-speed vehicle shall conform to the requirements of *Technical Standards Document No. 500, Low-speed Vehicles* (TSD 500), as amended from time to time.

(2) Every low-speed vehicle shall be permanently marked with a slow-moving vehicle identification emblem (SMV emblem) that conforms to section 6 of American National Standard *Slow Moving Vehicle Identification Emblem (SMV Emblem)*, ANSI/ASAE S276.6, published in January 2005 by the American Society of Agricultural Engineers.

(3) However, section 6 of ANSI/ASAE S276.6 is modified as follows:

(*a*) the dimensions of the SMV emblem may be greater than those specified in Figure 1 as long as each dimension is increased so that it has the same relation to the other dimensions as the dimensions specified in the Figure have to each other; and

(*b*) the recommendation in paragraph 6.2.6 is mandatory.

(4) The SMV emblem shall be mounted in accordance with paragraphs 7.1.1 and 7.1.2 of ANSI/ASAE S276.6. It shall be mounted on the centreline or as near to the left of the centreline of the vehicle as practicable, not less than 500 mm but not more than 1 500 mm above the surface of the roadway.

(5) The SMV emblem shall be affixed so that the view of the emblem is not obscured or obstructed by any part of the vehicle or any attachment designed for the vehicle.

(6) This section expires on June 1, 2013.

COMING INTO FORCE

4. (1) These Regulations, except subsections 3(2) to (5), come into force on the day on which they are published in the *Canada Gazette*, Part II.

(2) Subsections 3(2) to (5) come into force one year after the day on which these Regulations are published in the *Canada Gazette*, Part II.

REGULATORY IMPACT ANALYSIS STATEMENT

(This statement is not part of the Regulations.)

Description

This amendment to the *Motor Vehicle Safety Regulations* (MVSR) updates the requirements for the Low-speed Vehicles (LSV) class by: introducing requirements for a slow-moving vehicle emblem to be permanently marked on LSV; clarifying the original reason for establishing the LSV class, which was to allow the use of such vehicles for short trips such as shopping, social and recreational purposes, in limited, planned and controlled environments; introducing new wording that, for the first time, allows small trucks to be classified as LSV; including a maximum limit for the mass of LSV to ensure that large trucks and passenger vehicles cannot be improperly classified as LSV; and, introducing a requirement that the propulsion systems of LSV must be designed for their top speed of 40 km/h.

A minor revision to the definition of LSV is also introduced to clarify the current no emission requirement, to state that LSV do not use fuel as an on-board source of energy. This is in keeping with the original intent that LSV are environmentally friendly electric vehicles. Also, to remain aligned with the United States, this amendment specifies the type of safety glazing acceptable for LSV windshields.

Finally, the expiration date of the safety standard has been extended to June 1, 2013, to be in line with the date of similar requirements in other Canadian regulations. This has resulted in the requirement to re-enact the entire section 500 of the MVSR.

This amendment better defines LSV and increases other road users' awareness of them. More importantly, it further aligns the Canadian requirements with recent changes made in the United States to their corresponding Federal Motor Vehicle Safety Standard (FMVSS) 500.

Background

In July 2000, LSV were introduced as a new class of vehicle and minimum safety requirements were established in section 500 of Schedule IV to the MVSR, (see footnote 2) hereafter referred to as Canadian safety standard. The introduction of this vehicle class was a result of several industry requests for Canada to harmonize with the requirements developed in the United States under FMVSS 500 introduced by their Final Rule in 1998 (see footnote 3).

Since the introduction of the LSV class in the United States, several amendments to the requirements have been made. The Final Rule of July 25, 2003 (see footnote 4) clarified that windshields would meet the requirements of FMVSS 205; the Final Rule of August 17, 2005 allowed trucks with a maximum gross vehicle weight rating of 1134 kg to be classified as LSV; (see footnote 5) while the Final Rule of April 19, 2006 increased the maximum gross vehicle weight rating for LSV to 1,361 kg. (see footnote 6) The amended Canadian safety standard again ensures that Canada and the United States remain closely aligned. Although the goal is to maintain harmonization between the Canadian and United States LSV safety standards, some minor variances are being implemented or retained from the existing Regulations.

The LSV class was created to allow for the manufacture, importation and nation-wide distribution of small, lightweight vehicles that could not meet safety standards appropriate for larger and heavier vehicles. These electrically driven vehicles were intended for use on short trips for shopping, social and recreational purposes, primarily within retirement or other planned, self-contained communities.

Consultations with the provinces and territories with regard to the introduction of LSV into Canada were conducted concurrently with the development of this new class because the provinces and territories are responsible for setting out the requirements for LSV licensing and use. Provinces and territories may designate areas for use of LSV or may otherwise regulate the use of LSV on public roads. The safety risk of introducing this new class of vehicle was foreseen to be low if LSV were operated in appropriate environments.

Since there are virtually no safety or other performance requirements related to the LSV class, it is important that the vulnerable character of LSV is clearly stated in the vehicle class definition. A clear definition helps the provinces and territories select appropriate requirements for operation of LSV to protect their drivers and occupants.

The amended definition of LSV, as specified in subsection 2(1) of the Regulations, clearly describes LSV as a vehicle designed primarily for operation on streets and roads where law or an agreement controls access and operation of other classes of vehicles. Such a definition expresses the character of the LSV design without imposing restrictions on decisions taken by jurisdictions regarding vehicle use.

Initial consultations with the provinces and territories regarding the new definition brought to light a concern that it is important for a LSV to be identified as a slow-moving vehicle. To accomplish this, the Canadian safety standard is amended to require LSV to be permanently marked with a slow-moving vehicle emblem. Such identification will raise other road users' awareness of the vulnerable character of low-speed vehicles, their comparatively inferior acceleration, and limited top speed of LSV. This requirement is in keeping with other vehicles that travel at speeds of less than 40 km/h such as farm tractors.

As the amended Regulations regarding the mandatory marking of the slow-moving vehicle emblem will require some time for manufacturers to accommodate, this specific requirement will come into force one year after the day on which the amended Regulations come into force.

The amended Regulations reinforce the requirement that LSV not be modifiable for operation at higher speeds. This objective is addressed by identifying the power train for the LSV as a device originally designed to power this kind of vehicle. A vehicle equipped with a device that temporarily limits the vehicle's top speed is not regarded as a LSV.

The amended Regulations replace the current requirement "produces no emissions" with a new requirement: "does not use fuel as an on-board source of energy." The previous requirement may have been interpreted too narrowly and a vehicle could have been disqualified as a LSV because of emissions from the tires or vapours escaping from the on-board batteries.

Alternatives

Consideration was given to the options of maintaining the status quo, as well as to harmonize further with the United States.

Maintaining the status quo would have broadened the difference between Canada and the United States in defining a LSV. Operating LSV without restrictions amongst larger and faster vehicles could put users of LSV at risk. Also, the previous definition under the MVSR did not allow small trucks to be recognized as LSV.

The option which has been chosen is to harmonize with the United States safety standard, with the following exceptions. First, the amended Regulations support provincial and territorial regulations, which, for the most part, currently require a slow moving vehicle emblem, thus identifying slow-moving vehicles and improving road safety. It also helps new LSV purchasers reach compliance with provincial and territorial regulations. Secondly, a device temporarily limiting the vehicle's top speed is not allowed, as it could be de-activated and thus increase risk to LSV occupants. Finally, the distinct principle that LSV produce no emissions is being maintained, and is re-enforced by a requirement to ensure that LSV do not use fuel as an on-board source of energy.

Benefits and costs

Aligning the Canadian and United States safety standards allows any particular manufacturer to build one vehicle to be sold in both jurisdictions. It also allows manufacturers of small low-speed trucks (e.g. for municipal work crews, airport operators and small goods delivery companies) to begin

selling them in Canada. This benefits LSV manufacturers by allowing them to increase the scope of their production for both Canadian and United States markets and benefits Canadians by allowing them a choice of small and efficient trucks for use in places such as military bases, university campuses, parks, retirement communities and airports.

It is anticipated that the Canadian slow-moving vehicle emblem, which is based on a standard design and uses an inexpensive reflector, will not have any negative implications on the cost of LSV imported into Canada or manufactured in Canada for sale here. There is also no anticipated cost increase to the government arising from the implementation and enforcement of the amended Regulations.

Strategic environmental assessment

Under the government's Strategic Environmental Assessment Policy, a preliminary evaluation of the possible effects of this amendment was carried out. It was determined that the amendments to the Regulations by themselves would have no significant net impact on the environment. The replacement of smaller fossil fuel powered trucks with LSV trucks is expected to improve local air quality, but overall environmental impacts depend on the extent to which LSV displace conventional fossil-fuelled vehicles and the energy sources used to generate the electricity to recharge the LSV power pack. LSV have had limited sales in Canada since this class was created in 2000 and the adoption of LSV will depend on various market forces rather than on the current amendment.

Consultation

In the process of preparing the amendment to the Regulations, consultations were conducted with the Audit and Inspection Group of Transport Canada, the Canadian Council of Motor Transport Administrators (CCMTA), the Transportation Development Centre (TDC) of Transport Canada, Canadian Electric Vehicles LTD (CANEV), Centre d'expérimentation des véhicules électriques du Québec (CEVEQ), Institut du transport avancé du Québec (ITAQ) and directly with two manufacturers of LSV ("Dynasty" and "ZENN Motor Company").

As members of the CCMTA, provincial and territorial representatives requested that safety-related performance requirements be added for the LSV class so that occupants would be better protected. This proposition was not retained because adding performance requirements to the Canadian safety standard would result in significantly different requirements than those of the United States, such that the same vehicles could not be sold in both Canada and the United States. In addition, the Department of Transport notes that manufacturers are free to design and produce fully electric vehicles in any of the prescribed classes defined in the MVSR (such as passenger cars, trucks, etc.), which meet all the safety standards stipulated for that class. Given this attractive commercial prospect, several companies have developed mainstream electric vehicles or have announced their intent to market such vehicles in the near future. Under the ecoTechnology for Vehicles Program, the Department evaluates various environmentally promising propulsion systems including electric drivetrains.

Further comments provided by the CCMTA resulted in amendments to the proposal to clarify the use of LSV to be in areas where the access and operation of other classes of vehicles is controlled. Also, at the request of the provinces and territories, the permanent marking of a slow-moving vehicle emblem on LSV was included in the proposed Regulations. This requirement would help operators of LSV to conform to provincial and territorial requirements, which increase the conspicuity and awareness of slower moving vehicles among other vehicle drivers.

During initial consultations, some companies and associations promoting LSV noted concern with the portion of the proposed definition that clarifies the intended use of LSV. These companies and associations suggest that they would like to see LSV available as commuter vehicles sharing the roads with other classes of vehicles. Neither the Government of Canada nor the provinces and territories that commented shared this concern. Given the fact that LSV have almost no safety performance requirements, occupant safety could be compromised if they were to travel in traffic with

conventional, mainstream motor vehicles that must meet up to 40 standards depending on the specific class.

Notice of the Department of Transport's intention to make this amendment was published in Part I of the *Canada Gazette*, on December 22, 2007, and a 60-day consultation period was allotted. The Department received comments from various stakeholders including provinces and territories, associations, manufacturers and the general public, as summarized below.

Pre-publication Comments

During the pre-publication period of 60 days, the government received a total of over 550 comments regarding this amendment. Comments were received from the provinces of British Columbia, Ontario and Quebec, la Société de l'assurance automobile du Québec (SAAQ), LSV manufacturers Zenn and GEM, and several associations including the Association of International Automobile Manufacturers of Canada (AIAMC); the Canadian Vehicle Manufacturers Association (CVMA); Vancouver Electric Vehicle Association; Electric Vehicle Council of Ottawa; and Electric Mobility Canada. Approximately 540 of the comments were received from members of the public from which over 50% came from British Columbia residents, while approximately 25% were from Ontario residents, and 10% were from Quebec residents.

Most of the comments received addressed the clause that describes the intended use of LSV. Written comments were received from the provinces of British Columbia, Ontario and Quebec, SAAQ, all of which were supportive of the government's amendment. British Columbia specifically noted support for the government's position that provinces and territories will be able to select the appropriate environments for operating LSV within their own jurisdiction and indicated that it would be amending its legislation to facilitate broader use of LSV within their province.

A follow-up teleconference was held in which all provinces and territories participated. Several of the provinces and territories indicated safety concerns for LSV and were interested in any test results that would come out of a LSV safety test program being developed by the government. Many provinces and territories were also concerned about public confusion between regular fully compliant electric vehicles and LSV. Several provinces indicated that they had been reviewing their own legislation in reference to LSV usage and that there had been inquiries and interest from the public.

GEM and Zenn noted concern with the clause that describes the intended use of LSV, suggesting that in their opinion it would effectively ban LSV from public roads. Zenn additionally included a petition, with over 6,000 signatures, supporting the use of Zenn's LSV. Zenn also indicated that LSV should be part of the traffic mix, along with pedestrians, motorcycles, bicycles, scooters and buses. Further, they referenced an international study recently commissioned by L'institut du transport avancé du Québec (ITAQ) on the safety of LSV's. GEM further argued that there is no data to support safety concerns for LSV.

The majority of the approximately 540 responses received from members of the public claimed that in their opinion the government was limiting the use of LSV as a result of the inclusion of the clause that describes the intended use of LSV. Many went on to express their desire for LSV to be allowed on roads to reduce pollution. They also raised the issue of relative safety with respect to other forms of transportation, such as motorcycles, scooters and bicycles.

The associations that commented did not support the clause that describes the intended use of LSV. They noted their concern that these requirements could create a barrier to the adoption of LSV. The associations expressed a desire that LSV be allowed on roads where traffic is limited to 50 km/h. Further, they argued that the traffic mix consisting of pedestrians, motorcycles and cyclists would be safer with LSV, rather than the vehicles that they would be replacing.

Contrary to the comments received, this amendment does not prohibit the provinces or territories from determining appropriate operating environments for LSV. In Canada, provincial and territorial

governments are responsible for public road use, vehicle operation and driver licensing. The highway traffic acts in each jurisdiction establishes the legal responsibilities of motor vehicle owners and operators, and set the rules for all types of vehicles that can be operated on public roads as well as for other road users (pedestrians, bicyclists, etc.). Some provinces and territories are currently examining their regulations with respect to LSV usage.

While the United States does not clearly specify the design intent of LSV in their definition, the preamble to their rules is used as part of their legal interpretation for regulations. The United States rules on LSV have included many safety references on the use of LSV. For example, the final rule dated August 17, 2005, noted that LSV are not designed to meet safety standards appropriate for larger and heavier vehicles and encouraged states to be very careful when contemplating the use of LSV on public roads. The Insurance Institute for Highway Safety (IIHS), which represents companies that hold 90% of the United States auto insurance policies, has also indicated serious concerns regarding the safety risk of LSV when operated in areas with larger and fully safety compliant vehicles.

The clause that describes the intended use of LSV has been included in the definition of LSV to clarify that they are not equipped with features to allow them to safely circulate on roads in the presence of larger, heavier and faster vehicles. The proposed definition clarifies that LSV are intended to be used in controlled areas, as defined by provincial and territorial governments. Larger, heavier and faster vehicles could present a significant threat to the occupants of LSV. The clause that describes intended use would not determine compliance with the amended Regulations.

There were no negative comments received with respect to allowing a truck to be classified as a LSV. The LSV manufacturers, Zenn and GEM, as well as the associations noted support for the allowance of trucks as LSV. The public largely ignored this issue.

The associations did not support the no fuel on-board clarification, citing that this would exclude hydrogen-powered LSV, such as fuel cell vehicles, from entering the marketplace. The government notes the intent of the LSV as an environmentally friendly vehicle producing zero greenhouse gas emissions. It is also noted that, while fuel cell power sources represent another possible solution to reducing greenhouse gas emissions, the integration of hydrogen fuel systems into vehicles requires special consideration to ensure the safety of these unique propulsion systems. Transport Canada is currently involved with the development of a global technical regulations for hydrogen and fuel cell vehicles, under the auspices of the United Nations. Once such regulations have been developed, the Department will be in a position to consider the incorporation of applicable sections into other safety standards, such as the LSV standard. Therefore, at this time, the requirement for no fuel as an on-board source of energy will be established.

The provinces that commented noted support for the introduction of the slow-moving vehicle emblem. British Columbia indicated that while it would be amending its legislation to facilitate broader use of LSV, it would at the same time be releasing LSV from their current requirements to display the slow-moving vehicle emblem and operate with flashing lights.

Zenn welcomed the additional visibility introduced by the addition of the emblem requirement, citing that it already installs such an emblem on vehicles shipped to jurisdictions that have slow-moving vehicle emblem requirements in their local laws. GEM and the associations, however, did not support the added requirement. GEM noted that the addition of the signage would interfere with the provinces and territories' prerogative to establish operating rules. Only a few of the comments from Canadians noted any concern for the addition of the slow-moving vehicle emblem.

The government notes that the vast majority of provinces and territories currently require the use of a slow-moving vehicle emblem on vehicles that do not travel over 40 km/h. The specification of a standard slow-moving vehicle emblem will increase other road users' awareness of the nature of LSV especially in the case where the LSV closely resembles a passenger car.

The associations requested that the government consider improvements to the safety standards for LSV. Ontario also suggested that further safety requirements be added to the LSV class including

service brakes, performance standards for seat belts, roof intrusion protection, safety signage and a horn. In addition, Zenn indicated support for the government increasing the LSV safety requirements including: seat belt restraint standards, automotive lighting, seat anchorages and braking performance requirements. The government has not chosen to include these upgraded safety standards, as it is important that LSV be manufactured to a set of similar North American standards. As the design requirements for LSV are already aligned in the United States and Canada, it is currently possible for a manufacturer to make one design for both markets.

Finally, GEM noted that there should be a clarification made in the Regulations that only the windshields of LSV need comply with the Canadian safety standard for glazing. No clarification is required as the incorporated Technical Standards Document notes that only the windshield need comply.

The traffic mix on today's roads involves a diverse range of vehicles from motorcycles to large trucks and buses. Each vehicle class is subject to safety performance standards in line with their design and use and LSV would continue to be required to meet a far more limited set of safety standards than all the other prescribed classes of vehicles that are regulated under the MVSR. In addition, each vehicles class is subject to specific provincial and territorial, licensing and operating requirements and driver licensing requirements commensurate with their use. As a result, it is important that LSV be uniquely identifiable to potential buyers as well as to other road users, and that they not be mistaken in appearance or in design intent for regular passenger cars.

The government has been in contact with United States organizations including the United States Department of Transportation's National Highway Traffic Safety Administration, IIHS, and AAMVA (American Association of Motor Vehicle Administrators) with the purpose of determining the safety record and performance of LSV in the United States. These organizations all noted the need to carefully control the road use of LSV to protect occupant safety. Nevertheless, they were not able to provide any data on the safety history of LSV or results of testing. The government hence undertook a safety assessment of various LSV including testing of their performance in the types of collisions that could occur on streets with low speed limits. The assessment confirmed that the LSV lacked many of the standard safety features that are common in passenger cars and would also pose significantly greater safety risks to occupants, compared to fully safety certified vehicles.

The government is of the opinion that it is important to amend its definition of LSV in order to allow low-speed trucks to be sold in Canada. More importantly, many of the proposed amendments are needed to align the Canadian requirements with those of the United States in order to increase the availability of LSV in the marketplace. As a result, no substantive changes have been made to the original proposal.

While no substantive changes have been made to the original amendment, the expiration date of the safety standard has been extended to June 1, 2013, to be in line with the date of similar requirements in other Canadian regulations. This has resulted in the requirement to re-enact the entire section 500 of MVSR.

Compliance and enforcement

Motor vehicle manufacturers and importers are responsible for ensuring that their products comply with the requirements of the MVSR. The Department of Transport monitors self-certification programs of manufacturers and importers by reviewing their test documentation, inspecting vehicles, and testing the compliance of vehicles obtained in the open market. Also, when the Government of Canada, a manufacturer or importer identifies a defect, the manufacturer or importer must issue a notice of defect to owners, and to anyone who has received parts for the vehicle and to the Minister of Transport, Infrastructure and Communities. If a vehicle does not comply with a safety standard, the manufacturer or importer is subject to prosecution and, if found guilty, may be fined as prescribed in the *Motor Vehicle Safety Act*.

Contact

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Footnote a
S.C. 1993, c. 16

Footnote 1
C.R.C., c. 1038

Footnote 2
SOR/2000-304

Footnote 3
63 FR 33194

Footnote 4
68 FR 43996

Footnote 5
70 FR 48316

Footnote 6
71 FR 20026

APPENDIX C

Schedule

1 *Section 1 of the Motor Vehicle Act Regulations, B.C. Reg. 26/58, is amended by adding the following definition:*

"neighbourhood zero emission vehicle" means a vehicle that travels on 4 wheels and is powered by an electric motor that is designed to allow the vehicle to attain a speed of 32 km/hr but not more than 40 km/hr in a distance of 1.6 km on a paved level surface, and

(a) meets or exceeds standards of the *Motor Vehicle Safety Act* (Canada) for a low-speed vehicle and bears a compliance label for a low-speed vehicle in accordance with that Act, or

(b) if imported to Canada, has been imported as an admissible low-speed vehicle in accordance with the *Motor Vehicle Safety Act* (Canada) requirements and

(i) bears a compliance label for a low-speed vehicle in accordance with that Act, or

(ii) meets applicable federal United States laws in accordance with the *Motor Vehicle Safety Act* (Canada).

2 *Section 7.01 is amended*

(a) in subsection (1) by striking out "Subject to subsection (2)" and substituting "Subject to subsections (2) and (3)", and

(b) by adding the following subsection:

(3) A neighbourhood zero emission vehicle need not comply with the requirements set out in this Division but it must meet the equipment standards required under the *Motor Vehicle Safety Act* (Canada) for low-speed vehicles.

3 *Section 7.09 is amended*

(a) in subsection (1) by striking out "Subject to subsection (2)" and substituting "Subject to subsections (2) and (3)",

(b) by adding the following paragraph to subsection (2):

(f) neighbourhood zero emission vehicles. *, and*

(c) by adding the following subsection:

(3) The standards for neighbourhood zero emission vehicles are those set out under the *Motor Vehicle Safety Act* (Canada) for low-speed vehicles.

4 *Section 7B.01 of Division 7B is amended in the definition of "Slow moving vehicle" by adding "a neighbourhood zero emission vehicle," after "but does not include".*

5 The following sections are added to Division 24:

Neighbourhood zero emission vehicles

24.07 (1) No person may drive or operate a neighbourhood zero emission vehicle on a highway or class of highway except as authorized under this section.

(2) A person may drive or operate a neighbourhood zero emission vehicle in unorganized areas of British Columbia

(a) on a highway or class of highway that has a speed limit of 40 km/hr or less, or

(b) if authorized by a road use permit issued by the Minister of Transportation under section 209 (2) (d) of the Act, on a highway or class of highway that has a speed limit of over 40 km/hr but no more than 50 km/hr.

(3) A person may drive or operate a neighbourhood zero emission vehicle in a municipality

(a) on a highway or class of highway that has a speed limit of 40 km/hr or less, or

(b) if authorized by bylaw of the council of a municipality, on a highway or class of highway that has a speed limit of over 40 km/h but no more than 50 km/hr.

(4) A person who drives or operates a neighbourhood zero emission vehicle as authorized by subsection (2) or (3) may cross a highway that has a speed limit that is not greater than 80 km/hr at an intersection to enable the person to continue on a highway on which the person is authorized to drive or operate a neighbourhood zero emission vehicle.

(5) A person commits an offence who operates a neighbourhood zero emission vehicle in contravention of this section.

Grandparenting of neighbourhood zero emission vehicles

24.08 (1) If a person owns or leases a neighbourhood zero emission vehicle on the day before this section comes into force,

(a) Division 7B applies to the neighbourhood zero emission vehicle, and

(b) sections 7.01 (3), 7.09 (3) and 24.07 do not apply to the neighbourhood zero emission vehicle

as long as the neighbourhood zero emission vehicle continues to be owned or leased by the person who owned or leased it on the day before this section comes into force.

(2) A person described in subsection (1) may apply to the director to exempt the person from subsection (1).

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Act and section:- *Motor Vehicle Act*, R.S.B.C. 1996, c. 318, s. 210

Other (specify):- OIC 1004/58

R/297/2008/33

Minister of Transportation

ANNEX 2: Safety & Operation of Low Speed Vehicles (LSV) - Research Summary

Report Title: *Safe Integration of Electric Low Speed Vehicles on Ontario's Roads in Mixed Traffic*
Year: 2008
Author: Ontario Ministry of Transportation & the National Research Council of Canada

1. Whereas in Canada LSVs are 100% electric powered vehicles, in the US they can be gasoline powered as well. In European countries, quadricycles are equivalent to LSVs. Quadricycles use ICE for propulsion, weigh less, have a maximum speed of 45 Km/hr and are allowed to operate on roads with a posted speed limit of 90 Km/hr.

2. Zero-emission LSVs with comparable safety, conspicuity, speed and winter drivability capabilities to those of fuel powered vehicles will be available & affordable in the near future.

3. The current Canadian federal standard for LSVs does not require them to meet a majority of safety standards that are required for passenger cars. While LSVs need to meet the requirements of only three CMVSS standards, quadricycles are required to meet 20 European standards. Neither LSVs nor quadricycles are required to meet any crash test standards.

4. There may be a substantially higher driver injury and fatality rate amongst LSV operators due to the relatively low mass of LSVs compared to other vehicles on public roads. A risk equation developed using Fatal Accident Reporting System (FARS) data in the US suggests that the mass & size of each vehicle involved in the collision influence the severity of the collision.

    a. In a right side collision situation in which a Honda Civic strikes an LSV, the driver of the LSV is 40 times more likely to be killed than the driver of the Honda Civic. In a similar collision in which an LSV strikes a Honda Civic, the driver of the LSV is still twice as likely to be killed as the driver of the Honda Civic.

    b. In a left-side collision between an LSV & a Honda, in which the Honda Civic strikes the LSV on the left side, the driver of the LSV is 79 times more likely to be killed than the driver of Honda Civic. For comparison, in a similar collision in which the LSV strikes the Honda Civic, the driver of the Honda Civic is 1.29 times more likely to be killed as the driver of the LSV.

    c. In a rear-end collision, in which a Honda Civic rear-ends an LSV, the driver of the LSV is 11.5 time more likely to be killed than the driver of the Honda Civic. When an LSV rear-ends a Honda Civic, the driver of the LSV is still nearly 10 times as likely to be killed as the driver of the Honda Civic.

    d. In a head-on collision between an LSV & a Honda Civic, the driver in the LSV would be 9.5 times more likely to be killed than the driver of the Honda Civic. In a head-on collision between an LSV & a more comparably sized smart car shows that the LSV driver would still be 2.5 times more likely to be killed than the driver of the smart car.

    e. The risks estimated above are likely to go higher as LSVs don't have the same crashworthiness as the Honda Civic and LSVs may have lighter weight than 1400 Lb assumed.

5. Lower acceleration performance (still about three times that of heavy trucks) of LSVs is unlikely to have an adverse effect on vehicle flow or congestion

6. LSV braking rates are comparable to those of conventional passenger vehicles and are not expected to adversely affect the traffic flow.

7. Practically, majority of traffic travels in the range of 60 Km/hr on a 50 Km/hr road. The fact that LSVs travel at maximum 40 Km/hr will slow down traffic on two lane roads which is particularly problematic for buses limiting their maximum speed to 40 Km/hr.

8. The fact that LSVs will appear the same as standard vehicles to the following drivers despite their reduced operating capabilities, rear-end crashes are likely to increase due to delayed detection of a substantial speed difference with the LSV ahead.

9. LSVs are likely to cause more aggressive driving behavior as it becomes more difficult to escape from behind a slower driver.

10. The lack of noise generated by LSVs may result in increased collisions with both pedestrians (in particular, the visually impaired) and cyclists.

11. LSVs may be unable to clear yellow or all-red light in the signal times typically allocated for clearance on public roads.

12. LSVs may not be equipped with Daytime Running Lights (DRLs), which is required by CMVSS on all new vehicles made in Canada or imported after January 1st, 1990.

13. Not all LSVs carry a spare tire.

14. Flooded Lead Acid (FLA) batteries are considered hazardous materials and therefore are subject to certain handling, shipping & storage rules. There are concerns related to the battery securement system and the potential of hazardous material spillage during and after a collision involving an LSV. LSV occupants, other vehicle occupants and emergency personnel attending the crash scene may be at risk.

15. The LSVs may not have airbags causing serious injury to occupants

16. The performance of the seat belt assembly anchorage in LSVs is unknown. The seat belt assembly anchorage may fail in accidents.

17. There is no provision for child seats in LSVs. An LSV operator may still try to install such seats resulting in the seat failure and serious injury or death to the child in a sever crash.

18. It is possible to conduct vehicle modifications on some LSV models to achieve speeds greater than 40 Km/hr resulting in a greater severity of collision should a collision occur.

19. Towing a trailer using an LSV may be unsafe.

20. LSVs may not have back-up warning systems

21. The existing road connectivity may limit LSV drivers to operating in a confined area. This could result in LSV operators eventually taking unsafe risks and driving on higher speed roads.

22. The cost of upgrading the road infrastructure to address LSV related safety issues would be significant. For example, the City of Lincoln in California provides three types of infrastructure for the safe movement of LSVs:
23. Separate right of way for use of LSVs, pedestrians and bicycles which is 3.65 m wide,
24. 2.1 m LSV lane
25. Shared with mixed traffic on roads

26. Unlike in European countries, all North American jurisdictions require a passenger vehicle driver's license to operate an LSV on public roads. The LSV vehicle licensing process is

identical to the passenger vehicle licensing process. In BC, LSVs are issued license plates identical to those for passenger vehicles.

27. In terms of insurance costs, ICBC doesn't have sufficient BC data to rate LSVs as a unique class of vehicles therefore includes in the broad grouping of regular passenger vehicles. It is expected that the insurance industry will initially set a conservative rate for such a class of vehicle, which has no previous history and this rate will subsequently be adjusted to reflect the actual crash rate and repair costs of LSVs and the occupant injury experience.

28. LSVs' operating performance in winter conditions is not well understood.

CITY OF KELOWNA

BYLAW NO. 10398

Amendment No. 17 to Traffic Bylaw No. 8120

The Council of the City of Kelowna, in open meeting assembled, enacts as follows:

1. THAT **PART 1 – INTRODUCTION**, Section **1.4 Definition**, Subsection 1.4.1 Definitions, of the City of Kelowna "Traffic Bylaw No. 8120" be amended by adding the following definition in its appropriate location:

   "**Neighbourhood Zero Emission Vehicle**" means a vehicle that travels on four wheels and is powered by an electric motor that is designed to allow the vehicle to attain a speed of 32 kilometers per hour but not more than 40 kilometers per hour in a distance of 1.6 km on a paved level surface, and

   (a) meets or exceeds standards of the Motor Vehicle Safety Act (Canada) for a low-speed vehicle and bears a compliance label of a low-speed vehicle in accordance with that Act; or

   (b) if imported to Canada, has been imported as an admissible low-speed vehicle in accordance with the Motor Vehicle Safety Act (Canada) requirements and

      (i) bears a compliance label for a low-speed vehicle in accordance with that Act; or

      (ii) meets applicable federal United States laws in accordance with the Motor Vehicle Safety Act (Canada)."

2. THAT **PART 3 – VEHICLE REGULATIONS** of the City of Kelowna "Traffic Bylaw No. 8120" be amended by adding new a section **3.5 Neighbourhood Zero Emission Vehicles** in its appropriate location:

   "3.5 NEIGHBOURHOOD ZERO EMISSION VEHICLES

   3.5.1 A person may drive or operate a neighbourhood zero emission vehicle only:

   (a) on a street that has a speed limit of 50 kilometers per hour or less; and

   (b) in the lane on the street that is closest to the right hand edge or curb of the street, except when a left hand turn is necessary or when passing another vehicle.

   3.5.2 A person may not operate a neighbourhood zero emission vehicle on Highway 97 (Harvey Avenue) or Highway 33."

3. This bylaw may be cited for all purposes as "Bylaw No. 10398, being Amendment No.17 to City of Kelowna Traffic Bylaw No. 8120."

4. This bylaw shall come into full force and effect and is binding on all persons as and from the date of adoption.

Read a first, second and third time by the Municipal Council this

Adopted by the Municipal Council of the City of Kelowna this

_____
Mayor

_____
City Clerk

NEIGHBOURHOOD ZERO EMISSION VEHICLES (NZEV)

City of Kelowna

WHAT IS A NZEV?

Federal Regulations :The Motor Vehicle Safety Act defines a Low Speed Vehicle(LSV):

- Designed for use on regulated roads
- Travels on 4 wheels
- Powered by an electric motor
- Does not use fuel as an energy source
- Attains a speed of 32 - 40 km/h
- Weighs less than 1361 kg

WHAT IS A NZEV?

Canada's Motor Vehicle Safety Act states that LSVs must be self-certified by the manufacturer and be equipped with:

- Headlights
- Turning Signals
- Brake Lights
- Parking Brake
- Seatbelts
- Windshield
- Rear View Mirror

All NZEVs must be registered, licensed, and insured through ICBC. All operators must have a valid driver's license.

Provincial, not federal, responsibility to specify details of requirements, licensing, and use of NZEV's on public roads.

Currently, British Columbia, Ontario, and Quebec allow LSVs on streets.

The provincial regulations state that:

- NZEVs are allowed to travel on any road with a max speed limit of 40 km/h.
- NZEVs no longer have to display the LSVs flashing triangle.

- Individual municipalities are allowed to alter the bylaws to allow NZEVs on municipal roads with a maximum speed limit of 50 km/h, but no greater than 50 km/h.

WHAT ISN'T A NZEV?

- Hybrid vehicles
- Flex Fuel vehicles
- Golf Carts
- Electric Scooters
- Electric Wheelchairs
- Smart cars
- Segway
- Motorized Scooter
- Motorized Skateboard
- Motor assisted bicycle

City of Kelowna

ADVANTAGES

- GHG emissions
- Transport cost
- Noise impact
- Infrastructure impact

DISADVANTAGES

- Safety of "vulnerable users"; enforcement
- Initial cost ($12,000 to $25,000)
- Restricted highway and arterial access
- Electrical energy source

City of Kelowna

BC CITIES ALLOWING NZEVS

District of Oak Bay (August 2008)

Vancouver (September 2008)

Districts of Colwood & Esquimalt

Burnaby

Qualicum Beach

City of Kelowna

INCENTIVES

- Free Parking
- Public re-charging facilities
- Private re-charging facilities
- Appropriate road signage & info
- Product availability

LIGHT DUTY VEHICLE PER CAPITA

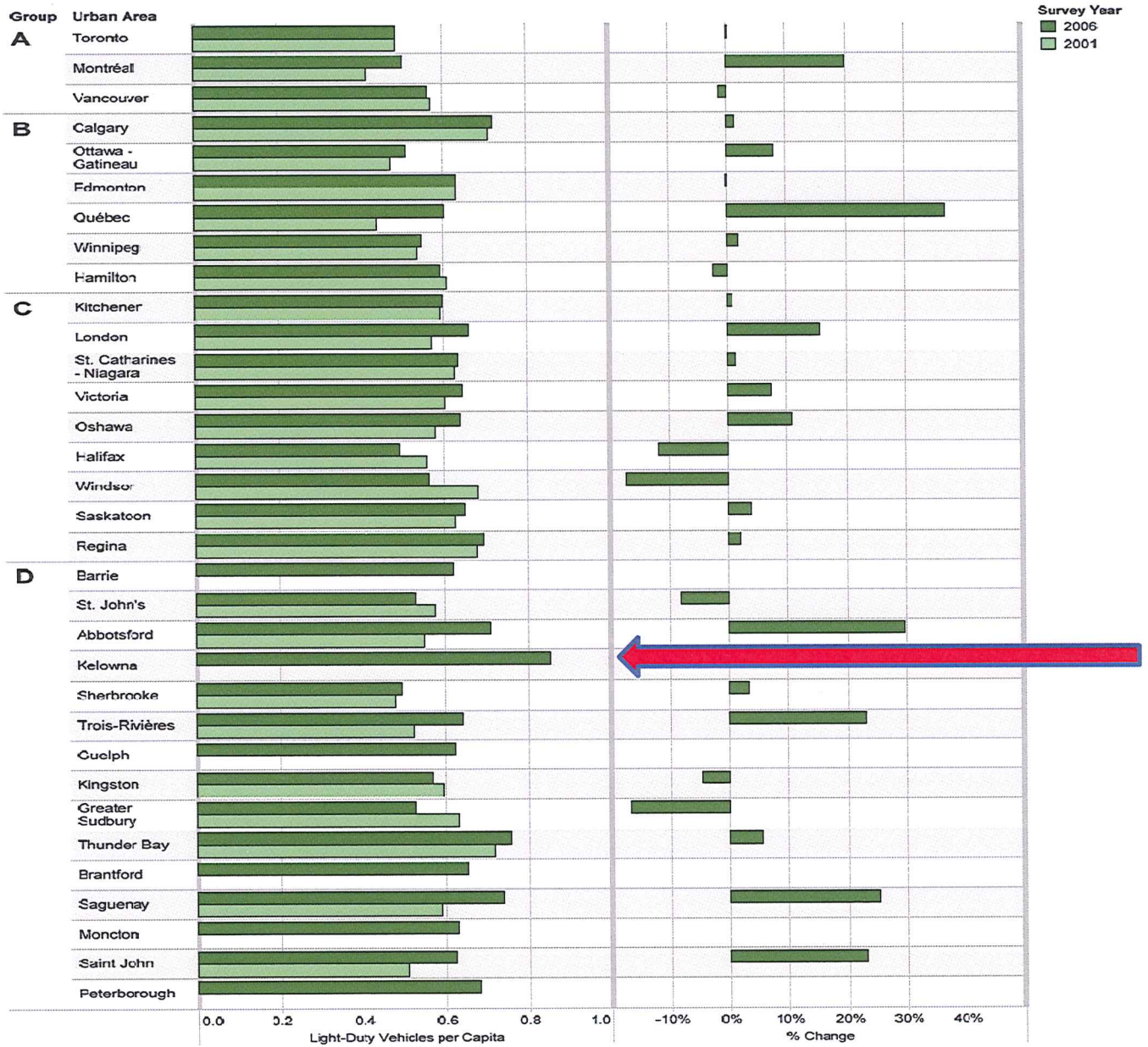

Exhibit 8.3: EUA Light-Duty Vehicles per Capita, 2001-2006 [1]

Source: Statistics Canada

CAR DEPENDENCY

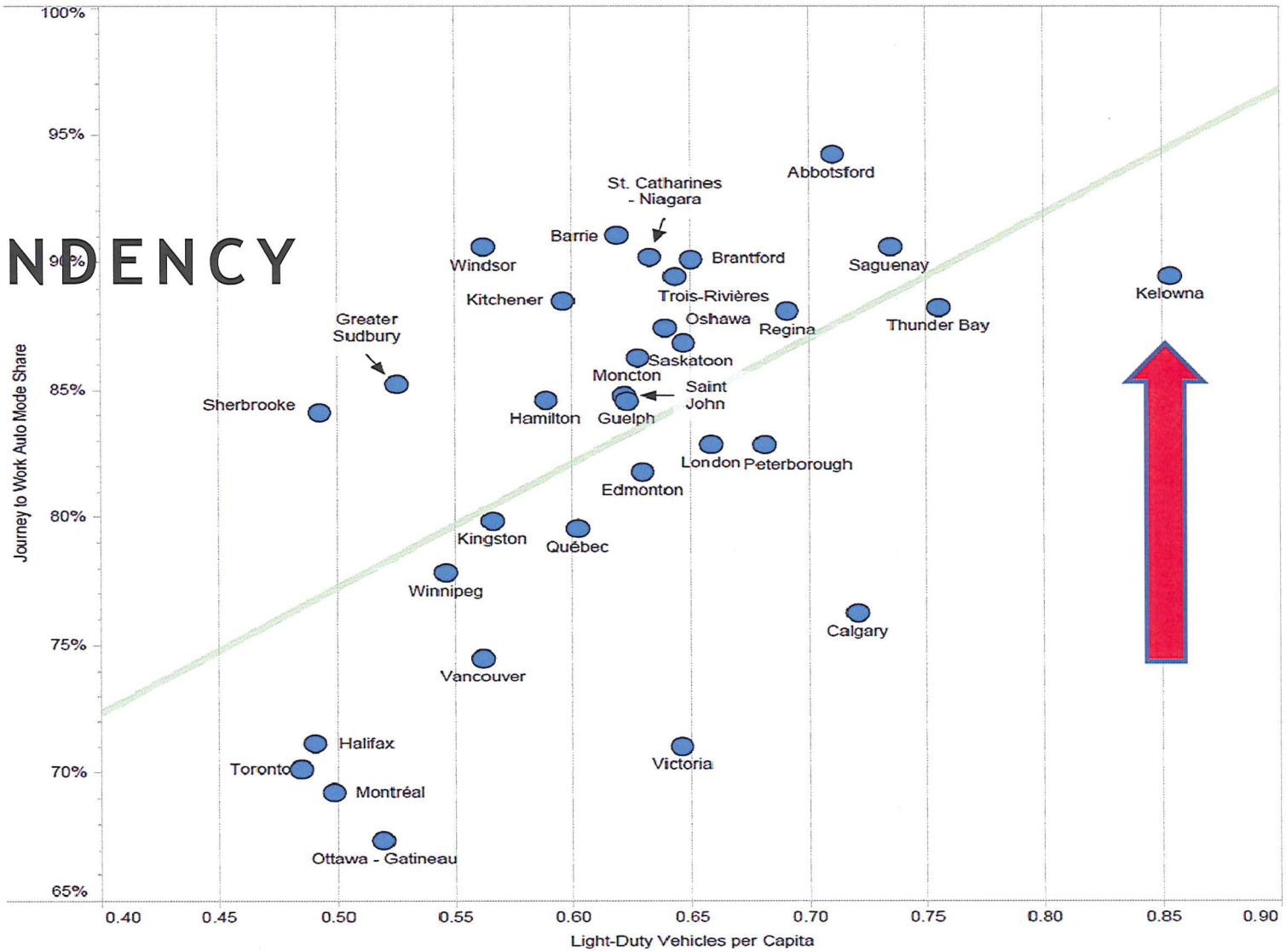

Exhibit 8.4: Trend in Light-Duty Vehicles per Capita and Journey-to-Work Auto Mode Shares, 2006 [42]

Source: Statistics Canada

INJURIES & FATALITIES PER VEHICLE KM

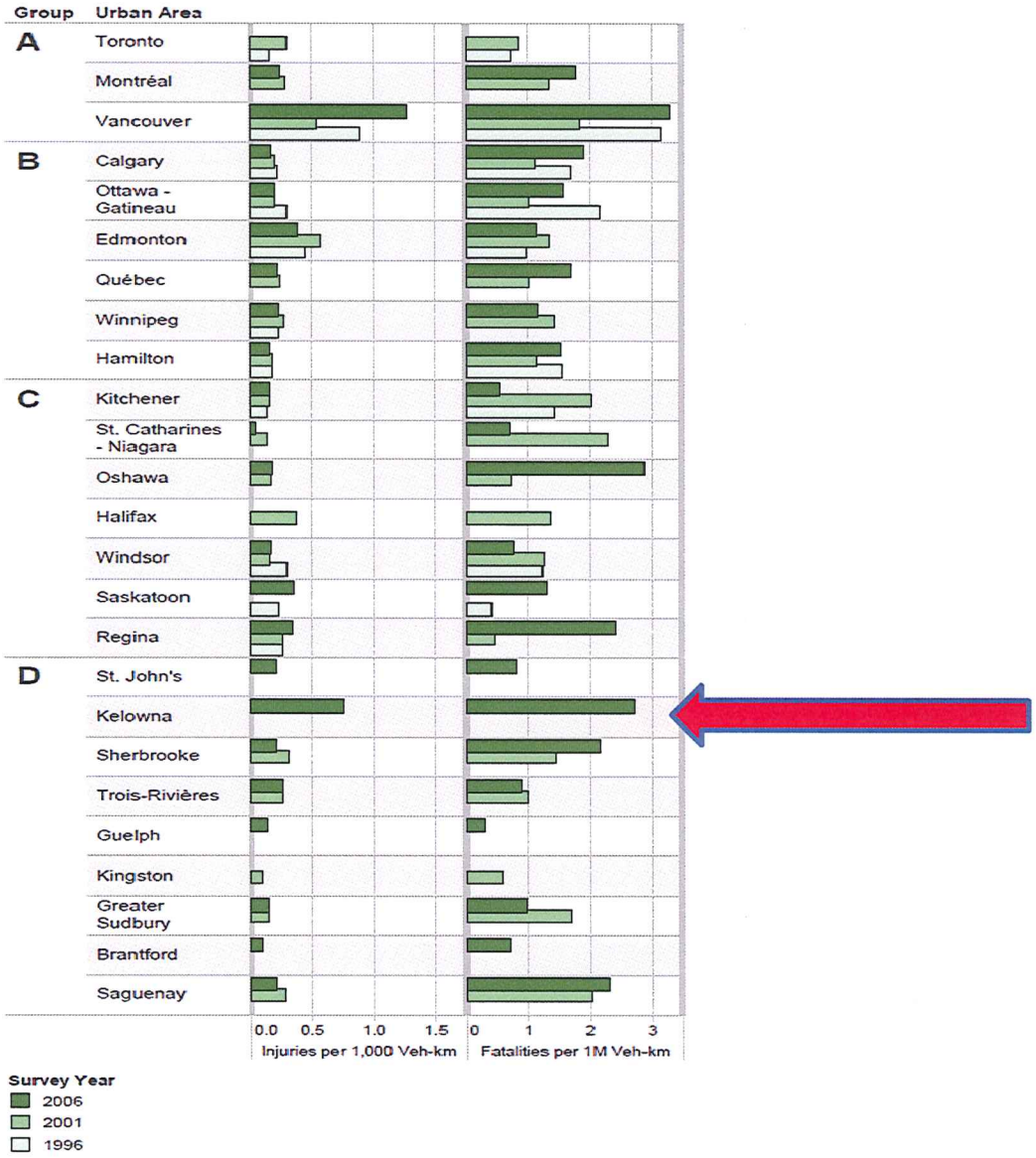

Exhibit 5.10: EUA Injuries and Fatalities per Veh-km, 1996-2006 [23]

RECOMMENDATIONS

- Reduce car dependency and improve Kelowna's rating for injuries/fatalities
- Return with NZEV Bylaw

ALTERNATE RECOMMENDATIONS

- Bylaw amendment reading consideration
- Eco-pass for NZEVs & sunset criteria
- Enforcement options
- Zoning and Development Bylaw
- Program Evaluation