

CCMTA Discussion Paper and
Recommendations Regarding Issues of
Managing
Motorized Personal Mobility Devices
(MPMDs)

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Final Draft

Prepared for CCMTA
By Motorized Personal Mobility Devices Working Group
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1 Executive Summary

Recent years have seen significant growth in both the volume and number of types of motorized personal mobility devices (MPMDs), such as mobility scooters, motorized wheelchairs, Segways. As the baby boomer generation enters retirement age, the demand for and prevalence of MPMDs are expected to continue to increase.

Issues of MPMD classification and regulation have not, for the most part, been addressed in Canada. This purpose of this paper is to identify the issues surrounding the use of MPMDs, examine some approaches to MPMD regulation used in other jurisdictions, and inform the development of policies to manage the use of the various types of MPMDs that are available.

This paper recommends the development of three MPMD classifications reflecting their different uses: assistive MPMDs intended for people with mobility impairments, professional MPMDs for fleet use (e.g. police, mail carriers) and a general classification for use by the broader population.

Issues of MPMD management and regulation that have been identified include determining appropriate operating environments, operator fitness and training, registration, insurance, equipment and monitoring. However, more work and experience are required in order to identify best practices for the management of MPMDs.

This document does not address vehicles classified primarily for on-road use, personal mobility devices driven by muscular power (e.g. hand-powered wheelchairs, bicycles), infrastructure requirements for MPMDs or the transportability of MPMDs (refer to CSA Standards Z604 and Z605 and/or ANSI/RESNA for Wheelchairs, Section 19). Furthermore, there are some incomplete or unpublished research reports on MPMDs mentioned in Section 3.5.

2 Project Group

The Canadian Council of Motor Transport Administrators (CCMTA) is an organization established by the provincial, territorial and federal governments and related agencies to act as a neutral and independent coordinating body in all matters dealing with the administration, regulation and control of motor vehicle transportation and highway safety. Since 1993, private organizations have had the opportunity to become associate members of CCMTA.

The CCMTA includes three separate and distinct standing committees to accomplish its objectives. The committees are Drivers and Vehicles (D&V), Compliance and Regulatory Affairs (CRA), and Road Safety Research and Policies (RSRP). The Motorized Personal Mobility Devices (MPMD) Working Group is a working group of the Vehicle Strategy Overview Group (VSOG) that reports to the D&V Committee. The MPMD Working Group is also working with the RSRP Committee.

Working group members include Mark Francis (BC – Chair), Chris Yanitski (AB), Ben Shannon (ON – author), Lin Wong (ON), Jeffery Turner (ON), Karl Groskopf (ON), Christine Dupius (QC), Harold Blaney (QC), Mark Baril (QC), Paul Boase (Transport Canada) and Ian Tomlinson (CCMTA Secretariat).

Decisions regarding how to address the issues discussed in this paper are up to the individual jurisdiction, as each will be faced with issues of competing priorities for available resources.

As new issues and research emerge over time, the group will remain open to new strategies, amendments or additions to this document as deemed appropriate by the standing committee.

3 Background

Examples of MPMDs include (see pictures at the end of this document):

- Motorized wheelchairs
- Mobility scooters
- Segways
- T3 Motion, Blue-RIDE and similar enforcement-oriented devices

3.1 Market for MPMDs

People With Disabilities/Aging Population

- Between 2009 and 2036, the 65 and over population in Canada is expected to double to around 10 million.¹
- Nearly one-third of adults in Canada aged 65 and over have a mobility-related disability²
- These trends will increase the number of elderly persons who will be unable to drive and who will, therefore, require alternatives to the personal vehicle for transportation.³
- In 2006, an estimated 4.4 million people in Canada had disabilities, representing 14 per cent of Canada's population.⁴
- In 2006, 2.7 million of the 4.4 million Canadians 15 years and older with disabilities used or needed technical aids or specialized equipment to help them perform one or more daily activities.⁵
 - People with mobility limitations used on average the second highest number of assistive devices per person (2.5 million).
- Mobility problems are the type of disability most often reported by adults aged 15 and older.⁶
 - In 2001, nearly 2.5 million or 10.5 per cent of Canadians had a mobility disability and had difficulty walking, climbing stairs, carrying an object for a short distance, standing in line for 20 minutes or moving about from one room to another.
 - Regardless of age, women are more likely than men to have a mobility-related disability.
- Environmental and energy concerns may generate increased demand for smaller alternatives to traditional passenger cars for personal transportation.

Personal Mobility for Enforcement

¹ Transport Canada - Population Projections for Canada, Provinces and Territories – 2009 to 2036

² Statistics Canada, Participation and Activity Limitation Survey, 2006

³ Transport Canada - Canada's aging population: Transportation safety and security

⁴ Statistics Canada, Participation and Activity Limitation Survey, 2006

⁵ Statistics Canada, Participation and Activity Limitation Survey, 2006

⁶ Statistics Canada, Participation and Activity Limitation Survey, 2006

- Royal Canadian Mounted Police (RCMP) have purchased two T3 Motion vehicles for use on private property.
- Police in Montréal and the city of Québec have been given authorization to use the T3 Motion as an emergency vehicle on the road network.
 - The T3 Motion is considered a moped and must therefore comply with equipment requirements for this type of vehicle.
- Hamilton, Niagara, and Guelph Police Services have approached MTO about the possibility of permitting the T3 Motion or similar devices on public roads.
- Peel Police are using the T3 Motion at Toronto Pearson International Airport.

Personal Mobility for the General Public

- Around 50,000 Segways have been sold since their launch in 2002, making them a device for a niche market.⁷
- Segway tours/rentals are offered in Toronto, Edmonton, Montreal, and dozens of cities worldwide.
 - Segway tours in Canada do not take place on regular sidewalks; instead they take place in parks, on trails or on private property.
- Segways may provide enhanced mobility to some people with disabilities.

3.2 Jurisdictional Responsibilities

The federal government is responsible for setting vehicle classes and the standards for motor vehicles imported or manufactured for the Canadian market. Transport Canada has responsibility for Motor Vehicle Safety Regulations (MVSR) under the authority of the Motor Vehicle Safety Act (MVSA) and associated enforcement. The MVSA requires that all vehicles manufactured for the Canadian market fully comply with all applicable Canada Motor Vehicle Safety Standards (CMVSS) in effect at the time of main assembly. Transport Canada does not directly certify vehicles. The MVSA is based on self-certification by the manufacturer and provides Transport Canada with audit and enforcement powers.

Provinces and territories regulate vehicle licensing and have the authority to establish requirements for vehicles under their respective traffic laws (e.g. Ontario's Highway Traffic Act), including laws that may set additional requirements that vehicles must meet for highway operation.

Municipalities have jurisdiction to regulate the use of sidewalks, including the use of MPMDs on sidewalks. Municipalities may also be granted by-law powers to regulate selected classes of vehicles on highways under their jurisdiction.

3.3 Federal Safety Standards

The CMVSS establish minimum safety requirements for new vehicles sold in Canada. Requirements of the CMVSS apply to prescribed classes of vehicles only. A vehicle of a prescribed class must bear a compliance label displaying, among other things, the vehicle manufacturer's name, the date of manufacture, the national safety mark and a vehicle identification number.

⁷ http://www.ft.com/cms/s/0/9ee68b76-23d4-11de-996a-00144feabdc0.html?nclick_check=1

A MPMD is not a prescribed class of vehicle and is therefore not required to meet any requirements of the CMVSS. However, if the motor output exceeds 100 watts, some MPMDs may fall under the Motor Vehicle Safety Regulation's (MVSR) definition of "Restricted-Use Motorcycle", a prescribed class of vehicle (see below), in which case they would be required to meet two CMVSS (#108 – Lighting System and Retroreflective Devices and #115 – Vehicle Identification Number).

CMVSS are verified through testing safety performance requirements manufactured into the vehicle at the time of assembly. Full compliance with CMVSS cannot be determined through a provincial mechanical fitness inspection.

The MVSR defines a Restricted-Use Motorcycle as follows:

"restricted-use motorcycle" means a vehicle, excluding a power-assisted bicycle, a competition vehicle and a vehicle imported temporarily for special purposes, but including an all-terrain vehicle designed primarily for recreational use, that:

- (a) has steering handlebars,
- (b) is designed to travel on not more than four wheels in contact with the ground,
- (c) does not have as an integral part of the vehicle a structure to enclose the driver and passenger, other than that part of the vehicle forward of the driver's torso and the seat backrest, and
- (d) bears a label, permanently affixed in a conspicuous location, stating, in both official languages, that the vehicle is a restricted-use motorcycle or an all-terrain vehicle and is not intended for use on public highways.

3.4 Road Safety Statistics

- There are no major sources for MPMD safety data or statistics in Canada. Given the expected growth in MPMD usage, this deficiency is raised as a discussion item below.
- A research note from the US Department of Transportation⁸ found that during the five-year period from 1991 to 1995, an estimated 299,734 persons in wheelchairs were injured or killed, an average of about 60,000 persons each year.
 - More than 2 per cent (7,121 of 299,734) of these persons were injured or were killed in incidents involving motor vehicles during the five-year period, about 1,500 persons annually.
 - Fatalities represented 0.6 per cent (43 of 7,121) of the wheelchair users who were injured or killed in accidents involving motor vehicles. All of the estimated 43 fatalities were associated with collisions with a motor vehicle. About 90 per cent of injured wheelchair users were treated and released.
 - The majority (5,233 or 73 per cent) of the wheelchair users injured or killed in motor vehicle incidents were at least 60 years old. 1,268 (18 per cent) were between the ages of 30-59, with the remainder (620 or 9 per cent) of those injured or killed 29 years of age or less.
- The Council of Ministers of Transportation endorsed Road Safety Vision 2010 (RSV2010), which called for a national target to achieve a 30 per cent decrease in the average number of road users

⁸ US Department of Transportation NHTSA Research Note, Sept 1997

fatally or seriously injured during the 2008-2010 period (compared to 1996-2001), which was managed by CCMTA.

- RSV2010 comprised of sub-targets, one of which was vulnerable road users and called for a 30 per cent decrease in the number of fatally or seriously injured vulnerable road users (pedestrians, motorcyclists and cyclists).
 - The RSV2010 Mid-Term Report showed the national sub-target for vulnerable road users was not on pace and “there have been substantial deteriorations in pedestrian safety and motorcycle safety”. There were no specific statistics available on MPMD
- CCMTA and partners are working on a successor strategy proposed as RSV2015 scheduled for launch in 2011 and one of the key areas will once again be the segment of vulnerable road users.

3.5 Other Related Work

A Transport Canada Study, “Analysis and Assessment of the Environment for Three- and Four-Wheel Mobility Scooters and Identification of Future Needs” is expected to be completed by the end of 2010.

The University of Sherbrooke was commissioned by the Quebec Ministry of Transportation to study the use of electric personal mobility devices such as Segway and T3 Motion. Research focused on determining what environments would be safe for these vehicles to operate, and what rules or conditions should apply in order to use these vehicles on different types of public infrastructure.⁹

The Public Health Institute of Quebec and the University of Sherbrooke were commissioned by the Quebec Auto Insurance Board and the Quebec Ministry of Health and Social Services to study the use of motorized wheelchairs and 3 or 4 wheeled mobility scooters. The study is expected to be completed by the end of 2010; however, it may be extended with the addition of an experimental phase to be carried out in 2011.

The United States Federal Highway Administration study, “Characteristics of Emerging Road Users and their Safety” (2004), documents their findings concerning the physical dimensions and operational characteristics of a wide assortment of mobility devices, including several MPMDs.

⁹ Pouliot, M, Memo re: Recent Research on PMDs, University of Sherbrooke, 12th February 2010

4 Problem Statement

In the past few years, there has been an increase in the use of three and four-wheeled single occupant mobility devices.¹⁰ Based on the demographics of the Canadian population, the number of MPMDs is expected to increase. MPMDs may also emerge as an alternative to using cars for short-distance trips.

Increased uptake of MPMDs for personal transportation may reduce traffic volumes which may reduce traffic collisions. However, increased use of MPMDs on sidewalks would involve increased potential for vehicle-pedestrian interactions.

Several issues arise relating to the safe integration of MPMDs on sidewalks and other paths. Issues that are of concern to users, pedestrians, and policy makers include¹¹:

1. MPMDs compete for space on footpaths with other users, and may also compete for space on roadsides with cyclists and other road users where appropriate. The use of MPMDs on pedestrian paths is of real concern to older pedestrians for a number of reasons:
 - a. Older pedestrians are less likely to hear the approach of MPMDs.
 - b. MPMDs frequently travel faster than older pedestrians, making it more difficult for those with limited mobility to avoid them. This raises the anxiety levels among older people about possible collisions and about their vulnerability as pedestrians.
2. Problems with visibility.
 - a. MPMDs can be difficult to see if they are immediately in front of large vehicles such as buses or trucks. Some scooter drivers do not realize that other drivers cannot see them and fail to take this into account when they are crossing roads or intersections.
3. Speed.
 - a. Higher speeds relative to pedestrians may be dangerous and intimidating.
 - b. Lower speeds compared to other roadside vehicles (e.g. bicycles) may hinder traffic flow in places where MPMD roadside use is appropriate.
4. Inappropriate use of MPMDs in places like supermarkets or shops.
5. MPMDs travelling on the road instead of the footpath under unsafe and illegal circumstances.
6. Drivers forgetting to charge the battery and becoming stranded away from home, especially those who become stranded in remote locations.
 - a. Problems have been reported with respect to stranded mobility aids on sections of bicycle paths which can not be accessed by equipment that is needed to transport large devices.

¹⁰ Mobility Scooter Research Report; Steyn, Pieter V. and Chan, Adrienne S., University College of the Fraser Valley, March 2008

¹¹ Includes examples from “Mobility Scooter Usage In London – Results From The Scootability Project” (<http://www.tc.gc.ca/pol/en/Transed2007/pages/1144.htm>)

7. Failure of MPMD users to obey basic road rules. Problems have already been identified by various levels of government regarding the use of these mobility aids on streets, sidewalks and bicycle paths.
8. Some mobility devices are entering the market that are wider, heavier, faster, and pose a danger to other sidewalk or road users.
9. Some people are modifying existing vehicles to accommodate for other conditions or uses not originally intended. Travel also occurs more frequently in highly congested urban pedestrian areas.
10. There is a grey area for enforcement as to what constitutes a personal mobility device, as illustrated by the following examples. In the Ontario *Highway Traffic Act*, the definition of a wheelchair is very broad, including the language “a chair mounted on wheels.” The term used in the BC *Motor Vehicle Act*, “a mechanically propelled invalid’s chair that is used only for the purposes for which it was designed”, is not defined. It is not clear whether a mobility scooter would be considered to be an extension of the body (like a wheelchair) or a motor vehicle.
11. Some mobility devices meet the criteria of currently defined vehicles. For example, the T3 Motion and Segway may fit the federal definition of a Restricted Use Motorcycle (RUM), but are operated in ways that may not have been anticipated when this definition was created. This has created a void in appropriate training and testing for these devices.
12. Devices may be marketed for use in fleets. For example, the T3 Motion is marketed to police services and the private security industry. Different considerations may apply depending on the intended use of the vehicle.
13. There may not be insurance available for MPMDs; there is potential for theft and liability issues to arise.
14. Due to the variety of configurations of available assistive MPMDs, public transportation providers may have difficulty in ensuring their vehicles are accessible for people who use these devices.

5 Discussion Items for Classification and Management of MPMDs

5.1 Federal approach

- The federal government does not have a MPMD vehicle class. Some MPMDs may fall under the Restricted-Use Motorcycle (RUM) category.
- The United Kingdom Department for Transport specifies three classifications for wheelchairs and mobility scooters:
 - Class 1 refers to wheelchairs propelled by muscular power
 - Class 2 refers to powered wheelchairs and mobility scooters that can travel up to 4 mph (~6.4 km/h) on flat ground
 - Class 3 refers to powered wheelchairs and mobility scooters that can travel greater than 4 mph (~6.4 km/h) on flat ground
- It is recommended that Transport Canada consider the development and implementation of vehicle classes and definitions for MPMDs, acknowledging their specialized uses. This will ensure uniformity across the country. It is recommended that three MPMD vehicle classes be considered for development as follows:
 - “Assistive Motorized Personal Mobility Devices”, which would be intended for use by persons with disabilities. Occupational therapists, physical therapists and physicians are typically qualified to recommend these devices, which may include:
 - Motorized wheelchairs
 - Mobility scooters
 - “Professional Motorized Personal Mobility Devices”, which would offer greater range and speed for professionals such as police and security services, mail carriers. These may include:
 - T3 Motion
 - Blue-RIDE
 - Anything not included in the prior two categories would be in a general category of MPMDs which may be available to the general public. These may include:
 - Segway
 - Honda U3-X
- Some devices that would fall within the general category of MPMDs may also be appropriate for use by persons with disabilities or professionals (e.g. Segways).

5.2 Discussion items for MPMD classification

The points below list features that may be used to distinguish between the three classifications of MPMD. Safety features that may be required for classification are also included. Some information specific to certain MPMDs is listed in this table under a potential associated sub-class to demonstrate that the device may be included in the classification.

5.2.1 Dimensions

For MPMDs to share a sidewalk, it is preferable that their width is sufficiently limited so that two may pass one another easily. According to Geometric Design Standards for Ontario Highways, the normal width of a sidewalk, generally considered to be the minimum, is 1500mm. At least in Ontario, MPMDs for sidewalk use would therefore optimally be less than 750mm in width. Most mobility scooters and electric wheelchairs are less than 750mm in width.¹² The width for both of the examples of Professional MPMDs exceeds 750mm (T3 Motion 880mm, Blue-RIDE 815mm). Professional MPMDs' potential inability to pass one another should be considered by jurisdictions and organizations when planning how they are used.

Dimensions for assistive MPMDs are particularly important to define. Transportation providers with vehicles such as transit buses, passenger trains and airplanes need to know what dimensions are required in order to make their vehicles accessible. The Transport Canada study on 3- and 4-wheeled mobility scooters (see 2.5 – Other Related Work) is expected to provide additional insight into the accessibility of public transportation vehicles. Jurisdictions should also take MPMD dimensions into account when designing sidewalk features such as street furniture and bus shelters in order to ensure that MPMD users have sufficient clearance to pass comfortably.

5.2.2 Weight

The weight of an MPMD, especially when coupled with its speed, adds to its potential to cause injury or damage in the event of a collision. Distribution of the weight is also an important consideration; if the combined centre of gravity of the MPMD and its operator are too high relative to its wheel base, there may be increased instances of injury or damage due to the device tipping and falling over.

Assistive MPMDs

U.K. regulations provide two classifications for powered wheelchairs and mobility scooters (“Class II and Class III Invalid Carriages”). Devices in Class II and Class III are limited to 113.4 kg and 150 kg respectively. CSA Standard Z604, “Requirements for construction, marking, test procedures, performance, and crashworthiness for occupied mobility aids”, sets a maximum weight of 136 kg.

Professional MPMDs

T3 motion base weight: 136 kg
Blue-RIDE base weight: 100 kg

General MPMDs

Segway base weight: 47.7 kg
Honda U3-X base weight: 10 kg

¹² TRANSED, 2007. The Size of the Reference Wheelchair for Accessible Public Transport

5.2.3 Speed

Some jurisdictions have classified MPMDs (usually mobility scooters) based on their maximum speed: In addition to weight restrictions (see 5.2.2 – Weight), U.K Class II and III devices (powered wheelchairs and mobility scooters) are also differentiated by maximum speed. Class II devices include only those that can not exceed 4 mph (~6.4 km/h); Class III devices include those that have a maximum speed within 4-8 mph (~6.4-12.8 km/h). Australia and France also use maximum speed to differentiate between two classes of mobility scooters. These speeds are greater than a typical pedestrian walking speed.

Assistive MPMDs

Motorized wheelchairs and mobility scooters are typically capable of 6-12 km/h; some more powerful versions may exceed 15 km/h.

Professional MPMDs

T3 motion MPMDs are capable of up to 40 km/h. Blue-RIDE MPMDs are capable of 24 km/h and can go up to 40 km/h with optional upgrades.

General MPMDs

Segway MPMDs are capable of 13-20 km/h. Honda U3-X are capable of up to 6 km/h.

5.2.4 Number of Wheels

The number of wheels is often a defining characteristic of a vehicle, playing a large role in determining its classification. MPMDs vary widely in their numbers of wheels, which may cause difficulty in creating their definitions.

Assistive MPMDs

Assistive MPMDs typically have at least three wheels; some (e.g. Quingo) have as many as five. Powered wheelchairs most often have four wheels; however, the iBOT wheelchair has six wheels and is able to traverse a wider range of surfaces than most other wheelchairs (e.g. curbs, stairs). Although the iBOT is no longer sold, it is possible that similar devices may emerge again.

Professional MPMDs

The T3 Motion and Blue-RIDE have three wheels: one front wheel and two rear wheels.

General MPMDs

Other MPMDs include the Segway and Honda U3-X, which have two wheels and one wheel respectively. However, there remains potential for MPMDs to emerge that have different numbers of wheels and wheel configurations.

5.2.5 Power Output of Motor

Power output needs to be sufficient to accelerate and maintain walking speed while traveling up a sloped sidewalk. On the other hand, higher power may allow excessive acceleration. Accelerating too quickly may cause negative safety side-effects, such as posing an elevated collision risk to nearby pedestrians, or pitching the MPMD backwards. A higher power MPMD may be safer if coupled with a 'soft-start' feature (power is brought on gently), preventing excessive acceleration from a stopped position. Another alternative for a higher powered MPMD would be to integrate a gear transmission system.

Assistive MPMDs

Mobility scooters and electric wheelchairs typically have a power output in the 150-450W range. Some more powerful models exceed 600W.

Professional MPMDs

Professional MPMDs are more powerful than other MPMDs. T3 Motion devices have a power output of 746W; Blue-RIDE devices have a power output of 1500W.

5.2.6 Other Safety Standards

Stability is a key safety feature for vehicles in general, and particularly relevant to MPMDs in which few if any occupant protection features are integrated. Many reported injuries and deaths on MPMDs have occurred when the scooter tips laterally. MPMDs tipping forwards or backwards are also a concern on a sloped sidewalk and dropped curbs (e.g. curbs outside a driveway, pedestrian crossings) especially among devices with higher centres of gravity relative to their wheel base.

Several other safety standards are needed for a device to meet CSA Standard Z604, “Requirements for construction, marking, test procedures, performance and crashworthiness for occupied transportable mobility aids”. Standards that may apply to MPMDs may include, but not be limited to, the following:

- Equipment:
 - Dynamic brakes
 - Lighting and reflectors
 - Horn
 - Tires
 - Turn indicators
 - Mirrors
 - Seat belts

- Identification requirements
 - Labelling
 - Pre-sale literature
 - User and Maintenance Instructions
 - User warnings

- Performance requirements
 - Flammability performance
 - Corrosion protection
 - Electrical wiring and electrolyte leakage standards

5.3 Discussion items for MPMD management

The points below list discussion items for the management of MPMDs, including some items specific to the individual types of MPMDs. These may assist municipal and provincial/territorial governments in developing a regulatory framework for the use of MPMDs on sidewalks. In general, jurisdictions should carefully consider any rules that would apply to (and may create barriers for) Assistive MPMD users; people with disabilities are a protected class in the Charter of Rights and Freedoms.

5.3.1 Operation

Pedestrian walking speeds may vary; 4-5 km/h in general and 3-4 km/h for older or less able populations are typical.¹³ Some MPMDs are capable of significantly higher speeds; this has led to some jurisdictions creating sidewalk speed limits for MPMDs and other sidewalk vehicles. For example, some European countries have prohibited speeds greater than 6 km/h; Georgia and Washington D.C. have limits of 8 mph (~13 km/h) and 10 mph (~16 km/h) respectively.¹⁴ A November 2009 B.C. Coroner's report on the death of a mobility scooter user contained a recommendation that personal mobility devices not travel faster than 12 km/h on the sidewalk. Other jurisdictions require or encourage users to operate at a speed that will not endanger others or adapt their speed to their surroundings.¹⁵

There may be practical difficulties in enforcing a speed limit; for example, the technical limitations of current radar technology may not be able to gauge such low speeds. A jurisdiction considering a sidewalk speed limit is therefore encouraged to consult with their policing community to discuss strategies for enforcement. Users of professional MPMDs may have reasonable grounds to travel faster than typical sidewalk travel speeds; e.g. a police officer responding to an emergency call.

5.3.2 Operators

Some stakeholders have expressed the view that a user of an assistive MPMD should have a demonstrable need for a mobility aid. Occupational therapists, physical therapists and physicians have been cited as qualified to provide a recommendation for an assistive MPMD. In Australia, MPMDs with a maximum speed of greater than 10km/h are classified as motor vehicles, requiring a licence and registration.

Assistive MPMDs

There have been several instances of mobility scooter training courses offered. Several police services and municipal governments in the U.K. have offered courses, often in response to an increase in MPMD crashes, many of which cause injury to the user or nearby pedestrians. In Canada, the *Scooter Smart* education program was piloted in two B.C. communities, focusing on key skills for safe scooter operation.

Professional MPMDs

Professional MPMDs are large, heavy devices that are capable of speeds many times that of a typical pedestrian. Jurisdictions considering allowing these higher speeds to be used may wish to consider requiring some form of training for professional users.

¹³ Improving Pedestrian Safety at Unsignalized Crossings and How to Develop a Pedestrian Safety Action Plan

¹⁴ Victoria Transport Policy Institute – Managing Personal Mobility Devices on Nonmotorized Facilities, 2008

¹⁵ Mobility Scooter Research Report; Steyn, Pieter V. and Chan, Adrienne S., University College of the Fraser Valley, March 2008

5.3.3 Registration, Insurance

In the state of Queensland, Australia, mobility scooters with a maximum speed no more than 10 km/h must be registered as a “motorized wheelchair”. MPMDs with maximum speed greater than 10 km/h must be registered as a motor vehicle and be operated only by a licensed driver throughout Australia. In the U.K., Class III devices (powered wheelchairs and MPMDs that can travel 4-8 mph) must be registered with the Driver and Vehicle Licensing Agency.

France requires insurance for MPMDs that can exceed 6 km/h. The U.K. Driver and Vehicle Licensing Agency recommends that all mobility scooter users purchase insurance, although insurance is not required by law. Insurance plans that are available may cover either or both of the cost of damage or replacement for the MPMD, and third party damages. Some Canadian mobility scooter vendors use the absence of an insurance requirement as a marketing device.

Professional MPMDs

Jurisdictions may wish to consider controlling access to professional MPMDs through a registration process. Registering a fleet of professional MPMDs under an organization could help ensure that these larger, more capable MPMDs are used only for their intended purpose.

5.3.4 Equipment

Jurisdictions may consider requiring additional safety equipment for MPMD users on sidewalks, such as helmets. Ontario’s Pilot Project for Segways requires users to wear an approved bicycle helmet. Lights are also required.

Other considerations for MPMD equipment include managing the use of MPMDs for hauling or carrying passengers. Users of assistive MPMDs in particular may be accompanied by a caregiver for whom passenger capacity may be beneficial.

Modification may be appropriate for professional users, e.g. a police MPMD may have markings indicating that it is a police vehicle, and be equipped with lights and a siren for emergency responses. Assistive MPMD users may have functional limitations that require MPMD modification for their effective use. Any rules governing modification should consider both the user’s needs and the safety of other sidewalk users, and take into account the dimensions required for sharing the sidewalk with pedestrians and other MPMD users.

5.3.5 Monitoring

There are no known organized efforts to monitor MPMD use in Canada. Consultations with the enforcement community may be helpful in determining a method of monitoring that would be efficient and effective.

6 Additional References

- Victoria Transport Policy Institute – Managing Personal Mobility Devices (PMDs) on Nonmotorized Facilities, 2004
- University of the Fraser Valley, Centre for Education & Research and Aging – Mobility Scooter Research Report, 2008
- Proposed Transportation Accessibility Standard under the Accessibility for Ontarians with Disabilities Act, 2005.
- Centre for Electric Vehicle Experimentation in Quebec (CEVEQ)/MTQ/Transport Canada - Pilot project for evaluating motorized personal transportation devices: Segways and electric scooters
- CEVEQ/MTQ/Transport Canada - Pilot project for evaluating the Segway HT motorized personal transportation device in real conditions
- Canadian Institutes of Health Research - Mobility in Aging - a Strategic Initiative of the CIHR Institute of Aging



Mobility Scooter



Electric Wheelchair



Segway



T3 Motion



Blue-RIDE



Honda U3-X



Quingo Mobility Scooter



iBOT Mobility System