Appendix 12

Centre for Education and Research on Aging (CERA)

Final Report

Mobility Scooter Research Project

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Mobility Scooter Research Project Final Report

CONTENTS

NOTE:
The views expressed in this report are those of the authors and not necessarily those of the University of the Fraser Valley, the City of Abbotsford or the Scooter Working Group of the City of Abbotsford.

Executive Summary

In common with many other countries, evidence suggests that the number of powered wheelchairs and scooters has increased in recent years in the eastern Fraser Valley region (i.e. Abbotsford, Chilliwack, Hope, District of Kent [Agassiz], Harrison Hot Springs and Mission). Clearly, this is of great benefit for the mobility of seniors and people with disabilities, but there are a number of concerns. Anecdotal evidence suggests that the number of accidents involving these vehicles is increasing. This raises questions regarding whether there should be regulations for scooters. When the term "scooter" is used in this report, it refers to both a mobility scooter and powered (electric) wheelchair.

The UFV Centre for Education and Research on Aging (CERA), in collaboration with the Scooter Working Group of the City of Abbotsford, conducted a research project regarding the use of mobility scooters in the region. The overall purpose of the research project is to develop a set of recommendations and draft guidelines that will provide the basis for establishing an appropriate policy framework and educational programs in the area of mobility scooter use. The research project aims were to provide a description and analysis of the different aspects of scooter use in terms of user patterns and issues, including regulatory issues, with scooter use from the perspective of scooter users and stakeholders.

Methodological triangulation was employed by using multiple data collections methods including document analysis, in-depth-interviews, focus groups, observations of scooter routes, pilot education programs (qualitative methods), and a community survey of scooter users (quantitative method). The findings of this study should not be generalized beyond the eastern Fraser Valley region, although the findings may resonate with other communities.

The most consistent finding in this study was the view of the importance of mobility scooters in maintaining and enhancing users' quality of life. This finding had a high level of consensus among the participants in the research, including stakeholders and scooter users. The general sentiment is that mobility scooter use "*must be protected*". However, any changes in legislation and/or regulation should be considered very carefully in terms of the impact these changes may have on user patterns and their quality of life. An estimate of the number of scooter users in the region was made on the basis of the total population of a specific age group and the percentage of individuals in the age group with mobility related disabilities. It is acknowledged, however, that the estimate of approximately 250 to 300 scooter users in the region might err on the side of being conservative.

In this exploratory research study, attempts were made to collect data on scooter users in the region and to begin to describe who the scooter users are, where they drive their scooters, what activities they engage in, and what difficulties they experience when using their scooters. In summary, the groups of scooter users surveyed tended to be in their mid seventies (middle-old category), single, live alone, and most reside in assisted living facilities. Most of the scooter users rate their own health as fair/poor. This rating appears

to be congruent with the nature and number of chronic health problems experienced by scooter users. The prevalence of chronic diseases appeared to be higher in scooter users. Findings indicate that most scooter users in the region use their scooters on a regular (daily/weekly) basis on sidewalks, on the road when crossing the road, and in shops/stores. The most popular winter and summer activities for users are taking a ride, doing their shopping and going to the corner store or coffee shop.

The majority of stakeholders and scooter users would like to maintain, in principle, the current status of a mobility scooter as a pedestrian. However, the fact that scooters have become increasingly capable of operating at higher speeds (up to 20kph), was identified as a major concern and a speed limit on sidewalks was suggested. No conclusive evidence could be found on scooter use of bicycle lanes or whether scooters should drive with, or against, the flow of traffic. These issues will require further investigation.

Findings suggest that the assessment of scooter users have two distinct purposes namely assessment of the need to use a scooter and an assessment of fitness as users to operate a scooter. It was concluded that even though the issues around "scooter driver fitness" are of vital importance, only the assessment of need to have a scooter should be regulated at this point in time. There was a high level of agreement amongst stakeholders and scooter users that scooter driver training is essential for scooter users. Based on the findings, a scooter education/training structure or model, named "*Scooter Smart*" was developed and implemented in a scooter education pilot project in two communities in the region. A scooter users guide was developed to accompany the scooter education model.

Findings confirm the importance of the environmental context in which scooters operate. Users operate their scooters on sidewalks, on the roads (when there are no sidewalks or cross the road), on bicycle lanes, and in pedestrian environments such as parks, trails, and shopping areas. It is the responsibility of the entire community, including local, provincial and federal government to develop and maintain a context and an awareness for scooter drivers so that they can operate in a safe and comfortable way.

The overarching recommendation is that the communities of the eastern Fraser Valley need to implement strategies to ensure the accommodation of an increase in scooter use in the communities. The following recommendations suggest action that will assist in creating scooter friendly communities:

(1) Maintain the current status of scooters as "pedestrians";
(2) Set a speed limit on sidewalks of 8kph;
(3) Undertake a pilot project in the region on assessment of need and the registration of scooter users;
(4) Implement and further research the "*Scooter Smart*" scooter education program;
(5) Develop scooter friendly cities in the eastern Fraser Valley;
(6) Conduct further research on multi-use of bicycle lanes;
(7) Develop and maintain a data collection strategy on mobility scooters; and
(8) Conduct further research on scooter use.

(Pages 101 – 111 of the Report)

4. Discussion and Conclusions

Two main factors prompted the need to conduct this research on mobility scooters. Firstly, the perception of an anticipated dramatic increase of scooter users due to the predicted aging of the "baby boomers" resulting in an increase in the senior (age 65 plus) population. Secondly, there was a desire expressed among stakeholders in local government, and the health and social service sectors, to enhance the understanding of scooter user patterns, and issues around safe scooter use and the fitness of scooter users. It is anticipated by stakeholders that this enhanced understanding of the "*mobility scooter phenomenon*" would result in timely and appropriate planning on local, provincial, and national levels.

One of the central questions in this research study on mobility scooters focused on the nature of a regulatory system for scooters, and the profile and user patterns of scooter users. The findings are based on a review of international regulatory systems, and an analysis of local stakeholder perceptions, scooter users and user patterns, which suggest that the "*scooter phenomenon*" is multi-dimensional. The debate on "*where and how fast scooters should operate, and scooter driver fitness*" has just started, and will continue and intensify over time as the numbers of scooter users increase. Findings in this study suggest that the scooter debate is dynamic and represents diverse and sometimes strong opposing arguments from stakeholders and scooter users alike. It was not uncommon to see participants in this study change their perceptions on issues during the course of the project. This is not a sign of indecisiveness, but rather reflects the complexity of the issues, the influence of new information, and the strong desire to find solutions that will fit the diverse needs of mobility scooter users.

The importance of scooters

The most consistent finding in this study was a high level of consensus among researchers, stakeholders and scooter users is their position on the importance of mobility scooters in maintaining and enhancing the quality of life of users. Scooters are viewed as useful assistive devices for people (of any age) with mobility problems. The findings suggest that scooters provide an important option for persons with mobility related problems. Scooters enhance the ability of users to conduct their activities of daily living and meet their social needs. Mobility scooters ultimately contribute to maintaining independence, participation in society, and quality of life.

The general sentiment from stakeholders and users is that mobility scooter use must be protected. Any changes in legislation and/or regulation should be considered very carefully with regard to the impact these changes may have on user patterns and the quality of life of users. The underlying principles that were echoed in this study were that any suggested changes to regulations and scooter use needs to focus on enhancing scooter safety. Scooter users experience multiple difficulties in their lives and it would not be acceptable to impose any changes on scooter users that would unnecessarily complicate their functioning further. The ideal would be to devise a system that would balance the needs and wants of scooter users, with personal and community safety.

In order to develop a sufficient understanding of the "scooter phenomenon", basic data had to be collected on a number of aspects related to scooter users themselves, including their numbers in the community and how the aspects of scooter usage are perceived by non-users. At the onset of this study in the eastern Fraser Valley, very little information existed regarding powered wheelchairs and scooters, particularly in terms of the number that are in used in the region, which type are used, the environments in which they are most commonly used, the activities they are used for, and the incidents that occur involving scooters. The findings of this study should not be generalized beyond the eastern Fraser Valley region.

The first challenge was to develop an idea of what the magnitude of the "scooter phenomenon" is in the region. It was expected that it might not be easy to estimate the total number of powered wheelchairs and scooters in the eastern Fraser Valley. An estimate of the number of scooter users in the region was made on the basis of the total population of a specific age group (2006 Census data) and the percentage of individuals in the age group with mobility related disabilities. This "formula" is offered as an option to estimate the numbers of scooter users in a community. It is acknowledged, however, that the estimate of approximately 250 to 300 scooter users in the region might err on the side of being conservative. The "baby boomer" group is now between 45 and 63 years old and the oldest of this group will turn 65 in the 2010. It is anticipated that the aging of the baby boomers will result in an increase in scooter use in the region.

In this exploratory research study, the objectives were to collect data on scooter users in the region and begin to describe who the scooter users are, where they drive their scooters, and what activities they engage in. In this context, it was important to understand what difficulties users experience when using their scooters. In summary, the groups of scooter users surveyed tended to be in their mid seventies (i.e. the middle-to-old category), single, living alone, and most were residing in assisted living facilities. More than half of the users have post-secondary education, were in the middle-income categories and described their previous work experience as professional or clerical. There were also scooter users (one in four) who had income levels that were low and have little disposable income. One in five of the respondents refused to answer the question about their income.

Health

Scooter users provided useful information about their health status and how they perceived their own health. Three in four (75%) of scooter users rated their own health as fair/poor. This rating appears to be congruent with the nature and number of chronic health problems experienced by scooter users. The prevalence of chronic diseases appears to be higher in scooter users. A high percentage (almost 90%) of users suffer from arthritis and chronic pain that is not related to arthritis. Heart, lung, hearing problems and diabetes in scooter users appears to be double what it is in the national population. Stroke and memory related problems appear to be four times as high in the group of scooter users. About one in ten of the users indicated that they experience impaired visual functioning. Most users that gave up their motor vehicle driver's licenses because of health reasons and most (90%) users indicated that the main reason for their decision to acquire a scooter, was the onset of medical problems that impacted their ability to walk.

The findings confirm that most scooter users are aware of the fact that they experience multiple chronic health conditions and that their health status can be described as poor. This finding is congruent with the findings that the scooter users access more medications and use more healthcare services than non-users in the same age group. Scooter users (83%) experience problems with walking and need some form of human and/or mechanical assistance. About one in five users are able to walk short distances. This group also appears to be healthier, independent when compared with the group that needs assistance to walk even short distances. It was somewhat surprising to find that, in light of the poor health status of scooter users, and in spite of the fact that a number of them live in assisted living facilities, not many of them utilize support services in the community. This might be explained by the possibility that their scooters provide them with opportunities to be more self-reliant and independent to address their needs.

Scooter types and activities

Most of the scooter users (9 out of 10) in the study use a "scooter-type" assistive device. About 10% use power wheelchairs controlled by a joystick. Scooter users reported using a variety of makes and models of scooters. Most of the scooters have four wheels, have the capability of a top speed of more than 7kph and the users perceived the speed capabilities of their scooters to be "*just about right*". Most users bought their current scooters more than a year ago from local scooter vendors while 10 users acquired their scooters privately or from a "non-scooter second-hand" store. One third of the users (a number that is much higher than the numbers in the UK) acquired used, second-hand scooters. About half (54% or 28) of the users received financial assistance to acquire their scooters and paid for it with financial assistance from government agencies (e.g. Veterans Affairs or other government ministries) or extended health plans. One in five users modified their scooters with the goal to make it more comfortable by adding canopies, windshields and cane holders.

A major focus of this study was to initiate an exploration of where, and for what reasons (e.g. goals and activities) scooter users use their scooters. Findings were compared and contrasted with findings of similar studies in the UK and Demark. In the eastern Fraser Valley, most scooter users used their scooters on a regular (daily/weekly) basis on sidewalks, on the road when crossing the road, and in shops. A third used their scooters to drive on the road on a regular basis, and one in four users use their scooter on a regular basis on bicycle paths. Most users never drove their scooters inside their homes and this finding confirms that scooters were mostly used outdoors and outside the users' residences.

Findings on goals, activities and seasonal (winter/summer) patterns of scooter users reveal that the most popular winter and summer activities for users are to go for a ride, to do their shopping and to go to the corner store or coffee shop. These activities can be considered as some of the users favourite destinations and these outings address the fulfillment of basic needs and need for social interaction. About a third of the users use their scooters to visit friends and family year round, to go to seniors' centers and clubs, to go to places of entertainment and education such as libraries and cinemas, and healthcare services (e.g. doctor's visits, clinic, or hospital). Overall, users use their scooters more in summer than in winter. When compared with seasonal user patterns in Denmark, scooter users in the eastern Fraser Valley appeared to use their scooters more to go to the corner store/coffee shops, and to go seniors' day centres, clubs, visit the library and go to the cinema. It appears that the Fraser Valley users use their scooters more for recreational, educational, and social activities.

Findings on maintenance, storage and travel patterns of scooter users indicate that most scooter users maintain their scooter by using the services of local scooter shops (vendors) and mainly when "*something is wrong*" with the scooter. Most of the scooter users stored their scooters in designated areas of their primary residences like the garage or basement of their homes or apartments, or in a "scooter room" that is often in the basement/garage of an independent living or assisted living facility. Forty percent of the users take their scooters with when traveling longer distances and transport them by private car, special transportation (e.g. "handyDART" service or "wheelchair taxis"), transit buses and sky train. All the users who travelled longer distances indicated that they need a place to recharge their scooter's batteries.

Regulation

Perceptions of stakeholders and scooter users in the eastern Fraser Valley indicate that there is, at this point in time, little support and little appetite to embark on a dramatic change of the existing regulatory system for mobility scooters. Findings suggest that the majority of stakeholders and users would like to maintain, in principle, the current status of a mobility scooter as a "pedestrian". However, the fact that scooters have become increasingly capable of operating at higher speeds (up to 20kph), was identified as a major concern. Operating at higher speeds that exceeds that of normal walking speed (2-4kph), was perceived to be incongruent with the intended use of a mobility scooter (i.e. to

assist with an individual's ability to walk). A high level of agreement was found on the need to make a distinction between the "faster and slower scooters".

There was consensus that speed should be the deciding factor and that scooters, to maintain their status as pedestrians, should operate at a lower speed (at a top speed of between 6-8kph). That means that slower scooters must abide by the rules of the road for pedestrians, which is: to only operate on the sidewalk, and only to be on the road when there is no sidewalk or when the scooter driver crosses the road from sidewalk to sidewalk. The pedestrian status also does not require registration and licensing of a scooter as a vehicle, nor is insurance or a driver's license required to operate a scooter. Scooter users who want to operate at faster speeds (e.g. 10kph or higher) should be classified as operating a motor vehicle (i.e. registered and insured), only drive on the road (not the sidewalk at a high speed) and should have a valid motor vehicle driver's license. This perception is in principle, congruent with the regulatory changes that have been made in the UK and European countries.

The scooter user survey in the region indicated that more than half (60%) of the scooter users do not have insurance of any kind to cover their scooters, however the majority of users support the idea of having insurance for their scooters. The majority (85%) of scooter users are not in agreement with any regulation for slow scooters (top speed of less than 7kph) and the regulation of the operator of a slow scooter and about half of users oppose the regulation of faster scooter (top speed more than 7kph).

The issues around a speed limit for mobility scooters on sidewalks were fiercely debated -- especially by the stakeholders in this study. There was agreement around the principle of setting a speed limit on sidewalks and recommended speed limits for other pedestrian areas like footpaths, trails and commercial environments. It was much more complicated to discern what an appropriate speed limit should be. The proponents of a speed limit suggested speed limits between normal walking speed (2-4kph) and 10kph (which is the Queensland, Australia speed limit). Setting a speed limit on sidewalks is further complicated by arguments about the difficulties of enforcement of any regulation that would set speed limits. Counter arguments include the technical information that a scooter has a dial or switch (i.e. speed governor) that can be set to a specific speed that can be inspected by, for example, a bylaw enforcement officer. Suggestions were made to develop a speed regulation and enforcement system for scooters. This implies the necessity for and development of bylaws at municipal level. It was also argued that in practice, bylaws are often only enforced when a complaint is received. Bylaws also serve the purpose of raising awareness and draw attention to the importance of following certain regulations.

Scooter users (as pedestrians) often have to travel on the road because of the lack of sidewalks. This usage raises the question of direction of travel when on the road. The rule of the road for pedestrians clearly states that scooters (as pedestrians) need to travel against traffic (facing traffic). There was no clear research finding on this issue; thus no conclusions could be drawn. No conclusive evidence could be found that suggested it is safer for scooters to drive in the same direction as traffic.

The use of bicycle lanes by scooter users sparked a debate amongst stakeholders with opposing viewpoints. It was assumed that scooters (as pedestrians) would not use bicycle lanes if a sidewalk is available. Usually sidewalks are available along bicycle lanes (with the exception on lanes in rural/farming areas). Findings indicate that in the UK 69% of scooter users drive regularly on bicycle lanes. One in four scooter users (27%) in the eastern Fraser Valley region used bicycle lanes on a regular basis and drove in the direction indicated on the lane. The main reason for this was that users perceived bicycle lanes to be more appropriate for scooter driving. Users claimed that bicycle lanes have smooth surfaces without obstacles like poles and curb cuts. Scooter users suggested that cyclists underutilize bicycles lanes in the region. Concerns raised about scooters using bicycle lanes include arguments about safety and potential congestion of bicycles lanes.

The lack of conclusive evidence on multi-use of bicycle lanes warranted a caution about the use of bicycle lanes by scooters. However, the dilemma remains whereby scooter users use the lanes and increased usage is anticipated. The difficulties encountered by scooter users on sidewalks will continue to reinforce perceptions that bicycle lanes are more suitable and would encourage users to use bicycles lanes instead of adjacent sidewalks.

Visibility of the scooter and scooter operator was strongly emphasized throughout this study. The different requirements to increase visibility include lights, directional indicators, a horn, rear-view mirror, rear reflectors, and pole with a flag. It was suggested that scooter users must be encouraged through scooter education and awareness programs to voluntary use the safety features.

There was agreement that scooter users could operate their scooter in ways that may endanger others, and might be impaired by alcohol and medications at times. Scooter drivers should continue to be exempted from road traffic legislation such as dangerous driving and driving under the influence of drugs or alcohol. It was concluded that these issues are serious and should be brought to the attention of scooter users and be a focus of scooter driver education.

It was not possible in this study to estimate the number of scooter incidents involving injury and/or damage to property. Two fatalities have occurred in the region; however there is no data available about other serious accidents. The main reasons for this were that police and insurance agencies keep no specific statistics on scooter incidents. Further, it appears that the majority of incidents involve minor bumps, bruises, and near misses, which, are never reported or recorded. Research findings on scooter users in the region indicate that 16 (30%) of the scooter users were involved in at least one incident. Scooter users were hit by cars and sustained injuries (one user sustained serious injuries), or fell off their scooters. It appears that most of these incidents could have resulted in fall and fractures for the scooter users involved. It should be noted that most scooter users in the survey indicated that they perceive themselves to be safe when operating their scooters.

Assessment

Findings suggest that the assessment of scooter users have two distinct, but inter-related purposes. Firstly, users are assessed as to whether they need a scooter. Secondly, they are assessed in order to determine if they are capable or fit to operate a scooter. The current practice for assessment is that scooter providers/ vendors (who recognized that they are not trained to assess scooter user fitness) will engage in an initial immediate evaluation of how a prospective scooter purchaser, presents her/himself. If a prospective buyer's fitness is questioned on this first evaluation, the provider will encourage the person to consult with her/his physician and/or other healthcare providers (e.g. occupational therapist or physiotherapist) prior to the final purchase. Scooter users who receive financial assistance to purchase their scooters are usually required by the funding agency to undergo an assessment. These assessments are usually undertaken by physicians, occupational therapists, physiotherapists or rehabilitation specialists.

In terms of a needs assessment, most stakeholders argued in favour of a system where scooter users need to provide some form of documentation that they are in need of a mobility scooter. The intention of such a system is not to determine the scooter users "*fitness to drive*", but rather initiate a consultation with a healthcare provider (e.g. family physician, occupational therapist). What might transpire in such consultations, is a discussion of whether a scooter is the most appropriate assistive device for the scooter user, or if there should be no scooter use. This assessment may also provide an opportunity for the healthcare provider to discuss with the users additional measures to maintain and enhance mobility and to make referrals to other applicable professionals and services and scooter education.

The outcome of such a consultation would be a document (i.e. a completed form) that indicates that the scooter user/potential user has a medical and or other condition(s) that negatively impacts her/his mobility. The scooter user would then present this medical certificate to a local registration office to obtain a scooter permit that would be valid for a certain time period (e.g. two years). The registration component refers to the scooter user rather than to the scooter itself. This proposed system could be compared to the already existing system to obtain a handicap parking permit in British Columbia that follows similar principles and procedures. The intention would be for only scooter permit holders would be permitted to use their scooter on sidewalks without proof of a vehicle driver's license.

The suggested system of "*proof of need*" assessment is a form of regulation and should be measured against an earlier stated caution against over-regulation or regulations that pose a hardship on scooter users. It should be balanced against the potential benefits for the scooter user. Benefits may include an increased ability of the scooter users to make informed decisions about scooter use, and an opportunity for healthcare providers to appropriately advise scooter users when a scooter may not be the most appropriate choice for her/his mobility needs. It might also provide an opportunity for healthcare providers and the administrators of the registration system to encourage scooter users to utilize

scooter education opportunities in the community. The registration system will make it possible to monitor the number of scooter users in a community and make it possible to identify scooter users in case of an emergency or theft of the scooter.

Assessment: Fitness for use

Related to the assessment of need, is the issue of assessing the fitness of scooter users to operate a scooter appropriately. This is sometimes referred to as a drivers' license for a scooter user. The subject of assessment of scooter users and their fitness to operate a mobility scooter was debated by stakeholders. Strong support was expressed, especially from stakeholders in the healthcare field, for a mandatory or voluntary assessment system for scooter users. Stakeholders debated various aspects of such an assessment system including the type of indicators which indicate fitness to operate a scooter, and the need for different criteria for slower and faster scooters. It was suggested that a scooter users fitness assessment should include an assessment of vision, hearing, reflexes and reaction time, judgment and cognition, medications taken, ability to maneuver the scooter, and previous motor vehicle driving experience.

Some stakeholders offered arguments against the assessment of fitness of scooter users and suggested that assessment might be considered discriminatory and an imposition for fitness-to-drive criteria to be placed on scooter users while pedestrians and cyclists are exempted. It was also argued that a driver's test for scooter users, might deter current and potential scooter users to use their scooters. Scooter users might attempt to avoid the testing procedure, and the stigma of failing the test, by not using their scooters. This avoidance might lead to further reduction of mobility levels of people with disabilities (of al ages) and to further isolation. No mandatory assessment of driver fitness has been implemented in the UK, Queensland, Australia, or any other jurisdiction. Most scooter users (60%) in the regional survey were opposed to mandatory assessment, testing, and a driver's license for scooter users.

Training

There was a high level of agreement amongst stakeholders and scooter users that scooter driver training is essential for scooter users. However, stakeholders were divided as to whether training should be mandatory or voluntary. Findings suggest that scooter training should not only focus on current scooter users, but also include potential scooter users. The ideal is for potential scooter users to take some form of initial training before they make the decision to acquire a scooter. It was found in this study that scooter vendors in the region provided valuable initial training for scooter users at the point of sale. It should be noted that not all users acquire their scooters from scooter shops (vendors) and may not receive any instruction at the point of sale.

Scooter training should include knowledge and skills on safe operation of the scooter, regulations and rules of the road for scooters, insurance, operation in different pedestrian

environments, scooter maintenance and storage, medication use and the safe operation of a scooter. Training should also include a "*Code of Courtesy*" that will capture the nature of "*good scooter driving behavior and scooter driving etiquette*", and a practical component that would include basic safe maneuvering of a scooter.

Based on the findings, a scooter education/training structure or model, named "*Scooter Smart*" was developed by the UCFV Centre for Education and Research on Aging (CERA) and implemented a scooter education pilot project in two communities in the region. Preliminary findings suggested that the proposed model for scooter education could be used to guide learning activities for scooter users. In order to refine the model and evaluate effectiveness, the model would be subjected to more research. A scooter users guide was developed to accompany the scooter education model. The user guide would be further refined and research would be conducted to determine its effectiveness.

Context

Scooter use does not occur in a vacuum, but in an environmental context. Most scooter users used their scooters outside their residences, for a variety of activities. Users operated their scooters on sidewalks, on the roads when there are no sidewalks or cross the road, on bicycle lanes, and in pedestrian environments like parks, trails, and shopping areas. Stakeholders and scooter users commented extensively on the "scooter context" and identified several contextual factors that could be beneficial and detrimental to scooter use.

One of the issues that received significant comments was the concern with the sidewalks in communities in the region. Most (83%) scooter users indicated that they are forced to drive on the road because there are no sidewalks available and/or insufficient curb cuts. Most scooters users and stakeholders (i.e. representing all the communities involved in the study) raised concerns about the state of the sidewalks in all the communities surveyed. Concerns include steep curb cuts, uneven surfaces, utility poles on sidewalks, construction on sidewalks, placement of the buttons to activate the pedestrian crossing lights, difficulty to maneuver scooters at crosswalks on raised traffic islands or "pork chops", and insufficient time to safely cross at a controlled crossing. Examples of sidewalk concerns are presented in section 3.4 of this report to illustrate some of the challenges experienced by scooter users in navigating sidewalks and roads. This section of the report also provides examples of sidewalks and roads that reflect good planning and creates a context that is conducive to safe scooter use.

The development and maintenance of a context for scooter drivers has become the responsibility of the entire community, including local, provincial and federal government. The majority of stakeholders held this view, and further suggested that the role of government is necessary for the safe and comfortable operation of scooter use.

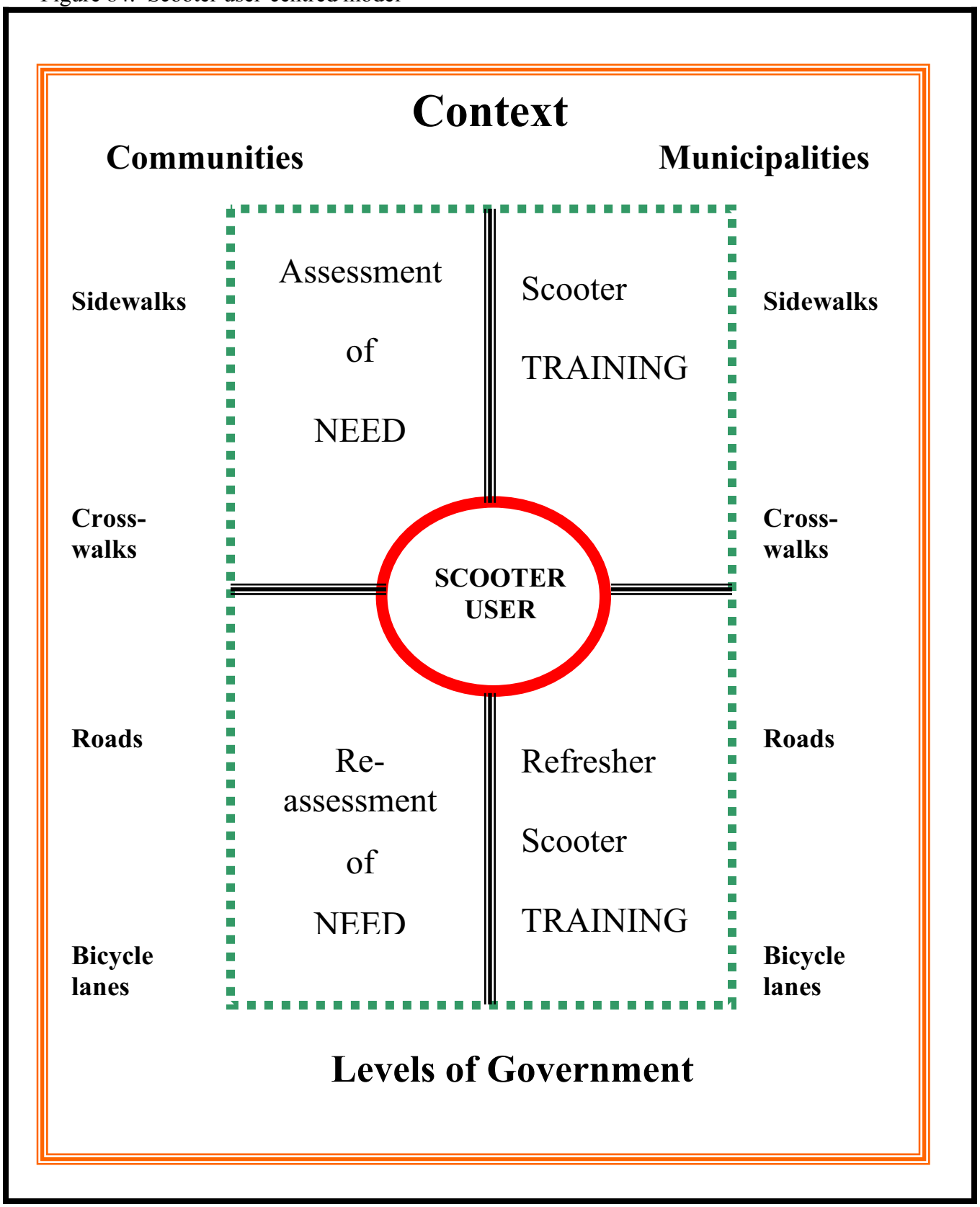
Local government in particular should be required to create and maintain the walkabilty of communities and to ensure that the community is "scooter friendly." In the future, city

planners and engineering departments will need to anticipate higher scooter and pedestrian use in certain areas and plan accordingly. Communities will need to have zoning bylaws that will promote appropriate scooter routes in the communities – especially in areas where there are a higher concentration of scooter users (e.g. around retirement communities, seniors centers and health care facilities). Provincial governments need to plan for the increase in scooter traffic and set standards for sidewalk widths and for external storage facilities. It appears important for the provincial government to consider amendments to provincial building codes in order to be more responsive to the needs of scooter users.

Concluding remarks

In conclusion, the findings and discussion point in principle to the need for a "Scooter user-centred model". The model is premised on the belief in the importance of mobility scooters, and that scooters are fundamental to maintaining and enhancing users' quality of life. Scooters enhance the ability of users to fulfill the activities of daily living and this includes their social needs. Mobility scooters ultimately contribute to the users' ability to maintain independence, participation in society and quality of life. The model is graphically represented in Figure 84.

Figure 84: Scooter user-centred model



(pages 112 and 113 of Report)

5. Recommendations

The overarching recommendation for scooter use is that the communities of the eastern Fraser Valley need to implement strategies to ensure the accommodation of an increase in scooter use in the communities. Strategies should ensure the safe and comfortable use of scooters in the communities by scooter users themselves, as well as for unmotorised pedestrians of all ages. The following recommendations suggest actions that will assist in creating scooter friendly communities.

1. Maintain current status as a pedestrian.
It is recommended that a mobility scooter (including a powered wheelchair) maintain the current status as a pedestrian. This means that a scooter, like an unmotorised pedestrian, can only operate on the sidewalk, and only be on the road (or bicycle lane) when there is no sidewalk or when the scooter driver crosses the road from sidewalk to sidewalk. Congruent with the rules of the road for pedestrians, it is recommended that scooters continue to travel against the flow of traffic (i.e. facing traffic). When using a bicycle lane and when there is no sidewalk, scooters must travel with the flow indicated on the bicycle lane.

2. Speed limit on sidewalks of 8kph
It is recommended that municipalities in the eastern Fraser Valley investigate the possibility of developing a bylaw that will set a speed limit for mobility scooters/powered wheelchairs on sidewalks at 8kph.

3. Pilot project: Assessment of need and registration of scooter users
It is recommended that one or more of the communities in the eastern Fraser Valley undertake a pilot project for a period of two years to test the efficiency and effectiveness of a scooter user registration system based on the users' need for scooter use. This proposed registration model does not refer to the assessment of scooter user fitness, neither does it refer to the registration of a mobility scooter/powered wheelchair as a vehicle. The proposed model is a variation of the model used in Queensland, Australia and resembles the BC system of obtaining a disability parking permit. The registration model includes two steps:
Step 1: The main feature of the model is that scooter users need to obtain a certificate from a healthcare professional (physician, occupational therapist, physiotherapist, registered nurse or social worker in a health care setting) that certifies that the scooter user needs a mobility scooter/powered wheelchair. (Note: This would not be a document that certifies that the scooter user is fit to operate a scooter/powered wheelchair.)

Step 2: The scooter user presents her/his certificate, at no cost to the scooter user, to the office of a local municipality and receives a scooter permit. A scooter permit will be valid for a period of two years, when it needs to be renewed.

4. Implementation and research of the “Scooter Smart” scooter education program.
It is recommended that the Scooter Smart education program be implemented in the communities in the region. Implementation should be accompanied by further research into the program’s effectiveness.

5. Development of scooter friendly cities in the eastern Fraser Valley
It is recommended that the local governments in the communities request their Transportation Advisory Committees to advise local municipalities on creating walkable and scooter friendly communities with specific attention to the improvement of sidewalks in all communities.

6. Research on multi-use of bicycle lanes.
It is recommended that local governments in the region commission further research on multi-use of bicycle lanes and specifically the operation of mobility scooter/powered wheelchairs on bicycle lanes.

7. Data collection on mobility scooter incidents.
In the absence of a data collection system on accidents and incidents where scooter are involved, a system should be developed by law enforcement agencies and insurance industry to collect and store data on mobility scooter/powered wheelchair incidents.

8. Further research on scooter use
It is recommended that the research on mobility scooters be expanded to include other communities in the province of British Columbia.