TECHNICAL REPORT

Transportation Association of Canada

Inline Skating Review
Phase 2

December 1997

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Abstract

In-line skating in Canada is continuing to grow in popularity, becoming more than a recreational activity and worthy of consideration as a mode of transportation.

In TAC's In-line skating review it was revealed that in-line skating represents a concern for many municipalities in terms of their ability to manage, regulate and enforce this activity on the transportation system. Some significant philosophical differences exist within the transportation profession regarding the appropriateness of in-line skates on roadways and other elements of the transportation infrastructure. As the activity grows in scope and scale, a need becomes evident for the development of design, operational and safety guidelines.

The objective of the In-line skating review: phase 2 was to undertake a comprehensive investigation of some pertinent issues relating to in-line skating and to establish guiding principles with respect to: 1) the appropriateness of permitting in-line skating on any roads, sidewalks, bicycle routes and offroad facilities and 2) the need for and type of protective equipment that should be used. The report includes a thorough assessment of the current technology, the basic operational characteristics of in-line skating, performance characteristics/constraints, the safety record of the equipment, a review of enforcement issues and suggested criteria to be used in assessing the capability of infrastructure elements to safely accommodate in-line skaters.

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The Project Consultants would like to acknowledge the contribution of the many individuals representing provincial governments, municipalities, enforcement agencies, in-line skating and cycling advocates and other professionals who provided input throughout the course of the study.

EXECUTIVE SUMMARY

In September 1995, the Transportation Association of Canada (TAC) retained a consultant to conduct a review of the state of in-line skating in Canada. The purpose of the in-line skating review was to identify critical issues relative to this popular and emerging activity in Canada. This study, referred to in this document as the ***Phase 1 Review***, provided information, discussion and where possible, answers to a number of fundamental questions regarding in-line skating. The following conclusions resulted from the Phase 1 Review:

1. In-line skating is more than a recreational activity and is continuing to grow in popularity. As the concept of utilitarian in-line skating gains greater acceptance within the transportation community, and as the activity grows in both scope and scale, there will be a need for the development of design, operational and safety guidelines.
2. Although design guidelines may eventually be required to ensure the safe accommodation of in-line skating on various elements of the transportation infrastructure, prior to the development of these guidelines, a thorough understanding of the operating characteristics of these devices is required. In the meantime, it may be prudent to establish some ***basic design and operating principles*** on which the guidelines will be ultimately based.
3. The Phase 1 Review revealed that, under certain circumstances, some elements of the transportation infrastructure appear to be appropriate for use by in-line skaters, including roads and sidewalks. The report also suggested that there may be a requirement for a further review of existing design standards for those infrastructure elements that may be deemed appropriate for in-line skating.
4. Information gathered as part of the Phase 1 Review indicated that a total ban/prohibition of in-line skaters on roadways may not be practical; however, it was clearly recognized that there may also be valid reasons for not permitting in-line skating on some roads and other elements of the transportation system.
5. It was clear from the research conducted as part of the Phase 1 Review that the classification of in-line skating in the appropriate provincial/territorial legislation ***may*** be necessary to define in-line skating and to give it the required status to permit adequate enforcement/regulation of this activity.

The examination of in-line skating issues revealed some significant philosophical differences within the transportation profession regarding the appropriateness of in-line skates on roadways, and on certain other elements of the transportation infrastructure.

In recognition of the fact that definitive guidelines for in-line skating cannot be established until the operational characteristics of these devices are thoroughly understood, it was recommended in the Phase 1 Review that further investigation be undertaken, possibly in two additional phases (Phases 2 and 3). As a result of the above, in July 1996, TAC initiated the In-line Skating Review - Phase 2, with ***the goal of developing a more thorough understanding of the in-line skating activity and establishing a set of basic principles.***

The In-Line Skating Review - Phase 2, involved a thorough review of the current technology, the basic operating characteristics of in-line skating, performance characteristics/constraints, protective equipment requirements, and the ***"safety record"*** of the equipment. A key aspect of the Phase 2 Review was the need to determine ***guiding principles*** for the use of in-line skates on roadways.

The principles developed as part of the Phase 1 Review were premised on the assumption that in-line skating represents a ***concern*** for many municipalities in terms of their ability to manage, regulate and enforce this activity on the transportation system.

The following principles, developed as part of the Phase 2 work, include some suggested criteria to be used in assessing the capability of elements of the transportation system to safely accommodate in-line skaters:

1. In-line skating in Canada should be recognized as a ***viable mode of transportation***. Subject to satisfying the appropriate criteria, detailed in Section 5 of this document, in-line skating should, in general, be considered an acceptable activity on the following types of facilities:
   - Sidewalks;
   - ***"Low speed"*** roadways; and
   - Off road pathways (bicycle and multi-use facilities).

2. The principle that in-line skating be recognized as a viable mode of transportation may require the creation of enabling provincial and territorial legislation, or the amending of existing

legislation, to permit municipalities to plan, regulate and manage the in-line skating activity on all elements of the transportation system. This could include, if deemed appropriate, ***the outright prohibition of this activity on certain elements of the local transportation system.***

3. In order to regulate and manage the activity on roadways, each provincial and territorial government should ensure that their respective Highway Traffic Act (HTA) is amended to permit in-line skating on roadways. This could include recognizing in-line skates as a ***"vehicle"*** or, alternatively, in-line skating as an ***"assisted pedestrian"*** activity.

4. Regulation and management of the in-line skating activity on sidewalks and other off-road facilities (and possibly on roadways) should be effected at a municipal level through the creation of an ***endangerment bylaw*** or bylaws. These bylaws would deal with skaters who operate in an unsafe manner. If considered appropriate, the endangerment bylaw could also represent the mechanism to regulate the use of protective equipment.

5. Subject to the enactment of the appropriate legislation which would permit municipalities/police agencies to adequately regulate this activity, a ***model*** for dealing with in-line skating is recommended and includes the following elements:

   - In-line skating should be permitted on sidewalks, except in areas of high pedestrian activity such as sidewalks in downtown areas and other public activity centres/areas;
   - In-line skating should be permitted on off-road bicycle paths and multi-use pathways in conjunction with cycling and pedestrian activities; and
   - In-line skating should be permitted on some ***"lower speed"*** roadways, provided that the basic design and operational criteria outlined in Section 5 of this document are satisfied.

   Until further investigation is conducted specific to the in-line skating activity, the suggested criteria or guidelines documented in this report must be considered in conjunction with sound engineering judgement.

6. Planning for in-line skating should be integrated into planning for pedestrian and bicycle facilities and in-line skating requirements should be considered in the context of mobility planning decisions and the economic implications associated with such decisions.

7. Municipalities, provincial and territorial agencies, in-line skating associations, and manufacturers should endorse and encourage the development and marketing of recognized accredited training and education programs for in-line skating.

8. There should be acknowledgement that certain items of protective equipment should be worn or used by all participants in the activity. Equipment that could be considered essential includes:

   - A braking device on skates;
   - A helmet that has been developed for ***"multi-purpose"*** use;
   - Wrist guards; and
   - Elbow and knee pads.

   Other highly desirable items of equipment include:

   - A bell or whistle; and
   - Reflective gear and lights on the helmet or arms (armband) for night operation.

9. The manufacturers of in-line skates should be encouraged to work with the Canadian Standards Association (CSA) to develop standards for protective devices identified in Principle 8 above.

10. Signage is necessary to provide the in-line skater with basic safety and operational data.

The tasks undertaken as part of this study has indicated that further work may be needed to develop national in-line skating design guidelines. The focus of Phase 3 of the In-Line Skating Review should be to undertake a comprehensive consultation program with users and mobility providers across the country to identify design guidelines and standards for in-line skating, relative to specific infrastructure elements. The Work Plan should include the development of a model ***"endangerment or reckless skating"*** bylaw that could be adopted by municipalities to better manage and enforce in-line skating activities.

1.0 BACKGROUND

In September 1995, the Transportation Association of Canada (TAC) retained a Consultant to conduct a review of the ***state of in-line skating in Canada***. The purpose of the In-line Skating Review (Phase 1) was to identify, and, if possible, address some critical issues relative to this popular and emerging activity in Canada. This review represented the first major Canadian study on this matter. The ***Phase 1 Review*** study provided information, discussion and preliminary answers to a number of fundamental questions including:

- What regulations are currently being applied to in-line skating?
- What are the current levels of enforcement being applied to in-line skating?
- Is in-line skating a recreational activity or a legitimate transportation mode?
- Should in-line skating be permitted on roads, bike lanes, bike paths, sidewalks, all, or none of the above?
- Should in-line skates be classified as a vehicle?

The work undertaken as part of the Phase 1 Review included a comprehensive literature review and research relative to existing standards, current legislation and perceived operational, safety, and design issues. The Phase 1 Review resulted in the following conclusions:

1. In-line skating is more than a recreational fad and is continuing to grow in popularity as a utilitarian mode of transportation. It is believed by staff of many municipalities across the country that the growing demand for in-line skating on the transportation system must be addressed to ensure the safety of all users of the transportation facilities.
2. Although design guidelines may be required for in-line skating activities, prior to the development of these guidelines, a thorough understanding of the operating characteristics of these devices is required. ***In the meantime, it may be prudent to establish some basic design and operating principles.***
3. It appears from the data collected as part of the Phase 1 Review that, under certain circumstances, there are some elements of the transportation infrastructure, such as off-road, multi-use recreational and bicycle paths, that may be appropriate for use by in-line skaters. However, a further review of design standards may be required for these facilities when considering the addition of in-line skaters to the pedestrian and cycling activities already permitted on these facilities.

4. The Phase 1 Review also indicated that, under certain circumstances, in-line skating may be an acceptable activity on some sidewalks. This may, however, be dependent on the location and the prevailing level of pedestrian activity. It should be recognized that the work undertaken as part of the Phase 1 Review revealed that allowing in-line skating in high pedestrian volume areas may compromise pedestrian safety.
5. The information gathered as part of the Phase 1 Review indicated that a total ban/prohibition of in-line skaters on roadways may ***not*** be practical or achievable; however, it was recognized that the existing roadway system cannot be designed to accommodate all types of vehicles and activities and that there may be valid reasons for ***not*** permitting in-line skating on roads. The Review also indicated that additional work is required to determine whether legislation should be enacted which would permit this activity on roadways and if so, under what conditions.
6. It was clear from the research conducted as part of the Phase 1 Review that the classification of in-line skating in the appropriate provincial/territorial legislation may be necessary to ***"define"*** in-line skating and give it the required status to permit adequate enforcement/regulation of this activity. Provincial/territorial legislation generally provides the framework for municipal bylaws and other legislation relating to the use of transportation rights-of-way. ***Any changes to the existing legislation should be founded on a set of guidelines and recommended practices, developed in a national context.***

The Phase 1 Review on in-line skating clearly indicated that there were a number of outstanding issues remaining to be resolved and that must be addressed through the completion of additional research and study, including a need to:

- Better understand the operating characteristics and limitations of in-line skates;
- Properly ***"define"*** in-line skating, should it be necessary to include such devices in Provincial/Territorial or municipal legislation;
- Identify and assess viable and ***"acceptable"*** alternatives to accommodate in-line skaters on the transportation infrastructure;
- Thoroughly assess the implications of recommending a complete prohibition of in-line skaters on the street system, (if such a recommendation results from further study of in-line skating issues); and
- Develop, in conjunction with mobility providers, legislators, and in-line skaters themselves, a set of guidelines for acceptable and safe use of transportation infrastructure elements.

The reader should note that the research undertaken as part of the Phase 1 work revealed some ***"inconsistencies"*** relating to how the transportation system is ***"managed"***, by provincial, territorial and municipal agencies. For example, the legislation in most Provinces/Territories recognizes bicycles as ***"vehicles"*** - yet motorized wheelchairs, scooters, rollerskates and in-line skates have no status. Bicycles are also the only ***"vehicles"*** permitted on sidewalks and pathways, as well as on roadways. Such inconsistencies make the resolution of in-line skating issues a much more complex proposition.

The examination of the issues relating to in-line skating also revealed some significant philosophical differences within the transportation profession regarding the appropriateness of in-line skates on roadways and other elements of the transportation infrastructure.

There are a number of jurisdictions that are awaiting the development of some in-line skating ***"principles"*** from TAC; as a result, it is considered fundamental that in-line skating issues be addressed as expediently as possible.

In recognition of the fact that the appropriate guidelines for in-line skating cannot be established until the operational characteristics for these devices are ***thoroughly*** understood, it was recommended in the Phase 1 Review that further investigation be undertaken, possibly in two additional phases (Phases 2 and 3). As a result of the above, in July of 1996, TAC initiated Phase 2 of the In-Line Skating Review with the goal of ***developing a more thorough understanding of the in-line skating activity and establishing a set of basic principles*** which may be used in the creation of operating/design guidelines/standards.

2.0 PHASE 2 - OBJECTIVES AND SCOPE

Phase 2 of the Review involved a thorough assessment of the current technology, the basic operating characteristics of in-line skating, performance characteristics/constraints and the ***safety record*** of the equipment. It was considered that a review of the operating characteristics would permit the development of guiding principles which could ultimately form the framework for design and operating guidelines/standards. The objective of this phase of the in-line skating review was to establish guiding principles or positions with respect to:

- Determining the appropriateness of permitting in-line skating on any roads;
- Determining the acceptability of permitting in-line skating on sidewalks;
- Determining the acceptability of permitting in-line skating on bicycle routes (i.e. on-road);
- Identifying the need for and type of protective equipment which should be used by all participants in the activity; and
- Determining the acceptability of sharing off-road facilities such as bike paths, trails, etc.

It was also considered appropriate that Phase 2 should include a review of enforcement issues and involve consultation with the appropriate agencies.

3.0 ISSUES SURROUNDING THE IN-LINE SKATING ACTIVITY

As discussed in the previous sections, Phase 1 of the In-line Skating Review addressed a number of basic questions about in-line skating; however, it was clear from the previous work that some critical issues required further investigation. This chapter of the report provides a discussion of these issues. Where it is not possible to provide definitive answers to questions or concerns, further work or research to be undertaken has been suggested.

3.1 APPROACH

A ***systems approach*** was used to address some of the fundamental issues relating to the in-line skating activity. The first priority in Phase 2 of the In-Line Skating Review was to expand on the issues identified in the Phase 1 Review. This was undertaken by completing the following major activities:

- Reviewing the findings, conclusions and recommendations of the Phase 1 Review;
- Interviews with a representative from the Canadian In-Line Skating Trade Association;
- Literature reviews and research, including ***"surfing"*** the Internet (**Appendix G**);
- Discussions with staff of government agencies, user groups, enforcement agencies and other stakeholders;
- Discussions with Project Steering Committee members;
- Presentations by the Project Manager to the Canadian Institute of Transportation Engineers at meetings with the Toronto and Southwestern Ontario sections (presentation material - **Appendix F**);
- Discussions with members of TAC's National Committee on Uniform Traffic Control; and
- Feedback from a presentation made to TAC's National Committee on Uniform Traffic Control in October 1996.

A detailed list of the contacts made as part of the Phase 2 Review are provided in **Appendix C**.

Completion of the above activities led to the development of a list of the key issues to be addressed. Following a review and investigation of the issues, ***"models"*** representing potential strategies for handling or managing in-line skating on the various elements of the infrastructure, were developed

for review and comment by provincial, territorial, municipal and enforcement agencies. Comments were obtained through a comprehensive written survey circulated across the country to provincial, territorial, municipal and enforcement agencies. In addition to soliciting comments on the in-line skating models, the survey also attempted to re-affirm information and conclusions arising from the Phase 1 Review.

After feedback on the ***"models"*** and other issues was obtained through the in-line skating survey, some suggested ***"principles"*** relating to how this activity should be handled by the transportation industry were developed. These principles are articulated in ***Section 5.0*** of this document.

In order to properly address the upper and lower tier jurisdictional roles regarding the in-line skating activity, a number of fundamental issues had to be addressed. Three (3) critical issues have been identified that directly relate to the concerns and needs expressed by agencies and stakeholders who participated in Phase 1 of the In-line Skating Review. There are also numerous other questions (secondary or sub-issues) which remain to be addressed. The three main issues are discussed below.

1. ***In order to establish a "direction" with respect to in-line skating, there is a defined need to better understand how these devices are being used and to re-affirm whether or not it is a recreational activity or a transportation mode. Sub-issues or unanswered questions include***:

    - Who is actually taking advantage of this technology?
    - How often are these devices being used?
    - For what function are these devices being used?
    - How are these devices being viewed in the context of alternative transportation strategies?
    - Is there really a need for TAC, the provinces or the municipalities to take ***"action"*** relative to the in-line skating activity?

2. ***There is a need to understand the operational characteristics of these devices and to identify any characteristics that may affect, either positively or negatively, the use of in-line skates on any element of the transportation infrastructure. Secondary or sub-issues associated with the primary issue include***:

- The need to define a ***"typical in-line skater"***;
- The type of travelled surface required for in-line skaters;
- Problems relating to the quality or maintenance of the travelled surface;
- A comparison between in-line skates and other conveyances, and in particular, bicycles;
- The ability to integrate in-line skaters and other conveyances on the public right-of-way;
- How weather affects this activity;
- Assessing the safety record of these devices, and using this record or history to identify accident prone areas or infrastructure elements; and
- Reviewing the safety equipment available and the items considered essential to improve safety for the ***"user"***.

3. ***Once the operational characteristics and problems associated with these devices have been defined, there is a need to determine how this activity is to be handled on existing and future infrastructure elements. Related sub-issues include***:

- Is it appropriate to permit this activity on roadways?
- Is this activity acceptable on sidewalks?
- Is this activity acceptable on bicycle routes on the road, or on off-road facilities such as bike paths and trails?
- What kind of protective equipment should be considered mandatory for all participants in the activity?
- How is this activity to be enforced?
- Is it possible, or practical, to recommend a complete prohibition of in-line skaters on the street system?

3.2 UNDERSTANDING AND DEFINING IN-LINE SKATING

In-line skating in Canada has quickly grown from a ***"fringe"*** sport into a popular family-orientated activity. An estimated two million Canadians currently participate in the sport. Since its inception in the early 1980's, the use of in-line skates has virtually exploded, resulting in an ever increasing market for skates, protective equipment and accessories. For the purpose of this study, and possible use in the development of future legislation, in-line skates have been defined as a ***"manufactured or assembled device consisting of a shoe, boot or other foot covering, with***

a frame or chassis holding two or more ball bearing wheels aligned in a single straight line, and used to skate, or glide, by means of muscle power".

Although sale figures from the manufacturers are confidential and difficult to acquire, it is known from discussions with a representative of the In-Line Skating Trade Association that annual sales are increasing from year to year with many of the purchases now being regarded as upgrades; that is, participants are buying better and, in some cases, more expensive skates and replacing worn out devices.

The surveys conducted by TAC as part of Phase 1 of the In-line Skating Review, and the work undertaken as part of this study, have represented the most extensive surveys of in-line skating in Canada to date; although, it should be recognized that the work undertaken by TAC has not included a separate survey of the users of in-line skates themselves. Some feedback from users has been obtained through information gathered from the Internet and informal discussions with users and user groups. This information, however, should not be construed as being a comprehensive survey of users, nor should the anecdotal information gathered from users be considered representative of the opinions and sentiments of all in-line skaters. Many of the comments contained herein are based upon these informal discussions in addition to anecdotal evidence provided to us by municipal staff in Canada and the U.S., staff of enforcement agencies, and other stakeholders consulted during the course of the Study.

Many of the provincial and municipal government staff surveyed as part of the Phase 1 In-line Skating Review were operating under the premise that in-line skating continues to be a ***"fringe"*** sport or activity and have categorized the activity as being similar to skateboarding, or rollerskating. In some locales, in-line skating has not yet become a major ***"problem"*** on roadways (or other infrastructure elements) and, therefore, may not have realized the profile achieved in other communities.

Research indicates that in-line skating has developed far beyond the realms of skateboarding and rollerskating and is an activity enjoyed by all age groups, whereas skateboarding and rollerskating is mostly enjoyed by younger users. Surveys undertaken as part of the In-line Skating Review appear to indicate that the users cover a range in age from under 18 years to 70 years plus, with the majority of the frequent users falling in the 18 and under age bracket.

Skill levels of in-line skaters vary enormously, depending upon their experience, and is not necessarily a function of age. Children who are in-line skaters generally use in-line skates for recreational/play purposes. Children's motor skills are less developed and, when combined with their reduced visibility (size), makes them more vulnerable to accidents. The International In-Line Skating Association (IISA) defines a ***beginner*** skater as someone who has skated for less than one season, an ***intermediate*** skater as one who has skated for two seasons or more or has taken lessons, and an ***experienced*** skater as an individual who has more than two seasons of skating and has taken lessons. The above definition of user expertise has been adopted for use in this report.

As mentioned above, in-line skating has been linked or equated by many people to skateboarding or rollerskating; however, there are significant differences between these activities and in-line skating. Over the last three decades, skateboarding has gone through a number of cycles where it has been extremely popular and then, disappears for several years, only to experience a resurgence of popularity. In addition, skateboarding is an activity that is conducted in localized areas where there are significant grades, stairways, handrails and ***"obstacles"*** for users to challenge their skills. There is no evidence that skateboarding has been used for anything other than sport or recreation. In addition, observation and anecdotal information obtained from surveys and interviews indicated that skateboard users have tended to fall into the age category of 18 years and under and has never been popular with those beyond the age of 18. In-line skaters on the other hand, tend to cover a range in age from under 18 to 70 years plus. There is a significant amount of evidence of individuals in their 50's, 60's and 70's taking up in-line skating. In-line skates also are being used by individuals in all areas of the community from sidewalks to roads to off-road pathways and also in areas where skateboarding is popular.

The only similarity between in-line and rollerskates appears to be the fact that both devices have wheels which are attached to a boot or shoe covering. Rollerskating has been an activity enjoyed by all ages for many years. In terms of operational characteristics, rollerskates are less manoeuvrable than in-line skates, have traditionally been heavier and bulkier and are more difficult to use on uneven or rough surfaces or on surfaces which have not been well maintained. Rollerskates are better suited to indoor rinks, asphalt pathways, playgrounds or paved tennis courts. Rollerskates continue to be used for recreation and there is little or no evidence that these devices have ever been employed for other utilitarian purposes (e.g. commuting). The usage patterns and characteristics of rollerskates and in-line skates appear to be significantly different and it is

considered that these devices are not directly comparable in terms of their potential use on the transportation infrastructure.

Discussions with transportation professionals and in-line skaters across the country confirmed that in-line skating is becoming more popular as a transportation mode. There are also a number of positive attributes associated with this activity including:

- In-line skates are compact, convenient, and can be easily carried or stored;
- Users can readily transfer from one mode of transportation to another, eg. from in-line skating to transit;
- The activity is environmentally friendly;
- The activity promotes a ***"healthy lifestyle"***;
- If the weather becomes inclement, users can easily transfer to another mode, making other travel arrangements, etc., without having to be concerned about what to do with, for example, their bicycle;
- In-line skates, because of their portability, are not subject to the same risk exposure (vandalism and theft) as bicycles are; and
- The cost of in-line skates, from both a capital and maintenance perspective is, in many cases, lower than the cost of an adult bicycle.

Summary

The following has been concluded regarding the ***"state of in-line skating"*** in Canada:

- In-line skating is no longer just a recreational activity and is worthy of consideration as a mode of transportation along with other existing conveyances, such as cycling;
- In-line skating is a practical and economic means of local transportation in addition to being a healthy recreational activity;
- All age groups are involved in this activity and for a variety of functions including utilitarian activities such as commuting;
- There is evidence that use of in-line skating is increasing and is at a point where operational, safety and integration issues must be addressed to ensure the continued integrity of existing transportation infrastructure elements;

- It must be acknowledged, however, that although in-line skating can be considered to be a practical and economic mode of local transportation, increased participation in this activity currently will likely have little impact on traffic volumes on roadways; and
- Although some municipalities are not currently experiencing ***"problems"*** relating to in-line skating, there are many municipal representatives across the country who have expressed a need to define this activity and to obtain some guidance in the form of operating strategies or principles, regarding the handling of these devices on certain infrastructure elements.

3.3 OPERATIONAL CHARACTERISTICS OF IN-LINE SKATES

In-line skates (often referred to as rollerblades - a trade name) are similar to hockey skates except that the blade is replaced by, typically, four wheels in a line - thus the name in-line skates. The name was derived to set the devices apart from roller skates where each boot has two sets of wheels placed side by side. In-line skate wheels are made of urethane and are relatively soft to provide traction in conditions on a variety of outdoor surfaces. The boots of the skates are typically moulded plastic, although, traditional hockey boots are becoming more popular. Except for some specialized skates, most have a brake on the rear of one boot with the brakes being interchangeable between boots. Other braking systems have been, or are being, developed by manufacturers including a hand held drum brake and an active braking technology (ABT), which does not require that a skater lift one foot to stop. Discussions with manufacturers revealed an obvious reluctance to divulge any information about product development or research.

An understanding of the operating parameters will permit a more informed assessment of where it is appropriate for these devices to be used on the transportation infrastructure.

As previously discussed, many individuals not familiar with these devices or the operating characteristics, have compared in-line skates to roller skates. In addition, others compare in-line skates to bicycles - not in terms of operational characteristics, but in terms of in-line skates representing another non-motorized utilitarian conveyance which is viewed as an alternative mode of transportation. For the purposes of assessing the operating capabilities/limitations of in-line skates, these devices have been compared to bicycles in the context of this document.

3.3.1 Braking

Stopping is one of the most difficult aspects of in-line skating. Discussions with users have revealed that many beginners, already nervous because in-line skating is a new activity to them, have the perception that falling will result in an impact greater than falling when skiing, ice skating, or running. With activities such as ice skating and skiing, the stopping techniques are similar; however, stopping on in-line skates requires a technique which is unlike any other activity. Based upon observation, anecdotal evidence and experience gained from first hand testing of the equipment, ***braking is the most difficult technique for beginners to master***; it is also perhaps, the single operating characteristic that evokes the most concern amongst transportation professionals when it comes to considering in-line skates for use on certain elements of the transportation infrastructure, and in particular, roads. Most people who are not intimately familiar with this activity, and even some that are, have concerns relative to the braking characteristics when discussing the potential for use of these devices on roadways.

There are a number of braking techniques which are most commonly used by in-line skaters. The technique employed by a skater is generally a function of the experience and aggressiveness of the individual. It is possible that an advanced skater may use several different techniques to stop during the course of a ***"skate"***.

Brake Stop

On most in-line skates sold, there is a rubber pad located at the rear of the wheels on the right skate (although most in-line skates allow the user to move the brake between the left and right units). Assuming that the brake pad is on the right skate, the braking effect is created by extending the right leg forward, lifting the toe upwards and pushing the rubber pad to the ground to increase friction and slow the user down. As mentioned earlier, another type of brake also available is active braking technology (ABT) that results in greater pressure being exerted to the ground from the skate by increasing the angle between the foot and the lower leg. The ABT system allows the skater to keep all four wheels on the ground.

As with other conveyances, braking distance is a direct function of the speed at which the in-line skater is travelling. No definitive data is currently available regarding braking distances, although it has been observed and confirmed by representatives of the manufacturers and anecdotal evidence from users, that a ***"skilled"*** in-line skater travelling at a similar speed to a bicycle, can stop in the same or shorter distance.

Tee Stop

The tee stop is an effective way for beginners to learn how to stop. The technique involves the dragging of one skate behind the other with the trailing skate turned perpendicular to the leading skate. Applying pressure to the dragging edges of the wheels of the skate will slow the skater down. A tee stop is not recommended as a braking method as it has an impact on wheel wear and requires replacement of the wheels much sooner than if skating under normal conditions and using other stopping techniques. This braking technique is frequently used by novice/beginner skaters.

Rotating Stop

The rotating stop is similar to the tee stop. This braking technique involves dragging one skate behind the other at an angle of less than 90 degrees. This causes the skater to quickly turn and the resulting friction between the skates and the travelled surface, slows the skater down. Although this is a recognized stopping technique by skaters, individuals who are not familiar with the sport tend to perceive that anyone making this manoeuvre is ***"out of control"***.

Hockey Stop

Because of the nature of the skates, the urethane wheels and the surfaces travelled on by in-line skaters, the hockey stop is the most difficult method of stopping and is only practised by the most advanced skaters. Similar to ice skates, this manoeuvre involves the skater turning quickly at an 90 degree angle and sliding in the direction of travel.

Slow Stop

The slow stop is not always an effective way to stop, but is a good method of slowing down. The slow stop involves the skater shifting their weight to one skate, thus increasing the level of friction. Significant distance is required to stop and thus, this method should only be used where there are few space limitations.

Weave

On wide paths a simple method to slow down before stopping is to weave. This method involves a skater moving back and forth across the pavement, slowing down as they go. A skater shifting their body weight from side to side while weaving will gradually result in reduced speeds. The problem with this braking method is that it requires a significant amount of pavement width and obviously cannot be used for sudden stops.

3.3.2 Operating Space Requirements

During the course of the research conducted as part of this study, little information was available from which to determine definitive operating space requirements or to establish dimensions for the definitive ***"typical in-line skater"***; however, in order to assess the suitability of these devices on various infrastructure elements, there was a need to identify, at least in a preliminary fashion, some basic space or ***"envelope"*** requirements. As a consequence, some field survey work was undertaken to identify the space needed for an average in-line skater. Tests were conducted by project team staff using novice and expert skaters and preliminary measurements relative to space requirements were taken from these tests.

Horizontal Space

The data provided relative to the horizontal space requirements should not be considered definitive, but should be used in the context of assessing the requirements of in-line skaters and their potential to operate with other conveyances on roads, pathways, sidewalks and other components of the transportation network. **Exhibit 1** shows the operating space required for an average to expert in-line skater as measured by project team members. **Exhibit 2** shows the requirements for a ***"design cyclist"***, as extracted from the Canadian

Institute of Planners Community Cycling Manual. As can be noted from the comparison between the requirements for cycling and in-line skating, there is additional space required by the in-line skaters. The spatial requirements for in-line skaters may affect their ability to safety utilize certain existing infrastructure elements.

Vertical Space

The International In-line Skating Association (IISA) recommends that the vertical clearance for in-line skaters should be in the order of 2.35 m. This compares to recommended vertical clearance of 2.50 m for cyclists (Canadian Institute of Planners Community Cycle Manual).

3.3.3 Travel Speed

Depending upon the skill level, in-line skaters can achieve speeds over 25 km/h. This compares to 40 km/h for the top speed for an expert cyclist. The difference in speeds between bicycles and other conveyances, including pedestrians, can result in a potential safety hazard on some facilities.

3.3.4 Grades on Slopes

The grades that an in-line skater can safely operate on depends upon the level of expertise of the individual. A beginner can comfortably traverse slopes of no more than a very gradual slope, while an expert may be able to manage slopes in excess of 10% for short distances. **Table 1**, which relates gradient to skater expertise, is taken from the IISA Guidelines for Establishing In-Line Skate Trails in Parks and Recreational Areas.

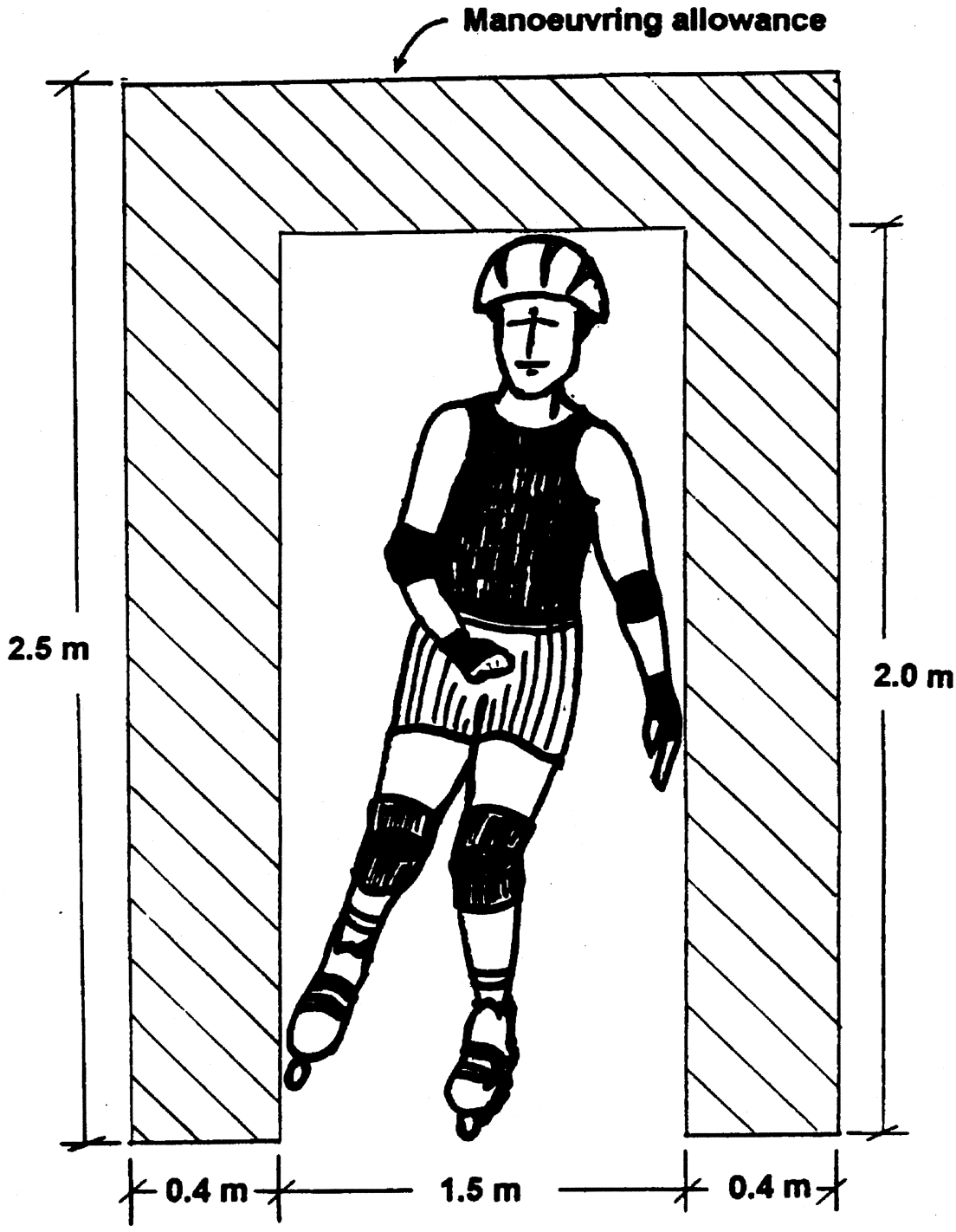

EXHIBIT 1 IN-LINE SKATER'S OPERATING SPACE - ESTIMATED

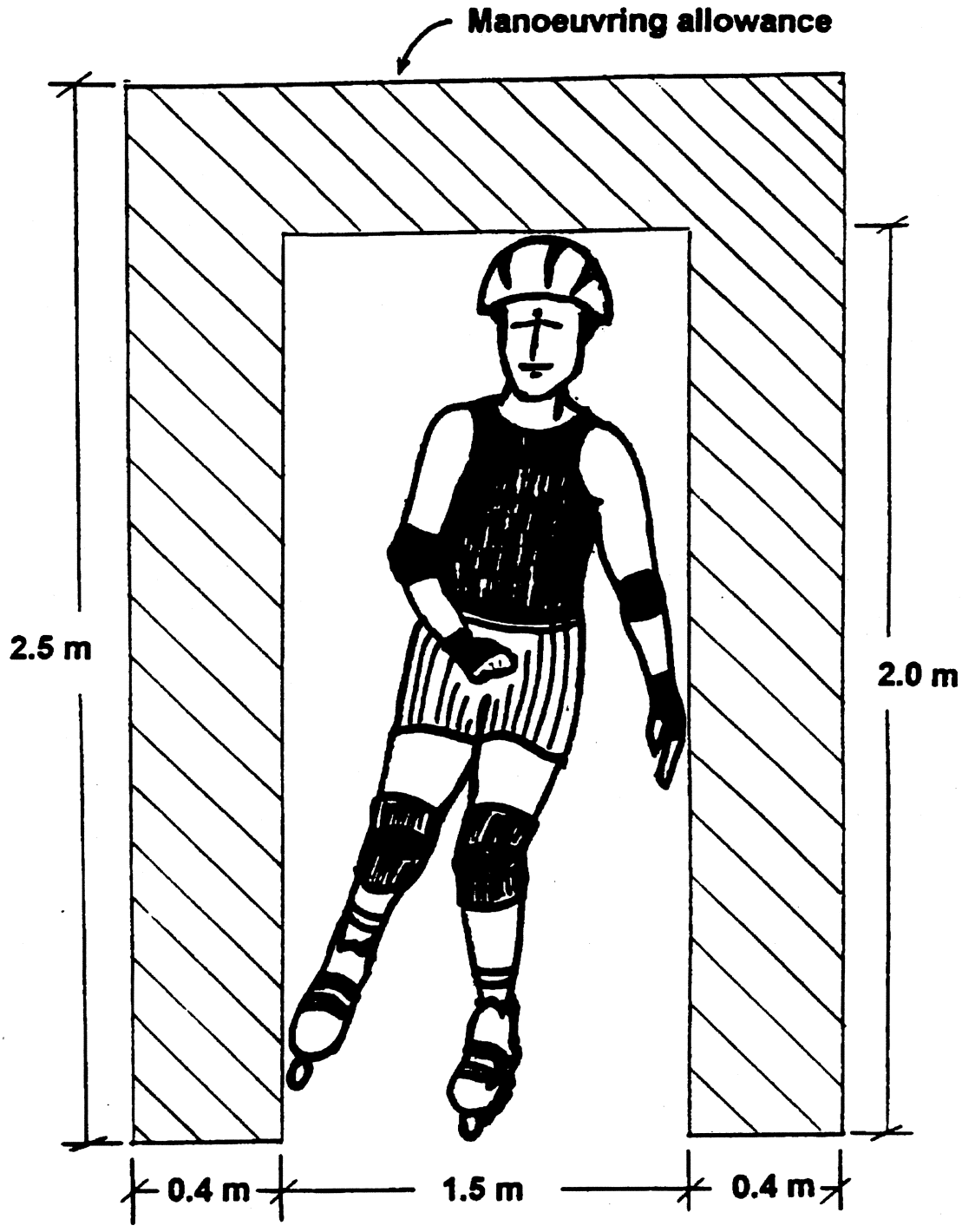

EXHIBIT 1 IN-LINE SKATER'S OPERATING SPACE - ESTIMATED

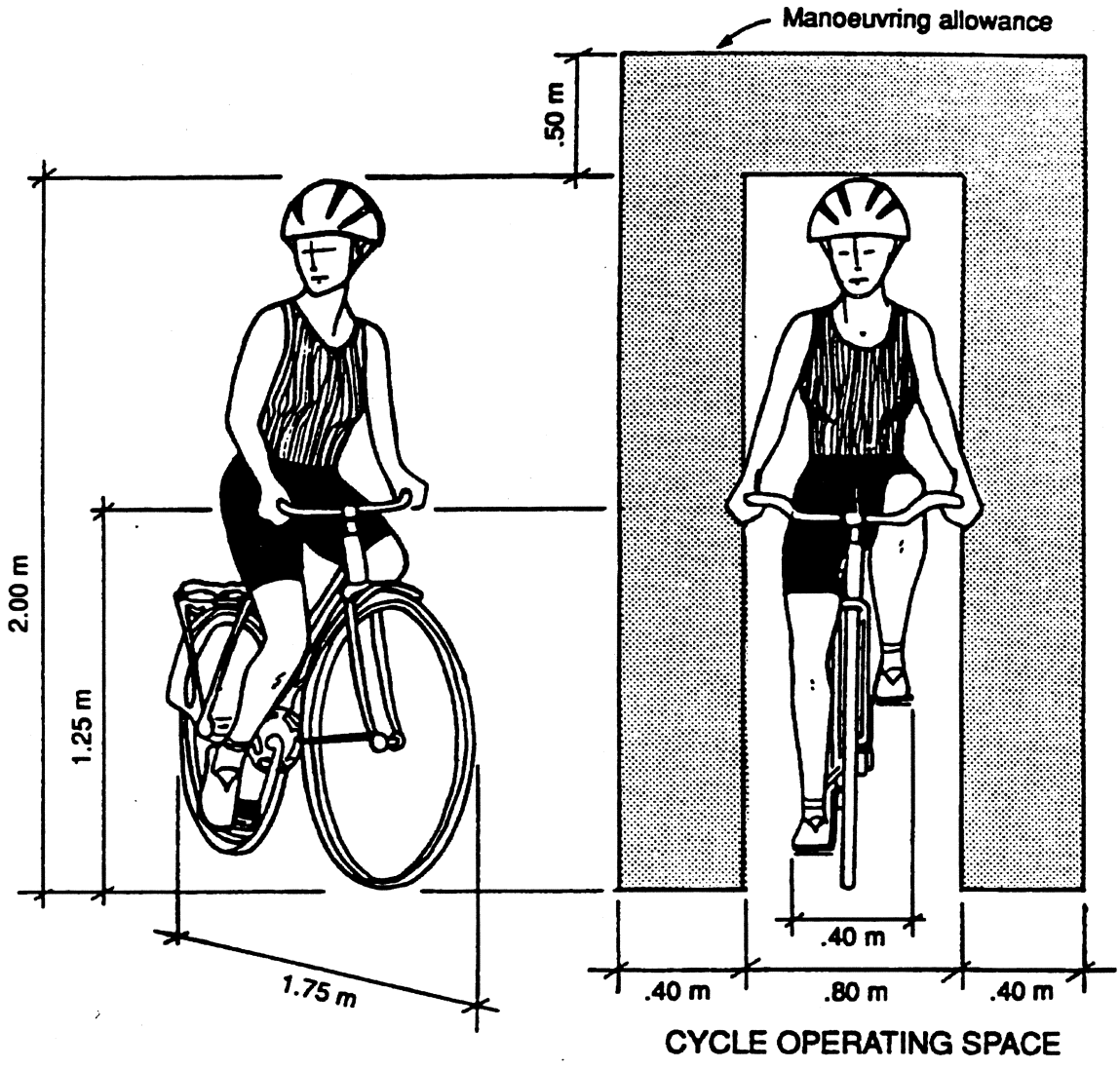

EXHIBIT 2 CYCLE AND CYCLIST DIMENSIONS

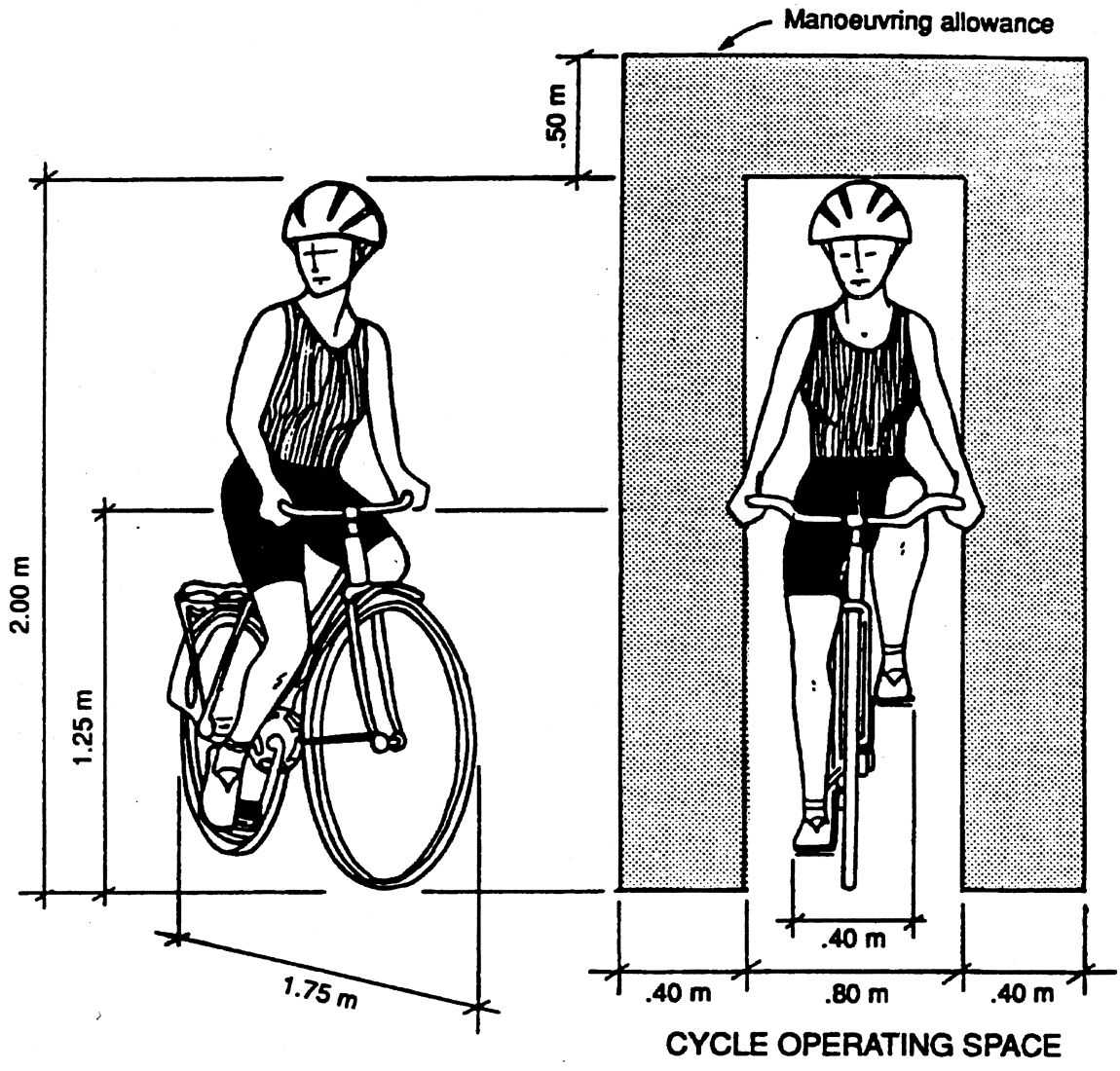

EXHIBIT 2 CYCLE AND CYCLIST DIMENSIONS

TABLE 1 IN-LINE SKATING AND GRADES		
GRADIENT	MAXIMUM DISTANCE	ABILITY OF SKATER[1]
1% - 3%	100 m	Beginner/Novice
3% - 5%	100 m	Beginner - Intermediate
5% - 10%	100 m	Experienced
> 10%	Evaluation Required	N/A

Note 1: Beginner: In-line skated for less than 1 season
Intermediate: In-line skated 2 seasons or more, or has taken lessons
Experienced: More than 2 seasons of in-line skating and has taken lessons

TAC's Urban Supplement to the Geometric Design Guide for Canadian Roads suggests slopes for bicycle trails not exceed 5%. Grades are one area where bicycle and in-line skate requirements differ significantly. Cyclists can normally brake while travelling in a straight direction while in-line skaters require more space to weave and maintain control on a downgrade.

If in-line skating is to be permitted on roadways, the following information contained in **Table 2** could be employed to evaluate the grade of the road in relation to the length of the inclined portion of the facility:

TABLE 2 LENGTH OF SLOPE AND IN-LINE SKATING		
% GRADE OF ROAD	LENGTH (m)	IN-LINE SKATING APPROPRIATE
< 3%	< 100	Yes
< 3%	≥ 100	Probably
≥ 3% - < 5%	< 100	Probably
≥ 3% - < 5%	≥ 100	Probably Not
≥ 5%	-	Not Recommended

3.3.5 Sight Distance

There is limited data available relating to sight distance requirements for in-line skating, however, the IISA recommends that sight distances necessary for in-line skating trails should be at least as great for a car travelling at the same speed.

3.3.6 Riding Surface

There are many types of manufactured surfaces that are used for roads, pathways, and sidewalks. Among the most common are asphalt, concrete, and interlocking brick or other decorative stone. Materials that are also commonly used, but mainly for bridges and connections between trails, include wood and steel. Wood is common along boardwalks and scenic areas, while steel is used for bridges.

The only suitable pavement surface for in-line skating is either asphalt or concrete. Surface conditions must ***exceed*** what would be considered adequate conditions for bicycles. Asphalt is preferable due to the comfort level when skating. However, this level of comfort is reduced significantly if there is no surface coat and one must skate on the binder layer. Concrete, unless very new, can be rough and the effects of gravel and sand are more pronounced since the surface is not as uniform or smooth as asphalt. Expansion joints are therefore required in concrete sidewalks to prevent cracking. These expansion joints can become one of many obstacles for in-line skaters.

Debris, even small foreign objects or stones/gravel, in the path of in-line skaters is potentially dangerous, as loss of control is possible. Even a very thin layer of sand can create a problem for skaters. The sand affects the ***"pushing"*** motion of the skater and can cause the skater to slip or slide, resulting in lost grip and sometimes, loss of control. All skate paths must generally be clear of sand, gravel, and other foreign objects. **Table 3** provides an assessment of the suitability of various travelled surfaces for in-line skating, and includes the identification of problems that can be encountered with surfaces.

TABLE 3
ASSESSMENT OF TRAVELLED SURFACES FOR IN-LINE SKATING

SURFACE	COMMON LOCATION	POSSIBLE PROBLEMS	EXISTING SOLUTION	IMPACT ON IN-LINE SKATING	SUITABILITY FOR IN-LINE SKATING (1)	
					NEW	REPAIRED
Asphalt	Roads, Pathways, Some Sidewalks & Stairs	Cracking, Pot Holes	Crack Repair - Emulsion	Skates Stick in Warm Weather	Excellent	Caution Required but Still Good
Concrete	Roads, Pathways, Stairs	Cracking, Pot Holes, Joints	Crack Repair - Emulsion	Uneven/Bumpy Surface Condition	Good	Caution Required but Still Good
	Sidewalks	Joints	-	Uncomfortable	Poor	Poor
Brick	Driveways, Sidewalks, Roadways	Uneven, Bumpy	Replace	Difficult, Uncomfortable	Poor	Poor
Steel	Structures	Very Smooth (If Steel Plate), or Grate (Walk Only)	N/A	Very Difficult, Low Coefficient of Friction on Steel	Very Poor - Handrail Required	Very Poor
Wood	Board Walks, Stairs, Pedestrian Bridges	Uneven, Joints Warping	Replace	Very Difficult, Uncomfortable	Poor	Poor
Gravel	Pathways	-	-	No Traction, Impossible to Traverse	Not Appropriate	Not Appropriate

(1) This is a subjective opinion of the authors based on personal experience.

Skating is not recommended when there is snow and/or ice on any pavement or sidewalk surface, no matter what the surface material is. Skating on a wet surface is also not generally considered appropriate.

3.3.7 Obstacles

There are a number of physical obstacles or constraints that can significantly affect in-line skating performance, safety and rider comfort. Some of the more common obstacles include curbs, drainage grates, manhole covers, stairs, etc. With practice these hurdles appear to be easy dealt with by having the in-line skater reduce speed and approach the obstacle cautiously. Other obstacles that are of some concern include at-grade railway crossings, some traffic calming devices such as speed bumps, bump-outs, curb extensions, raised intersections, etc., streetcar tracks, stairways and ramps. Careful placement of street furniture and illumination is also required, recognizing the spatial requirements for in-line skaters. Some facilities designed for other users, such as pedestrian or bicycle bridges or tunnels, in many cases do not necessarily reflect the special requirements of in-line skaters; although, observation and experience clearly indicates that skaters can adequately adapt to many conditions.

3.3.8 Other Operating Constraints/Issues

In terms of evaluating the suitability of in-line skating on infrastructure elements, there is a need to be aware of other issues including the fact that during inclement weather conditions, including rain, in-line skates on some surfaces have problems with grip/adhesion. A comparison with bicycles in this regard is not available and is an issue that requires further investigation.

3.4 IN-LINE SKATING INJURY DATA

As discussed in Phase 1 of the In-line Skating Review, injury statistics gathered by the Canadian Hospital Injury Reporting and Prevention Program (CHIRPP) are the major source of injury data in Canada. The program collects data from 15 hospitals in Canada, 10 of which are paediatric. Prior to reviewing the injury data provided by CHIRPP, there is a need to understand the inherent limitations of this data. Because the data comes from only 15 hospitals, it does not represent the complete injury picture for all in-line skating activities across the country; however, it does allow certain trends to be identified. In addition, as ten of the hospitals who are participating in the program are pediatric, much of the information is skewed towards injuries to younger in-line skaters. In discussing injury reporting procedures with individuals involved in the assembly of the CHIRPP data, it is apparent that there are also some anomalies in terms of the data collection procedures at the hospitals themselves. The quality of data is also dependent on knowledge that the individual has taking information at the hospital. It is also clear that, because of a lack of knowledge about in-line skating, some in-line skating injuries may be attributed to other devices such as skateboards or rollerskates.

In the future, injury data relating to in-line skating may be less available as budgets to medical facilities and hospitals are being reduced in many provinces and some of the data previously collected will not be collected in the future, or at least not at the same level of detail. This trend has been confirmed by CHIRPP. The information provided below and attached in **Appendix D**, should be viewed with caution and used only to assess basic injury trends.

Table 4 provides a summary of total in-line skating injuries reported to CHIRPP from the period 1991 to 1995. As can be noted from **Table 4**, the number of injuries relating to in-line skating has been increasing since reporting began in 1991. Few definitive conclusions can be drawn from this particular table other than to suggest that, as in-line skating increases in popularity (as with any other transportation or recreational ***"device"***) and as reporting procedures have improved up to 1995, the number of injuries reported obviously would also increase. No conclusions should be drawn relative to the total number of in-line skating injuries reported through the CHIRPP program, in comparison to other conveyances.

TABLE 4 IN-LINE SKATING INJURIES - 1991 TO 1995	
YEAR	NO. OF INJURIES
1991	33
1992	154
1993	326
1994	756
1995	893
TOTAL	**2,162**

Table 5 below provides an age distribution of injured persons as obtained from the CHIRPP statistics. What can be gleaned from this table is that, given the CHIRPP data and its limitations regarding the types of hospitals who were reporting injuries, it can be seen that a large percentage of injuries occur for in-line skaters between the age of 5 and 19 years old.

TABLE 5 AGE DISTRIBUTION OF INJURED PERSONS - 1995 DATA		
YEAR	NUMBER	% OF INJURIES
1-4 Years	13	1.5
5-9 Years	179	20.0
10-14 Years	532	59.6
15-19 Years	133	14.9
20+ Years	36	4.0
TOTAL	**893**	**100**
64.1% of Injuries involving In-line Skates were sustained by males		

Perhaps more useful or pertinent information can be drawn from **Table 6** which provides a summary of locations where injuries reported by CHIRPP actually occurred. Referring to **Table 6,** it is

apparent that the majority of the injuries occurred on what is called transport areas including roads, foot paths, bicycle paths, etc. This injury pattern is consistent with observations which revealed that more in-line skaters are using these facilities than the other facilities listed in **Table 6**.

TABLE 6
WHERE THE INJURY OCCURRED

	NUMBER	% OF INJURIES
Transport Areas		59.6
Road	326	
Footpath (incl. sidewalks)	98	
Driveway	43	
Parking Area	38	
Bicycle Path	15	
Alley	12	
Sub-Total - Transport Areas	532	59.6
Sports & Recreation Areas	85	9.5
Own Home	68	7.6
Park & Recreation Land	63	7.1
School	33	3.7
Other/Unknown	112	12.5
TOTAL	**893**	**100**

Table 7 provides an synopsis of the circumstances and factors which contributed to injury, i.e. the reason for injury. As can be noted from this table, the majority of the injuries occurred with the skater losing control with no specifically defined cause.

TABLE 7
CIRCUMSTANCES AND FACTORS CONTRIBUTING TO INJURY

	NUMBER	% OF INJURIES
Lost Control with no Specific Cause	603	67.5
Playing Roller Hockey	55	6.2
Stunts or Difficult Manoeuvres	48	5.4
Fell Because of Conditions of Surface	45	5.0
Hit By, Ran Over by or Avoiding Collision with Motor Vehicle	31	3.5
Hit or Tripped Over Stationary Object	33	3.7
Moving Over Stairs, Steps, Changes in Level	22	2.5
Hit by or Avoiding Collision with Other Person Including Cyclist	17	1.9
Other	39	4.3
TOTAL	**893**	**100**

Table 8 provides some information that is of particular importance to this study. **Table 8** indicates the type of safety and protective equipment used at the time of injury. As can be noted from **Table 8**, ***an overwhelming majority of those injured appeared not to be wearing any equipment or the equipment used was not actually reported on the recording form.*** It is possible that this information is somewhat skewed as a result of the hospital not actually reporting or noting what equipment is being worn by the injured person; however, field observations and data collected as part of this study clearly confirm that a significant number of in-line skaters fail to wear even the most basic of safety devices - a helmet. It appears that a major contributing factor to injuries in the in-line skating activity is the failure to utilize equipment or the proper equipment. This has been confirmed with members of the medical fraternity and is a concern of the manufacturers. Additional discussion on appropriate in-line skating equipment is provided in ***Section 3.5***.

TABLE 8 SAFETY AND PROTECTIVE EQUIPMENT USED AT TIME OF INJURY		
	NUMBER	% OF INJURIES
None or Not Reported	662	74.1
Regulated Sport Specific	72	8.1
Helmet	34	3.8
Other	125	14.0
TOTAL	**893**	**100**

Table 9 provides a summary of selected injury statistics identifying which parts of the body were injured most frequently by in-line skaters. The data in **Table 9** reveals that the majority of injuries to in-line skaters occurs to the forearm, the wrist and the head, neck and face area.

TABLE 9 SELECTED INJURY STATISTICS		
BODY PART INJURED	% OF ALL TYPES	% OF TOTAL INJURIES WHICH ARE FRACTURES (42.2% OF ALL INJURIES)
Forearm	30.6	24.6
Head/Neck/Face	14.2	-
Minor Head Injuries	2.5	-
Concussions	0.8	-
Lower Leg	11.5	2.4
Wrist	13.2	2.8
Other	27.2	12.4
TOTAL	**100**	**42.2**

3.5 IN-LINE SKATING SAFETY EQUIPMENT

Despite the evolution of this sport over the last few years, there are still various opinions regarding what equipment, if any, should be required for in-line skaters. There is also the obvious fundamental issue of whether or not the use of safety equipment should be legislated. It appears from observation and the injury statistics collected that, however limited the data, ***protective equipment is essential to help reduce the chance of minor or serious injury***. The review of equipment requirements and discussions with medical specialists, injury prevention specialists and manufacturers revealed that there are several pieces of equipment that could be worn to reduce the number and severity of in-line skating related injuries:

- **Helmet** - This is perhaps the most important piece of equipment to be worn by any in-line skater. Any helmet worn should be certified by either CSA, ANSI, or the Snell Memorial Foundation. There are currently no separate standards for in-line skating helmets, as there are for cycling, and it appears that there will not be a separate standard for in-line skating helmets in the near future. Recently the Snell Memorial Foundation, recognizing that it may not be practical for people to purchase multiple helmets for cycling, in-line skating, mountain biking and skateboarding, developed a standard for Multi-Sport Helmets - N94. The N-94 helmet standard is the first helmet safety standard developed specifically for multi-sport use. The Snell Memorial Foundation is a non-profit organization dedicated to helmet safety, testing, research and education. The Snell standards are recognized worldwide and are adopted by many government agencies responsible for setting helmet safety standards. It is fundamental to note that hockey and cycling helmets do not provide the protection necessary for in-line skating;
- **Wrist Guards** - Injury data collected and the experience of in-line skaters appears to suggest that the wearing of wrist guards ***may significantly reduce wrist and forearm injury***. When falling, a skater has the tendency to put a hand out to break the fall. It requires minimal force to injure the wrist or forearm, but this type of injury appears to be easily preventable. There are no specific safety or design standards for wrist guards at the present time. The wrist guard is essentially a plastic or metal brace worn on the inside of the wrist which crosses the palm of the hand;

- **Knee Pads** - Knee pads are designed to prevent abrasions and do not interfere with the skating movement. The knee pad is a foam or cloth material pad with a plastic shield which will skid across the pavement surface protecting the knee from scrapes and abrasions. Again, there are no specific safety or design standards for knee pads;
- **Elbow Pads** - Elbow pads are designed to prevent abrasions and do not interfere with the skating movement. This piece of equipment is a foam or cloth material pad with an outer plastic shield which will skid across the pavement surface protecting the elbow from scrapes and abrasions. There are no current safety or design standards for elbow pads;
- **Long Pants/Trousers and Long Sleeve Shirts** - Although not specifically recognized as a piece of safety equipment, clothing that covers exposed skin would provide further protection against bruising, scrapes and abrasions. It is recognized that wearing trousers and long sleeve shirts will reduce the seriousness of abrasions, lacerations and bruises, however, it may be impractical to enforce skaters to wear such clothing as in-line skating is generally a warm weather activity;
- **Reflective Paraphernalia** - This includes the wearing of reflective clothing - reflective material attached to the helmet and skates, and lights on the helmet or arms (armbands);
- **Bell or Whistle** - To inform pedestrians, cyclists, other in-line skaters, etc. of the in-line skater's presence; and
- **Braking Device on Skates** - Although some specialized in-line skates, such as those manufactured for roller hockey, do not have a brake, most skates have a brake on the rear of one boot which is interchangeable between the left and right boot.

It appears from the data collected to date that all Provinces and most municipalities have not taken any action to legislate the wearing of safety equipment.

3.5.1 In-Line Skating Equipment Maintenance

In-Line skates require frequent maintenance to ensure safe operations. Of particular importance is regular inspection, cleaning, lubrication and rotation of wheels and bearings. ***It is generally considered more critical to effect regular maintenance of devices in comparison to a typical bicycle.***

Summary

The evidence collected to date has revealed that there are some issues relating to the operation of these devices that must be considered in the context of determining the most appropriate location for use of in-line skates:

- The operating characteristics of in-line skates are dissimilar to other types of conveyances currently using the transportation infrastructure, including bicycles;
- It appears from observation and anecdotal evidence that beginner or novice skaters may represent a risk on some facilities; however, it also appears that it may be appropriate to consider skilled skaters to be no more of a risk on many facilities than cyclists - in terms of operational capabilities;
- Children appear to be more vulnerable than adults relative to injury potential ***and therefore should be considered separately*** in the planning of future in-line skating facilities;
- There is clear evidence, as a result of concerns relative to the braking characteristics of these devices that ***the use of in-line skates may not be desirable on certain classifications of roads*** and may in fact, represent a serious risk to the skater and other users;
- The requirements associated with in-line skating and existing conditions on some facilities may require that separate facilities or the widening of existing facilities be considered if in-line skating is to be permitted;
- Novice in-line skaters, like novice cyclists, represent somewhat of a risk on any facility. The key to minimizing the risk is to ensure that the appropriate level of training and education is available for all new users; and
- There is a need to ensure that the appropriate safety equipment is worn by in-line skaters at all times to reduce accident numbers, severity and societal costs associated with injury treatment.

3.6 INFRASTRUCTURE ELEMENTS

If there is a particularly sensitive and controversial issue relating to in-line skating, it is the need to determine what existing infrastructure facilities should be made available for use by in-line skaters. In particular, concern has been expressed about the use of existing roadways for in-line skating. These concerns have been expressed by staff of provincial and municipal agencies and also the

police/enforcement agencies who are required to enforce legislation or bylaws pertaining to this activity. It is clear from the work undertaken to date that most municipalities are looking for some form of guidance from their respective provincial agencies before taking action on in-line skating issues.

3.6.1 Roadways

Over the past several years, there has been a significant shift in public attitude toward the use of the public right-of-way. While many still believe that roads are predominantly for motorized vehicles, there is a demand from other groups, such as cyclists, for use of part of this right-of-way. The legitimacy of cycling as an alternative form of transportation has been reasonably well established across Canada. However, many municipalities are unsure of how to integrate them into the transportation system; now there is pressure from in-line skating groups to achieve similar status for in-line skaters. This pressure to expand the use of the right-of-way to permit other conveyances, other than automobiles, has resulted in philosophical differences amongst those responsible for the transportation systems regarding the use of roadways and sidewalks for in-line skating.

There is significant evidence (anecdotal, observations by project team members, and survey results) that the roadway system is currently being employed by a growing number of in-line skaters. There is also evidence that ***there may be good reasons why a number of municipal traffic engineers feel that it is appropriate to prohibit in-line skating on roadways***. From the opposite perspective, during the course of the investigation associated with this study, a number of times the question was raised as to why in-line skating cannot be afforded the same status as bicycles on roadway facilities; it is clear that there are different physical or spatial requirements for each activity and each activity is superior to the other in certain circumstances. It is difficult to suggest without further detailed study and comparison that one activity is inherently ***"safer"*** than the other, although it is clear that there are conditions on any infrastructure element where neither activity is desirable.

The evidence provided in ***Section 3.3*** indicates that, if the operating characteristics of in-line skaters were the only criteria to the determination of where this activity should be permitted, and given the current perceptions regarding this activity, ***there is good reason why many municipalities are seriously considering prohibiting in-line skating on most existing roadways***.

Despite the above, prohibiting in-line skating on all roadways may not be practical given the demand for this activity and the lack of other facilities where this activity can take place.

It is felt that, in order to permit in-line skating on roadways, the following basic criteria must be satisfied. These criteria were formulated after discussions with transportation professionals, in-line skaters and other road users. Until further investigation is conducted and hard empirical data is produced specific to the use of in-line skates on roadways, these suggested basic criteria must be considered in conjunction with sound engineering judgement:

Posted Speed: Given the knowledge that exists regarding the braking characteristics of in-line skates and the operating space and surface requirements, it is suggested that ***in-line skaters not be permitted on roadways where the posted speed exceeds 50 km/h***, unless separate bike or in-line skating lanes exist. It should be noted that this posted speed is generally less than that deemed acceptable for roadways which accommodate bicycle traffic (up to 80 km/h). Municipalities may wish to consider permitting in-line skaters on roadways where the posted speed is as high as 60 km/h if separate bike or in-line skating lanes have been constructed.

Direction of Travel: In-line skaters should travel in the direction of traffic when skating on the roadway.

Grade: Generally should be <5% except for very short sections.

Surface Condition: Surface conditions must ***exceed*** what would be considered adequate conditions for use by bicycles. The surface should be free of gravel and other "contaminants" (including snow and ice); judgement will be required to determine whether the prevailing pavement surface is adequate for in-line skating. It is strongly suggested that in-line skate manufacturers provide literature with the purchase of skates advising users of appropriate surface conditions for skating and indicating that due care and judgement must be used when assessing the adequacy of surface conditions.

Bus or HOV Lanes: In-line skating should not be permitted in HOV or bus lanes

Parking: As cycling is not recommended on roads where cyclists and parked vehicles share a lane if the lane is less than 4.0 m (Source: Canadian Institute of Planners' Community Cycling Manual), it follows that in-line skating is not recommended on a roadway if similar conditions exist. A marked parking lane of 2.5 m will help to ensure that vehicles park close to the curb and allows for a

minimum width of 1.5 m for in-line skaters. In-line skate manufacturers should provide general guidance to users regarding appropriate "lane widths" and indicate that judgement must be used when selecting streets to skate on. This guidance should be contained in literature provided to purchasers of new in-line skates.

Bike Lanes: Exclusive bike lanes are recommended to be a minimum of 1.5 m in width, which would also provide a suitable manoeuvring allowance for in-line skaters, although it is recognized that in-line skaters can, under certain circumstances, require more operating space than cyclists.

Traffic Calming Devices: Where traffic calming devices are in place, engineering judgement should be used to determine the appropriateness of in-line skating on the road.

Shoulders on Rural Roads: Paved shoulders can be suitable for in-line skating provided the other roadway related criteria (width, surface conditions, etc.) are met. Paved shoulders should be a minimum of 1.5 m wide, although a width of 2.0 m is preferred. With the above shoulder widths, in-line skating could be permitted on roadways having a posted speed up to 60 km/h.

3.6.2 Sidewalks

Issues relating to the use of sidewalks by in-line skaters include pedestrian safety, interaction between pedestrians and skaters, pavement conditions, and the volume of pedestrian and skaters.

A number of municipalities have created bylaws prohibiting in-line skating from sidewalks in certain areas of the community. The issue of pedestrian safety is often referenced as a reason for creating these bylaws. Research conducted as part of this study indicates that, in many circumstances, the mixing of pedestrians and in-line skaters does not generally create problems.

In most residential suburban areas, the potential for conflict between pedestrians and in-line skaters is very low. Most often in these circumstances the skaters appear to be children and some adults, who are learning to skate and are operating at low speeds. In addition, it is quite apparent from discussions with users that many novices are more comfortable using the sidewalks to learn to skate than operating on the roads or pathways; evidence suggests that it may be appropriate from a safety perspective to encourage novices to use sidewalks or other off-road facilities such as rinks, parks and parking lots to learn to skate and to gain the necessary confidence before venturing onto other facilities where there are greater volumes of pedestrians and cyclists.

More experienced users have indicated that sidewalks are less desirable for utilitarian or long distance travel due to the existence of frequent expansion joints. Sidewalks also tend to receive less maintenance than the roadways and therefore are not always appropriate for in-line skaters. Although it has been mentioned previously that the injury data collected as part of this exercise must be viewed with caution, the records that are available indicate that only approximately 10% of the injuries involved skating on sidewalks or footpaths and that 0.2% of the injuries occurred as a result of skaters hitting another person or cyclist. It appears that, consistent with anecdotal evidence provided to the project team, there would be a low risk associated with skaters, more specifically children, skating on sidewalks.

In high pedestrian activity areas such as downtown cores, City squares, and pedestrian malls, there is obviously a higher potential for conflict between in-line skaters and pedestrians. It is clear from discussions with staff of municipalities across the country that there is significant concern about potential pedestrian/skater conflicts in high pedestrian areas.

In the absence of hard performance data, engineering judgement will be required to determine which areas are not suitable for in-line skating; these areas should be addressed in the appropriate local bylaw(s).

3.6.3 In-line Skating on Multi-Use Recreational Paths Including Bicycle Paths

Multi-use recreational paths are those paths provided off-road which are available for use by cyclists, pedestrians and in-line skaters. During the course of this study, there were few circumstances identified where it is currently considered totally unacceptable for in-line skaters to mix with bikes and pedestrians on multi-use recreational paths. As previously discussed, even in very high traffic areas, very few problems have been encountered although there has been some segregation of cyclists and pedestrians on the Waterfront Trail in Toronto, the Seawall Trail in Vancouver, and Calgary's twin-path system.

On some very heavily utilized pathways such as the Waterfront Trail in the Greater Toronto Area (GTA), there have been few problems with the joint use of the pathways. In this situation, pedestrians and in-line skaters are combined with cyclists. Any problems that have arisen have stemmed from the fact that users of the facilities, whether they be in-line skaters, cyclists or pedestrians, are failing to recognize their responsibilities and the rights of others. The problems that

exist in most cases, relate to education and a lack of basic social graces -not necessarily physical space limitations. Problems do, however, sometimes occur at crosswalks, where in-line skaters appear to be less apt to obey traffic regulations. Because in-line skating is not adequately defined in highway traffic acts in Canada, the rules of the road cannot be enforced. Nor can any local bylaws currently be effectively enforced as in-line skaters, like pedestrians, currently do not have to identify themselves to an enforcement officer.

An issue that has been discussed frequently with respect to combining the various conveyances is the width of the pathway. **Table 10** provides some recommended standards for pathways assuming that these pathways would permit use by in-line skaters.

TABLE 10
SUGGESTED WIDTHS OF PATHWAYS

FACILITY TYPE OF CLASSIFICATION	MINIMUM WIDTH (m)
One-Way Exclusive Use by In-Line Skaters	2.0
One-Way Shared with Pedestrians/Cyclists	3.0
Two-Way Exclusive Use by In-Line Skaters	3.0
Two-Way Shared with Pedestrians/Cyclists	4.0

Sources:
1. Canadian Institute of Planners' Community Cycling Manual
2. Urban Supplement to the Geometric Design Guide for Canadian Roads
3. The Municipality of Metropolitan Toronto - Review of Bicycle Facilities on Metropolitan Toronto Roads

The above minimum values are generally applicable where conditions are such that:

i) In-line skating, pedestrian, and bicycle traffic is expected to be low;

ii) Horizontal and vertical alignments are such that safe and frequent passing opportunities are available; and

iii) Pavement conditions are suitable for in-line skating.

If any of these conditions are compromised, an increase in the pathway's width may be necessary to prevent conflicts and/or collisions. Engineering judgement is required to determine when the above conditions exist.

Another major issue with respect to off-road pathways is the path surface itself. As previously discussed, asphalt or concrete are preferred surfaces for in-line skating as they provide the smoothest ride for skaters; pathways with other surfaces, including gravel, are not considered desirable for skaters.

Bicycle paths are off-road paths for bicycles only. Surface types on these trails often vary. As with recreational trails, there seems to be a consensus among the municipalities in allowing in-line skaters on paved bike paths. As with off-road multi-use pathway facilities, the common concern for users and municipalities is the width of the pathway.

3.7 BYLAWS AND IN-LINE SKATING MODELS

Research undertaken in the context of the Phase 2 In-line Skating Review indicates that there is little or no provincial legislation regarding this activity. All of the provinces surveyed indicate that their highway traffic legislation does not recognize in-line skating as a separate conveyance. In many Highway Traffic Acts (and municipal bylaws), it can be interpreted that in-line skaters are given the same recognition as pedestrians. With respect to municipal legislation, it is also clear from the surveys conducted as part of this study that many of the municipalities are waiting for their provincial/territorial governments to determine how in-line skating should be addressed before attempting to regulate this activity. Some municipalities have enacted bylaws as a result of problems that have surfaced or pressure from user groups. Most of these bylaws are aimed at prohibiting in-line skating from various elements of the infrastructure. Some of this legislation has turned out to be difficult or impossible to enforce and many enforcement agencies are not enforcing existing bylaws. Without recognition of this activity in the appropriate Highway Traffic Act or other provincial statutes, development of municipal bylaws to deal with the in-line skating issue may be fruitless. For example, in Ontario the Highway Traffic Act does not recognize in-line skating in any way, shape or form.

The City of North York in Metropolitan Toronto has enacted a bylaw which is essentially aimed at ensuring that in-line skaters are wearing the proper safety equipment. There is a significant fine for those skaters who are not wearing the appropriate equipment. Although the intent of the City's bylaw was to enhance the public's knowledge of in-line skating safety equipment requirements and to especially alert parents to potential hazards associated with in-line skating; there is some concern regarding the ability of this bylaw to stand up to a court challenge.

Copies of municipal and other bylaws assembled as part of this study are contained in **Appendix E**.

In order to obtain feedback from the appropriate stakeholders including municipalities, provincial governments and enforcement agencies, two basic models were developed which reflected possible strategies to deal with in-line skating on roadways. The first model, **Model A** would permit in-line skaters to share existing roads and other infrastructure elements. In order for this to occur, municipalities would have to enact a ***Public Endangerment Bylaw*** which would deal with in-line skating, walking and cycling. **Model A** also implies that ultimately roadway, pathway and other infrastructure standards would be changed to accommodate the appropriate in-line skating operating requirements.

Model B would permit in-line skating to occur on all infrastructure elements only when these elements are specifically designed to accommodate the operational requirements of in-line skaters. Effectively, this would imply a ban on most existing roadways in municipalities across Canada. It also implies that in-line skating would have a lower ***"status"*** than cycling. It could be inferred from **Model B** that standards would also have to be changed with respect to roadway design, pathways and bike facilities, etc.

The above two generic models were the subject of a survey conducted of municipalities, provincial governments and enforcement agencies. Discussion on the results of this survey is contained in ***Section 4.0*** of the report.

The concept for the proposed endangerment bylaw, which would be required for either of the above models, resulted from discussions with members of various enforcement agencies, municipal solicitors and other transportation professionals. ***The premise behind the proposed endangerment bylaw would be to enact a municipal bylaw which would permit the police or the appropriate enforcement agencies to "charge" an in-line skater, cyclist or pedestrian with an "offence" if they are operating or travelling in a manner which places themselves or others in danger***. In order to enact such a bylaw, the municipality would have to define reckless skating or cycling or other dangerous activities. In addition, either through the Highway Traffic Act or some other provincial statute, municipalities would have to be given the power to regulate activities relating to the use of non-motorized conveyances and to pedestrians, and to require that

these individuals identify themselves when stopped for an infraction. In most provinces, municipalities are presently unable to legislate the use of safety equipment without being empowered to do so through provincial legislation.

3.8 SUMMARY

The review of the appropriateness of in-line skating on the various transportation infrastructure elements has revealed the following:

- Most mobility or transportation providers appear to be in general agreement that there are currently few problems permitting skaters to use sidewalks and off-road pathways, other than in areas where pedestrian or cyclist volumes are high;
- It appears to be feasible to permit in-line skaters to use bike lanes or widened curb lanes, where available depending on:
  - Posted speed;
  - Pavement condition; and
  - Grades.
- Some problems still remain with respect to aggressive or inconsiderate skaters, cyclists and pedestrians, and the failure of some system users to act in a courteous and safe manner. These problems do not result from a lack of physical capacity but a lack of basic social responsibility on the part of the users;
- Some of the above concerns highlight the need for appropriate legislation, at a provincial and municipal level, to deal with enforcement;
- The above concerns also highlight the need for improved education and training relating to the in-line skating activity;
- The major issue with respect to determining the appropriate location on the transportation infrastructure for in-line skating is the issue of how to deal with this activity on roads;
- It appears that while there may be some legitimate concerns regarding the use of in-line skates on roadways, a total ban is impractical, and would be difficult to properly implement, from a political perspective. In addition, and contrary to the perceptions of some provincial and municipal staff, a total ban on the use of roads would not absolve the municipalities of their liability in the case of an in-line skating incident (further discussion of this issue is contained in **Section 4.2**);

- Some in-line skating activities may not be appropriate for roadways, for example in-line hockey training or cross-country skiing, if the use of poles is involved; and
- There is a need to ensure that the municipalities have the appropriate powers/legislation to permit the adequate management and enforcement of in-line skating on the transportation infrastructure including roads, sidewalks and pathways.

4.0 IN-LINE SKATING SURVEY RESULTS

In order to obtain additional information about in-line skating, a survey was developed by the project team and distributed to staff of the transportation/traffic departments within municipalities across the country, solicitors from the same municipalities, enforcement agencies, and provincial or territorial governments. The survey included questions focused on the following:

- More input was required to be able to produce recommendations or to establish principles relative to the use of in-line skating on roads;
- More information was required regarding the potential for an ***"endangerment"*** bylaw which could be used to effectively control/manage/enforce the in-line skating activity, not only on roads but on other infrastructure elements;
- Additional information was required with respect to the need for provincial legislation from which the municipalities could take certain direction; and
- There was a need to determine the relationship of the in-line skating activity to other mobility initiatives such as HOV links, bus lanes, etc.

In all, a total of 270 surveys were faxed out and the following response rate was achieved at the time of this writing:

- Municipalities - 80 surveys distributed 30, surveys received.
- Solicitors - 56 surveys distributed, 7 surveys received.
- Enforcement Agencies - 124 surveys distributed, 54 surveys received.
- Provincial and Territorial Agencies - 10 surveys distributed, 7 surveys received.

The survey was made available in both English and French. A copy of each survey is provided in **Appendix A**. Detailed survey results are provided in **Appendix B**.

In addition to the written surveys, telephone surveys and follow-up interviews were conducted with staff from a number of municipalities, representatives from selected enforcement agencies, staff of the Waterfront Regeneration Trust in Ontario, members of the Project Steering Committee, and solicitors from several major municipalities across Canada. The purpose of these additional interviews was to clarify comments provided in the surveys or to discuss the pertinent issues relating to the in-line skating activity.

The following section provides a synopsis of the salient findings from the in-line skating survey. It should be noted that there was some overlap in survey coverage, i.e. where surveys were sent to traffic and legal staff in the same municipality. It should also be noted that there were some contradictory comments or suggestions/solutions that came back from the same municipality. The answers provided were not always consistent and this reflected the fact that many municipalities have no ***"official"*** position regarding in-line skating and that the comments were the opinions of the staff or departments from which the response originated.

4.1 IN-LINE SKATING AS A MODE OF TRANSPORTATION

It is clear from the responses received through the survey that in-line skating is considered to be a viable and valid mode of transportation and that it is not just a recreational activity or a fad. It can also be concluded that in-line skating is an activity which is separate and distinct from vehicles, bicycles and pedestrians; however, there is a need to ensure that cyclists, pedestrians and in-line skaters are given consideration when it comes to planning, management and enforcement.

4.2 IN-LINE SKATING MODELS

The questionnaire requested feedback from respondents regarding the viability of the two in-line skating ***"models"*** discussed in ***Section 3.7*** of this report. **Model A** essentially involved permitting in-line skaters on all infrastructure elements, including roads, and **Model B** effectively represents the banning of in-line skates on roads and other facilities, until these elements can be upgraded to accommodate the operating requirements associated with these devices.

Based upon the feedback from the survey respondents, a number of conclusions can be drawn. One of the most important conclusions is that, despite the desire of some municipal transportation staff and enforcement agencies to ban this activity from the roadways, and the technical facts that suggest the operating characteristics of these devices may be questionable in the context of roadway use, it appears that ***an outright ban on roadways, or other infrastructure elements is not considered to be practical nor politically viable***. This effectively renders **Model B**, as described above, unsuitable.

About one-third (1/3) of all of the respondents felt that a complete ban on the roadways continues to be a viable strategy. Investigation revealed that some of the municipalities, (in particular, those

who felt that in-line skating should be totally prohibited from the roadways), expressed this opinion only because they felt a total prohibition would protect themselves or their municipality from liability, should an accident occur on a roadway. This perception is considered false for the following reasons:

- There is extensive evidence that some roads are being used by in-line skaters today, which suggests a demand that cannot be ***"ignored"***;
- A lack of funds for enforcement would not be considered adequate justification for a ban/prohibition, if a known problem exists;
- Prohibiting in-line skating does not absolve responsibility, especially if parallel facilities are not provided; and
- In many situations in-line skating may be no more of a problem on roadways than cycling in most municipalities.

The above position has been confirmed with solicitors from two major municipalities in Ontario.

With respect to the proposed **Model A** which would allow in-line skaters to use existing roadway facilities and other infrastructure elements, in excess of 60% of the respondents felt that this model could be viable although there were some strong sentiments regarding the effect of allowing in-line skaters on ***all*** roads from the perspective of skater safety, preservation of roadway capacity, and liability. It is clear that additional work is required before such a model could be completely endorsed. The major concern relating to **Model A** is the need to recognize that the prevailing operating characteristics of in-line skates precludes their use on some roadways and other facilities.

As a result of the above issue, it is suggested that a **Model C** be developed for consideration which would:

- Generally permit in-line skaters to share pathways and sidewalks with other users provided that those facilities satisfy some basic criteria. These criteria would relate to the volume/density of other users, the width of the facility, grades, etc.; and
- Permit in-line skaters to use only those roadways that satisfy the appropriate criteria relating to the surface condition, the posted speed, parking conditions, grades, etc.

Implementation of **Model C** would imply the following:

- That certain roadways, subject to the development and satisfaction of the appropriate criteria, could be used by in-line skaters;
- That municipalities, if they so wish, could ban/prohibit in-line skating on certain or all roadways; and
- That the appropriate standards would be developed for future facilities which are to be used by in-line skaters.

It is worth noting that one large Canadian municipality declined to complete the portion of the survey relating to the in-line skating models, and indicated that in their community, in-line skating was not currently an issue and they were continuing to treat in-line skating as they would other pedestrian activities. Further investigation and discussions with the particular respondent revealed that his failure to respond was based upon the perception that in-line skating was not an issue in their community. Follow-up with other respondents revealed that this particular situation appears to be limited to this community and that in-line skating continues to be an issue in most Canadian municipalities and that the status quo (i.e. no definition, no enforcement) is not acceptable. There is, however, a recognized need to establish guidelines or principles which would permit each municipality to have overriding control over how all conveyances are operating in their communities.

It is inherent in all of the models discussed above that some municipal legislation/bylaws would be required to permit municipalities to better enforce this and other activities that occur within the transportation rights-of-way. The issue of enforcement and the necessary legislation is dealt with in ***Section 4.3*** of this document.

4.3 MUNICIPAL BYLAWS AND PROVINCIAL LEGISLATION

Of the municipalities surveyed, about half indicated that they had some form of a bylaw which they could use to enforce the in-line skating activity in their community; however, the majority of the respondents indicated that there is very little enforcement occurring at this time because the bylaws are potentially unenforceable, staff are not available to enforce them and there is some inconsistency between the municipal bylaws and the governing provincial highway traffic acts, i.e. most provincial legislation does not deal with in-line skating. Enforcement agencies also expressed concern that the bylaws in some cases were confusing and they were not sure exactly what they were enforcing and where. In addition, it is clear that without some recognition of the in-line skating activity at the provincial or territorial level, enforcement agencies will find it difficult to deal with

problems relative to in-line skating or other activities, including cycling and walking. Should in-line skaters continue to be recognized in many locales as pedestrians, police are unable to obtain even the identity of these individuals when stopped unless the issues are ***"escalated"*** to more serious charges.

There was general agreement among the respondents of the need for some recognition of the in-line skating activity at a provincial/territorial level whether it be through the Highway Traffic Act or other provincial/territorial statutes. It appears that it is not necessary to define in-line skaters as a vehicle, but it is necessary to ensure that in-line skaters can be dealt with when operating in an unsafe manner on any part of the road, pathway or sidewalk system within the community. Changes to provincial legislation should also be considered to ensure that municipalities can effectively enforce the wearing of the appropriate safety equipment, if desired.

4.4 PERCEPTIONS OF IN-LINE SKATER SAFETY

The survey results also revealed some interesting perceptions regarding the safety of in-line skating. Firstly, it is clear that many of the respondents feel that cycling is a safer activity than in-line skating. Follow-up discussions with some of the respondents revealed that this is definitely a perception and that many of the respondents were cyclists, but had not attempted to in-line skate. Their comments were based on observation and opinion. The majority of the respondents also felt that requiring skaters to wear the appropriate equipment could make this activity somewhat safer, although, this did not change the perception of some with respect to the appropriateness of these devices on roadways; that is, just because safety equipment is worn does not make the activity safe enough to be conducted on roadways.

4.5 IN-LINE SKATING IN HOV AND BUS LANES

While many of the respondents felt that it may be possible to permit in-line skating on roadways, it is clear that the use of these devices in HOV and bus lanes is not supported by a majority of the respondents, despite the fact that bicycles are permitted to use these lanes. Following up on the survey results, it was revealed that most of the concerns relate to the mixing of buses and in-line skaters in the same area and the operating space required by in-line skaters.

4.6 ENDANGERMENT OR RECKLESS SKATING BYLAW

Although the majority of the respondents indicated that **Model A** had some potential, they expressed some concern about the ability of municipalities to actually pass and enforce the Endangerment Bylaw associated with this model. It appears from follow-up discussions with solicitors from some municipalities that the concept of the endangerment bylaw may not have been entirely understood by the survey respondents. A review of the responses clearly indicates that the municipal solicitors clearly recognize that such a bylaw could be put in place and enforced with the appropriate supporting provincial legislation. Follow-up discussions with staff of municipalities also revealed that such bylaws are currently in use in other locations in Canada and the U.S. for both in-line skating and other activities. Samples of such bylaws are contained in **Appendix E**. Follow-up discussions also revealed that, when more details are provided about the proposed endangerment bylaw, there is consensus that such legislation is viable and considered by many, the only practical and cost-effective way to enforce in-line skating, cycling and other non auto-related activities on the transportation infrastructure. Although desirable, it is not absolutely necessary for the provinces or territories to include in-line skating in their highway traffic acts; there is, however, a need for these bodies to enact a provincial/territorial statute which empowers the municipalities with the responsibility for the planning and enforcement of conveyances such as in-line skating, pedestrians, bicycles, etc.

4.7 EDUCATION

This survey clearly revealed that there is a strong need for a public education program to be undertaken with respect to in-line skating, whether or not this activity is ever permitted on roadways within the municipalities. There is a strong sense amongst all respondents that problems on the infrastructure relate to a lack of knowledge about in-line skating, not only from a users perspective, but from other users of the transportation infrastructure.

5.0 RECOMMENDATIONS

The purpose of the In-line Skating Review - Phase 2 was to undertake a comprehensive investigation of some of the pertinent issues relating to in-line skating and to develop some basic guiding principles. From the work undertaken as part of Phase 2, the following guiding principles are recommended. The principles are premised on the conclusion that in-line skating represents an issue today for many municipalities in terms of their ability to manage, regulate and enforce the activity. Further, it is felt that action must be taken to ensure that this activity can be undertaken in a safe manner for both participants and other users of the transportation infrastructure. The following principles include some suggested criteria to be used in assessing the capability of existing infrastructure elements to safely accommodate in-line skaters.

1. In-line skating in Canada should be recognized as a viable mode of transportation. Subject to satisfying the appropriate criteria, in-line skating should be considered an acceptable activity on the following types of facilities:
   - sidewalks;
   - roadways; and
   - off-road pathways (bicycle and multi-use).

   Under specified conditions, in-line skaters can operate in harmony with:
   - pedestrians;
   - cyclists; and
   - vehicular traffic.

2. The principle that in-line skating be recognized as a viable mode of transportation may require the creation of enabling provincial and territorial legislation, or the amending of existing legislation, to permit municipalities to plan, regulate and manage the in-line skating activity on all elements of the transportation infrastructure. In certain circumstances, this could include the outright prohibition of this activity on certain elements of the infrastructure, should such action be deemed appropriate by a municipal, provincial or territorial agency.

3. In order to regulate and manage the in-line skating activity on ***roadways***, each provincial and territorial government should ensure that their respective Highway Traffic Act (HTA) is amended to permit in-line skating on roadways. This could include recognizing in-line

skates as a ***"vehicle"*** consistent with the status that bicycles have been accorded in many HTA's, or alternatively, recognizing in-line skating as an ***"assisted pedestrian activity"***. Recognition of in-line skates in the context of each HTA would provide municipalities across Canada with the basis to plan for, regulate and manage the in-line skating activity.

Once in-line skating is recognized within each HTA, the activity can be regulated either by the application of the regulations within the HTA (i.e. the rules of the road) or through municipal legislation/bylaw(s) (see Principle 4, below).

4. Regulation and management of the in-line skating activity on ***sidewalks*** and other ***off-road facilities*** (and possibly on roadways) should be effected at a municipal level through the creation of an "endangerment" bylaw or bylaws. These bylaws would deal with skaters operating in an unsafe manner. If considered appropriate, the endangerment bylaw could also represent the mechanism to regulate the use of protective devices. Examples of such bylaws are included in Appendix E.

   The use of sidewalks by in-line skaters may result in some unique regulatory issues. Many jurisdictions use bicycle wheel diameter to determine those bicycles that can be permitted on sidewalks. This measurement permits smaller wheel diameter bicycles, usually children's bicycles, to legally use the sidewalk. At the present time there appears to be no simple way to establish when in-line skaters should be permitted or precluded from using these facilities. The proposed endangerment bylaws could be used to ensure the safe use of these devices on sidewalks.

   The proposed municipal endangerment bylaws would also address the current "problems" experienced by police services/agencies when attempting to enforce in-line skating, cycling and pedestrian activities, specifically on sidewalks and other off-road facilities.

5. Subject to the enactment of the appropriate legislation which would permit municipalities/police agencies to adequately regulate this activity, a ***"model"*** for dealing with the in-line skating activity is recommended which includes the following elements:

   - In-line skating should be permitted on sidewalks except in areas of high pedestrian activity such as sidewalks in downtown areas and other public activity centres/areas where the use of in-line skates would represent a safety hazard to pedestrians. In the

absence of hard performance data, engineering judgement will be required to determine which areas are not suitable for in-line skating; these areas should be addressed in the appropriate local bylaw(s). Field observation and anecdotal evidence suggests that it is appropriate to prohibit in-line skating where the existing sidewalk width is less than 1.5 m or the prevailing pavement condition would be deemed unsuitable by the staff of the municipality (i.e. major cracking, spalling, unevenness, cobblestone, interlocking brick, etc.). If no sidewalk exists, in-line skaters should use the roadway and travel in the direction of traffic.

- In-line skating should be permitted on off-road bicycle paths and multi-use pathways in conjunction with cycling and pedestrian activities. When designing new facilities, the width of such facilities should meet or exceed the following minimum values:

TABLE 11
WIDTH OF PATHWAYS - EXCLUSIVE AND MULTI-USE

FACILITY TYPE OF CLASSIFICATION	MINIMUM WIDTH (m)[1]
One-Way Exclusive Use by In-Line Skaters	2.0
One-Way Shared with Pedestrians/Cyclists	3.0
Two-Way Exclusive Use by In-Line Skaters	3.0
Two-Way Shared with Pedestrians/Cyclists	4.0

1.Sources: 1. Canadian Institute of Planners' Community Cycling Manual
2. Urban Supplement to the Geometric Design Guide for Canadian Roads
3. The Municipality of Metropolitan Toronto - Review of Bicycle Facilities on Metropolitan Toronto Roads

The above minimum values are generally applicable where conditions are such that:

i) In-line skating, pedestrian, and bicycle traffic is expected to be low;

ii) Horizontal and vertical alignments are such that safe and frequent passing opportunities are available; and

iii) Pavement conditions are suitable for in-line skating.

If any of these conditions are compromised, an increase in the pathway's width may be necessary to prevent conflicts and/or collisions. Engineering judgement is required to determine when the above conditions exists.

- In-line skating should be permitted on some roadways provided that the following "basic" criteria are satisfied. Until further investigation is conducted specific to the in-line skating

activity, these suggested guidelines must be considered in conjunction with sound engineering judgement. The following criteria apply to both urban and rural roadways:

- **Posted Speed**: Given the knowledge that exists regarding the braking characteristics of in-line skates and the operating space and surface requirements, it is recommended that **in-line skaters not be permitted on roadways where the posted speed exceeds 50 km/h**, unless separate bike or in-line skating lanes exist. It should be noted that this posted speed is generally less than that deemed acceptable for roadways which accommodate bicycle traffic (up to 80 km/h). Municipalities may wish to consider permitting in-line skaters on roadways where the posted speed is as high as 60 km/h if separate bike or in-line skating lanes exist.
- **Direction of Travel:** In-line skaters should travel in the direction of traffic when skating on the roadway.
- **Grade**: Generally should be <5% except for very short sections. The following table identifies the grades for both pathways and roadways that can be generally handled by skaters based on skating "ability":

TABLE 12
IN-LINE SKATING AND GRADES

GRADIENT	MAXIMUM DISTANCE	ABILITY OF SKATER[1]
1% - 3%	100 m	Beginner/Novice
3% - 5%	100 m	Beginner - Intermediate
5% - 10%	100 m	Experienced
> 10%	Evaluation Required	N/A

Note 1: Beginner: In-line skated for less than 1 season
Intermediate: In-line skated 2 seasons or more, or have taken lessons
Experienced: More than 2 seasons of in-line skating and have taken lessons

Source: IISA Guidelines for Establishing In-Line Skater Trails in Parks and Recreational Areas and the Canadian In-Line and Roller Skating Association

To permit or prohibit in-line skating on a specific road requires an evaluation of its grade in relation to the length of the inclined portion of the road. The following table is a

proposed evaluation tool that may be used to determine whether a certain road is appropriate for in-line skating:

TABLE 13
LENGTH OF SLOPE AND IN-LINE SKATING

% GRADE OF ROAD	LENGTH (m)	IN-LINE SKATING APPROPRIATE
< 3%	< 100	Yes
< 3%	≥ 100	Probably
≥ 3% - < 5%	< 100	Probably
≥ 3% - < 5%	≥ 100	Probably Not
≥ 5%	-	Not Recommended

- **Surface Condition**: Surface conditions must ***exceed*** what would be considered adequate conditions for use by bicycles. The surface should be free of gravel and other "contaminants" (including snow and ice); judgement will be required to determine whether the prevailing pavement surface is adequate for in-line skating. It is strongly suggested that in-line skate manufacturers provide literature with the purchase of skates advising users of appropriate surface conditions for skating and indicating that due care and judgement must be used when assessing the adequacy of surface conditions.
- **Bus or HOV Lanes**: In-line skating should not be permitted in HOV or bus lanes.
- **Parking**: As cycling is not recommended on roads where cyclists and parked vehicles share a lane if the lane is less than 4.0 m (Source: Canadian Institute of Planners' Community Cycling Manual), it follows that in-line skating is not recommended on a roadway if similar conditions exist. A marked parking lane of 2.5 m will help to ensure that vehicles park close to the curb and allows for a minimum width of 1.5 m for in-line skaters. In-line skate manufacturers should provide general guidance to users regarding appropriate "lane widths" and indicate that judgement must be used when selecting streets to skate on. This guidance should be contained in literature provided to purchasers of new in-line skates.

- **Bike Lanes**: Exclusive bike lanes are recommended to be a minimum of 1.5 m in width, which would also provide a suitable manoeuvring allowance for in-line skaters, ***although it is recognized that in-line skaters can, under certain circumstances, require more operating space than cyclists.***
- **Traffic Calming Devices:** Where traffic calming devices are in place, engineering judgement should be used to determine the appropriateness of in-line skating on the road.
- **Shoulders on Rural Roads**: Paved shoulders can be suitable for in-line skating provided the other roadway related criteria (width, surface conditions, etc.) are met. Paved shoulders should be a minimum of 1.5 m wide, although a width of 2.0 m is preferred. With the above shoulder widths, in-line skating could be permitted on roadways having a posted speed up to 60 km/h.

The above criteria are based on knowledge known to date and may be subject to modifications should further investigation be undertaken. Other criteria, such as stopping sight distance, cross section elements, and horizontal and vertical clearance, should generally conform to the guidelines in the CIP Community Cycling Manual or prevailing local policy documents dealing with cycling and bike paths.

6. Planning for in-line skating should be integrated into planning for pedestrian and bicycle facilities and in-line skating requirements should be considered in the context of mobility planning decisions and the cost implications associated with such decisions.

7. Municipalities, provincial and territorial agencies, in-line skating associations, and manufacturers should endorse and encourage the development and marketing of recognized accredited training and education programs for in-line skating. It is recommended that manufacturers provide information with all new skates on various aspects of in-line skating. The information should clearly identify that each skater must recognize their own abilities and then exercise judgement when selecting locations to skate and conditions which to skate under.

8. The following protective devices should be acknowledged as the recommended equipment to be worn or used by all participants in the activity.

Essential Equipment:

- A braking device on the skates (The Canadian Standards Association (CSA) has not, to date, been requested to develop a standard);
- A helmet that has been designed for multi-purpose use (The CSA has not, to date, developed a standard for in-line skating helmets);
- Wrist guards; and
- Elbow and knee pads.

Highly Desirable:

- Bell/whistle; and
- Reflective gear and lights on the helmet or arms (armbands) for night operation.

All equipment used by in-line skaters for the purpose of protecting the skater should be CSA approved, if applicable. At present, only the helmet is the foremost piece of equipment that requires approval, but until CSA develops a standard, helmets worn should be of the multi-use variety. Helmets designed for cycling and hockey do not provide the protection necessary for in-line skating.

9. The manufacturers of in-line skates should be encouraged to work with the CSA to develop standards for protective devices (including braking devices) identified in principle 8. above.

10. Signage is necessary to provide the in-line skater (and other users of the facility, if multi-use) with information regarding bridges, areas to approach with caution, roadway crossings, etc. However, because an in-line skater is susceptible to the dangers of surface contamination, stencil signs (pavement markings) should be avoided unless absolutely necessary.

6.0 IN-LINE SKATING REVIEW - PHASE 3 - WORK PLAN

The primary objective of Phase 3 of the In-Line Skating Review would be to build on the work previously undertaken in Phases 1 and 2, and in particular, to develop in-line skating guidelines from a national perspective which would include a review of signing and maintenance practices. The focus of Phase 3 would be to undertake a comprehensive consultation program with users and mobility providers across the country to identify design guidelines and standards for in-line skating relative to specific infrastructure elements. In addition, the study should include the identification of specific warrants or thresholds relative to the application of in-line skating on any roadway, pathway or multi-use trail. The Work Plan should also involve the development of a model ***"endangerment or reckless skating"*** bylaw that could potentially be adopted by municipalities in an effort to better manage and enforce in-line skating activities within the communities.

The Phase 3 Work Plan would include, but not be limited to, the following major tasks:

1. Develop a detailed work plan, activity schedule, cash flow projection and documentation procedure and submit to the Project Steering Committee for review.
2. Summarize and expand on the basic study issues/goals and objectives, as articulated above, and review with the Project Steering Committee.
3. Review the available literature and reference material collected as part of the Phase 1 and Phase 2 In-Line Skating Reviews conducted by TAC. Update material as required, focusing on new information that may be available from user groups, municipal agencies, academic institutions, provincial and territorial agencies, manufacturers, automobile clubs, etc.
4. Identify and articulate, in a working paper, the objectives for a workshop program to be undertaken across Canada. This working paper should include the issues to be covered, overall approach, anticipated deliverables and methods for contacting appropriate user groups and agencies.
5. Undertake a minimum of five (5) workshops across Canada. The purpose of these workshops will be to obtain input from mobility providers and users. The workshop should be held between the months of April and October, to maximize the potential for relevant input from users and to permit field observations to be conducted concurrent with the workshops. The activities associated with the workshop program should include, but may not be limited to:
    - Development of advertising and promotional materials/strategies;

- Development of consultation list (and consultation with local municipal staff);
- Preparation of an agenda/workshop booklet;
- Provision of an experienced facilitator/workshop leader; and
- Development and analysis of a workshop survey.

6. Conduct workshops and prepare follow-up documentation ensuring that all participants are provided with a copy of the material.
7. Re-assess and draw conclusions regarding the viability of various infrastructure alternatives using input obtained from the workshop sessions and recommend restrictions in terms of time periods and locations.
8. Develop guidelines for each infrastructure element indicating when and where it may be appropriate to permit in-line skating on each element of the transportation system. This is a critical component of the work program.
9. Identify a general approach that should be followed regarding the planning of in-line skating facilities, i.e. should the first priority be to develop off-road facilities before roadways are utilized.
10. Identify where there may be conflicts between design guidelines for cycling, pedestrians and other activities and in-line skating. Recommend solutions to these potential conflicts.
11. Obtain input from the Project Steering Committee regarding the viability of the proposed alternatives (depending on the project timing, this could involve a status report to TAC's National Committee on Uniform Traffic Control).
12. Research and summarize design guidelines for any facilities considered viable. The guidelines should include the following:
    - Vertical clearance;
    - Horizontal clearance;
    - Surface quality and maintenance;
    - Grades;
    - Signing and markings;
    - Horizontal and vertical curves;
    - Seasonal use of facilities;
    - Intersection treatment;
    - Maintenance requirements for all facilities;
    - How to deal with the potential of obstructions, such as sewer grates and maintenance hole covers; and
    - Railway and streetcar crossings.

The guidelines should also recognize the in-line skaters' criteria in addition to other users' criteria.

13. The summary of guidelines should include identification of the target group of users including age and skill level. Also include a comparison of requirements for in-line skaters to standard/guidelines for pedestrians and cycle facilities.
14. Define the role of municipal and provincial governments with respect to regulation of the in-line skating activity and the creation of enabling legislation and identify or suggest appropriate model legislation recognizing the need to deal with both adults and children. This aspect of the study should also identify the responsibilities of the different jurisdictions, whether local, provincial or federal.
15. Prepare an outline of the report, including any appendix requirements and submit to the Project Steering Committee for review.
16. Recommend which documents the work regarding guidelines on in-line skating should be incorporated into, i.e. Geometric Design Guide for Canadian Roads.
17. Suggest an approach to educating in-line skaters to ensure safe use of the appropriate facilities.
18. Suggest an approach to marketing/encouraging public awareness and general acceptance of this activity.
19. Develop a glossary for inclusion in the final report.
20. Identify and recommend future associated research requirements and techniques/strategies to collect and maintain data on usage, accident statistics, etc.
21. Prepare a draft report for review by the Project Steering Committee.
22. Prepare a final document for publication by TAC.

Appendix A
SURVEYS

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URGENT

September 12, 1996

RE: In-Line Skating Survey

In June 1995, the Transportation Association of Canada's (TAC) study, entitled *In-Line Skating Review*, was accepted by TAC as a basis for further investigation of how to incorporate in-line skating into the transportation system. As a result of the 1995 study, TAC accepted the notion that ***in-line skating is a viable mode of transportation***. This position is consistent with principles articulated in TAC's *A New Vision for Canadian Transportation* which recognizes the need to provide "environmentally friendly" modes of transportation and provide "easier access to a wider choice of transportation options".

The purpose of this survey is to explore several issues relating to in-line skating in more depth to gain a clearer understanding of opinions and sentiments regarding this activity and its role as a potential mode of transportation in Canadian society. The key areas we wish to explore through this survey relate to ***enforcement, safety, and liability*** and how these issues could affect the development of "guiding principles" for this activity.

Research conducted to date appears to indicate that physical and operating requirements make in-line skating an activity which could be considered incompatible with cycling, autos, buses, trucks, and pedestrians when considering potential joint use of various transportation facilities, i.e. roads, sidewalks, pathways, etcetera. Recognizing this activity as a viable means of transportation may require that in-line skating be incorporated into design standards for roads and pathways - potentially requiring significant revisions to roadway and bicycle facility standards. However, having said this, it is apparent that in-line skating is growing in popularity and it will be difficult and possibly impractical to prevent skaters from using various elements of the infrastructure until the required improvements are in place.

We would greatly appreciate your prompt response to this survey. It will assist the special TAC Committee studying the implications of in-line skating and assist in the development of guiding principles relating to the acceptability of in-line skating on roads, sidewalks, bicycle routes, trails, and pathways, and safety equipment requirements for users.

We require a response **at the latest by Friday, September 20, 1996**. ***Please FAX back your response to the number above. If you have any questions, please contact Joanna Musters.***

Thank you for your assistance.

Yours truly,

Doug Allingham, P.Eng.
Consultant Project Director

Introduction

The initial review of in-line skating in Canada was conducted in September 1995 by TAC. Through the review it was determined that there is no clear consensus among municipalities regarding how to deal with in-line skating -- some ban them from roads, other from sidewalks, others from both and some municipalities currently ignore the issue. As a result of many discussions with the various players involved in the in-line skating "debate", two models for managing in-line skating have evolved and are the subject of this survey along with the enforcement and liability issues which arise from them.

Model A: PERMIT IN-LINE SKATING TO SHARE ROADS AND OTHER INFRASTRUCTURE ELEMENTS

This model would consist of the following components:

- Definition of in-line skating (in some form) within provincial highway safety acts/legislation reflecting the activity as a viable mode of transportation.
- Enactment of Municipal "public endangerment" by-laws which would cover pedestrians, cyclists and in-line skaters, and would permit municipal enforcement authorities to charge these users for "*acting in a manner which endangers others or self*". (Note: the precise wording of the bylaw would be reviewed by legal and enforcement authorities). This type of bylaw would allow ticketing of users for reckless behaviour *anywhere within the public right-of-way*, e.g. not wearing helmets and/or safety equipment or using the equipment in a manner which endangers the user and other users of the transportation system.
- This approach would not preclude a municipality prohibiting any activity on specific routes or all routes but is intended to control in-line skating where it is deemed acceptable.
- Implies possible standards change over time to accommodate in-line skating on roads, pathways, etc.

Model B: ALLOW IN-LINE SKATING ON ALL INFRASTRUCTURE ELEMENTS, ONLY WHEN THE ELEMENTS ARE SPECIFICALLY DESIGNED TO ACCOMMODATE THE OPERATIONAL REQUIREMENTS OF IN-LINE SKATERS

This model would currently preclude any in-line skating on roads, most sidewalks and some multi-use paths within a municipality and would require the following:

- Clarification of provincial legislation to differentiate between autos, bicycles, in-line skates, etc.
- Implies recognition that although in-line skating is a viable means of transportation, it should be given a different and lower status than cycling.
- Commitment to enforcement of in-line skating prohibitions.
- Segregation of all non-motorized modes
- Implies that new standards will need to be developed to accommodate in-line skating on roads, paths, and sidewalks and will have to be implemented before in-line skating is allowed on specific facilities.

Below is a series of questions following from the above Models. **We would like the responses to reflect your municipality's/agency's opinion or official position on in-line skating.**

1. Do you accept the notion that in-line skating is a viable mode of transportation?
   ❑ Yes ❑ No ❑ Not sure

2. (a) Do you think that **Model A** is a viable option?
   ❑ Yes ❑ No
   ❑ Yes, but I have concerns that must be addressed: ❑ Safety of skaters
   ❑ Impact on auto/truck capacity ❑ Impact on overall roadway safety

❑ Liability to municipality/province ❑ All of the above ❑ Other_____

(b) Do you think that **Model B** is a viable option?
❑ Yes ❑ No
❑ Yes, but not practical to enforce and therefore cannot be considered as an acceptable solution

ENFORCEMENT

3. Does your jurisdiction currently have bylaws *specifically* pertaining to in-line skating ?
❑ Yes ❑ No

(a) Do enforcement agencies regularly enforce these bylaws ?
❑ Yes ❑ No
If not, why not? _____
_____

4. Many jurisdictions receive complaints regarding in-line skating. If you have the information available, approximately what percentage of these complaints would be related to skaters on Roads ? ___%
Sidewalks ___% Other ____% Please describe _____

5. If a total ban of in-line skates on roads and/or sidewalks were to be put in place, can your jurisdiction afford to provide additional enforcement ? ❑ Yes ❑ No

6. To what extent are cycling laws enforced ?
❑ Based on complaints ❑ As a matter of course ❑ Only in serious circumstances, e.g. cyclist responsible for an accident ❑ Not rigorously enforced ❑ Other (please specify) _____

OPERATIONS AND FACILITIES

7. Should the following facilities be restricted for use by:

	In-line skaters?		Bicycles?	
Bus lanes	❑ Yes	❑ No	❑ Yes	❑ No
HOV Lanes	❑ Yes	❑ No	❑ Yes	❑ No
Sidewalks -low traffic (e.g. residential areas)	❑ Yes	❑ No	❑ Yes	❑ No
Sidewalks -high traffic (e.g. downtown areas)	❑ Yes	❑ No	❑ Yes	❑ No

8. If it is determined that in-line skating should be allowed on roads, what would be the best design option:
❑ Use existing roads as designed, which meet certain criteria relative to traffic volumes, truck percentages, width, i.e. volume < 3000 vehicles per day, truck % < 5%
❑ Widen roads to provide a separate space for each of bikes, in-line skaters, and other vehicles.
❑ Combine in-line skating and bikes in their own space.
❑ Take away a lane of traffic to accommodate in-line skaters and bicyclists.
❑ Take away on-street parking to accommodate in-line skaters and bicyclists.
❑ Don't believe that in-line should be on the roads at all.

LIABILITY/LEGAL

9. How do you assess your potential liability risk resulting from a *total ban* of in-line skating *from roads and other facilities* in your municipality? ❑ No risk ❑ Low ❑ Moderate ❑ High ❑ Don't know

10. Would your municipality's potential exposure to litigation be any different with a selected prohibition of in-line skating from certain facilities as compared with a total ban? ❑ Yes ❑ No
    (a) If Yes, how would it be different? ❑ Higher ❑ Lower *Please explain why.*

    _____

    _____

11. Is municipality's potential exposure to litigation relative to in-line skating be any different than for bicycles?
    ❑ Yes ❑ No *Please explain your answer.*

    _____

    _____

12. (a) Has your municipality ever been sued for an incident related to in-line skating?
    ❑ Yes ❑ No
    (b) If Yes, what was the outcome? _____

13. Do you think that provincial legislation is required to better define in-line skating?
    ❑ Yes ❑ No *If Yes, please explain why* _____

14. Do you know of any reason why the proposed "public endangerment bylaw" suggested in Model A could not be implemented? ❑ Yes ❑ No *If Yes. Please explain.*

    _____

    _____

15. Would a bylaw requiring the wearing of safety equipment change your perception of the liability relating to in-line skating on roads? ❑ Same ❑ Reduced liability ❑ Increased liability ❑ Don't know

SAFETY

16. Would a bylaw requiring the wearing of safety equipment change your perception of safety of in-line skating on roads? ❑ It would make it safer ❑ There would be no change to the level of safety
    ❑ Don't know

17. In your opinion is in-line skating as an activity any less safe than bicycling ? ❑ Yes ❑ No
    Please explain _____

18. Do you agree or disagree with the following statements:

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
(a) Interaction between pedestrians & in-line skaters on the same facility is acceptable	❑	❑	❑	❑
(b) Interaction between bicycles & in-line skaters on the same facility is acceptable	❑	❑	❑	❑
(c) Interaction between autos/trucks & in-line skaters on the same facility is acceptable	❑	❑	❑	❑
(d) Roadway maintenance is a major safety problem for in-line skaters	❑	❑	❑	❑
(e) The condition of the roadway from a maintenance perspective is more of an issue for in-line skaters than bicyclists.	❑	❑	❑	❑

FUTURE OF TRANSPORTATION SERVICES

20. Do you agree or disagree with the following statements:

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
(a) We cannot as a society afford to develop infrastructure to accommodate in-line skating	❑	❑	❑	❑
(b) All non-motorized modes should be segregated if not compatible	❑	❑	❑	❑
(c) Concern about risk or liability is not a good reason to ban in-line skating	❑	❑	❑	❑
(d) Social attitudes preclude the safe use of infrastructure by non-motorized modes, i.e. intolerant auto/truck drivers	❑	❑	❑	❑
(e) We must make every reasonable effort to encourage reduced use of automobiles and increased use of non-motorized modes - even if it means affecting the current level of service on roadways.	❑	❑	❑	❑

21. Would your municipality be likely to undertake an upgrading of facilities in order that in-line skaters could use them ? ❑ Yes ❑ No ❑ Don't Know

22. (a) Is your municipality currently developing cycling routes? ❑ Yes ❑ No
(b) Would your municipality consider developing in-line skating routes? ❑ Yes ❑ No

YOUR MUNICIPALITY

23. What is your agency's role within the municipality ?
❑ Enforcement ❑ Legal ❑ Engineering ❑ Planning ❑ Other

24. What is the approximate population of your municipality ? _____

25. Who enforces local municipal bylaws ? ❑ Police ❑ Bylaw Officers ❑ Other

Please give us some information about yourself and your position:

Name _____ Agency _____
Position _____ Phone _____
Address _____ FAX _____

A prompt response to this survey would be greatly appreciated (BY FRIDAY, SEP 20, 1996). Please direct any questions to Doug Allingham or Joanna Musters at 905-668-9363.

Appendix B
SURVEY RESULTS

Appendix B
SURVEY RESULTS

IN-LINE SKATING REVIEW - PHASE 2 - MUNICIPAL RESPONSES

Municipality	Prov.	Pop.	1	2		3		4			5	6	7 - in-line				7 - bikes				8	9	10	11	12
				a)	b)	a)	b)	Roads	Sidewalks	Other			Bus	HOV	R.L.	R.H.	Bus	HOV	R.L.	R.H.					
Mississauga	ON	500000	Yes		Yes	Yes	No				No	Not rigorously enforced	Yes	Yes	No	No	No	No	Yes	Yes	Combine bikes and in-line	Low	Yes Lower	Yes - pavement must be better	
Regina	MB	180000	Yes	Safety of skaters Municipal liability	Not enforceable	No					No	Not rigorously enforced	Yes	Yes	No	No	No	No	Yes	Yes	Use existing roads	Low	Higher ***see survey***	Don't know	No
Cambridge	ON	100000	Not sure	No	Not enforceable	No	No				No	Serious circumstances	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Should not be on roads	Don't know	No Could not enforce	No Could not enforce	No
Whitehorse	YK																								
Charlottetown	PE	32000	Yes	No	Yes	Yes	No Insufficient manpower	40	60		No	Serious circumstances	No	No	No	No	No	No	No	No	Widen roads, shoulders	Don't know	No	No	No
North York	ON	550000	Yes	All of the above	No	Yes	No Practicality				No	Not rigorously enforced	Yes	Yes	No	No	No	No	No	Yes	Use existing roads	Don't know	No	Yes	No
New Westminster	BC	48000	Yes	Yes	No	No					No	Not rigorously enforced	Yes	Yes	No	No	No	No	No	Yes	Use existing roads	Don't know	No	No Potential for suit always exists	No
Victoria 1 of 2 responses	BC	76000	Yes	Safety, Impact on overall road safety	No	Yes	Yes				No	Matter of course	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Combine bikes and in-line	Don't know	No	No	No
Red Deer	AB	60000	Yes	All of the above	No	No	No				No	Not rigorously enforced	Yes		No	Yes	Yes		No	Yes	Combine bikes and in-line	Don't know	No	No Considered means of transportation	No
Waterloo Regional Municipality	ON	400000	Yes	Safety, Impact on overall road safety, liability	No	No					No	Not rigorously enforced	Yes	Yes	No	No	Yes	Yes	No	No	Widen roads	Moderate	Lower Standards must be met	Yes	No
Edmonton	AB	650000	Yes	Yes - should not be on roadways	No	Yes	No - new by-law	10	90		No	Complaints, serious circumstances	Yes	Yes	No	No	No	No	Yes	Yes	Should not be on roads	Low	Lower - limit in dangerous areas	Yes - bikes are a vehicle	No
Calgary (1) - 2 fatal accidents this year	AB	750000	Yes	No	Yes	Yes	Yes				No	Complaints	No	No	Yes	No	Yes	No	No	No	Widen roads, Combine in-line and bikes	No risk	Higher - must be expressed in HTA	Yes - bikes are a vehicle	No
Red Deer	AB	60000	Yes	Safety, liability	No	No					No	Complaints	No	No	Yes	No	No	No	Yes	No	Use existing roads, combine bikes and in-line	Don't know	Don't know	Don't know	No
Scarborough	ON	550000	Not sure	All of the above	Not enforceable	No		10	90		No	Serious circumstances	Yes	Yes	No	Yes	No	No	Yes	Yes	Use existing roads	Don't know		Yes	No
Niagara Falls	ON	77000	Yes	No	Yes	No	No				No	Not rigorously enforced	Yes		Yes	No	Yes		Yes	No	Widen roads	Low	Lower		No
Kingston	ON	65000	Yes	All of the above	Yes	Yes	No				No	Complaints			No	Yes			Yes	Yes	1,2,3,5	Low	Lower	Yes	Yes
Saskatoon	SK	20000	Yes	All of the above	No	No					No	Not rigorously enforced			No	No			No	Yes	***see survey***	Don't know	Lower ***see survey***	No - agency not always at fault	No
Metropolitan Toronto	ON		Yes	No/All of the above	Yes	Yes	No Basically unenforcble				No	Not rigorously enforced, serious circumstances										No risk	Higher ***see survey***	Yes - maintenance standards must be higher	No

IN-LINE SKATING REVIEW - PHASE 2 - MUNICIPAL RESPONSES

Municipality	Prov.	Pop.	1	2		3		4			5	6	7 - in-line				7 - bikes				8	9	10	11	12
				a)	b)	a)	b)	Roads	Sidewalks	Other			Bus	HOV	R.L.	R.H.	Bus	HOV	R.L.	R.H.					
Summerside	PE	15000	Not sure	All of the above	No	No	No	50	50		?	Complaints				No			No	No	Use existing roads	Low	Higher accidents	Yes - not legally defined	No
Whitby	ON	70000	Yes	Yes	Not enforceable	No					No		Yes	Yes	No	No	Yes	Yes	No	No	Combine bikes and in-line	Don't know	No		No
Victoria 2 of 2 responses	Yes	75000	Yes	All of the above	Not enforceable	Yes	No	100				Convenience				Yes	No	No	Yes	Yes	Combine bikes and in-line	Don't know			No
Ottawa-Carleton Regional Municipality	ON	700000	Yes	Impact on roadway safety, liability to municipalities	No	No	No - need prov. guide-lines				No	Complaints, enforcement blitzes			Yes	Yes			Yes	Yes	Use existing roads, widen roads	Low	Higher ban puts risks on skaters	Yes - novice, skills, surface defects	No
Winnipeg	MB		*see letter*																						
Windsor	ON	200000	Yes	All of the above	Not enforceable	No					No	Not rigorously enforced			Yes	Yes			Yes	Yes	Use existing, Widen roads, Combine	No risk	Higher	Yes - HTA refers to bikes	No
Langley	BC	22000	Yes	All of the above	No	No	No				No		Yes	Yes	No	No	Yes	Yes	Yes	Yes	Combine bikes and in-line	Don't know	No	No	No
West Vancouver	BC	40000	Yes	Impact on capacity, impact on safety, liability	No	No					No	Complaints	Yes	Yes	No	No	No	No	No	Yes	Use existing roads, combine bikes and in-line	Low	No	Yes - roadway maintenance is higher	No
Gatineau	PQ	105000	Yes	All of the above	Yes	No					Yes	Only in serious circumstances	No	No	No	No	No	No	No	No	Use existing roads	No risk	No	Yes	No
Montreal	PQ	1000000	No	No	Yes	Yes	Yes				Yes	Complaints, only in serious circumstances	No	No	No	No	No	No	No	No	Widen roads, combine in-line and bikes	Low	Higher *see survey*	No	Yes
Calgary (2)	AB	750000	Yes	No	Yes	Yes Gener park b	Yes clearly define offenses	1	10	90 conflict	No	As a matter of course, serious circumstances	Yes	Yes	No	No	No	No	No	Yes	Combine bikes and in-line	Low	Higher on munic.	No	
Calgary (3)	AB	750000	Yes	No	Yes	Yes	Yes				No	Complaints	No	No	Yes	No	Yes	No	No	No	Widen roads, combine in-line and bikes	No risk	Higher liability	Yes	No

IN-LINE SKATING REVIEW - PHASE 2 - MUNICIPAL RESPONSES

Municipality	13	14	15	16	17	18					20					21	22		23	25
						a)	b)	c)	d)	e)	a)	b)	c)	d)	e)		a)	b)		
Mississauga		No	Reduced liability	Safer	Less control	Somewhat agree	Somewhat agree	Somewhat disagree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Don't know	Yes	Yes	Engineering	Police By-law
Regina	No	No	Same	Safer	Yes Poor brakes Diff in speed	Somewhat agree	Somewhat agree	Somewhat disagree	Strongly agree	Somewhat agree	Strongly agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	No	Yes	No	Engineering	Police By-law
Cambridge	Yes	No	Same	Don't know	No	Somewhat disagree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	No	Yes	No	Enforcement Legal	Police By-law
Whitehorse																				
Charlottetown	No	Yes Too subjective	Reduced liability	Safer	No User determines safety	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Strongly disagree	Somewhat agree	Somewhat agree	Somewhat disagree	Strongly agree	Somewhat disagree	Don't know	Yes	Yes	Parks and Recreation	Police
North York	Yes	No	Reduced liability	Don't know	Yes Width required	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat agree	Strongly agree	Strongly agree	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat disagree	No	No	No	Engineering	Police By-law
New Westminster	No	No	Same	No change	Yes Braking, debris	Somewhat agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly agree	Somewhat disagree	Strongly agree	Somewhat disagree	Somewhat disagree	No	Yes	No	Engineering	Police By-law
Victoria 1 of 2 responses	No	No	Same	No change	Yes Braking, skill	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Don't know	Yes	Yes	Engineering	Police By-law
Red Deer	No	Yes Difficult to enforce	Same	No change	Yes	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	No	Yes	Yes	Planning and Programming	By-law
Waterloo Regional Municipality	Yes	No	Same	Safer	Yes Higher mntnce standards req.	Somewhat disagree	Somewhat agree		Strongly agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Yes - as bike routes	Yes	No	Engineering	Police By-law
Edmonton	Yes - set standards	No ***see survey***	Reduced liability	Safer	No	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	No	Yes	No	Engineering	Police By-law
Calgary (1) - 2 fatal accidents this year	Yes - authority to pass by-laws	Yes - won't apply to minors	Same	No change	Yes - operating and braking	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Don't know	Yes	Yes	Traffic Operations	Police By-law
Red Deer	Yes - particularly if joint use on roads	No	Same	Safer	Yes - more operating space	Somewhat agree	Strongly agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Don't know	Yes		Engineering	Police
Scarborough	Yes	No	Reduced liability	Safer	Yes - less control	Somewhat agree	Somewhat agree	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Strongly disagree	No	No	No	Engineering	Police
Niagara Falls	Yes	Yes - safety	Same	No change	Yes - braking	Somewhat disagree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	No	Yes	No	Recreation	By-law
Kingston	Yes	No	Reduced liability	Safer	Yes	Somewhat disagree	Strongly agree	Somewhat disagree	Strongly agree	Strongly agree	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat agree	Strongly disagree	Don't know	Yes	Yes	Engineering	Police By-law
Saskatoon	No	No	Same	Safer, not for others on roads	Yes - braking	Somewhat agree	Strongly agree	Somewhat agree		Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Don't know	Yes		Engineering	Police By-law
Metropolitan Toronto	Yes ***see survey***	No	Reduced liability	Safer	Yes - braking and manoeuvrability	Somewhat agree	Somewhat agree	Somewhat disagree	Strongly agree	Strongly agree	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Don't know	Yes	Yes	Engineering	Police

IN-LINE SKATING REVIEW - PHASE 2 - MUNICIPAL RESPONSES

Municipality	13	14	15	16	17	18					20					21	22		23	25
						a)	b)	c)	d)	e)	a)	b)	c)	d)	e)		a)	b)		
Summerside	Yes	No biased questn	Don't know	Safer	Yes	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Strongly disagree	Somewhat agree	No	No	No	Engineering	Police
Whitby	No	No	Same	No change	No	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Don't know	No	No	Engineering Enforcement	By-law
Victoria 2 of 2 responses						Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat agree	Don't know	Yes		Engineering	Police By-law
Ottawa-Carleton Regional Municipality	Yes - consistency and uniformity		Reduced liability	Safer	Yes - movement less predictable	Somewhat agree	Somewhat agree	Somewhat agree	Strongly agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat agree	Strongly disagree	Don't know	Yes	No	Engineering	Police By-law
Winnipeg																				
Windsor	Yes	No	Same	Safer	No	Depends on width	Depends on width	Somewhat agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat disagree	No	Yes	No	Engineering Transp. Planning	Police By-law
Langley	No	No	Reduced liability	Safer	No	Somewhat agree	Strongly agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	No	Yes	Yes	Parks and Recreation	By-law
West Vancouver	Yes	No	Same	Safer	Yes	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat disagree	No	No	No	Engineering	By-law
Gatineau	Yes	No	Same	No change	No	Strongly disagree	Somewhat agree	Somewhat disagree	Strongly agree	Strongly agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	No	Yes	No	Engineering	Police By-law
Montreal	No	Yes	Same	No change	Yes	Somewhat disagree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat disagree	Somewhat disagree	Somewhat disagree	No	Yes	No	Engineering Planning	Police
Calgary (2)			Don't know	Safer	Yes difficult to brake	Strongly agree	Strongly agree	Strongly disagree	Somewhat disagree	Somewhat disagree	Strongly disagree	Strongly agree	Somewhat agree	Somewhat agree	Strongly agree	Yes	Yes	Yes	Parks	By-law
Calgary (3)	Yes	Yes Not applicable to minors <12	Same	No change	Yes different brakes	Somewhat agree	Somewhat agree	Strongly disagree	Strongly agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Don't know	Yes	Yes	Planning	By-law

IN-LINE SKATING REVIEW - PHASE 2 - CHIEFS OF POLICE RESPONSES

Municipality	Prov.	Pop.	1	2		3		4			5	6	7 - In-line				7 - bikes				8	9	10	11	12
				a)	b)	a)	b)	Roads	Sidewalks	Other			Bus	HOV	R.L.	R.H.	Bus	HOV	R.L.	R.H.					
Tracadie-Sheila	NS	5000	Yes	No	Not enforceable	No	Yes	0	0	0	Yes	Complaints	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Should not be on roads	Low	No	Yes - in ACT	No
Wikwemikong	ON	3000	Yes	All of the above	Not enforceable	No						Complaints	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Widen roads	Low	Yes Lower	Yes - young skaters	No
Leamington	ON	15000	Yes	All of the above	No	Yes	No - not high priority				No	Not	No	Yes	Yes	No	No	Yes	Yes	No	Combine bikes and in-line	Don't know	No	No - same as bike	No
New Liskeard	ON	5500	No	All of the above	No	Yes	No - cost of enforcement	?	?	?	No	Complaints	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Should not be on roads	Low	Yes	Yes - in HTA	No
Wallaceburg	ON	12000	Yes	All of the above	Not enforceable	No		95			No	Not rigorously enforced	Yes	Yes	Yes	Yes	No	No	Yes	Yes	2,3,4,5	Don't know	No	No	No
London	ON	336000	No	No	Yes	No					Yes	Not rigorously enforced	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Combine bikes and in-line	No risk	Yes Higher	Yes	No
Waterloo Regional	ON	420000	No	No	No	No					Yes	Complaints Matter of course	No	No	No	No	No	No	No	No	Should not be on roads	Low	No		No
Charlottetown	PE	32000	Yes	No	Yes	Yes	No - difficult to enforce	40	60		No	Only in serious circumstances	No	No	No	No	No	No	No	No	Widen roads	Don't know	No	No	No
Miramichi	NB	22000	No	No	Not enforceable	No	No	5	40	55 Parking lots		Complaints	Yes	Yes	Yes	Yes	No	No	Yes	No	Combine bikes and in-line	High	No	Yes - bikes are more controllable	No
Essex	ON	6700	No	Yes	No	No					Yes	Complaints	Yes	Yes	No	Yes	No	No	No	Yes	Use existing, Combine bikes and in-line	Don't know	Don't know	No	No
Sarnia	ON	73000	Yes	All of the above		No	No				No	Not rigorously enforced	No	No	Yes	No			No	No	Use existing, Combine bikes and in-line	Low			No
Yellowknife	NT	17000	Yes	Safety, impact on overall road safety, liability	Not enforceable	No	N/A	10	80	10 Paths	No	Not rigorously enforced	Yes	Yes	No	Yes	Yes	Yes	No	No	Combine bikes and in-line	Don't know	Yes - lower discriminates	Yes Unless regulated and enforced	No
Metro Toronto	ON	2100000	No	No	No	Yes	Yes				No	Matter of course	No	No	No	No					Should not be on roads	No risk	Yes - higher		
Brockville	ON	22000	Yes	Safety, impact on road safety, other	No, but not not enforceable	Yes	No				No	Not rigorously enforced	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Widen roads	Moderate	Yes - lower	No	No
Hawkesbury	ON	10000	Yes	No	Yes	Yes	Yes				No	Matter of course	No	No	Yes	No	No	No	No	No	Should not be on roads	Moderate	No	No	No
Saskatoon	SK	200000	No	All of the above	No	No	No				No	Not rigorously enforced	No	No	Yes	Yes			No	Yes	Should not be on roads	Don't know	No	No	No
Fredericton	NB	45000	Yes	Yes		Yes	No - Council direction				Yes	Complaints			No	No					Widen roads	No risk	Yes - higher	Yes - bikes in MVA	No
Hamilton-Wentworth	ON	500000	Not sure	Impact on road safety, liability	Not enforceable	No	No	10	90		No	Not rigorously enforced	No	No	No	No	Yes	Yes	No	No	Should not be on roads	Low	No		

IN-LINE SKATING REVIEW - PHASE 2 - CHIEFS OF POLICE RESPONSES

Municipality	Prov.	Pop.	1	2		3		4			5	6	7 - in-line				7 - bikes				8	9	10	11	12
				a)	b)	a)	b)	Roads	Sidewalks	Other			Bus	HOV	R.L.	R.H.	Bus	HOV	R.L.	R.H.					
Ottawa Carleton	ON	300000	Yes	All of the above		No	Yes	5	10		Yes	As a matter of course	No	No	No	No					Combine bikes and in-line	Don't know	Lower	No	No
Durham Region	ON	410000	Not sure	All of the above		No					No	Complaints, serious circumstances, Not rig. enforced	No		Yes	No	No		Yes	No	Should not be on roads	Don't know	No	Yes - bikes in HTA	?
Waterloo	ON	90000	Yes	All of the above	Not enforceable	No					No	Not rigorously enforced	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Should not be on roads	Don't know	Lower	No	No
Alexandria	ON	3500	Yes	No	Yes	No		No complaints			No	As a matter of course	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Should not be on roads	No risk	Higher	Yes	No
Amherst	NS	10000	No	Yes	No	No	No				No	Complaints			Yes	Yes			Yes	Yes	Use existing roads, combine bikes and in-line	Don't know	No		No
Elliot Lake	ON	15000		All of the above		No	No				No	Complaints	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Use existing roads	High	No	No - both fall into the same category	No
Halton Region	ON	300000	No	No	Not enforceable	Yes	No - lack of resources				No	Complaints	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Combine bikes and in-line	Moderate	No - enforcmt is key to ban	Yes - bikes in HTA	
Port Hope	ON	12500	Yes	No	Yes	No	No	10	5	5	No	Complaints	No	Yes	Yes	No	No	Yes	Yes	No	Widen roads	Moderate	No	No	No
Sudbury Regional	ON	160000	No	No	Not enforceable	No	No				Yes	Bicycle patrol	No	No	Yes	Yes	No	No	Yes	Yes	Combine	Low	Lower - we would provide alternative	Yes - bikes are a means of trans.	No
Brandon	MB	38600	Yes	Impact on road safety, liability	No	yes	No				No	Complaints, as time permits	Yes		No	Yes	No		Yes	Yes	Should not be on roads	Low	Higher ***see survey***	Yes - surface cond. are a concern	No
Barrie	ON	85000	Yes	No	Yes	Yes	No very low priority				No	Complaints	Yes	No	Yes	Yes	No	No	Yes	Yes	Widen roads	No risk	No	No	No
Smith Falls	ON	9500	Yes	All of the above	No	No					No	Complaints, not rigorously enforced	Yes		No	Yes	Yes		No	Yes	Combine bikes and in-line	Don't know	No	No - accepted mode of transportation	No
Niagara Region	ON	365000	Yes	Other	Not enforceable	No					No	Not rigorously enforced			Yes	Yes			Yes	Yes	Should not be on roads	Low	Higher	No	?
Sault Ste. Marie	ON	80000	No	No	No	No				Parking lots	Yes	Not rigorously enforced	No	Yes	No	No	No	Yes	Yes	Yes	Should not be on roads	Low	No	Yes - bikes accepted mode of transportation	No
Winnipeg	MB	650000	Yes	No	Yes	Yes	Yes				No	Complaints, matter of course	No	No	No	No	Yes	No	No	No	Combine bikes and in-line	Low	No	No	No
Victoria	BC	75000	Yes	Yes, but	No	Yes	Yes				Yes	A matter of course	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Combine bikes and in-line	No risk	No		
Pembroke	ON	15000	Yes	Yes	No	No					No	A matter of course	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Combine bikes and in-line				No
Saint John	NB	75000	No	No	Yes	No		100			No	Only in serious circumstances	No	No	No	No	Yes	Yes	No	No	Widen roads	High	No	No	No

IN-LINE SKATING REVIEW - PHASE 2 - CHIEFS OF POLICE RESPONSES

Municipality	Prov.	Pop.	1	2		3		4			5	6	7 - in-line				7 - bikes				8	9	10	11	12
				a)	b)	a)	b)	Roads	Sidewalks	Other			Bus	HOV	R.L.	R.H.	Bus	HOV	R.L.	R.H.					
Lethbridge	AB	68000	Not sure	No	Yes	No	No	70	30		No	Complaints, Only in serious circumstances			No	No			No	No	Should not be on roads	Don't know	Don't know	No	
Saanich	BC	100000	No	No	No/Not enforcble	No	No	90	10		Yes	Only in serious circumstances			No	No			No	No	Should not be on roads	No risk	Higher liability	Yes - surface cond. width required	No
Whitehorse	YK	22000	No	No	Not enforceable	No					No		Yes	Yes		Yes	No	No	Yes	Yes	Should not be on roads	Don't know	No	No	No
Summerside	PE	14500	Yes	All of the above	Yes	No					No	Complaints	No	No	Yes	No	No	No	No	No	Widen roads	No risk	No	No	No
Edmonton	AB	700000	Yes	No	Yes	Yes	Yes				No	Complaints	Yes		Yes	Yes					Widen roads	Low	Lower	No	No
Brand Bay	NB	4000	Yes	All of the above	No	No					No	A matter of course			Yes	Yes	No	No	No	No	Combine bikes and in-line, should not be on roads	Don't know			
Abbotsford	BC	100000	No	No	Not enforceable	No	No				No	Not rigorously enforced, serious circumstances	No	No	No	No	Yes	Yes	No	No	Widen roads	No risk		No	
Saint-Foy	PQ	80000	Yes	Impact on road safety, liability	Yes	Yes	Yes				Yes	Only in serious circumstances	No		Yes	No	No		No	No	Combine bikes and in-line, should not be on roads	No risk	No	No	No
Drummondville	PQ	46000	Yes	All of the above	Not enforceable	Yes	Yes				No	Not rigorously enforced	No		No	No	No		No	No	Widen roads ***see survey***	Low	No	No	No
Rouyn-Noranda	PQ	30000	Yes	No	Yes	Yes	Yes	10	90		Yes	Complaints	No		No	No	No		No	No	Widen roads, combine bikes and in-line	Low	No	No	
Parc Olympique	PQ		Yes	No	Yes	No	No						No	No	No	No	No	No	No	No	Widen roads	Moderate	No	No	No
Baie-Comeau	PQ	27000	Yes	All of the above	No	Yes	Yes				No	Not rigorously enforced	Yes		No	No	Yes		No	No	***see survey***	Moderate	Lower	Yes	No
Sept-Iles	PQ	25000	Yes	Impact on capacity, impact on safety, liability	Not enforceable ***see survey***	Yes	No				Yes	Only in serious circumstances	No		No	No	No		No	No	Combine in-line and bikes, should not be on road	Higher	Yes ***see survey***	No ***see survey***	No
Quebec	PQ	175000	No	No	Yes	Yes	Yes				Yes	Not rigorously enforced	No		No	No	No		No	No	Widen roads	No risk	Yes	Yes	No
Charlesbourg	PQ	75000	No	No	Not enforceable	Yes	Yes				Yes	Not rigorously enforced	No		Yes	No	No		Yes	No	Combine in-line and bikes	Low	No	No	No
Hull	PQ	63000	Yes	Yes	Safety of skaters, liability	Yes	No				No	Not rigorously enforced	No	No	Yes	No	No	No	No	No	Widen roads	No risk	Yes	Yes ***see survey***	No
Port Moody	BC	20000	Not sure	No	Yes	No	No				No	Only in serious circumstances	No	No	Yes	Yes	No	No	Yes	Yes	Should not be on roads	Don't know	Lower	Yes	Yes
Banff	BC	50000	Yes	No	Not enforceable	Yes	Yes	50	50			As a matter of course	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Should not be on roads	No risk	No		No

IN-LINE SKATING REVIEW - PHASE 2 - CHIEFS OF POLICE RESPONSES

Municipality	13	14	15	16	17	18					20					21	22		23	25
						a)	b)	c)	d)	e)	a)	b)	c)	d)	e)		a)	b)		
Tracadie-Sheila	Yes	Responsibility of Municipality	Same	No Change	Yes - Less attention on in-line skaters	Strongly disagree	Somewhat agree	Strongly disagree	Strongly agree	Somewhat agree	Strongly disagree	Somewhat disagree	Somewhat disagree	Somewhat agree	Strongly disagree	Don't know	Yes	No	Enforcement	Police
Wikwemikong	No	No	Don't know	Safer	No	Somewhat disagree	Somewhat agree	Somewhat disagree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	No	No	No	Enforcement	Police
Leamington	Yes - provide definition	No	Same	Safer	No	Strongly agree	Somewhat disagree	Somewhat agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat disagree	Somewhat disagree	Somewhat disagree	Somewhat agree	Don't know	No	No	Enforcement	Police
New Liskeard	Yes	No	Same	Safer	Yes - no rules	Strongly disagree	Somewhat disagree	Strongly disagree	Strongly disagree	Strongly disagree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat disagree	No	No	No	Enforcement	Police
Wallaceburg	Yes	No	Don't know	Safer	Yes - control in-line, effect of debris	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Don't know	No	Yes	Enforcement	Police
London	Yes	No	Reduce liability	No change	Yes	Strongly disagree	Somewhat agree	Strongly disagree	Somewhat agree	Strongly agree	Somewhat disagree	Strongly agree	Somewhat agree	Strongly agree	Strongly disagree	No	Yes	No	Enforcement	Police By-law
Waterloo Regional	No	Yes - will not identify self	Same	No change	Yes - braking	Strongly disagree	Somewhat agree	Strongly disagree	Strongly disagree	Strongly disagree	Strongly disagree	Somewhat agree	Somewhat agree	Somewhat agree	***See survey***	Don't know	Yes		Enforcement	Police By-law
Charlottetown	No	Yes - subjective	Reduced liability	Safer	No - user determines safety	Somewhat agree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Don't know	Yes	Yes	Enforcement	Police
Miramichi	No	No	Don't know	No change	Yes - bikes more controllable	Somewhat agree	Somewhat agree	Strongly disagree	Strongly agree	Strongly agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly disagree	No	Yes	?	Enforcement	Police
Essex	No	No	Reduced liability	Safer	No	Somewhat agree	Strongly agree	Strongly disagree	Strongly disagree	Strongly disagree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	No	No	No	Enforcement	Police
Sarnia	Yes	No	Same	Safer	No - only if safety equip. is used	Somewhat disagree	Strongly agree	Somewhat agree	Strongly agree	Strongly agree	Strongly disagree	Somewhat disagree	Strongly agree	Somewhat disagree	Strongly agree	Don't know	No	No	Enforcement	Police By-law
Yellowknife	Yes Uniform regulations	Yes - requires accident, high enforcmt cost	Same	No change	Yes Requires more space, braking	Strongly disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Don't know	Yes	No	Enforcement	By-law
Metro Toronto	No	Yes - lack of resources	Same	No change	Yes	Strongly disagree	Somewhat disagree	Strongly disagree	Somewhat agree	Strongly agree	Strongly agree	Strongly agree	Somewhat disagree	Strongly disagree	Somewhat disagree	Don't know	Yes	?	Enforcement	Police By-law
Brockville	Yes	No	Same	Safer	No	Strongly agree	Strongly agree	Somewhat disagree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Yes	Yes		Enforcement	Police By-law
Hawkesbury	Yes Education is required	No	Don't know	No change	No	Somewhat disagree	Strongly disagree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat agree	Don't know	No	No	Enforcement	Police By-law
Saskatoon		No	Reduced liability	Safer	Yes	Strongly agree	Somewhat agree	Strongly disagree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Somewhat agree	Somewhat disagree	No	Yes	?	Enforcement	Police
Fredericton	No	No	Reduced liability	Safer	No	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat agree		Strongly agree	Don't know	Yes	Yes	Enforcement	Police By-law
Hamilton-Wentworth	No	No	Same	Safer	Yes	Strongly disagree	Strongly disagree	Strongly disagree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat agree	Somewhat agree	Don't know	Yes		Enforcement	Police By-law

IN-LINE SKATING REVIEW - PHASE 2 - CHIEFS OF POLICE RESPONSES

Municipality	13	14	15	16	17	18					20					21	22		23	25
						a)	b)	c)	d)	e)	a)	b)	c)	d)	e)		a)	b)		
Ottawa Carleton	Yes	No	Reduced liability	Safer	Yes	Strongly disagree	Strongly agree	Strongly disagree	Somewhat agree	Strongly disagree	Strongly agree	Strongly disagree	Strongly agree	Strongly agree	Somewhat agree	Don't know	Yes	Yes	Enforcement	Police By-law
Durham Region	Yes - give meaning to by-laws	No	Same	No change	Yes - less control braking	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Don't know	Yes		Enforcement	Police By-law
Waterloo	No	No	Don't know	No change	No - always a danger	Strongly disagree	Strongly agree	Strongly disagree	Somewhat agree	Strongly agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly disagree	Don't know	Yes		Enforcement	Police By-law
Alexandria	Yes	Yes	Same	Safer	No	Strongly agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Strongly agree	Strongly agree	Somewhat agree	Somewhat disagree	No	No	No	Enforcement	Police
Amherst	Yes	No	Don't know	Safer	No - risk of acc. the same	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat disagree	No	No	No	Enforcement	Police By-law
Elliot Lake	Yes	No	Don't know	Safer	No	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Strongly agree	Strongly agree	Strongly disagree	Strongly agree	Somewhat agree	Strongly disagree	No	No	No	Enforcement	Police By-law
Halton Region	No	No	Reduced liability	No change	Yes - less control	Somewhat disagree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Don't know	Yes		Enforcement	Police By-law
Port Hope	Yes	No	Reduced liability	Don't know	No	Strongly agree	Strongly agree	Strongly disagree	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat disagree	Don't know	Yes	Yes	Enforcement	Police
Sudbury Regional	Yes	No	Same	No change	No - less skill required for bikes	Strongly disagree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Strongly disagree	Strongly agree	Somewhat disagree	Don't know	Nó	No	Enforcement	Police By-law
Brandon	Yes	No	Same	No change	Yes - more variables for harm	Strongly disagree	Somewhat agree	Somewhat disagree	Strongly agree	Strongly agree	Strongly agree	Somewhat agree	Strongly disagree	Somewhat disagree	Somewhat disagree	Don't know	Yes	No	Enforcement	Police By-law
Barrie	Yes	No	Same	No change	Yes - bikes have brakes	Strongly disagree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat disagree		Somewhat disagree	Don't know	Yes	Yes	Enforcement	Police By-law
Smith Falls	No	No	Don't know	No change	No *see survey*	Somewhat agree	Somewhat agree	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly disagree	No	No	No	Enforcement	Police By-law
Niagara Region	No	No	Reduced liability	Safer	No	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Strongly disagree	No	Yes	No	Enforcement	Police By-law
Sault Ste. Marie	Yes *see survey*	Yes *see survey*	Reduced liability	Safer	Yes *see survey*	Strongly disagree	Somewhat agree	Strongly disagree	Strongly agree	Strongly agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Don't know	Yes	Yes	Enforcement	Police
Winnipeg	Yes	No	Don't know	No change	Yes - control, contact with road surface	Strongly disagree	Strongly agree	Strongly disagree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat disagree	No	No	No	Enforcement	Police By-law
Victoria	No	No	Same	No change	Yes	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Strongly disagree	Strongly agree	Don't know	Yes		Enforcement	Police Other
Pembroke	No	No	Reduced liability	Safer	No	Somewhat agree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Strongly agree	Don't know	Yes		Enforcement	Police
Saint John	Yes	No	Reduced liability	No change	Yes	Strongly disagree	Somewhat disagree	Strongly disagree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Somewhat disagree	Strongly agree	Somewhat agree	Don't know	No		Enforcement	Police Other

IN-LINE SKATING REVIEW - PHASE 2 - CHIEFS OF POLICE RESPONSES

Municipality	13	14	15	16	17	18					20					21	22		23	25
						a)	b)	c)	d)	e)	a)	b)	c)	d)	e)		a)	b)		
Lethbridge	Yes	Yes - resources	Don't know	No change	Yes	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat disagree	Don't know	Yes		Enforcement	Police By-law
Saanich	Yes	Yes - difficult to enforce	Same	Safer	Yes	Strongly disagree	Somewhat disagree	Strongly disagree	Strongly agree	Strongly agree	Strongly agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat disagree	No	Yes	No	Enforcement	Police By-law
Whitehorse	No	No	Same	No change	Yes - braking, slower speed	Somewhat agree	Somewhat disagree	Strongly disagree	Somewhat agree	Strongly agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	No	Yes		Enforcement Engineering Planning	Police By-law
Summerside	No	No	Reduced liability	Safer	No	Somewhat disagree	Somewhat agree	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Don't know	Yes	No	Enforcement	Police By-law
Edmonton	No	No	Reduced liability	Safer	Yes - braking	Somewhat disagree	Somewhat disagree	Strongly disagree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat disagree	Somewhat disagree	No	Yes	?	Enforcement	Police By-law
Brand Bay		No	Don't know	Safer	No	Somewhat agree	Strongly agree	Strongly disagree	Strongly agree	Somewhat agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly disagree	No	Yes		Enforcement	Police By-law
Abbotsford	Yes	No	Reduced liability	Safer	No	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	No	Yes		Enforcement	Police
Saint-Foy	Yes	No	Same	No change	No	Somewhat disagree	Strongly agree	Strongly disagree	Strongly agree	Strongly agree	Somewhat agree	Strongly agree	Somewhat agree	Strongly disagree	Somewhat agree	Don't know	Yes	No	Enforcement	Police
Drummondville	Yes	Yes	Reduced liability	Safer	Yes	Strongly disagree	Somewhat agree	Somewhat agree	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly agree	Yes	Yes		Enforcement	Police
Rouyn-Noranda	Yes	Yes	Reduced liability	Safer	Yes	Somewhat disagree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly agree	Yes	Yes	Yes	Enforcement	Police
Parc Olympique	No	No	Same	Safer	Yes	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat disagree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly agree	Strongly agree	Somewhat agree	Don't know	Yes	?	Other	Police
Baie-Comeau	Yes	No	Same		No	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly agree	No	Yes	No	Enforcement	Police
Sept-Iles	Yes *see survey*	No	Increased liability	Safer	No	Somewhat disagree	Strongly agree	Strongly disagree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly disagree	Somewhat disagree	Strongly disagree	Don't know	No	No	Enforcement	Police By-law
Quebec	Yes	*see survey*	Reduced liability	No change	Yes	Strongly disagree	Strongly disagree	Strongly disagree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Don't know	Yes	Yes	Enforcement	Police
Charlesbourg	Yes	No	Same	Safer	No	Strongly disagree	Strongly agree	Strongly disagree	Strongly agree	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat disagree	Don't know	Yes	No	Enforcement	Police
Hull	Yes	Yes	Reduced liability	No change	Yes	Somewhat agree	Somewhat agree	Somewhat agree	Strongly agree	Strongly agree	Somewhat agree	Somewhat disagree	Somewhat agree	Strongly agree	Somewhat disagree	Don't know	Yes	No	Enforcement	Police
Port Moody	Yes	Yes	Don't know	No change	Yes	Somewhat agree	Somewhat agree	Strongly disagree	Strongly agree	Strongly agree	Somewhat agree	Strongly agree	Strongly disagree	Strongly agree	Somewhat disagree	No		No	Enforcement	Police By-law
Banff	No	No	Don't know	Safer	No	Strongly disagree	Somewhat agree	Strongly disagree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	No	No		Enforcement	Police By-law

IN-LINE SKATING REVIEW - PHASE 2 - CITY SOLICITOR RESPONSES

Municipality	Prov.	Pop.	1	2		3		4			5	6	7 - in-line				7 - bikes				8	9	10	11
				a)	b)	a)	b)	Roads	Sidewalks	Other			Bus	HOV	R.L.	R.H.	Bus	HOV	R.L.	R.H.				
Suite Ste. Marie	ON	80000	Not sure	No	No	No					No	Not rigorously enforced			Yes	No			Yes	No	Should not be on roads	No risk	No	Yes - bikes are in HTA
Fredericton	NB	48000	Yes	Impact on road safety, liability	Not enforceable	Yes	No - directed by Council not to				No	Not rigorously enforced			No	Yes			No	Yes	Use existing roads, combine bikes and in-line	Moderate	Higher ***see survey***	Yes - bikes are in Act
Courtenay	BC	25000	Yes	All of the above	No, but not enforceable	No					No	Only in serious circumstances			No	No			No	No	Combine bikes and in-line	Low	Higher ***see survey***	Yes - offers motorists new problem
Moncton	NB	70000	Not sure	All of the above	No	Yes	Yes				No	Complaints			Yes	No			No	No	Should not be on roads	No risk	Higher	No
Ottawa	ON		Yes	Yes	No	Yes	No				No	As a matter of course	Yes	Yes	No	Yes	No	No	Yes	Yes	Take away a lane, combine bikes and in-line	Low	Higher ***see survey***	Yes - bikes are in HTA
Halifax	NS	350000	Not sure	No		Yes					No	Complaints	No	No	No	No	No	No	No	No	Use existing roads, should not be on roads	No risk	Higher Ambiguity	Yes - less visible
Charlottetown	PE	30000	Yes	No	No	No	No	50	50		No	Complaints	Yes	Yes	Yes	Yes					Widen roads, Combine bikes and in-line	Moderate	Lower	Yes

IN-LINE SKATING REVIEW - PHASE 2 - CITY SOLICITOR RESPONSES

Municipality	12	13	14	15	16	17	18					20					21	22		23	25
							a)	b)	c)	d)	e)	a)	b)	c)	d)	e)		a)	b)		
Suite Ste. Marie	No	Yes - to set standards	Yes Increased liability	Reduced liability	Safer	No - depend on skater	Somewhat disagree	Somewhat agree	Strongly disagree	Strongly agree	Strongly agree	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat disagree	No	Yes	No	Legal	Police
Fredericton	No	Yes - it is a mode of transportation	Yes - limits	Reduced liability	Safer	Yes - skill level lower	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly agree	No	Yes	Yes	Legal	Police By-law
Courtenay	No	No	No	Reduced liability	Safer	Yes	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat disagree	Somewhat disagree	Somewhat disagree	No	Yes	Yes	Legal	Police By-law
Moncton	No	Yes	No	Same	No change	No	Somewhat agree	Somewhat disagree	Strongly disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	No	No	No	Legal	Police
Ottawa	No	Yes	Yes - not within Auth. to enact		No change	Yes ***see survey***	Somewhat agree	Strongly agree	Somewhat disagree	Strongly agree	Strongly agree	Somewhat disagree	Strongly disagree	Somewhat disagree	Strongly disagree	Strongly agree	Don't know	Yes	Yes	Legal	
Halifax	No	Yes	Yes	Reduced liability	Safer	Yes ***see survey***	Somewhat disagree	Somewhat agree	Somewhat disagree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat disagree	Somewhat agree	Somewhat disagree	No	Yes	No	Legal	Police By-law
Charlottetown	No	Yes	Yes - public pressure	Reduced liability	Safer	Yes Inadequate roads	Somewhat disagree	Somewhat agree	Somewhat disagree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat agree	Don't know	Yes	No	Legal	Police

IN-LINE SKATING REVIEW - PHASE 2 - PROVINCIAL/TERRITORIAL RESPONSES

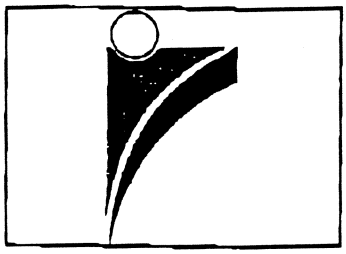
Municipality	Prov.	Pop.	1	2		3		4			5	6	7 - in-line				7 - bikes				8	9	10	11
				a)	b)	a)	b)	Roads	Sidewalks	Other			Bus	HOV	R.L.	R.H.	Bus	HOV	R.L.	R.H.				
Northwest Territories	NT	17000	Yes	Yes	No	No			50	50	No	Not rigorously enforced	No	No	No	Yes	No	No	Yes	Yes	Use existing roads	Don't know		
Nova Scotia	NS	800000	Yes	Safety of skaters	Not enforceable	No	No				No	Not rigorously enforced			No	Yes	No				Combine bikes and in-line	Don't know	No	No
PEI	PE		Yes	All of the above	No	Yes	No				No	Not rigorously enforced	No	No	No	Yes	No	No	No	Yes	Widen roads, combine bikes and in-line	Don't know	?	No
British Columbia	BC		Yes	All of the above	Not enforceable	Yes					No	***see survey***	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Combine bikes and in-line	Moderate		
Saskachewan	SK		Not sure	Safety of skater impact on road safety	Not enforceable	No	No				No	Only in serious circumstances, not enforced	Yes		No	No	Yes		No	No	Should not be on roads	Don't know		No
Alberta	AB		Yes	All of the above	Not enforceable	No						As a matter of course									Should not be on roads			
Québec	PQ	8000000	No	No	Yes							Not rigorously enforced	No	No	Yes	No	Yes	Yes	No	No	Combine bikes and in-line			Yes

IN-LINE SKATING REVIEW - PHASE 2 - PROVINCIAL/TERRITORIAL RESPONSES

12	13	14	15	16	17	18					20					21	22		23	25
						a)	b)	c)	d)	e)	a)	b)	c)	d)	e)		a)	b)		
No	Yes	Don't know	Don't know	Don't know	Don't know	Somewhat disagree	Somewhat agree	Somewhat disagree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat disagree	Somewhat agree	Strongly disagree	Strongly disagree	No	No	?	Other	By-law
Don't know	Yes	No	Same	Safer	No	Somewhat agree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Don't know	No	Yes	Engineering Planning	Police
?	Yes	Yes	Don't know	Safer	No	Somewhat agree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat disagree	Don't know	Yes	?	Other	Police
			Reduced liability	Safer	No	Strongly agree	Strongly agree	Somewhat disagree	Strongly agree	Strongly agree	Strongly agree	Somewhat disagree	Somewhat agree	Somewhat agree	Strongly agree	No				
No	Yes	No	Don't know	No change	Yes	Strongly disagree	Strongly agree	Somewhat disagree	Somewhat agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	Somewhat agree	No	No	No		
	Yes - diff. interpretations of in-line		Same	Safe	Yes	Somewhat agree	Somewhat agree	Strongly disagree	Somewhat agree	Somewhat agree	Strongly agree	Somewhat agree		Somewhat disagree	Strongly disagree	Don't know	Yes			
	Yes	Yes	Same		Yes	Somewhat disagree	Somewhat agree	Strongly agree	Somewhat agree	Strongly agree	Strongly agree	Somewhat agree	Somewhat agree	Somewhat agree		No	Yes	No	Planning	Police

Appendix C
CONTACT LISTS

Appendix D
INJURY DATA



HEALTH CANADA/SANTÉ CANADA
LABORATORY CENTRE FOR DISEASE CONTROL
LABORATOIRE DE LUTTE CONTRE LA MALADIE

REPORT FROM CANADIAN HOSPITALS INJURY REPORTING AND PREVENTION PROGRAM (CHIRPP)

Injuries associated with IN-LINE SKATING

CHIRPP database, summary data for the year 1995, all ages

WHAT IS CHIRPP?

CHIRPP is a computerized information system that collects and analyzes data on injuries to people (mainly children) who are seen at the emergency rooms of the 10 pediatric hospitals and five general hospitals in Canada. Data collection began in April 1990 at the 10 pediatric hospitals and between 1991 and 1993 in the five general hospitals. CHIRPP is a program of the Child Injury Section of the Laboratory Centre for Disease Control (LCDC), a directorate of the Health Protection Branch, Health Canada. See notes following this report for further information on CHIRPP and on the limitations of CHIRPP data.

SUMMARY (893 records)
Injuries related to in-line skating were most common (59.6%) among children 10 to 14 years of age and 64.1% of these injuries were sustained by boys. These injuries occurred most often in summer (39.6%) and in spring (36.8%) between the hours of 4 and 8 p.m. (40.5%). The majority of these injuries (56.5%) were caused by a loss of control without any specific cause and mostly occurred in transport areas (67.5%) such as roads or footpaths. Use of protective equipment was reported by 25.9% of patients. Injuries requiring advice only or minor treatment accounted for 41.5% of patients, 51.6% of patients needed medical follow-up after leaving the emergency department and 6.4% were admitted to hospital. The most common type of injury was fracture (42.2%) and 30.3% of the in-line skating injuries were to the forearm.

SPECIFICATIONS OF THE SEARCH

An August 1996 search of the CHIRPP database for the year 1995 (121,148 records) was conducted. There was no age restriction. Records were selected i) if they contained a factor code for in-line skating or skating unspecified (codes 3232, 3217) or ii) if the text fields contained the following strings "IN-LINE SKAT", "IN LINE SKAT", "INLINE SKAT, "ROLLERBLAD" , "ROLLER BLAD"., "ROLLER HOCK", "PATIN A ROU" or "PATIN ALIGN". Selected records were then scanned and eliminated if the injury was not directly related to in-line skating. The total number of records identified was 893.

OVERALL OCCURRENCE

	NUMBER	PERCENT OF INJURIES	NUMBER / 100,000*
1991	33	1.5	43.9
1992	154	7.1	218.8
1993	326	15.1	321.7
1994	756	35.0	613.0
1995	893	41.3	737.1
Total	**2162**	**100.0**	**440.1**

* Number of specific injury type per 100,000 CHIRPP injuries of all types within the year indicated

SEASON DURING WHICH THE INJURY OCCURRED

	NUMBER	PERCENT OF INJURIES
Spring (Mar.-May)	329	36.8
Summer (Jun.-Aug.)	354	39.6
Fall (Sep. - Nov.)	173	19.4
Winter (Dec. - Feb.)	37	4.2
Total	**893**	**100.0**

TIME AT WHICH INJURY OCCURRED

	NUMBER	PERCENT OF INJURIES
Midnight to 8 a.m.	6	0.7
8 a.m. to Noon	56	6.3
Noon to 4 p.m.	194	21.7
4 p.m. to 8 p.m.	362	40.5
8 p.m. to Midnight	153	17.1
Unknown	122	13.7
Total	**893**	**100.0**

AGE DISTRIBUTION OF INJURED PERSONS

	NUMBER	PERCENT OF INJURIES	NUMBER / 100,000*
1-4 years	13	1.5	45
5-9 years	179	20.0	755
10-14 years	532	59.6	1851
15-19 years	133	14.9	1082
20+ years	36	4.0	156
Total	**893**	**100.0**	**737**

* Number of specific injury type per 100,000 CHIRPP injuries of all types within the age group indicated

Note: 64.1% of injuries involving in-line skates were sustained by males. Of all injuries in the CHIRPP database in 1995, 59.6% are to males.

WHERE THE INJURY OCCURRED

	NUMBER		PERCENT OF INJURIES
Transport areas		532	59.6
-road	326		
-footpath	98		
-driveway	43		
-parking area	38		
-bicycle path	15		
-alley	12		
Sports and recreation areas		85	9.5
Own home		68	7.6
-yard	40		
-indoors	20		
-unspecified	8		
Park and recreation land		63	7.1
School		33	3.7
-yard	27		
-indoors	5		
-unspecified	1		
Other home		13	1.5
-yard	10		
-indoors	1		
-unspecified	2		
Other/Unknown		99	11.1
Total		**893**	**100.0**

CIRCUMSTANCES AND FACTORS CONTRIBUTING TO INJURY

The following is a list of frequently occurring circumstances and factors in injuries related to in-line skates. Each case was assigned to only one category and percentages were based on 893 persons injured. Category assignment was based on the level of detail available in the description of the injury.

	NUMBER	PERCENT OF INJURIES
Lost control with no specific cause	603	67.5
Playing roller hockey	55	6.2
Stunts or difficult maneuvers (e.g. ramp)	48	5.4
Fell because of conditions of surface (e.g. rocky, slippery, rough)	45	5.0
Hit by, ran over by or avoiding collision with motor-vehicle	31	3.5
Hit or tripped over stationary object	25	2.8
Moving over stairs, steps, changes in level	22	2.5
Hit by or avoiding collision with other person including cyclist	17	1.9
Roadway obstacle (e.g. grates, speed bumps, manhole cover, tar)	8	0.9
Skating on hill, incline, slope	8	0.9
Dangerous activity i.e. hitching ride (e.g. car, bike)	5	0.6
Walking dog	5	0.6
Skater hit other person	4	0.4
Malfunction of in-line skates (e.g. wheel loose)	3	0.3
Novice	3	0.3
Other	11	1.2
Total	**893**	**100.0**

NATURE OF INJURY AND BODY PART INJURED

	NUMBER		PERCENT OF INJURIES
Fracture		417	42.2
-forearm	243		
-finger or hand	69		
-wrist	28		
-upper arm	28		
-lower leg	24		
-head, neck	10		
-toe, ankle, foot	8		
-upper leg	6		
-trunk	1		
Abrasion, bruising or inflammation		284	28.7
-lower leg	56		
-forearm	47		
-wrist	41		
-head or mouth	33		
-finger or hand	31		
-trunk	29		
-upper arm	19		
-upper leg	16		
-toe, ankle or foot	7		
-other lower extremity	3		
-pancreas	1		
-brain	1		
Sprain or strain		133	13.4
-wrist	47		
-toe, ankle or foot	25		
-finger or hand	18		
-lower leg	14		
-forearm	10		
-upper arm	7		
-trunk	5		
-head or neck	4		
-upper leg	3		

NATURE OF INJURY AND BODY PART INJURED (continued)

Cut, laceration or puncture		99	10.0
-face or mouth	51		
-leg	20		
-finger, hand or wrist	15		
-arm	6		
-toe, foot or ankle	1		
-trunk	3		
-digestive tract	2		
-brain	1		
Minor head injury		25	2.5
Dental		9	0.9
Concussion		8	0.8
Dislocation or subluxation		7	0.7
-forearm	3		
-upper arm	2		
-finger or hand	2		
Bleeding		3	0.3
-leg	2		
-head	1		
Burn		3	0.3
-arm	2		
-trunk	1		
Crushing		1	0.1
None detected		(8)	
Total		**989**	**100.0**

* Up to three injuries may be specified for each record. Eighty-nine patients (10.0%) sustained more than one injury.

TREATMENT PROVIDED

	NUMBER	PERCENT OF INJURIES
Left without being seen	5	0.6
Advice only, or treatment with no need for follow-up	371	41.5
Treated, follow-up required	460	51.6
Admitted to hospital	57	*6.4
Fatal injury	**0	0.0
Total	**893**	**100.0**

* The percentage of CHIRPP injuries that resulted in hospital admission in 1995 is 6.0%.

** Fatalities counted by CHIRPP include only those patients who were dead on arrival at the emergency department or who died in the emergency department. They do not include people who died before they could be taken to hospital or those who died after hospital admission.

SAFETY AND PROTECTIVE EQUIPMENT USED AT TIME OF INJURY

	NUMBER	PERCENT OF INJURIES
None or not reported	662	74.1
Regulated sport specific	72	8.1
Helmet	34	3.8
Other	125	14.0
Total	**893**	**100.0**

PROFILE OF PATIENTS ADMITTED TO HOSPITAL

Of the 69 patients admitted to hospital, 46 were males and 23 were females; 47 patients were older children (10-14 years), 14 were children (5-9 years), four were adolescents (15-19 years), three were younger children (1-4 years), and 1 was an adult (20 years or older).

A total of 43 patients fell with no specific cause, 12 were hit by a motor-vehicle or while trying to avoid one, five fell while doing difficult maneuvers, three fell because of a roadway obstacle (e.g. speed bumps), two fell when hit by or while trying to avoid a collision with another person, one fell while playing roller hockey, one fell because of slippery or rough surface, one fell because of a loss of control on an incline or hill, and one fell from lack of experience.

Fracture was the primary injury of 50 patients (31 of the forearm, 1 of the hand, 2 of the upper arm, 5 of the upper leg, 4 of the ankle, 4 of the lower leg, and 3 of the head). Five patients suffered concussions, five sustained a minor head injury, three suffered cuts and lacerations, three suffered bruising, one suffered a sprain, one sustained an inflammation and another sustained a puncture.

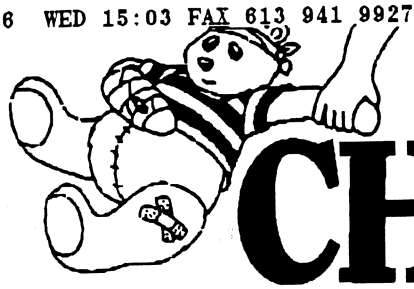
TAKE NOTE

This report is based on information from the database of the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP). It is important to note that the injuries described do not represent all injuries in Canada, but only those seen at the emergency departments of the 15 hospitals in the CHIRPP network. Since the bulk of CHIRPP data comes from the pediatric hospitals, which are in major cities, injuries suffered by the following people are under-represented in the CHIRPP database: older teenagers and adults, who are seen at general hospitals; native people; and people who live in rural areas.

If data from this report are included in any other document or publication, it should be noted, where appropriate, that the information comes from 15 hospitals (10 pediatric and five general) across Canada.

For additional information on the CHIRPP program, please contact the Child Injury Division, Laboratory Centre for Disease Control by phone at (613) 941-9918 or by FAX at (613) 941-9927.

Health Canada Santé Canada



CHIRPP NEWS

Issue 2 Canadian Hospitals Injury Reporting and Prevention Program July 1994

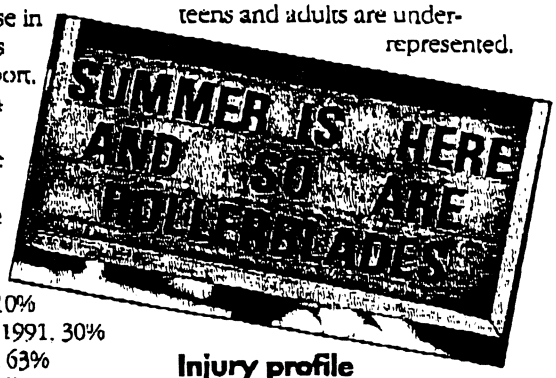
In-line skating: Rising popularity, more injuries

by Margaret Herbert, Senior Analyst, Childhood Injury Section, Diseases of Infants and Children Division

PARTICIPATION IN IN-LINE SKATING or "Rollerblading" has increased greatly over the past few years. Most people take up in-line skating as a recreational activity, but it is also used in fitness regimens and training programs for other sports. Increasingly, adults and children alike are finding in-line skating an enjoyable, accessible and affordable activity. Two thirds of those taking part in the sport are younger than age 21, according to figures from the U.S. In-Line Skating Association. Similar numbers of males and females participate.

Along with the rising popularity of in-line skating, there has been a corresponding increase in the number of injuries associated with the sport. A search in April 1994 for records of injuries associated with in-line skating among the 286,672 records in the CHIRPP database yielded 521 records. Of these, fewer than 10% occurred in 1990 and 1991, 30% occurred in 1992, and 63% occurred in 1993. Of all the records of injuries in the CHIRPP database, 41% are from 1990 and 1991, 25% are from 1992 and 34% are from 1993. Figures from 1994 were not examined because only data from the winter months had been entered in the database as of April 1994.

The following information comes from the 521 records in the CHIRPP database associated with in-line skating. Since most of CHIRPP's data come from pediatric hospitals, injuries to older teens and adults are underrepresented.

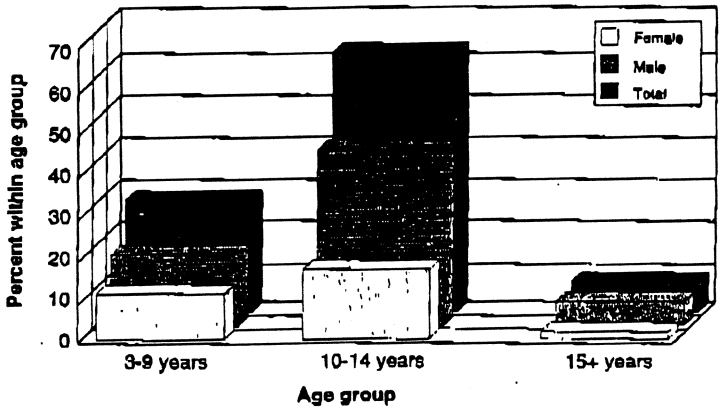


Injury profile

More than 60% of the injuries involved children between 10 and 14 years of age. Two thirds of the injuries happened to boys (Figure 1). Of those injured, fewer than one percent were younger than five years of age, and slightly more than one percent were older than 19 years of age. In the entire CHIRPP database, 27% of the records are for injuries to 10-14 year olds, and 60% are for injuries to males.

In-line skating
continues on page 4

Figure 1 — Distribution of injuries associated with in-line skating, by age group and sex



Based on CHIRPP data as of April 1994

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Canada

In-line skating continues from page 1

Location

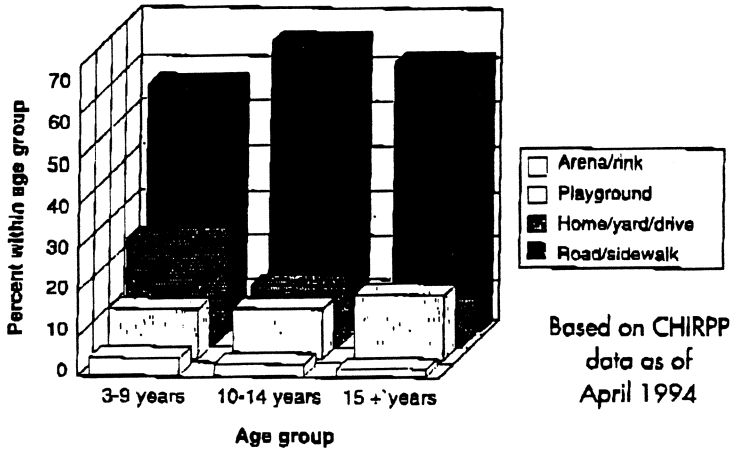
The majority of in-line skating injuries were caused by falls onto hard surfaces. Roads and sidewalks were the site of more than half (63%) of all in-line skating injuries. As expected, injuries to younger children were more common around the home (Figure 2). Relatively few injuries occurred in those areas best suited to recreational in-line skating, such as playgrounds and rinks.

Although one obvious danger of skating on roadways is the proximity to traffic, there were only five reports in the CHIRPP database of injuries involving collisions with bicycles or motor vehicles. Five additional injuries involved falls that occurred while skaters were trying to avoid such collisions. Injuries were also reported in connection with expected hazards and obstacles on and near roads: speed bumps, manhole covers, grates, potholes, fire hydrants and utility poles.

Context

Two specific types of in-line skating activity were noteworthy in the CHIRPP injury reports. Hockey, either street hockey or organized roller hockey, was associated with 16% of all in-line skating injuries among boys 10 14 years old . Only five percent of older and younger boys, and one girl, were injured while playing roller hockey. Also notable, but less frequent, was loss of control on hills, inclines and ramps, which contributed to three percent of the in-line skating injuries. The number of injuries associated with both these activities may be underestimated, since the CHIRPP questionnaire uses open-ended rather than specific questions.

Figure 2 — Locality of injuries, by age group



Based on CHIRPP data as of April 1994

Type of injury

More than half (58%) of the injuries were to the hand or forearm (Figures 3 and 4). Fracture or dislocation of the parts of the hand or forearm accounted for 40% of the injury reports, with fracture of the forearm being the single most common injury (27%). In the entire CHIRPP database, hand or forearm injuries represented 23% of injuries, with fracture or dislocation of the hand or forearm accounting for eight percent and fracture of the forearm for four percent.

Children younger than 10 years of age had more injuries to the head than older children, typically cuts and abrasions. A few concussions and dental injuries were also reported. Teens and adults tended to suffer relatively more injuries to the elbow, shoulder and leg.

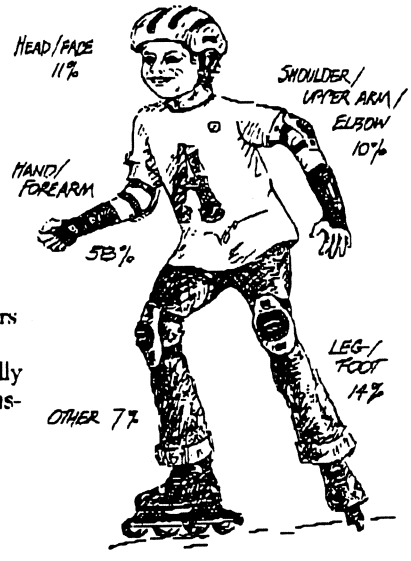
Fewer than half of the patients (41%) received no treatment or minor treatment, 51% required treatment and follow-up and eight percent were admitted to the hospital. There were no fatalities. In the entire database, 57% of the patients received no treatment or minor treatment, 37% required treatment and follow-up and six percent were hospitalized.

Safety equipment

It is not unusual to see children in-line skating on city or suburban streets wearing only light summer clothing, with no helmet or padding. CHIRPP injury data reflect this observation: only 17% of the injured people were wearing any kind of safety gear while in-line skating. Older children and teens were less likely than younger children to use protective equipment. The severity of injuries sustained by those with and without safety gear was similar. Compared to those not protected, people using safety gear had a smaller proportion of injuries requiring follow-up, but a slightly larger proportion of hospital admissions. These differences were not statistically significant.

Complete protective equipment for in-line skating should include a helmet, wrist guards, gloves, knee and elbow pads and protective clothing (long sleeves and long pants). Perhaps the relative

Figure 3 — Body part injured



novelty of the sport and the fact that injuries have not yet been widely reported have led to a casual attitude towards safety. Another factor may be cost. Purchase of full safety gear doubles the cost of outfitting for the sport.

Injury prevention

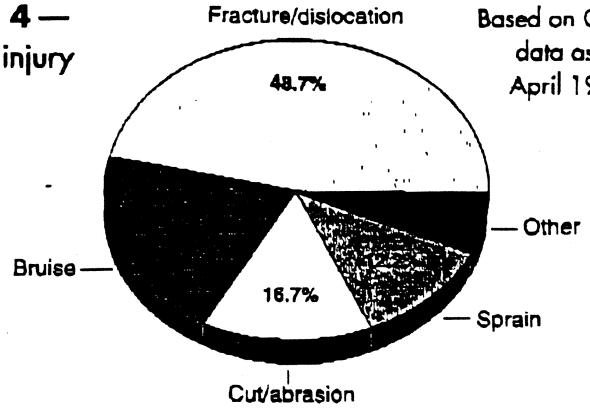
The application of safety guidelines for in-line skating and a touch of common sense can prevent most injuries. A scan of the circumstances for injuries reported in the CHIRPP database suggests the following measures:

- Use full protective equipment.
- Take lessons.
- Skate in areas such as roller rinks, parks and playgrounds that are free of traffic, pedestrians, obstacles and surface irregularities (e.g. cracks, debris, potholes).
- Skate on dry surfaces and under conditions of good visibility, and be wary of seasonal hazards such as wet fallen leaves or ice.
- Stay away from traffic.
- Don't skate in confined areas with obstacles (e.g. in the house or garage).
- Be careful near stairs and steps.
- Use caution on inclines, ramps and hills, especially if inexperienced.
- Don't skate while being towed by cars, bikes, dogs or people.
- Avoid outfitting very young children before they have sufficient strength and coordination.

Remember, playing hockey on in-line skates is a sport for experienced skaters and protective equipment is essential.

A growing number of Canadians enjoy in-line skating. Use of protective gear and knowledge of potential hazards can help reduce injuries.▲

Figure 4 — Type of injury



Based on CHIRPP data as of April 1994

CHIRPP data on injuries associated with in-line skating have been provided to two graduate students. Jacqueline Ellis used the data for a research project done in a course at the University of Ottawa; Manon Lajoie of the University of Toronto is about to submit her MSc thesis on in-line skating injuries. CHIRPP data were used in an article about regulating in-line skating that appeared on page one of *The Globe and Mail* on July 5, 1994.

B.C. profile continues from page 3

containing the newly entered data sent from Ottawa, obtains data from the BCCH CHIRPP database for Dr. Smith and is the main contact for the Ottawa office.

When Ms. Orth became the CHIRPP Coordinator in mid-1992, she was determined to increase the completion rate for forms: only 74% of the patients who presented at the emergency department for injury were filling out CHIRPP forms. Most of this problem was not due to reluctance on the part of the patient or parent, she found, but rather to their not having received a form, or to language difficulties. Now 77% of injured patients are completing forms, and the goal for 1994 is to increase the rate to 80%. She believes that her occasional reminders, when necessary, of the importance of handing out forms at patient registration are showing results. In general, she says, the unit clerks are very conscientious and committed to the program.

Ms. Orth endeavours to get CHIRPP forms completed on each eligible person, which means tracking down the information through phone calls or referring to the medical record. She estimates that the Ottawa office receives completed forms for about 95% of eligible patients, one of the highest capture rates of all the centres. In 1993, 7,699 records from BCCH were added to the database. That is 24.68% of the 31,200 patients (medical and surgical) seen by the emergency department during the year. The total number of records from BCCH since data collection began in April 1990 reached 29,129 in late June 1994.

In addition to the high capture rate, the forms that are sent to Ottawa are complete and easy to code. Ms. Orth reviews all forms, and very often adds key words. These additions virtually eliminate the need for the data entry clerk to infer any of the details surrounding the injury.

For CHIRPP to accomplish its goal — to contribute to the reduction of the number and severity of injuries in Canada — the input into the surveillance system and the output of results into the community must operate equally well. At BCCH, Carole Orth and David Smith have, respectively, made vital contributions to the wealth of information in the database and its timely utilization.▲

CHIRPP

THE CANADIAN HOSPITALS INJURY REPORTING AND PREVENTION PROGRAM

SOME QUESTIONS AND ANSWERS ABOUT THE PROGRAM

WHAT IS CHIRPP?

CHIRPP is a computerized information system that collects and analyses data on injuries to people (mainly children) who are seen at the emergency rooms of the ten paediatric hospitals and five general hospitals in Canada. These sites encompass major urban centres as well as two northern communities. Technical and financial support for CHIRPP is provided by the Laboratory Centre for Disease Control (LCDC), a directorate of the Health Protection Branch, Health Canada.

WHAT IS THE AIM OF CHIRPP?

The aim of CHIRPP is to make a key contribution to the reduction in the number and severity of injuries in Canada. To achieve its aim, CHIRPP collects data on all of the circumstances leading up to an injury, the nature of the injury as well as the age and gender of the injured person. The information gleaned from thousands of records permits researchers to identify hazards by studying patterns of injury occurrence, to set priorities for injury prevention and to develop and evaluate intervention programs.

HOW ARE CHIRPP DATA OBTAINED?

CHIRPP data are collected by the hospitals that participate in the program. The adult who accompanies the injured child to the emergency room (or the patient when he or she is old enough) is asked to complete a short questionnaire pertaining to the circumstances leading to the occurrence of the injury. The physician who examines the patient records clinical information.

Information from the questionnaires is coded and entered into the main CHIRPP database at LCDC within two or three months of an injury's occurrence. Up-to-date information from all participating hospitals can be readily obtained from LCDC. In addition, LCDC provides each hospital with regular updates to its own database, the information from which can be used to meet local needs.

IN WHAT WAYS IS CHIRPP UNIQUE?

CHIRPP is unique in the kind of information that it can provide and in the timeliness with which that information can be made available. The CHIRPP data provide information on where the injury occurred, what the injured person was doing at the time of the injury, what went wrong that resulted in the injury (e.g. child lost control of bicycle) and what actually caused the injury (e.g. child landed on concrete). Factors contributing to the injury, which may be products or people, are identified and information is available about the use of safety measures, the nature of the injury(ies) suffered, and how the injured person was treated at the hospital (e.g. treated and released, admitted). The "pre-event" information that is available through CHIRPP, and is essential to understanding how injuries occur and how they may best be prevented, is not available anywhere else. Other sources of information about injuries tend to provide a lot of clinical information (the nature of the injuries and treatment required) but little, if any, information about how the injury occurred.

CHIRPP data are generally coded and entered into the computer and available for use within a few months of the occurrence of the injury. In contrast, it can take several years for data on the morbidity and mortality associated with injuries to become available through other sources.

HOW IS INFORMATION FROM THE CHIRPP DATABASE USED?

Information from the CHIRPP database is being used in detailed studies of injuries that occur in sports and other leisure activities, of burns and scalds, of poisonings, of injuries that occur in daycare centres, and of injuries associated with bicycles, trampolines and playground equipment. Some of these investigations are being done by scientists at LCDC; others are being done locally. In addition to these studies, the CHIRPP staff at LCDC frequently provides brief responses to questions from health professionals and the media about the occurrence of selected injuries.

WHAT ARE THE LIMITATIONS OF CHIRPP DATA?

While the CHIRPP database provides a unique and valuable source of information, researchers and other users of information from CHIRPP should be cognizant of its limitations. CHIRPP does not attempt to collect information on every injury occurrence. Rather, CHIRPP aims to capture cases that are **representative** of all injuries treated in the Emergency rooms of participating hospitals.

1. Because the program operates **only** in hospital emergency rooms, there is no possibility of including the following injured persons in the CHIRPP database:
   - people for whom medical care is not sought, or who are seen by health professionals in their offices;
   - people who die from their injuries before they can be brought to the emergency room or following admission to hospital;
   - people for whom care is sought at non-participating hospitals.

2. Since the bulk of CHIRPP's data comes from the paediatric hospitals, which are in major cities, the following people are under-represented in CHIRPP:
   - older teenagers and adults, who are seen at general hospitals;
   - natives;
   - people who live in rural areas.

3. Not every person seen at the emergency room of a participating hospital is included in the CHIRPP database:
   - Severely-injured people often bypass the usual emergency room administrative procedures (such as receiving a CHIRPP form). This means that CHIRPP data may underestimate the frequency of severe injuries.
   - Some people who should be given a form do not receive one; furthermore, some who are given a form may choose not to complete it, or physicians may fail to complete their part of the form. A study is presently underway to determine if these events affect the representativeness of the data.

4. We have begun to collect CHIRPP data at all emergency rooms within selected communities. This will allow us to determine the rates at which injuries seen at emergency rooms occur in those communities. In general, it is not possible to calculate such rates from CHIRPP data.

Child Injury Section,
Bureau of Reproductive and Child Health, Laboratory Centre for Disease Control
Health Protection Branch, Health Canada

Hospitals that participate in CHIRPP as of June 1994

Province/Territory	Community	Hospital	Participant in CHIRPP since
Newfoundland	St. John's	The Dr. Charles A. Janeway Child Health Centre	April 1990
Nova Scotia	Halifax	The Izaak Walton Killam Hospital for Children	April 1990
Quebec	Québec	Unité de santé publique, Hôpital de l'Enfant-Jésus	July 1991
	Rimouski	Centre hospitalier régional de Rimouski	January 1994
	Montreal	Hôpital Ste-Justine	April 1990
		Montreal Children's Hospital	April 1990
Ontario	Ottawa	Children's Hospital of Eastern Ontario	April 1990
	Kingston	Hotel Dieu Hospital	June 1993
		Kingston General Hospital	June 1993
	Toronto	Hospital for Sick Children	April 1990
	London	Children's Hospital of Western Ontario	April 1990
	Sioux Lookout	Sioux Lookout Zone Hospital (including five nursing stations)	July 1992
Manitoba	Winnipeg	Children's Hospital	April 1990
Alberta	Calgary	Alberta Children's Hospital	April 1990
British Columbia	Vancouver	British Columbia's Children's Hospital	April 1990
Northwest Territories	Yellowknife	Stanton Yellowknife Hospital and nursing stations: Inuvik, Keewatin, Gjoa Haven, Baffin, Fort Simpson, Fort Smith	January 1991 January 1992

Appendix E
SELECTED BY-LAWS

Appendix F
PRESENTATIONAL MATERIAL

Appendix G
ARTICLES AND INFORMATION OBTAINED THROUGH THE INTERNET

Appendix H
BIBLIOGRAPHY AND REFERENCES