

*Making It Happen*

# Pedestrian Safety



A Guide for Communities



This resource is generously supported by FedEx



# Acknowledgements

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*Making It Happen*

# Pedestrian Safety



AS A NATIONAL LEADER, Safe Kids Canada promotes effective strategies to prevent unintentional injuries. By building partnerships and using a comprehensive approach, we advance safety and reduce the burden of injuries to Canada's children and youth.

Community change is a process that can take a long time. Safe Kids Canada encourages you to view pedestrian safety improvement as a work-in-progress. We believe that children, and indeed all pedestrians, have the right to safe walking routes and a safe environment in which to travel.

# Safe Kids Canada & FedEx Express – A ‘Perfect Fit’

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As the world’s largest express transportation company, FedEx places a high priority on safety, both in the workplace and in the communities in which we live and operate. Every year FedEx Canada vehicles drive over 25 million kilometres delivering time-critical packages for our customers. Providing this service in a timely and safe manner requires a commitment to safe practices by all of our employees, particularly our 3,000 plus professional drivers.

At FedEx, we participate in a number of traffic safety promotion programs with Safe Kids organizations. These initiatives stretch from North America to Brazil and China. In Canada, we are proud to partner with Safe Kids Canada to educate children about pedestrian safety, encourage motorist awareness about school zone safety and provide long-term support to communities by making neighborhoods and school zones more ‘walkable.’ We hope that this new pedestrian safety resource will stimulate community action in improving environments for vulnerable road users.

Corporate and community responsibility is a core value for FedEx. We look forward to continuing to work with Safe Kids Canada to demonstrate our commitment to be the employer, shipper and neighbour of choice in Canada.

*Rajesh Subramaniam*  
President  
FedEx Canada

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# Introduction

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Unintentional injuries are the leading cause of death and disability for Canadian children. The majority of these injuries are predictable and preventable.

Safe Kids Canada is the national injury prevention program of The Hospital for Sick Children. Our vision is to create a safe, injury free Canada for children and youth. As a national leader, Safe Kids Canada promotes effective strategies to prevent unintentional injuries. By building partnerships and using a comprehensive approach, we advance safety and reduce the burden of injuries to Canada's children and youth.

The aim of the Guide is to help you understand child pedestrian safety and to decide what to focus on to create an action plan that is based on evidence and tailored to the unique pedestrian safety in your community.

The Guide is designed to help you:

- understand how, why and where pedestrian injuries occur
- understand what a comprehensive approach is and why it is most effective
- examine your local pedestrian safety situation
- create a comprehensive action plan to improve pedestrian safety in your community

Community change is a process that can take a long time. Safe Kids Canada encourages you to view pedestrian safety improvement as a work-in-progress. In fact, long-term attention will strengthen each component of your pedestrian safety program by helping to sustain, build awareness and support over time. In addition, it will allow necessary resources to be allocated effectively as they become available. Use the part of the Guide that seems relevant and 'do-able' for your group at this time.

We hope that the commitment to improve pedestrian safety in your community will be sustainable, and that this Guide will help make your community safer for pedestrians.

We believe that children, and indeed all pedestrians, have the right to safe walking routes and a safe environment in which to travel. Children are among the most vulnerable road users due to varying developmental maturity and the amount of walking they do. Research shows that educating children is only part of what needs to be done to reduce child pedestrian injuries. Improving road safety and enforcing policies and laws are *equally* necessary elements of an effective pedestrian safety initiative. Although this Guide focuses on child pedestrian safety, any changes and improvements made will benefit your community as a whole.

## Companion Workshop Presentation

A workshop presentation has been developed and can be used in conjunction with this Guide. It follows the structure of the Guide and provides an opportunity for communities to customize some information, such as the picture of pedestrian injuries in your community. The presentation is particularly valuable at your first meeting to provide an overview of the Guide contents.

# Executive Summary

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Unintentional injuries are the leading cause of death and disability for Canadian children. Every week in Canada, on average – 80 child pedestrians are involved in a collision with a motor vehicle. At least one of them will die and 10 will have major injuries. In other words, **each year more than 4,000 children are hit by motor vehicles while playing outdoors or walking to school, to friends, to sports activities, or to a neighbourhood shop.**

Unless we can continue the downward trends, the next decade will see another 40,000 children injured and 600 die as pedestrians.

Not surprisingly, injuries to pedestrians are often severe. The surprising thing perhaps is that so many children survive their injuries. However, they often do so with long-term disabilities, resulting in months, years or a lifetime of emotional and financial burden on themselves and their families.

*These deaths and injuries are predictable and preventable.*

Improving pedestrian safety is best achieved using a comprehensive approach. **Educational, enforcement and environmental** strategies can address the factors that influence pedestrian safety at the individual and environmental levels. Evaluation research shows that programs that apply a *combination* of these strategies are more effective than programs that use any one strategy alone.<sup>1</sup> Although important in drawing attention to the issue(s) and achieving at least short-term benefits, *education alone is not enough to prevent injuries*. Both enforcement and environmental change are more complex and take longer to implement, but are *most effective* in achieving significant, long-term changes to behaviour resulting in decreased injury rate and/or severity.

**Education** can be achieved through public service campaigns (e.g., radio, television, posters), distribution of fact sheets and/or brochures as well as articles in newspapers. **Enforcement** refers to activities that reinforce existing laws or policies (e.g., police monitoring speeds).

**Environmental change** can include initiatives such as traffic calming (e.g., speed bumps, one-way streets).

There is no 'right' way to improve pedestrian safety. Examining the community's pedestrian safety situation and assessing available resources will help develop a program that is realistic, sustainable and has a greater potential for success. A nine step process will help to create a community pedestrian safety action plan:

1. Identify stakeholders and invite them to participate
2. Gather information
3. Build awareness and support
4. Conduct a community pedestrian safety audit
5. Create an action plan
6. Assess resources
7. Set priorities and decide who will do what and by when
8. Monitor and support
9. Evaluate

Building awareness and support (step 3) should be an integral part of the overall approach to developing a pedestrian safety program. At each step throughout the process, information should be shared with key stakeholders and the broader community. Feedback received throughout the process should be used to inform the final plan – making it truly a community developed solution.

Often, it is possible to incorporate or relate pedestrian safety initiatives to existing supported programs such as health active living strategies. Children should be encouraged to be safe while engaging in healthy activities.

Securing funding and other resources for pedestrian safety initiatives is one of the key components of a successful initiative. Support can be found through financial contributions, in-kind or donated services (e.g., space, transportation) as well as accessing community volunteers.

<sup>1</sup> Speller et al, 1998



Public policy and advocacy also play an integral role as they relate to enforcement as well as environmental activities. Building relationships with those who are responsible for making and enforcing transportation or safety-related policies, as well as with groups that can help advocate for change is essential.

Media support can be a useful part of the campaign by raising awareness of pedestrian safety issues among the community. A relationship with local media will allow the dissemination of information (education strategies) and may also help to garner support from the community for recommended environmental changes. There are a variety of ways to interact with media – advisories, news releases, articles, opinion/editorial pieces as well as letters to the editor. Developing a clear media plan will focus these activities.

Resources to access further information or related documents provide an expansion of the information contained in this Guide. Resources on injury data, coalition building, planning and design, evaluation, education program and advocacy and public policy have been provided.

Walkability checklist, neighbourhood survey, action plan documents and sample media materials are some of the tools that will make implementing a pedestrian safety program easier. In addition, step by step instructions for some activities, e.g., speed survey, have also been provided.

All of these pieces come together to provide communities who want to address pedestrian safety issues with a comprehensive Guide that will direct and support their activities.





# CHAPTER ONE

## Pedestrian Injuries

- Who is at risk
- Types of pedestrian-related injuries
- Severity of pedestrian injuries
- Where crashes happen
- When crashes happen
- Why crashes happen

# Chapter One: Pedestrian Injuries

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## Pedestrian Injuries

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Understanding who is most at risk for pedestrian injury, and where, when, and why pedestrian crashes occur is the first step to designing and implementing an effective community initiative to improve pedestrian safety. *Chapter One* provides information on the scope and risk factors of child pedestrian injuries. The following statistics define children as persons between the ages of 0 and 19.

### Fact

#### **A CHILD PEDESTRIAN IS KILLED BY A VEHICLE IN CANADA 60 TIMES A YEAR.**

He is around 8 years old. He is likely to be from a low income neighbourhood. It is between 5 and 9 p.m. on an October day in an urban environment in Canada. There is no traffic signal where he crosses the road, but there may be crosswalk markings painted on the road. There is high traffic volume and a vehicle is travelling straight ahead and it is speeding. It is likely that he ran into the road while playing or was crossing at an intersection. He is hit by the vehicle and dies from his injuries.

This situation will be repeated in 6 days – **and it is 100% preventable.**

**Child pedestrians have shared in this progress, but still – every week in Canada, on average – 80 child pedestrians are involved in a collision with a motor vehicle. At least one of them will die and 10 will have major injuries.** In other words, each year more than 4,000 children are hit by motor vehicles while playing outdoors or walking to school, to friends, to sports activities or to a neighbourhood shop. Unless we can continue the downward trends, the next decade will see another 40,000 children injured and 600 die as pedestrians.

Pedestrian safety is particularly important as communities strive to encourage **active transportation** in order to combat obesity and its health complications, along with air pollution and traffic congestion.

Researchers believe that one major reason for the decline in child pedestrian injuries is that children are walking less.<sup>3</sup> A 1998 study found that, while almost half (45%) of Canadian children lived within 2 km of their school, less than one-third (29%) usually walked to school and only 2% usually cycled.<sup>4</sup> Levels of obesity among Canadian children ages 7 to 13 have nearly tripled in the past 20 years.<sup>5</sup> The need to ensure that children recapture active lifestyle habits – without increasing their risk of serious injury – has never been more vital.

## Scope of Child Pedestrian Injuries<sup>2</sup>

Improvements in road safety and trauma care in Canada, along with changes in the ways we live and travel, have resulted in significant declines in deaths and injuries to pedestrians over the past decade. According to Transport Canada, deaths to pedestrians of all ages declined by 31% between 1991 and 2000, and non-fatal injuries decreased by 10%.

Worldwide, road traffic crashes are the eighth leading cause of death, according to the World Health Organization (WHO).<sup>6</sup> Due to the alarming increase in road related injuries, the WHO declared road safety the theme for the 2004 World Health Day.

<sup>2</sup> Unless otherwise noted, all statistics are derived from the following sources:  
Transport Canada, 2000  
Transport Canada, 1998-1997  
Transport Canada, 1998-2001

<sup>3</sup> DiGuiseppe and Roberts, 1997 p. 710-713

<sup>4</sup> Nicholson and O'Neill, 1999

<sup>5</sup> Go for Green

<sup>6</sup> Peden et al, 2003

## WHO is at Risk?

### 0 to 4 year olds

There are relatively low numbers of deaths and injuries to toddlers and pre-schoolers from being struck by motor vehicles and there has been a major decline in pedestrian injuries in this age group. Deaths are down by more than 60% since 1991 and non-fatal injuries have been reduced by close to 50%. Still, this is a highly vulnerable age group because of their inability to understand the risks of cars and because their small size makes them less visible to drivers.

### 5 to 9 year olds

**Pedestrian crashes continue to be the leading cause of injury death among children 5 to 9 years old in Canada.**<sup>7</sup> Non-fatal pedestrian injuries among this age group have also seen great decline – today there are half as many as there were in 1988 – and deaths have declined by two-thirds. Some of this improvement is likely due to reductions in the amount of time these children are walking on their own (e.g., they may be driven to school more often than in the past) or they may be better supervised when they are walking. Whatever the reasons, 5 to 9 year olds remain at high risk as pedestrians because their judgement and perceptual skills are still immature, yet they often eagerly try to cross streets on their own in order to demonstrate some independence.

### 10 to 14 year olds

Pedestrian injuries among older children and young teens have not seen such dramatic decrease in the past decade. Deaths among 10 to 14 year olds have declined by about 25% and non-fatal injuries by less than 10%. The reasons why these numbers have not improved more are not well understood and require further investigation.

**Pedestrian deaths and injuries to Canadian children and adults – 2001 Data**

Age	Deaths	Injuries
0-4 yrs	8	297
5-9 yrs	11	868
10-14 yrs	14	1,345
15-19 yrs	27	1,628
20+	273	9,337

[source: Traffic Accident Injury Database (TRAID), Transport Canada]

### 15 to 19 year olds

Among older teens, pedestrian deaths and injuries have decreased only by 10%. Older teens remain a particularly high risk group for pedestrian fatalities and injuries. This age group makes up about 7% of Canada's population but suffers more than 10% of pedestrian injury deaths.

### Seniors

It is important to note that elderly Canadians are also at high risk for pedestrian injury and account for a disproportionate percentage of deaths. Adults 65 years and older make up about 12% of our population but account for more than 30% of pedestrian fatalities. Pedestrian safety for older adults is not the focus of this Guide; however, many of the strategies designed to improve safety for children will also benefit senior pedestrians.

<sup>7</sup> Health Canada, 2003

## Boys vs. girls

As with many other causes of injury, boys are injured as pedestrians more often than girls. This gender difference is most evident among 5 to 9 year olds, although the gender gap in this age group has closed in recent years. In 1988, boys aged 5 to 9 were three times more likely than girls to be killed as pedestrians. Today, boys are still more at risk than girls but the difference is quite small.

Among 10 to 14 year olds, the small improvements in pedestrian death and injury rates are due primarily to fewer injuries among girls. Boys in this age group have the same fatality rate as they did 15 years ago.

For older teens, the reverse is true. Boys 15 to 19 years old used to be twice as likely as girls to die as a result of pedestrian-related injuries, but this gap has narrowed substantially since 1988, as the boys' fatality rate has declined more sharply than the girls.

## Socio-economic environment

Children living in low income neighbourhoods are more likely to be hit by motor vehicles. Many studies<sup>8</sup> from different countries, including Canada, have reported that children from lower socio-economic backgrounds are at greater risk of pedestrian injury. Research in Montreal

found that pedestrian injury rates were nearly six times higher in lower socio-economic areas compared to wealthier neighbourhoods.<sup>9</sup> This difference was related to the fact that children in lower income neighbourhoods cross more streets on their way to school (even though not all the injuries occurred on the trip to or from school).<sup>10</sup> Researchers believe that the link is due to increased traffic flow and higher speeds in poorer areas.<sup>11</sup>

## Injury Severity

Not surprisingly, injuries to pedestrians are often severe. In the physics of a crash, the contest is heavily in favour of the motor vehicle, with its huge mass and high velocity. Even a slow-moving vehicle has a great deal more energy than does a walking person, much less a child. The surprising thing perhaps is that so many children survive their injuries. However, they often do so with long-term disabilities, resulting in months, years or a lifetime of emotional and financial burden on themselves and their families.

A study of 357 severely-injured children treated at The Hospital for Sick Children found that children injured as pedestrians were the most likely to require assistance in the functions of daily life (e.g., walking, dressing, using

**Pedestrian safety in context:  
3 leading causes of injury death to Canadian children, 1998  
(rate per 100,000 population)**

1-4 yrs	5-9 yrs	10-14 yrs	15-19 yrs
Drowning (2.02)	<b>Pedestrian (1.07)</b>	MV occupant (1.29)	MV occupant (7.08)
MV occupant (1.11)	MV occupant* (0.82)	<b>Pedestrian* (0.69)</b>	<b>Pedestrian (1.66)</b>
<b>Pedestrian (1.05)</b>	Drowning* (0.82)	Drowning* (0.69)	Drowning (1.95)

Causes marked with \* have identical rates within age group. MV = motor vehicle  
[source: Injury Surveillance On-Line, Health Canada, Health Surveillance and Epidemiology Division,  
Centre for Healthy Human Development. <[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)>]

8 Carlin et al, 1997 p. 286-292

9 Dougherty et al, 1990 p. 204-209

10 Macpherson et al, 1998 p. 1840-1843

11 Roberts et al, 1995 p. 91-94



the bathroom, communicating) six months after the injury. Nearly three-quarters of pedestrians (72%) suffered functional disabilities, compared to 64% of child cyclists struck by cars, 59% of motor vehicle occupants, and 27% of children injured playing sports.<sup>12</sup>

Even if pedestrian injuries are becoming less common, prevention is vital because of the huge impact these injuries have on individual lives, as well as on our health care and rehabilitation systems.

## **WHERE Do Crashes Happen?<sup>13</sup>**

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### **Urban vs. rural**

Overall, 70% of pedestrian fatalities in Canada occur in urban areas or on roads with speed limits less than 60 km/h. Among children under 15 years old, however, one in every three pedestrian crash deaths happens in a rural area.<sup>14</sup> For youth and young adults, this figure is even higher – almost half of all pedestrian deaths occur in a rural area.

This is likely due to higher speeds on some rural roads, as well as lack of sidewalks and traffic control mechanisms such as traffic lights. For non-fatal injuries, more than 90% occur in urban areas. This is similar across all age groups.

### **Traffic control**

In most cases, child pedestrians are struck where there is no form of traffic control. More than 70% of deaths and more than 50% of non-fatal injuries occur at locations with no traffic signals, crosswalks or stop signs. This may be because children were crossing mid-block or because they were walking in the road. Available data do not include details on the presence of sidewalks or play areas where crashes occur.

## **Environmental risk factors**

Research shows that child pedestrian injuries are more likely to occur where the physical environment has these characteristics:<sup>15</sup>

- apartments buildings vs. single-family housing
- lack of adequate play areas
- lots of curb-side parking
- shared driveways
- main roads

## **WHEN Do Crashes Happen?**

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Most fatal pedestrian crashes occur between 5 and 9 p.m. and most non-fatal crashes happen between 3 and 6 p.m. Most crashes occur September to January, and this probably is related to a decrease in daylight hours. Researchers believe that driver's adjusting to decreased daylight is the main reason for increased collisions in the early evening and in the fall and early winter months.

## **WHY Do Crashes Happen?**

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There is no definitive research to indicate whether driver behaviour or child behaviour is most often the cause of a crash. In most cases, a combination of factors is involved. Risk factors for pedestrian crashes include:

- high traffic volume
- road speed limit of greater than 40 km/h
- high average vehicle speed
- child located on the road
- darkness
- rainy weather

Information gathered on individual crash circumstances and on child activity immediately before the crash provides insight into changes that could improve safety.

<sup>12</sup> Macpherson et al, 2003 p. 454-458

<sup>13</sup> Unless otherwise noted, data cited in remainder of this chapter are from Transport Canada, 1988-1997

<sup>14</sup> Rural roads are defined in these data as local, primary and secondary roads outside a metropolitan area or any road with speed limit greater than 60 km/h

<sup>15</sup> Wazana et al, 1997 p. 295-304

# Fact

“At 35 mph you are twice as likely to kill someone as you are at 30 mph.”  
UK’s “Kill Your Speed” campaign poster, 2000

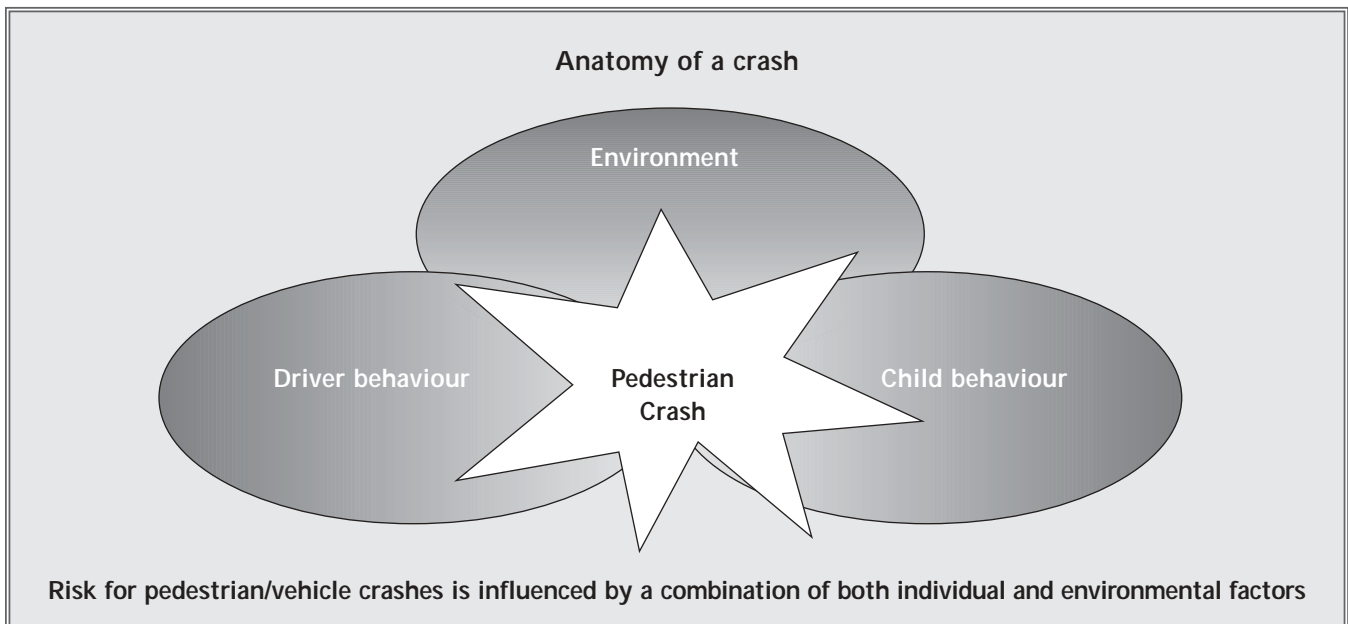
**Speed of the vehicle is an important risk factor for pedestrian injury and is noted as a cause in a high percentage of crashes.** Pedestrian crashes most often occur when cars are travelling straight ahead – probably because this is when vehicles are most likely to be going at, or above, posted speed limits. Traffic speed contributes to injury risk in two ways. First, at speeds above 30-40 km/h both drivers and pedestrians are more likely to make mistakes – in judging distances or time required to stop, for example. Second, the faster a vehicle is going, the worse the pedestrian’s injury is likely to be.<sup>16</sup>

A number of studies have shown the strong correlation between traffic speed and pedestrian injury, for adults as well as children. One study, analyzing the neighbourhood traffic environments of school children, found that the children were 3.5 times more likely to be hit by a car if

they had to cross streets where average vehicle speeds were above 50 km/h on their usual way to-and-from school.<sup>17</sup> Unfortunately, drivers often under-estimate their speeds. In one study which interviewed drivers who had just passed children on the sidewalk (playing with a ball or waiting to cross the road), most drivers said they would slow down to 40 km/h around children. In fact, they were actually travelling slightly above the posted limit of 50 km/h.<sup>18</sup>

Small reductions in vehicle speed can yield great reductions in injury risk – for example, it is estimated that a pedestrian struck by a car travelling at 50 km/h has an 80% chance of being killed, as opposed to a 10% risk at speeds of 30 km/h.<sup>19</sup> Reducing vehicle speed is proven to be effective in preventing crashes and reducing the severity of injuries.<sup>20</sup>

Transport Canada statistics, compiled from police data gathered at crash scenes across the country, help to paint a picture of pedestrian behaviour just before a child is hit by a motor vehicle.



16 Peden et al, 2004  
17 Roberts et al, 1995 p. 169-171  
18 Harré, 2003 p. 38-41  
19 Peden et al, 2004  
20 Pless, 2000 p. 163-166

- For 5-9 year olds, 1 in every 3 crashes is preceded by the child attempting to cross at an uncontrolled intersection or running into the road; in 1 of every 7 crashes, the child enters the road from between parked cars.
- For 10-14 year olds, 1 in 3 crashes occurs at uncontrolled intersections; in 1 of every 7 *fatal* crashes, the child was walking on the road (either with or against traffic).
- For 15-19 year olds, 1 in 3 crashes occurs when the child is attempting to cross at an uncontrolled intersection; 1 in 7 crashes occurs when the child is crossing with a pedestrian right-of-way; and 1 in 12 occurs while the pedestrian is walking on the road, most often with (rather than against) traffic.

**Pedestrian crashes result from a combination of individual and environmental factors.** For example, driver behaviour is influenced by the road and traffic environment, including speed control measures such as speed bumps and traffic signals. Individual road crossing behaviour is influenced by environmental conditions such as convenient crossings, signs and traffic signals.

**There is some evidence that driver knowledge and attitude and child knowledge can reduce the risk for pedestrian crashes.** It is important to emphasize that increased child knowledge improves road behaviour in the *short term only* and this should be considered in planning your community pedestrian safety strategy. Education for pedestrian safety is discussed further in *Chapter Two: How to Improve Pedestrian Safety*.

## Fact

### Top 10 Child Pedestrian Injury Risk Factors

- driver behaviour (speed)
- road environment (speed bumps, offset corners)
- intersection characteristics (traffic signals, length of time to cross)
- crosswalk characteristics (traffic signals, location of crossings)
- sidewalks (continuous, both sides of street)
- child behaviour
- pedestrian proximity to traffic
- time of day and amount of daylight
- enforcement of driving rules
- adult supervision of child (appropriate to age)





# CHAPTER TWO

## How to Improve Pedestrian Safety

- Using Haddon's matrix
- The Three E's – education, enforcement and environment
- Strategies to prevent injuries

# Chapter Two: How to Improve Pedestrian Safety

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## A Comprehensive Approach

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Improving pedestrian safety in your community is best achieved using a comprehensive approach. This means that your initiative will have more chance of success if it includes **educational, enforcement and environmental** strategies that address the factors that influence pedestrian safety at the individual and environmental levels. The formation of a committee that includes key stakeholders, interested individuals and decision-makers will be essential in the success of your project. *Chapter 3: Creating the Action Plan* provides detailed information and processes. Evaluation research shows that programs that apply a *combination* of these strategies are more effective than programs that use any one strategy alone.<sup>21</sup>

### Fact

“Educational approaches alone are less effective overall, although they probably encompass many activities which vary in effectiveness.”

Speller et al, UK, 1998

Before beginning the planning process, it is useful to apply Haddon’s matrix to pedestrian injury to help understand the risk factors that influence pedestrian safety. William Haddon developed this framework to improve the understanding of injury risk factors and improve the

### Fact

“A multi-disciplinary approach including theory based education, engineering solutions and law enforcement has potential to reduce pedestrian injuries.”

Preventing Traffic Injuries – Centers for Disease Control, USA, 2002

design of injury prevention interventions. This framework will help you analyze your unique community pedestrian situation and plan what to do in designing your program.

The framework includes three categories of factors and three points in time to examine injury risk factors. The three categories of factors are:

- host (who gets injured)
- agent (of force or energy)
- environment (physical and social)

The three points in time related to injury are:

- pre-event
- event – moment the injury occurs
- post-event

<sup>21</sup> Speller et al, 1998



In Table 1, Haddon’s matrix is applied to child pedestrian injury risk factors. Since pedestrian injury prevention is primarily concerned with the pre-event phase, this Guide focuses on the pre-event risk factors in order to design interventions to reduce the risk of pedestrian crashes before they happen.

**Table 1. Haddon’s matrix and child pedestrian safety risk factors**

	<b>Host (child)</b>	<b>Agent (driver, car)</b>	<b>Physical environment</b>	<b>Social environment</b>
<b>Pre-Event (prevention phase)</b>	<ul style="list-style-type: none"> <li>• road crossing behaviour</li> <li>• adult supervision</li> <li>• knowledge</li> <li>• child’s age</li> <li>• child’s gender</li> </ul>	<ul style="list-style-type: none"> <li>• vehicle speed</li> <li>• driver attitude</li> <li>• driver behaviour</li> <li>• driver knowledge</li> <li>• driver experience</li> <li>• vehicle design</li> </ul>	<ul style="list-style-type: none"> <li>• presence/condition of sidewalks</li> <li>• pedestrian proximity to traffic</li> <li>• road design</li> <li>• signage</li> <li>• crosswalks</li> <li>• type of housing</li> <li>• weather</li> <li>• daylight</li> <li>• time of day</li> </ul>	<ul style="list-style-type: none"> <li>• value placed on pedestrian safety</li> <li>• policy/promotion of pedestrian safety measures</li> <li>• law enforcement</li> <li>• neighbourhood socio-economic conditions</li> </ul>

## The Three E’s of Prevention – What Factors can be Changed?

The next step is to consider which factors are modifiable to determine what you will focus on. Because it is not possible to change age and gender of the child, and it is beyond the scope of a community project to modify vehicles to reduce injuries, you need to decide what strategies are most appropriate to address your unique community pedestrian safety situation and make the best use of your resources. Consider the range of strategies that could be applied in each category of risk to decide which conditions you will address.

### Fact

Research shows that a combination of strategies utilizing

- education
- enforcement
- environmental change

is most effective in reducing pedestrian injuries

The least expensive approach and one that is most often undertaken is education. Educational strategies may involve raising awareness of the issue(s) and providing information in an effort to achieve behaviour change. Although important in drawing attention to the issue(s) and achieving at least short-term benefits, *education alone is not enough to prevent injuries*. Both enforcement and environmental change are more complex and take longer to implement, but are *most effective* in achieving significant, long-term changes to behaviour resulting in decreased injury rate and/or severity when used in combination with education.

Pedestrian injury issues within Haddon's Matrix				
	Host (child)	Agent (driver, car)	Physical environment	Social environment
<b>Education</b>	What can we do to educate/improve child knowledge and behaviour?	What can we do about educating drivers?	What can we do to improve physical road conditions?	What can we do to educate to build awareness and support for valuing pedestrian safety?
<b>Enforcement</b>	What can we do about enforcement of safe crossing behaviour?	What can we do about enforcing or influencing the enforcement of safe driving behaviour?	What can happen to ensure traffic control installations are used as intended?	What can we do to influence laws and policies that improve pedestrian safety?
<b>Environmental change</b>	<p>What can we do about increasing adult supervision near the road?</p> <p>What can we do to change road crossing behaviour conditions (e.g., traffic lights)?</p>	What can we do about vehicle modification?	<p>What can we change about the physical environment:</p> <ul style="list-style-type: none"> <li>• to slow traffic?</li> <li>• to separate traffic and pedestrians?</li> <li>• to improve safe crossings?</li> </ul>	What can we do to advocate for pedestrian safety?

## Going Beyond Education Community Profile – Toronto Pedestrian Program

*Adapted from City Routes, Volume 4, Issue 1, Spring 2004*

### Programs focus on safety for pedestrians

Improving safety conditions for pedestrians on our roads is the goal of the “We’re all Pedestrians,” program developed by Transportation Services.

Transportation staff continues to work closely with the Toronto Pedestrian Committee to develop the program, identify priorities and put them into action. Three new pedestrian safety initiatives were developed.

#### **1. Essential Sidewalk Links**

To deliver on City Council’s new policy to provide sidewalks on both sides of arterial and collector roads, more than \$2.0 million per year is dedicated to new sidewalk construction for the next 10 years (2003–2012). This will complete most of the missing sidewalks on the city’s busiest streets.

#### **2. Pedestrian Safety Campaign**

The “Please Drive Carefully – We’re All Pedestrians” safety campaign encourages drivers to be more aware of pedestrians. The 2004 Pedestrian Safety Campaign will build on the success of last year’s campaign by getting the message to drivers via posters on transit shelters and the backs of buses. Posters will be distributed again to libraries, community centres, schools and other locations.

#### **3. Pilot Projects**

The purpose of pedestrian safety pilot projects is to evaluate new techniques and emerging technologies for improving pedestrian safety. In 2003–2004, the program will test three different techniques for reducing pedestrian-motor vehicle conflicts at signalised intersections. These pilot projects are:

##### **“Zebra-striped” Pavement Markings for Crosswalks**

To increase driver’s awareness of crosswalks.

##### **Leading Pedestrian Phase**

To provide an advance walk signal so that pedestrians begin to cross the street first before vehicles get the green signal.

##### **Passive Pedestrian Detection**

To detect pedestrians still in the crosswalk at the end of the walk cycle so that the walk cycle can be extended.

## Education

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Education strategies can focus on a variety of audiences, for example, parents/caregivers, children, community residents and policy makers. Except for children, all of these audiences are likely to be both pedestrians and drivers and they can benefit from strategies to raise awareness of their joint responsibilities to respect the rules of the road and each other. Education programs can also provide age-appropriate skills training to improve safe walking and driving behaviours. The following section will speak to the education of parents/caregivers and children. *Chapter Four: Making it Happen*, provides suggestions on how to communicate with and educate policy makers and the broader community using media and advocacy strategies.

Safety education can increase children's knowledge of safe road behaviour and can improve road crossing behaviour.<sup>22</sup> However, the effect of children's improved behaviour in response to education decreases over time, due to developmental immaturity. This suggests that safety education should be repeated at regular intervals. Getting parents involved helps to maximize the success of children's road safety education programs.

Education programs should be based on behaviour change theory.<sup>23</sup> A number of models or theories have been developed that describe how people become motivated to change specific behaviours in order to lower their health risks. In other words, how do you get people to follow good advice, to behave in ways that help prevent injury? For children, education needs to be appropriate to the age and stage of intellectual and physical development. For adults and children alike, behaviour change requires that (1) people see themselves potentially at risk, (2) realistic solutions are provided and (3) they believe they can effect change.<sup>24</sup>

According to child development specialists, children under nine are in a stage of growth and development which puts them at risk around traffic and which makes it difficult for them to apply traffic safety rules. According to the research, young children are at risk because:

- They often lack a sense of vulnerability. They don't understand that a car might seriously hurt or kill them if they are hit by one.

- Young children may believe that grown-ups will look out for them. They think that if they can see an adult drive a car toward them, the driver must be able to see them and stop.
- Young children are often restless and impulsive, and have trouble waiting (e.g., for lights to change).
- Young children's sense of perception is different than that of adults. They may think that large cars move more quickly than small cars or that wide streets are dangerous and narrow ones are safe. Children can have difficulty judging whether a vehicle is moving or how quickly it is moving.
- Young children tend to focus mainly on the things that interest them the most.
- Children can't see out of the corner of their eyes as well as adults. Their peripheral vision is not fully developed; it is two-thirds that of an adult.
- Children's height causes visibility problems for children and for drivers.
- Young children often have trouble knowing where to find the source of sounds (e.g., a siren). They may turn the wrong way searching for the sound.<sup>25</sup>

By age nine, children's brains have reached the stage of development that allows them to be more responsible and to make better judgements. This is because:

- Their brains become increasingly capable of processing multiple pieces of information at the same time; their thinking becomes more sophisticated, more finely tuned.
- They begin to develop feelings of vulnerability and therefore are more conscious of risks and consequences of their activities.
- They become less impulsive – they are more likely to think before acting.
- They develop physical coordination: they can now walk with good balance, heel to toe, in a straight line.<sup>26</sup>

<sup>22</sup> Duperrex et al, 2002

<sup>23</sup> Klassen et al, 2000 p. 83-110

<sup>24</sup> Some well-known behaviour change models (Health Belief Model, Social Learning Theory, PRECEDE Model) are summarized in the *Future of Children* reference noted above

<sup>25</sup> Safe Kids Canada, 1999

<sup>26</sup> Safe Kids Canada, 1999

Education can be passive or active. Many passive measures already exist, such as fact sheets, brochures, and pamphlets for parents that highlight pedestrian safety measures. Key child pedestrian safety messages provided in *Chapter Five: Resources and Tools*, can be used to create resources and develop articles. In addition, activity or learning resources are popular and can be easily accessed (see *Chapter Five: Resources and Tools*). Many educational programs focus on pedestrian safety to and from school. Although they do not address the whole range of exposure child pedestrians are likely to experience, they can be a good starting point to build a comprehensive approach to pedestrian safety. Some examples of programs that address these issues include:

### Curriculum

Curriculum programs incorporate pedestrian safety into the classroom teachings.

Risk Watch is one school-based curriculum that links teachers with community safety experts and parents. The curriculum is divided into five age-appropriate teaching modules and each module addresses eight leading causes of childhood injury, such as motor vehicle crashes, falls, bike and pedestrian hazards.

Another school-based curriculum is the Think First initiative that focuses on Kindergarten to Grade Six. This six unit curriculum was designed to be taught as an entire unit or integrated into class schedules according to teacher's discretion or preference. It can be taught at different times throughout the year and can be integrated into other topics of study. This program is currently being evaluated.

### In-Services

Local police services often provide safety education to children in school settings. Officers visit classrooms to provide information and demonstrations on a variety of safety topics, including pedestrian safety. In some areas of the country, Safety Villages have been built that recreate miniature towns with streetscapes that address a variety of transportation safety issues such as railway

crossings, pedestrian safety, cycling (and other wheeled activities) safety. After classroom instruction by police, fire and other safety personnel, the children demonstrate their knowledge of safety around the miniature village.

### Active & Safe Routes to School

School communities, e.g., parent council, principal, school trustee, transportation services, police, often conduct 'neighbourhood walkabouts' to identify specific transportation and safety issues at school sites and to prepare a plan of action to deal with these issues. Active and Safe Routes to School has a resource guide for individuals or groups wishing to encourage healthier and safer lifestyles in their children by implementing the program.

There are six distinct components:

- International Walk to School Day
- Walking Challenge/Kilometre Club
- Neighbourhood Walkabout
- No Idling at School
- Walking School Bus
- Classroom Mapping – Blazing Trails through the Urban Jungle

### Kidestrians

The Kidestrian program uses educational strategies for reducing child pedestrian injuries. Targeted at parents/caregivers, it is designed to give adults the tools to teach traffic safety to children. Based on a program in Germany, this program was developed in 1994 by a community group in Hamilton-Wentworth, Ontario. Using contemporary situations, it consists of a series of 13 exercises for adults to use to teach traffic safety. The program's step-by-step method teaches traffic safety on the sidewalk rather than in the classroom. The Kidestrian program is not a one-time training package. It is a tool that should be used over a long period of time to ensure that, through repetition, the skills become second nature to the child. This program was pilot tested in Hamilton and an evaluation was conducted.

## Walking School Bus

A walking school bus is a volunteer group of adults who walk with children along a set route to and from school each day. The walking bus promotes safety, traffic skills, exercise, socialization and independence among children. Most importantly, walking school buses increase supervision of child pedestrians and decrease traffic congestion near key drop-off and pick-up locations. To link with case studies from around the world, photos and real world experience, visit [www.walkingschoolbus.org](http://www.walkingschoolbus.org).

## Environment

**Environmental pedestrian injury risk factors are the most modifiable.** These include traffic volume, vehicle speed, protected play areas, curb-side parking and mean vehicle speed.<sup>27</sup> Children are at substantial risk for pedestrian injury due to developmental immaturity; therefore, physically separating them from traffic may be a more effective approach (than education alone).<sup>28</sup>

## Traffic Calming

A recent trend in Canadian municipalities is to implement traffic calming to resolve traffic and safety problems on residential streets. Traffic calming, however, is not perceived in the same way by everyone. This results in considerable variation in the way in which traffic calming is defined, and the way in which traffic calming measures are applied in different communities.<sup>29</sup>

*“Traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver-behaviour and improve conditions for non-motorized street users.”*  
(Institute of Transportation Engineers)

Experts recommend “...focusing on traffic conditions and traffic calming measures on residential local and collector streets, primarily within urban areas.”<sup>30</sup> The reason for not addressing “...arterial streets or rural roads is that the greatest demand for traffic calming is on local and collector

residential streets, where it has been proven both appropriate and effective. In comparison, there are fewer situations in which traffic calming measures would be appropriate and effective on arterial streets or rural roads.”<sup>31</sup>

The following information is intended to provide an overview of traffic calming measures to assist you when working with traffic professionals. Your committee will need to involve a traffic engineer and/or planner when attempting to implement traffic calming measures as part of your pedestrian safety initiative.

Every community is different and local environments vary widely, making it difficult to establish a ‘one size fits all’ solution. Below is a listing from the Transportation Association of Canada’s Canadian Guide to Neighbourhood Traffic Calming that outlines some of the local factors that will impact the selection of traffic calming measures:

- Weather, particularly winter conditions
- Topography
- Street network
- Existing street design standards, especially widths
- On-street parking conditions
- Driveway locations near intersections
- Transit, truck, service and emergency vehicle requirements
- Designated cycling routes
- Classification and characteristics of vehicles travelling in the community
- Legislation and legal precedents.

Traffic calming measures are intended to achieve one or more of the following objectives:<sup>32</sup>

- Reduce vehicular speeds
- Discourage through traffic volume
- Minimize conflicts between street users
- Improve the neighbourhood environment

Speed humps on residential streets are one type of traffic calming which have proven to be effective in substantially reducing child pedestrian injuries. An evaluation of an extensive program of speed hump installation in the city

<sup>27</sup> Peden, 2004

<sup>28</sup> Klassen et al, 2000

<sup>29</sup> Transportation Association of Canada, 1998

<sup>30</sup> Transportation Association of Canada, 1998

<sup>31</sup> Transportation Association of Canada, 1998

<sup>32</sup> Transportation Association of Canada, 1998



of Oakland, California found speed humps reduced the risk to children by up to 60%, regardless of the general income level of the neighbourhood. Children who lived in an area with no speed humps were more than twice as likely to be hit by a car near their home compared to children living within one block of a speed hump.<sup>33</sup>

## Fact

A Danish study found that traffic calming reduced pedestrian injuries in some cases by 70%.

The Future of Children, 2000

Safety for all street users can be improved when traffic calming measures are appropriately located, designed and signed to address identified problems. Where a traffic calming measure would compromise pedestrian, cyclist or motorist safety, either through inherent design or maintenance problems, through lack of clarity in the intended function of the measure or by creating a false sense of security, then the measure should not be used, even if it might provide some benefits (e.g., on-street parking). Not all traffic calming measures are designed primarily to improve pedestrian safety. In these cases, an alternative measure can often be used which would not create the same negative effects on safety.<sup>34</sup> One of the most important means of ensuring that traffic calming does not compromise safety in any way is to ensure that street users are adequately informed of the presence of traffic calming measures, and how to travel around or through specific devices.<sup>35</sup>

*A combination of local knowledge, technical expertise and careful judgement must be used to select an appropriate measure or combination of measures. Involving people with previous traffic calming experience is also very valuable.*<sup>36</sup> The Canadian Guide to Neighbourhood

Traffic Calming provides a list of principles that are applicable to every situation:

- Identify the real problem. Frequently, the perceived nature of a traffic problem is substantially different from the real problem.
- Quantify the problem. Some problems are more significant than others.
- Consider improvements to the arterial street network first.
- Applying traffic calming measures on an area-wide basis, not on a localized, site-by-site basis.
- Avoid restricting access.
- Use self-enforcing measures.
- Do not impede non-motorized modes.
- Consider all services, including transit, police, fire, ambulance and other emergency services, as well as garbage collection, snow removal and street cleaning.
- Monitor and follow up.

Monitoring and follow up are key activities when utilizing and/or implementing traffic calming measures to ensure the changes have improved the initial problem, that they are accepted by the community and to identify any unintended consequences from the changes.

The City of Brantford recognizes that sidewalks and multi-use pathways are an integral part of the city's transportation system. Priority is given to sidewalks on arterial and collector roadways and major pedestrian routes to school, hospitals, senior's centres, shopping malls, commercial districts and entertainment facilities. Sidewalks in areas frequented by persons with disabilities are also given priority. The city recently updated its local improvement process which, among other things, makes it easier for schools or parents of school-aged children to petition for sidewalks along roadways used by school-aged children. The net result has been that over the last three years, a significant portion of new sidewalks have been installed along school routes.

<sup>33</sup> Tester et al, 2004 p. 646-650

<sup>34</sup> Transportation Association of Canada, 1998

<sup>35</sup> Transportation Association of Canada, 1998

<sup>36</sup> Transportation Association of Canada, 1998

## The need for speed enforcement Motorists on the lookout under Road Watch

June 2, 2004 News Advertiser  
Keith Gilligan, Staff Writer

Celia Klemenz, News Advertiser photo

**DURHAM** – In the first five months of 2004, more than 100 letters have been sent out to vehicle owners telling them to lighten up on the gas pedal or be a little more careful when behind the wheel.

The Ajax-Pickering Road Watch program is celebrating its first anniversary, an initiative aimed at making streets safer. With the program, anyone seeing aggressive or unsafe motorists can fill out a form, which is forwarded on to the Durham Regional Police. A letter is then sent to the vehicle owner.



Since the Ajax-Pickering program started, more than 350 warning letters have been mailed out. Constable Phil Reed notes 120 letters have gone out so far this year.

Locally, the program has been “well received,” Const. Reed says. “I haven’t heard any negative complaints.” It’s not often, but vehicle owners receiving a letter can be thankful, he says. “Those that call back, the vast majority want an expanded version of what they did wrong,” he says. “Eight out of 10 times, they admit to doing wrong and own up to it. “Parents are happy to hear from us and they take the appropriate action,” which usually involves suspending driving privileges, the constable says.

That extends to business owners. “Employers want to hear about their employees,” he says. One lady called after receiving a letter. The incident involved her ex-husband, who was driving a vehicle still registered in her name. “She was taking the appropriate action to get the vehicle back,” he explained. A group of about 20 volunteers are involved with the program, most of them coming on board since the local program started, he points out. Since then, only two have left. “They were quickly replaced,” Const. Reed says. “They dropped out for personal reasons. One moved and the other had too many commitments. “We have a good core group.”

While the primary function of the program is to process complaints that come in, Road Watch also borrows a message board to show the speed a vehicle is travelling. “Any of the group can go out and do the speed board,” Const. Reed states, adding it takes two to four people to man it.

## Enforcement

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Another very important tool for improving pedestrian environments is enforcement. Police officers and other traffic officials (e.g., crossing guards) must hold drivers and pedestrians accountable for unsafe behaviours. Committees can address driver behaviour through enforcement of speed limits, crosswalk laws and/or traffic signals.

### Speed Survey and Enforcement Campaigns

If speeding is a danger that exists in the location your committee is addressing, consider conducting a speed survey and follow up with an enforcement campaign. The key to a successful speed survey and enforcement campaign will be the involvement and co-operation of law enforcement officials. Often, the local municipality has statistics on speeding in the community – check with local law enforcement officials before you begin planning a speed survey.

If no local statistics are available for your community, a speed survey process and tool in *Chapter Five: Resources and Tools* can be used to facilitate speed data collection. Be sure to conduct the survey in a typical traffic situation for that particular road. If there is a controlled intersection (e.g., one with a light or stop sign), conduct the speed survey at a distance from the intersection, where traffic has had the opportunity to reach a normal travelling speed before its speed is clocked.

This type of observation and follow up enforcement campaign can be applied to other traffic violations such as jaywalking, not yielding to pedestrians in crosswalks and rolling through stop signs.

### Crossing Guards

School crossing guards assist students in crossing streets, monitor vehicle traffic in the area to ensure there are no problems with speeders or other dangerous activities and provide adult supervision while children are walking near the school or waiting to board buses. Crossing guards also provide traffic direction in congested traffic areas near schools.

Many communities do not have an adequate number of crossing guards to keep children safe at every dangerous intersection. Your committee can help by prioritizing intersections near schools to determine the highest exposure of children to speeding cars and turning vehicles. Once these locations have been identified, find out who is responsible for employing crossing guards (if they aren't already on your committee). Set up a meeting with the responsible agency to present the priority intersection list.

Recruiting crossing guards is often difficult because of low pay, time conflicts and poor weather. If relevant, extend your committee's assistance to help recruit or train crossing guards.

On an annual basis, work with the school district, police department or transportation department to recognize the service of crossing guards. Promote these local heroes to the media. A recognition program can inspire presently serving crossing guards to continue their work and may help recruit new crossing guards.

### School Safety Patrol

School safety patrols are older students (at least 10 years of age) who direct their peers and smaller children in the school vicinity. These students are not crossing guards. Safety patrollers are senior elementary school students who do not stop or direct vehicular traffic. Patrollers should only be located at crossings where the regular flow of vehicular traffic presents frequent intervals to allow students to safely cross the road. School safety patrols also remind children to look both ways and not to run while crossing the street. They must be able to physically perform their duties, which may require long periods of standing outside in adverse weather conditions.

Eligibility is dependent on parental consent. Parents or guardians should read and sign an application form before their child begins patroller training. Membership in the patrol is voluntary. A school safety patrol inspires school children to develop positive relationships with peers and authority figures and establishes leadership skills.

## Parent Parking Patrol\*

Parent parking patrol is a program that has been effectively implemented in communities. Concerned parents form a committee with one main objective: to eliminate traffic safety problems around their school. The mission is to use positive peer pressure to encourage parents and students to choose safety over convenience and reduce the potential for pedestrian crashes due to traffic congestion before and after school.

Parent patrollers give warning notices to traffic safety violators – whether adult or child. By providing a written notice of unsafe activities, violators will understand that their behaviour is not acceptable. Examples of the violations would be jaywalking, illegal parking, illegal U-turns and failing to stop for a pedestrian.

Use the steps provided in *Chapter Five: Resources and Tools* to set up a parent parking patrol program.

## Kiss and Ride Drop Off\*

Parents/teachers meet cars dropping children off at school and escort students into school or onto ‘safe’ school property. Similar to ‘kiss and ride’ at train or bus stations, parents can drop children off at school quickly and safely, within a limited timeframe. It is usually helpful to ensure cars only travel one way through drop off zone and that children only get out on the side of the car that is away from traffic.

\* In some cases, the implementation of programs like these has resulted in an increase of parents driving their children to school because it has been made so ‘easy’ and ‘safe’.

## Healthy Active Living

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Recently, the issue of active living has received increased attention. Canadian children are less active and, as a result, more likely to be overweight and at risk for poor health. Walking is a healthy activity and increased safe walking by children would benefit personal health, the health of communities and our society as a whole. This Guide will encourage you to consider how ‘walkable’ your community is – whether the environment promotes walking as a form of transportation by making pedestrian routes attractive and safe.

Do more ‘walkable’ communities really have more active people and fewer pedestrian injuries? Recent research shows that there is a link. In one study, residents in a neighbourhood assessed as ‘highly walkable’ were more physically active and less likely to be overweight compared to residents of a ‘low walkability’ (but otherwise similar) neighbourhood.<sup>37</sup> Another study, which analyzed data from California and several European countries, found that in communities where more people walk or bicycle, pedestrians and cyclists were less likely to get struck by motorists. “There is safety in numbers,” the authors conclude. “Policies that increase walking and bicycling appear to be an effective route to improving the safety of people walking and bicycling.”<sup>38</sup>

There are a number of initiatives with the mission to get Canadian children more active. You can use these resources to integrate active living and pedestrian safety in your community. Contact information for the following initiatives can be found in *Chapter Five: Resources and Tools*.

37 Saelens et al. 2003 p. 1552-1558  
38 Jacobsen 2003 p. 205-209

## Health Canada's Active Living Strategy

Health Canada recognized that the rapid increase in overweight and obesity, combined with low levels of physical activity, represents a serious threat to the health of Canada's children and youth. In response to this crisis, Health Canada and the Canadian Society for Exercise Physiology initiated the development of a series of Active Living Guides and support resources. This program is designed to encourage an increase in physical activity levels among Canadians with special guides designed for children and youth.

## Green Communities Association

The Green Communities Association (GCA) has expanded the successful Active and Safe Routes to School program to all parts of Ontario. The GCA works with communities to develop and implement a safe routes to school program that meets their needs.

## International Walk to School Week and Day

International Walk to School Day gives children, parents, school teachers and community leaders an opportunity to be part of a global event as they celebrate the many benefits of walking. In 2003, nearly three million walkers from 29 countries walked to school together for various reasons – all hoping to create communities that are safe places to walk. For most of Canada, Go for Green is the organization responsible for providing information about Canadian activities for International Walk to School Week/Day. The coordinating organization for British Columbia is Way to Go! and in Ontario, Green Communities Association is the lead organization.

## Go for Green

Go for Green, the Active Living and Environment Program, is a national non-profit, charitable organization with the mission to encourage outdoor physical activity that protects, enhances or restores the environment. Go for Green has community-driven solutions that make a positive contribution to Canadian society. Their vision is to nurture commitment and action that improves health and the health of the environment.

We all have an obligation to protect children and keep them safe from harm. Making communities safe for walking is a goal we share with all those working to maintain and improve population health and safety.







# CHAPTER THREE

## Creating the Action Plan

- Develop an action plan
- Your role in the plan

# Chapter Three: Creating the Action Plan

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## What is Your Role?

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You will need to decide exactly how to change your community to improve pedestrian safety using the information in the previous chapter and applying it to your local issues and needs. The following steps will help you create a plan that will be relevant and appropriate for your community's unique pedestrian safety situation.

Remember that there is no 'right' way to improve pedestrian safety. Examining your community's pedestrian safety situation and assessing available resources will help you develop a program that is realistic, sustainable, and has a greater potential for success.



Safekids Canada is compiling information on pedestrian safety initiatives for a national report. Please send details about your activities, including evaluation, using the tools provided in *Chapter Five: Resources & Tools*.

## Community Scenarios

*Examples of Canadian community initiatives that employ a range of pedestrian safety strategies.*

### Kamloops, BC

Constable Menard has undertaken problem solving initiatives at schools where traffic safety problems are evident and has succeeded in effecting changes in environmental situations which in turn have impacted positively on traffic related problems. **He spends time at schools instructing students\*** on safe crossing habits and has implemented school-crossing guards at appropriate locations.

**One example of note is a situation where parents were dropping off secondary school students on a busy freeway,<sup>Δ</sup>** the students then took a short cut to school which involved crossing several lanes of high speed traffic. In addition, students were crossing another busy road adjacent to the same school, even though there was a traffic light in the vicinity. Constable Menard initiated a project to post signs on the freeway that would prohibit stopping. At the other crossing, Menard **coordinated the building of a fence to funnel the students to the controlled crosswalk.<sup>†</sup>** Both initiatives showed significant results.

### Ascot, QC

Project Sara came about when it was **realized that a number of incidents were occurring<sup>•</sup>** at the intersection of Belvédère and Sara. Teenagers were regularly crossing this intersection against the red light. The plan was to increase the use of pedestrian crossing lights in order to reduce the risk of injury, alert motorists to the danger in the area and educate them with respect to right-of-way laws.

They accomplished their goal of reducing incidents at the intersection through the use of **promotional materials (brochure),\* use of student radio to enforce the message, written notices and classroom visits by officers.** They conducted a mock collision with injuries on site to sensitize students to the dangers and the results of being involved in a pedestrian/motor vehicle collision. They also distributed information and letters to parents, bus drivers and teachers explaining the situation and enlisting their aid in providing support and reinforcement to the safety messages being conveyed by the police officers.

They also created a system whereby **violation notices<sup>¥</sup>** would be distributed to pedestrians (over age 14) and drivers to draw their attention to the errors they committed while using the intersection.

The project was very successful. During the final evaluation of the program, infractions at the intersection had declined dramatically.

\* EDUCATION

Δ SOCIAL ENVIRONMENT

• PROBLEM IDENTIFICATION

† PHYSICAL ENVIRONMENT

¥ ENFORCEMENT

## Developing an Action Plan

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### Nine Steps to Create Your Community Pedestrian Safety Action Plan

1. Identify stakeholders and invite them to participate
2. Gather information
3. Build awareness and support
4. Conduct a community pedestrian safety audit
5. Create an action plan
6. Assess resources
7. Set priorities and decide who will do what and by when
8. Monitor and support
9. Evaluate

### Identify Stakeholders and Invite Them to Participate

Coalitions are useful for accomplishing a broad range of goals that reach beyond the capacity of any individual member organization.<sup>39</sup> Who needs to be involved in pedestrian safety in your community? You may already have a committee in place: a safe community committee or a road safety committee for example. Or you may be just forming a committee. You will have a better chance of developing an effective and practical initiative if the appropriate people are involved from the beginning. *Developing Effective Coalitions: An Eight Step Guide* is an excellent resource that provides detailed information on coalition building with specific injury prevention related examples (see *Chapter Five: Resources and Tools* for contact information).

Start with those you think would be most interested and individuals or groups who have a large stake in pedestrian safety. Be sure you have representation from the various sectors that should be involved in making change at several levels. Sectors may include local government, schools, parents and children/youth, transportation, planning and police. Effective initiatives are those with broad

community representation, and you want to ensure you have the right people to get things done. The most obvious stakeholders are:

- public health departments
- police and law enforcement
- road and traffic planners
- hospitals and/or health authorities
- emergency response/medical
- municipal government
- teachers or school board representatives
- children and youth
- recreation and industry
- residents/neighbourhood associations
- parent associations (e.g., school councils)

Consider including a few youth representatives on your committee – they will have valuable insight and can play an important role in implementation. Contacts for youth representatives include student councils in area schools or local clubs (e.g., Boys & Girls Club).

Some stakeholders may not be able to attend meetings but you can keep them informed of your efforts. Determine their preference for mode of communication (e.g., mail, email) and level of information (e.g., agendas, minutes, quarterly update). This will ensure that they are able to keep up to date on your progress. These stakeholders may be helpful in situations where advocacy is needed and by receiving regular communications, they will be well informed and able to respond quickly.

### Ask

- Who should be involved?
- Does anyone know them and can make initial contact?
- What information will they need?
- What information do they want?

<sup>39</sup> Cohen et al, 2002

## Gather Information

Take account of what information you already have and determine what more you need. You will want to gather local data and information on pedestrian injuries and deaths. Local sources of data can include police, hospitals and provincial health departments or injury prevention programs. You may want to compare the information to other regional data or to provincial or national data (see *Chapter Five: Resources and Tools*). The data can be useful for building awareness and support for pedestrian safety improvements and will help you evaluate success.

## Ask

- What has been the nature of pedestrian injuries in our community? (sometimes local police gather this information)
  - How many?
  - How often?
  - How severe?
- Where have they happened?
- Do we have information on the cause?
- How can more information be obtained, if necessary?
- Who will gather more information and by when?

## Build Awareness and Support

At various stages throughout the process, it is important to build wider awareness about your pedestrian safety concerns and what activities are planned or in progress to address them. Information shared with key stakeholders and the broader community can result in feedback that can be used to inform the final plan – making it truly a community developed solution. This can help build partnerships, as well as ensure that community members have had a chance to become involved and that a wide range of perspectives have been considered. Plan to consult with area residents and other stakeholders at key points as your project progresses.

Ensuring good communication with the public is critical for the success of environmental changes or enforcement initiatives. Changes to neighbourhood traffic flow can be controversial, and it is better to build support before changes occur rather than fight opposition afterwards. Education initiatives often need strong publicity to be effective. Some specific ideas and tools for building awareness through the media and through advocacy are provided in *Chapter Four: Making it Happen*.

## Conduct a Community Pedestrian Safety Audit

Every community has a unique pedestrian safety situation. Whether your community is in a rural or urban setting, designing an initiative that is relevant and addresses the unique, local pedestrian safety problem starts with a thorough understanding of your community's pedestrian safety situation.

# Ask

## How 'walkable' is our community? (define a neighbourhood walking area)

- Are there sidewalks along walking routes?
- Are they in good repair?
- Are there crosswalks in good repair?
- Are they at convenient locations?
- Are there pedestrian signals at busy streets and intersections?
- Do they allow sufficient time to cross?
- Do drivers yield to pedestrians?
- Do obstacles block sidewalks?
- Are there barriers in place to separate pedestrians from traffic?
- Is there adult supervision where children cross near schools?

\* see *Chapter Five: Resources and Tools* for a sample walkability checklist

It may be valuable to obtain the observations of local residents regarding pedestrian issues or to conduct a walkability check or conduct a speed survey. *Chapter Five: Resources and Tools* provides a sample walkability checklist, neighbourhood observation survey and speed survey you can use to collect data. In addition to collecting valuable information, these activities will also raise awareness of the issues to residents and possibly garner support for your initiative. You may even find a volunteer or two along the way!

Make a list of all the factors that affect pedestrian safety in your community that you will want to consider for possible changes or improvements. You now can go through the list of modifiable risk factors to see which strategies will address each of the factors you have identified. This will provide the basis for your action plan.

### Example of the results of a safety audit

Issue(s)	Description of problem	Possible strategies	Estimated resource needed
Four lane street with four-way stop sign. Pedestrians have to be seen by possible eight drivers and at least four of those drivers wait while the pedestrians cross at the intersection.	Often cars will proceed from the four-way stop without it being safe for them to do so.	Use a traffic calming measure to narrow the roadway at the four-way stop.	Traffic count. Incident count – e.g., how many times pedestrian was not given the right of way. Input from municipal planning and road design. Structural change/construction perhaps funded by the municipality.



## Create your Action Plan

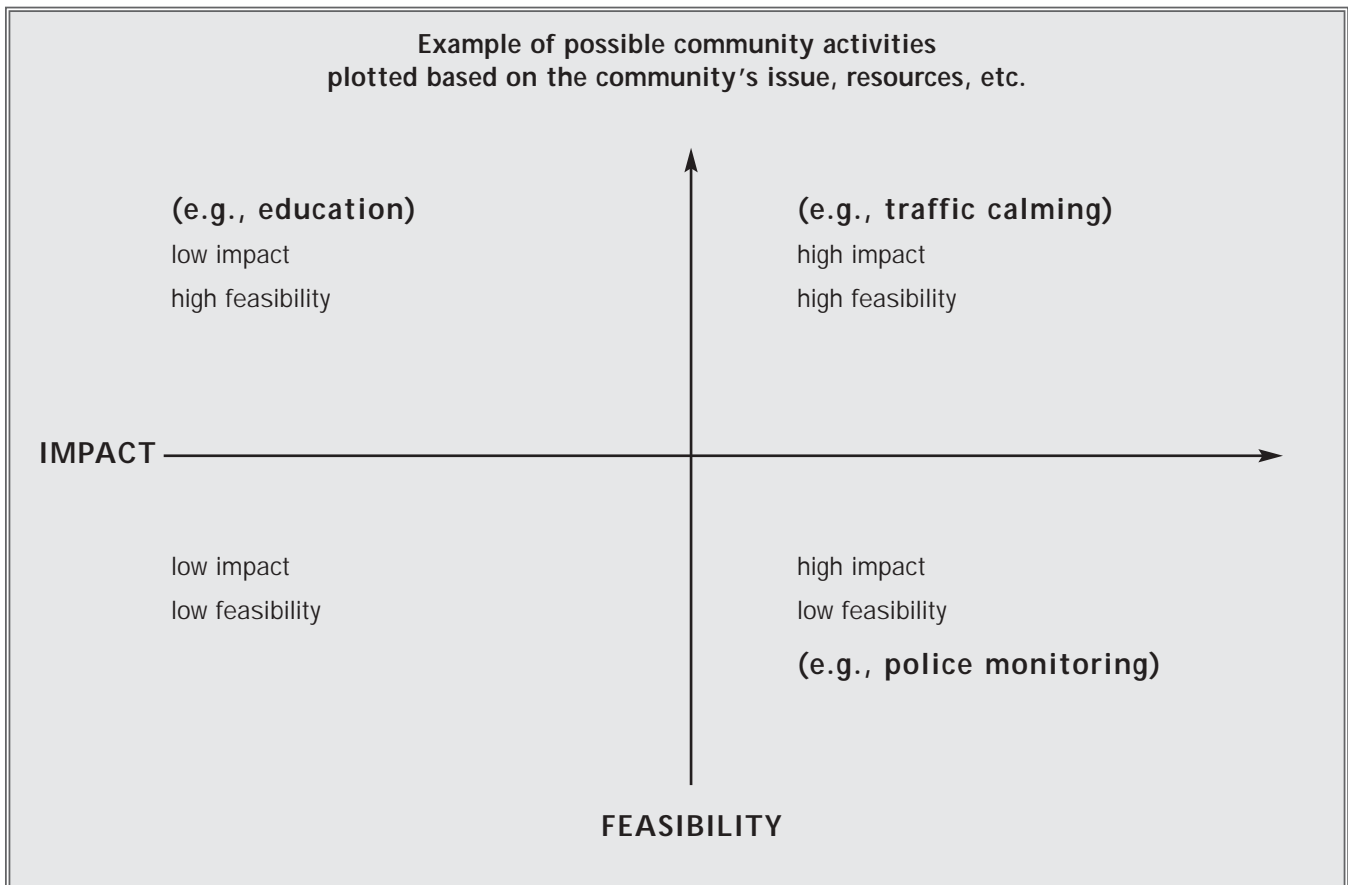
To determine what strategies to focus on, determine which modifiable risk factors are most feasible and will also have the most impact on pedestrian safety in your community.

Consider what criteria you will use to assess how feasible each of the activities is for your group. Among the criteria you identify, you will want to consider resources (see step 6), the length of time it will take to improve conditions, whether your group has the capacity to accomplish the

activity, which activity will have the most impact.

Also, agree what criteria constitute an activity's impact. Does high impact mean the activity will benefit a large number of people or is more likely to reduce severity in one crash?

Plot each of the activities you identify on the grid to help you decide what to focus on. Remember that several activities using a variety of strategies will be most effective. *Chapter Five: Resources and Tools* provide a work sheet to plot issues identified from the data collected.



## Assess Resources

Make a list of resources required for each activity. Consider human, financial and equipment resources you will need. You can then identify where there are gaps in resource requirements.

### Ask

- What resources are required for each activity?
- What resources do we have now?
- What do we need?

## Set Priorities, Timelines and Responsibility

Using the information charted in your action plan, decide which activities your group considers top priority. Then outline your strategies, set a timeframe and a person/people responsible for each.

## Evaluate

It is helpful to evaluate your program or a program component to monitor and document safety changes. Evaluation can help you learn how to improve your program's components and to assess what you have accomplished so far. The following table outlines the different types of evaluation that can be conducted. Process evaluation is often the most common level of evaluation for communities. Not all types of evaluation may be possible – do the best you can. Consider collaborating with researchers to conduct impact and outcome level evaluations – many researchers are looking for opportunities to work with communities on projects. Local universities, colleges or hospitals are good places to look for research collaboration opportunities.

To assist you in collecting information to evaluate your pedestrian initiatives, a template for each type of program evaluation is provided in *Chapter Five: Resources and Tools*. Use these forms when completing evaluation for local programming, advocacy and awareness building.

Example of priorities, timelines and responsibility

Priority issue(s)	Strategy to be initiated	Target audience	Responsible committee member	Timeframe
Narrow intersection	<i>Education</i> Fact sheet; article in newspaper	Drivers in neighbourhood	Joe/Jane Committee member	<i>Education</i> Sept/Oct
	<i>Enforcement</i> Short-term police presence		or Committee member x, y and z	<i>Enforcement</i> Oct
	<i>Environment</i> Traffic calming signage			<i>Environment</i> Oct/Nov

**Example of evaluation**

**Formative evaluation**

This evaluation type tests program plans, messages and materials before they are put into place. Personal interviews and/or focus group testing may help to determine the approaches for addressing the issues below.

- Perceptions of vulnerability to pedestrian injury or hitting a pedestrian
- Knowledge of safe pedestrian and driver behaviours
- Knowledge of laws related to pedestrians
- Likelihood of pedestrians to obey traffic laws
- Trust in police to enforce pedestrian-related traffic laws
- Knowledge of child development and injury risk

**Questions to consider:**

- Who are we trying to reach?
- What do they know/believe now?
- What do we want to change?
- Are we communicating effectively?

**Process evaluation**

This evaluation type is quantitative and involves actual counting (e.g., number of participants, media stories). Below are some examples of variables that could be measured.

- Traffic-calming devices installed
- Volunteers participating
- Media stories/articles
- Traffic violations
- Materials distributed
- Increased numbers of students walking

**Questions to consider:**

- What, specifically, are we doing?
- Who is doing it?
- How is it getting done?
- How does what we've done compare with what we intended to do?
- What have we learned?
- What would we change or not change?

**Impact evaluation**

This evaluation type uses a mix of quantitative and qualitative measures and incorporates tools such as surveys, observations, etc. Below are some examples of factors that could be measured.

- Changes in knowledge, attitudes and beliefs about child pedestrians (survey)
- Actual increase in yielding to pedestrians (pre- and post-observation)
- Actual decrease in speeds (pre- and post-observation)
- Introduction or passage of sidewalk ordinances in a community

**Questions to consider:**

- What are the results of our program?
- How do the results compare with what we expected?

**Outcome evaluation**

This evaluation type indicates whether a project has reduced injuries and deaths or the number of pedestrian crashes among children. This data can help to measure post-intervention progress.

**Questions to consider:**

- What factors may have contributed to the reduction in pedestrian injuries at the target locations or in the community as a whole?
- What has been learned about which activities or factors were most effective in improving pedestrian safety?





# CHAPTER FOUR

## Making It Happen

- Finding funds
- Involving media
- Enlisting volunteers and sharing the workload

# Chapter Four: Making It Happen

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## Funding

You will need to identify sources for getting the resources you identified to implement your program. If you have representatives from different sectors on your committee, ask what resources they have or are aware of and as a group identify other sources for funding. Identify which committee members will apply for funding and set a time frame.

Some sources of funding you can consider are:

- local planning departments
- local industry councils
- health authorities
- Police, Fire Department Community funds
- Foundations (e.g., Traffic Injury Research Foundation)
- Provincial/Territorial Ministries of Transportation
- Transport Canada
- Health Canada, Active Living
- Corporate sponsors (e.g., local car dealerships, manufacturers of reflective devices)

In-kind donations can help offset the costs associated with your initiative. Think about items or services that local businesses would be interested in contributing such as free advertisements in local newspapers, signage for an event that the local business could have its name on for profile or refreshments for volunteers and participants.

## Public Policy and Advocacy

Building relationships with government officials and policy-makers may be important in moving the goals of your educational, environmental and/or enforcement initiative forward. To begin, develop a list of key government representatives and/or policy-makers in your community who may be allies or opponents. Include other influential people who have an impact on transportation or safety-related policies or funding.

Some examples of key representatives are:

- Mayor
- Ward Councillors
- Representatives from transportation or planning departments
- Chairs or members of health, transportation committees
- Traffic engineers or planners
- School board members (e.g., trustees)
- School board officials (e.g., superintendent)
- Police

Other stakeholders may include:

- Boys & Girls Club members
- Pedestrian/bicycle committee representatives
- Parent advisory committee/school council chair
- Parent of a child who has had a pedestrian injury
- Organizations that play a role in public policy

There are some simple steps to take to begin building relationships with government officials and/or policy-makers:<sup>40</sup>

**Contact the government official(s) and/or policy-makers on your list.** Send a letter of introduction and ask for an introductory meeting. Enclose information on your initiative, your committee representatives, pedestrian-related issues and other general information.

<sup>40</sup> US Safe Kids, 2003



**Schedule a face-to-face meeting or walking tour of the high-risk location.** At the meeting, explain who you are, bring local facts about pedestrian injuries, offer to serve as a resource for data, provide anecdotes about children who have been injured (especially if they are constituents), tour the high-risk locations as pedestrians, etc. You may also want to use photos and/or videos to illustrate the issues. Representing the issues from a child's perspective can make an impact – the problems become very tangible. Don't be disappointed if you end up with an introductory meeting with a staff member. Staff members are key to a policy-maker's decision-making process. Other tips to remember:

- Respect their limited time.
- Know your subject and come prepared with succinct written information about the initiative. Always leave a written description of your initiative.
- Tailor your conversation to the audience and refer to their background, policy goals, interests, etc.
- Be specific in what you ask them to do (e.g., introduce a by-law, vote for a by-law, send letters to colleagues, submit an opinion/editorial for publication supporting your proposal).
- Always offer to provide them with sample letters, opinion/editorial and other support materials.

**Follow up with a thank you.** Follow up with a thank you note to the government representative or policy-maker and appropriate staff members reiterating some of the key points made in your meeting. Provide additional information in response to issues raised in the meeting and invite them to attend the next committee meeting or to tour the high-risk location, if relevant.

**Keep building the relationship.** Continue to provide the contacts you've made with accurate, concise, high-quality written materials and ideas for improving pedestrian environments. Add them to your mailing list and occasionally send email updates of successes. Invite him/her to speak at community-wide meetings or during a media event/interview.

## Advocacy Tools

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Regardless of the issues you are addressing in your community, there are a few tools that can help get your message out.

### Public Participation and Consensus-Building

There are many groups interested in creating more walkable communities, especially health, fitness, environment and smart growth proponents. The more public support you can garner for your initiative(s), the more likely it is that government officials and policy-makers will listen.

- Invite community members, policy-makers and the media on a short walk through the neighbourhood to conduct a pedestrian audit of the dangers that exist, and build support for interventions/changes.
- Attend relevant zoning, parks and recreation, neighbourhood association, school board and public works meetings. Ask to be a part of the agenda for the meeting and distribute information about the objectives of your initiative(s).
- Set up a table in a well-travelled area, such as a community event or local market, where petitions, postcards or letters can be collected and delivered to politicians representing that district.
- Find out if politicians will be hosting any constituent open houses or town meetings. Attend and ask questions about these issues.
- Host a news conference with supportive politicians to spotlight policy needs, pending legislation or traffic-calming projects.<sup>41</sup>

<sup>41</sup> US Safe Kids, 2003

## Writing Campaigns

Verbal communication is important, but written communication is absolutely critical to the success of any advocacy effort, regardless of the issue. This level of involvement demonstrates to government officials that the issue is important to the people who vote for him or her. These tools include:<sup>42</sup>

- Petitions from constituents
- Requests for action or memo alerting committee members to respond to an urgent piece of legislation or ordinance
- Letters to policy-makers
- Opinion/editorials in a local newspaper written by a policy-maker or by an individual who has been directly impacted by a pedestrian crash at the site of the concern

## Charters

Several communities have used the development of a pedestrian charter to gain support from local government and stakeholders. A charter is a public declaration of principles and responsibilities to achieve a common goal – in this case, to promote walking and protect the safety of pedestrians. A sample of the Charter developed and adopted by the City of Toronto in 2003 is provided in *Chapter Five: Resources and Tools*.

## Education Through the Media

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Media support can be a useful part of your education campaign. Media can help raise awareness of pedestrian safety issues among parents and the broader community.

The media are interested in information that is newsworthy – meaning it is interesting and important to people in your community and has some kind of attention-getting ‘news hook’. Elements of your action plan may already be newsworthy or you may need to create news to get attention. Here are some ideas:

- Find out the prior year’s pedestrian injury statistics from local police, hospital or emergency services/ambulance representatives. Try to get information on the causes of the injuries (e.g., child chased ball into street, driver ignored crosswalk). Release this information to media in September, positioning the information as important because (1) children are back to school, and therefore more child pedestrians are out and about, and (2) pedestrian injuries in Canada are most likely to occur between September and January.
- Conduct an observational study of pedestrian/traffic problems in your community and release the results. This does not need to be scientific; it is meant to serve as a snapshot of the problem. The area and issue you monitor (e.g., school drop-off problems, speeding) will depend on the major issues you identify in your analysis.
- Conduct an anonymous survey of children in your community to find out what traffic safety rules they know. This could be done through schools, recreational centres, and other places where children gather. It is highly likely that children won’t describe all the rules they should know, and the media angle could be ‘local children lacking awareness of traffic safety rules.’

<sup>42</sup> US Safe Kids, 2003

### Calgary “Look Out for Each Other” Campaign

A partnership between Calgary Roads of the City of Calgary, Calgary Police Services and the Calgary Health Region, this campaign’s goal was to raise awareness of pedestrian issues and provide education, enforcement and engineering strategies. One component was a media campaign that used bus tails (signs on the backs of municipal buses) and radio spots to highlight the message “look out for each other”. The campaign kicked off in Calgary with a media event and the radio spots which ran through the month. The bus tails were the next communication component. Another round of messaging with brochures and signage in shopping malls is planned to build the strength of the campaign.

In smaller communities, media will often cover stories about groups that are meeting to tackle specific issues – even if you haven’t determined your strategy yet. You may be able to get local media to attend your first committee meeting to report on why your group is needed (e.g., what your concerns are about pedestrian safety issues in your community). This can be a good way to raise your committee’s profile and make it easier to knock on doors to ask others to join you in developing community strategies around pedestrian issues.

Whatever media story you have, remember this key point: *Explain why the issue is a problem and always provide a solution.*

Depending on the angle of your story, the solutions to the issue could be new traffic calming measures or safety tips that parents should follow to protect their kids. The second part is critical; many health or safety news stories tell people about the hazards but fail to provide information on prevention. These types of stories can leave people feeling worried and powerless. Parents will want to know what steps they can take to protect their

children and what steps their community will be taking. Make sure this information is front and centre in all your media materials and interviews.

### Developing a media plan

Make sure your media strategy is focused. The best way to do this is by developing a clear plan. First, identify your audience and your education goals. To do this, ask two questions:

1. Who are you trying to reach through the media? (It’s best to focus on one priority group to keep the information focused – do you mainly want to educate parents or drivers?)
2. What do you want them to do? (Do you want parents to teach safety rules to their children? Do you want drivers to reduce their speed in school zones?)

Second, make a list of the top two or three points – key messages – you want your audience to remember. A list of child pedestrian key messages is provided in the *Introduction* of this Guide. This information should be tied to what you want your audience to do. These points should be stressed in your news release, in your media interviews and at your event. You will probably have lots of other information that you’d like to convey but keeping the focus on two or three messages increases the likelihood that they will get covered. If you have more time once you’ve discussed the key messages, you can expand on other points.

Third, determine how you will get media attention. Are you going to hold a news conference? Issue a news release? Demonstrate some pedestrian safety strategies, such as a walking school bus? If you want television coverage, keep in mind that they need something active and visual, such as a safety demonstration.

A sample media plan is provide in *Chapter Five: Resources and Tools*.

## Working with the media

### 1. Make initial contact with your local media.

Call the newsroom of each media outlet in your area and ask for advice. Tell them about the Pedestrian Safety Program and your plans and ask who in the newsroom should be sent media advisories regarding pedestrian community events. Get a name, title and direct phone and fax numbers. Also call any health, children's and lifestyle reporters or columnists and ask them the same questions. In some cases, they will want to be sent the information directly, even if it is also going to the editor. You may generate some early interest – possibly even a feature about the issue – simply by making these phone calls.

### 2. Approach local radio and television stations to feature pedestrian safety issues and promote your events through their announcers and other non-news programming.

Call the stations and ask for the names of contacts for the programs you think may be appropriate. Think of ideas that would fit these shows and propose them to the program contacts.

### 3. Consider enlisting a local media celebrity to be master of ceremonies for your news conference/event or to demonstrate pedestrian safety activities with his or her own young children.

For example, recruit a radio DJ who hosts a local program. S/He would likely discuss his involvement in your campaign and promote the campaign messages as part of his on-air chat.

### 4. Provide information through community newspapers.

Many community newspapers are eager for content – ask the paper if it will run information on pedestrian safety (e.g., safety tips) or on your event. Offer to write an article or guest column, using the information in this Guide. Many community papers welcome copy contributions that their readers may find of interest.

### 5. Publicize your event(s).

Here are some ideas for promoting events:

- Whether you're holding a news conference or a less formal event, you want the media to know about it and cover it. Prepare a media advisory that gives the media the details. It should be sent by fax at least five business days before the event. Call two to three days before to make sure they receive it and to determine their level of interest. A sample media advisory has been provided in *Chapter Five: Resources and Tools*.
- If you're holding a news conference, write a news release that summarizes the key information you'll be providing and highlights your key messages. Include quotes from speakers, and provide the name and phone number of your key contact. Give this news release to media who attend the news conference and fax it to those who didn't attend right after the event. (Read the "news release" section in this Guide for more detail.)
- On the day of your event, set up a media table where members of the media can sign in and receive more information. Ensure they get the information they need to cover your story. Include a copy of your news release, information on the issue and names and titles of speakers or event participants. Also be sure to list one name and phone number as the main media contact. Package all this information together in a folder or envelope.
- Clip and save (or tape) any resulting media coverage for inclusion in your evaluation report.

## Media materials

Below is a list of commonly used media materials. Samples of each are provided in *Chapter Five: Resources and Tools*.

### Media Advisory

The purpose of a media advisory is to attract reporters to your event. The advisory should include an attention-getting title, information about when and where your event will be held, who will be represented and what the activities will be. Fax the advisory out **at least five business days before** the event and follow up two to three days before to confirm they received it and are planning to attend.

### News Release

A news release provides all the key information about your event or program. It provides enough detail for a reporter to write a complete story. A news release is usually sent to the media on the day of your event, and distributed at the event.

### Opinion/Editorial

This is an opinion piece, traditionally found opposite the editorial page of the newspaper. Published pieces (as opposed to those that are submitted, but not published) are thoughtful, well written points of view usually backed by fact, most commonly by people with expertise (and positions) in the relevant field. Check with your local newspaper about the appropriate length for an op-ed piece; this can vary.

### Letter to the Editor

Letters to the editor are in response to an article from a previous edition and can be used to provide an alternative perspective or to support the views expressed in the original article. Keep your letter brief (ideally less than 300 words). If you email your letter, do not send an attachment; include your letter as part of your email message. Most newsrooms will not open unsolicited attachments.

## Involving Volunteers

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Volunteers can be valuable in assisting with public events or activities. The use of volunteers allows scarce resources to be used for more direct program expenses and provides an opportunity to involve local people.

Examples of how volunteers can get involved include:

- Sending out flyers
- Providing refreshments
- Participating in observational data collection (e.g., resident interviews, traffic counting, observing pedestrian behaviours)
- Putting up and tearing down signage
- Connections to networks of friends and colleagues







# CHAPTER FIVE

## Resources and Tools

- Resource contact information
- Helpful tools
- Instructions for activities

# Chapter Five: Resources and Tools

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## RESOURCES

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### Injury Data and Information

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#### Provincial Contact Information

##### British Columbia

BC Injury Research & Prevention Unit  
Centre for Community Child Health Research  
L408 - 4480 Oak Street  
Vancouver, BC V6H 3V4  
Tel: (604) 875-3776  
Fax: (604) 875-3569  
E-mail: [injury@cw.bc.ca](mailto:injury@cw.bc.ca)  
[www.injuryresearch.bc.ca](http://www.injuryresearch.bc.ca)

The BC Injury Research Centre  
855 West 12th Avenue  
Vancouver, BC V5Z 1M9  
Tel: (604) 875-4991  
Fax: (604) 875-4570

##### Alberta

Alberta Centre for Injury Control & Research  
4075 RTF, 8308-114 Street  
Edmonton, AB T6G 2E1  
Tel: (780) 492-6019  
Fax: (780) 492-7154  
E-mail: [acicr@ualberta.ca](mailto:acicr@ualberta.ca)  
[www.med.ualberta.ca/acicr](http://www.med.ualberta.ca/acicr)

Alberta's Children Hospital  
Emergency Department  
CHIRPP Coordinator  
1820 Richmond Road S.W.  
Calgary, AB T2T 5C7  
Tel: (403) 229-7069  
Fax: (403) 229-7398  
E-mail: [trudi.senger@crha-health.ab.ca](mailto:trudi.senger@crha-health.ab.ca)

##### Saskatchewan

Saskatchewan Institute on Prevention  
of Handicaps  
1319 Colony Street  
Saskatoon, SK S7N 2Z1  
[www.preventioninstitute.sk.ca](http://www.preventioninstitute.sk.ca)

##### Manitoba

IMPACT  
820 Sherbrook Street  
Winnipeg, MB R3A 1R9  
Tel: (204) 774-6511  
[www.hsc.mb.ca/impact/](http://www.hsc.mb.ca/impact/)

##### Ontario

Ontario Trauma Registry (CIHI)  
90 Eglinton Avenue East, Suite 300  
Toronto, ON M4P 2Y3  
Tel: (416) 481-2002  
Fax: (416) 481-2950  
E-mail: [otr@cihi.ca](mailto:otr@cihi.ca)  
[www.secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=AR\\_7\\_E](http://www.secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=AR_7_E)

##### Quebec

CHIRPP Coordinator  
Montreal Children's Hospital  
Community Pediatric Research  
2300 Tupper Street, Room C538  
Montréal, QC H3H 1P3  
Tél: (514) 412-4400 ext. 3167  
Fax: (514) 412-4477  
E-mail: [glenn@arobas.net](mailto:glenn@arobas.net)

CHIRPP Coordinator  
Hôpital Sainte-Justine  
L'urgence Chirurgicale  
3175, côte Sainte Catherine  
Montréal, QC H3T 1C5  
Tél: (514) 345-4931 ext. 2869  
Fax: (514) 345-4823  
E-mail: [elizabeth\\_platonow@ssss.gouv.qc.ca](mailto:elizabeth_platonow@ssss.gouv.qc.ca)

Unité connaissance-surveillance  
Institut national de santé publique du Québec  
945, avenue Wolfe, 3<sup>e</sup> étage  
Sainte-Foy, QC G1V 5B3  
Tél: 418-650-5115 ext 5700  
Fax: 418-643-5099  
E-mail: [danielle.st.laurent@inspq.qc.ca](mailto:danielle.st.laurent@inspq.qc.ca)

## Injury Data and Information

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### Provincial Contact Information

#### New Brunswick

Provincial Epidemiology Services  
Department of Health and Wellness  
PO Box 5100, Fredericton, NB E3B 5G8  
Tel: (506) 453-2536  
Fax: (506) 444-4697

#### Nova Scotia

Child Safety Link  
IWK Grace Health Centre  
5850 University Ave, PO Box 3070  
Halifax, NS B3J 3G9  
Tel: (902) 420-6492  
Fax: (902) 420-6774  
E-mail: [childsafetylink@iwk.nshealth.ca](mailto:childsafetylink@iwk.nshealth.ca)  
[www.childsafetylink.ca](http://www.childsafetylink.ca)

#### Newfoundland

CHIRPP Coordinator  
Dr. Charles A. Janeway – Child Health Centre  
Newfoundland Drive  
St. John's, NL A1A 1R8  
Tel: (709) 777-4550  
Fax: (709) 777-4726  
E-mail: [hcc.galle@hccsj.nf.ca](mailto:hcc.galle@hccsj.nf.ca)

#### NW Territories

Stanton Regional Hospital  
PO Box 10, Yellowknife, NWT X1A 2N1  
Tel: (867) 669-4326  
Fax: (867) 669-4129  
E-mail: [pat\\_booth@gov.nt.ca](mailto:pat_booth@gov.nt.ca)

#### Nunavut

Baffin Regional Health Board  
Post Bag 200  
Iqaluit, NU X0A 0H0

#### Provincial/regional public health offices

Consult your public health office listing

#### Local/regional police offices

Consult local police office listing

#### Local hospitals and trauma registries

Consult local hospitals and/or trauma registries listing

#### Provincial/regional coroner & medical examiner offices

Consult coroner/medical examiner listing

### National Contact Information

*Transport Canada*  
[www.tc.gc.ca](http://www.tc.gc.ca)

*Health Canada Injury Surveillance On-Line*  
[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

*Transportation Safety Board of Canada*  
[www.tsb.gc.ca](http://www.tsb.gc.ca)

*Inventory of Injury Data Sources and Surveillance Activities at HC's Centre for Surveillance Coordination*  
[www2.itssti.hc-sc.gc.ca/clf/clfinventory.nsf/maine?openview&count=10000](http://www2.itssti.hc-sc.gc.ca/clf/clfinventory.nsf/maine?openview&count=10000)

*Canadian Institute for Health Information*  
[www.cihi.ca](http://www.cihi.ca)

*Railway Association of Canada*  
[www.railcan.ca](http://www.railcan.ca)

*Traffic Injury Research Foundation*  
[www.trafficinjuryresearch.com](http://www.trafficinjuryresearch.com)

### U.S. Contact Information

*National Highway and Traffic Safety Administration*  
[www.nhtsa.dot.gov](http://www.nhtsa.dot.gov)

*National Strategies for Advancing Child Pedestrian Safety – Report by the National Center for Injury Prevention and Control*  
U.S. Centers for Disease Control and Prevention  
[www.cdc.gov/ncipc/pedestrian/](http://www.cdc.gov/ncipc/pedestrian/)

*National Safe Kids Campaign*  
[www.safekids.org](http://www.safekids.org)

## **Coalition Building Contact Information**

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*The Safe Communities Capacity Building Handbook: Planning for Self-Sustaining Coalitions [2004]*  
Safe Communities Foundation  
64 Charles Street East, Suite 201  
Toronto, ON M4Y 1T1  
Tel: (416) 964-0008  
Fax: (416) 964-0089  
E-mail: [info@safecommunities.ca](mailto:info@safecommunities.ca)  
[www.safecommunities.ca](http://www.safecommunities.ca)

*Developing Effective Coalitions – An Eight Step Guide*  
The Prevention Institute  
Oakland, CA  
[www.preventioninstitute.org](http://www.preventioninstitute.org)

*You Can Do It – A Community Guide for Injury Prevention*  
Harborview Injury Prevention & Research Center

## **Public Policy and Advocacy**

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*Toronto Pedestrian Charter*  
[www.city.toronto.on.ca/pedestrian](http://www.city.toronto.on.ca/pedestrian)

*Capacity Building: Linking Community Experience to Public Policy*  
[www.hc-sc.gc.ca/hppb/regions/atlantic/documents/index.html#policy](http://www.hc-sc.gc.ca/hppb/regions/atlantic/documents/index.html#policy)

*Parent Parking Patrol*  
[www.mast.mb.ca](http://www.mast.mb.ca)

## **Planning and Design**

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*The Canadian Guide to Neighbourhood Traffic Calming [December 1998]*  
The Transportation Association of Canada  
2323 St. Laurent Blvd.  
Ottawa K1G 4J8  
Tel: (613) 736-1350 ext. 236  
[www.tac-atc.ca](http://www.tac-atc.ca)

*Healthy Sidewalks: A Guide*  
M. Gordon Brown, Space Analytics  
Denver, Colorado USA  
[www.spaceanalytics.com](http://www.spaceanalytics.com)

*Oakland Plan for Pedestrian Safety*  
[www.oaklandnet.com/government/traffic-safety-grant.html](http://www.oaklandnet.com/government/traffic-safety-grant.html)

*Traffic Calming Handbook [1998]*  
Institute of Transportation Engineers  
525 School St. SW, Suite 410  
Washington, DC USA 20024

*Pedestrian Facilities Users Guide: Providing Safety and Mobility*  
U.S. Department of Transportation  
Federal Highway Administration  
National Technical Information Service  
Springfield, VA USA 22161

## **Evaluation Resources**

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*Injury Prevention Program Evaluation Manual [2001]*  
BC Injury Research & Prevention Unit  
Tel: (604) 875-3776  
E-mail: [injury@cwbc.ca](mailto:injury@cwbc.ca)  
[www.injuryresearch.bc.ca](http://www.injuryresearch.bc.ca)

*Evaluating Health Promotion Programs – Workbook 2002*  
The Health Communications Unit  
Centre for Health Promotion  
University of Toronto  
Tel: (416) 978-0522  
E-mail: [hc.unit@utoronto.ca](mailto:hc.unit@utoronto.ca)  
[www.thcu.ca](http://www.thcu.ca)

## Education and Enforcement Programs

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- Green Communities Association  
[info@saferoutestoschool.ca](mailto:info@saferoutestoschool.ca)
- Way to Go! British Columbia  
[www.waytogo.icbc.bc.ca](http://www.waytogo.icbc.bc.ca)
- Community Trespass Prevention Guide  
Direction 2006  
[www.direction2006.com](http://www.direction2006.com)
- On the Right Track for Rail Safety  
Safe Kids Canada  
[www.safekidscanada.ca](http://www.safekidscanada.ca)
- Walking School Bus  
[www.walkingschoolbus.org](http://www.walkingschoolbus.org)
- Walkability Checklist  
Pedestrian and Bicycle Information Centre  
[www.walkinginfo.org/cps/checklist.htm](http://www.walkinginfo.org/cps/checklist.htm)
- National Highway and Traffic Safety Association,  
Safe Routes to School  
[www.nhtsa.dot.gov/people/injury/pedbimot/ped/saferouteshtml/index.html](http://www.nhtsa.dot.gov/people/injury/pedbimot/ped/saferouteshtml/index.html)
- Active Living, Health Canada  
[www.hc-sc.gc.ca/dca-dea/allchildren\\_touslesenfants/she\\_road\\_e.html#ped](http://www.hc-sc.gc.ca/dca-dea/allchildren_touslesenfants/she_road_e.html#ped)
- Safe Kids Canada Resource for Community Action  
[www.safekidscanada.ca/ ENGLISH/  
IP\\_PROFESSIONALS/  
CommActions/ActionKit\\_Peds/IP\\_AKPeds\\_Cover.html](http://www.safekidscanada.ca/ENGLISH/IP_PROFESSIONALS/CommActions/ActionKit_Peds/IP_AKPeds_Cover.html)
- Kidestrians  
Trauma Prevention Council  
Hamilton, ON  
Tel: 1-866-860-2226
- Risk Watch  
[www.nfpa.org/riskwatch/](http://www.nfpa.org/riskwatch/)
- Think First  
[www.thinkfirst.ca](http://www.thinkfirst.ca)
- ROAD WATCH  
[www.roadwatch.ca](http://www.roadwatch.ca)
- Child Traffic Safety Resource Guide  
Alberta Transportation  
Traffic Safety Initiative  
Main Floor, 4999 98 Avenue  
Edmonton, AB T6B 2X3  
Tel: 780-422-8839  
Fax: 780-422-3682  
[www.saferoads.com](http://www.saferoads.com)
- Driver Education  
Young Drivers of Canada  
[www.yd.com/YoungDrivers/](http://www.yd.com/YoungDrivers/)
- Provincial or Territorial Ministry of Transportation  
for information on approved drivers education  
programs in your area:  
[www.mto.gov.on.ca/english/dandv/driver/gradu/  
approve.htm](http://www.mto.gov.on.ca/english/dandv/driver/gradu/approve.htm)
- Transport Canada's Road Safety Vision Report –  
[www.tc.gc.ca/roadsafety/vision/2001/targets.htm](http://www.tc.gc.ca/roadsafety/vision/2001/targets.htm)

## TOOLS

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### Education

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#### Key Child Pedestrian Safety Messages

*To promote child pedestrian safety, Safe Kids Canada has developed appropriate priority messages for parents/caregivers. These priority messages have been selected by experts in pedestrian safety and can be used in educational initiatives, media materials or other public awareness efforts.*

- Children under nine should be accompanied by adults or older children when crossing the street.
- Teach your children the rules of the road – start when they're young. Think of it as gradually training your children about safety until all the connections are in place. By the time your child reaches age nine and can act independently, the road safety rules will be second nature.
- Teach your children through play. Play act with toy cars; set up obstacle courses in the park. Make learning fun and you'll make it memorable. Talk about safety rules and your observations of safe or unsafe behaviour as you walk.
- Follow the same rules that you want your child to follow. You may want to cut across the street in the middle of the block, but you want your child to learn to cross at the intersection. Be a good role model.
- Teach children how to cross the street safely. Teach them to stop (before stepping onto the road), look left, right and left again, and listen for traffic before stepping out into the street. Teach children to wait until the street is clear and to keep looking until they have crossed the street. They should also look the driver in the eye before crossing.
- Children need to be extra alert when crossing at a corner with no traffic lights.
- Teach your children to stop at driveways, alleys and areas without curbs and to never run out onto the street.
- Teach children to recognize pedestrian crossing signals but not rely on them. Before crossing, children should make sure the traffic has stopped and should make eye contact with drivers. Remind them to continue across if the light changes to "Don't Walk" while they are in the crosswalk.
- Teach children respect the role of the crossing guard and to understand his/her signals.
- Teach children that wherever possible they should walk on the sidewalk. In areas without sidewalks, teach children to walk as far away from the road as possible.
- Teach children to walk facing approaching traffic [when there is no choice but to walk on the road].
- Teach children about the dangers of crossing the street between parked cars or when not at a corner. Children should cross only at corners and pedestrian crosswalks, not diagonally or between parked cars.
- Teach children that playing games at railway crossings or around trains can be deadly. Teach children that the only way to cross railway tracks is to use designated railway crossings.



## Walking School Bus<sup>43</sup>

Below are some simple steps for launching a walking school bus at a school near you.

### 1. Recruit and Organize Volunteers

The key to creating a successful walking school bus is getting the support of others. Engage parents, grandparents, neighbours, school staff and volunteers. To begin a walking school bus, you also need to determine interest among parents. Parents must decide whether their children will participate and if they have time to be a volunteer 'driver' of the walking school bus. The recommended ratio of adults to children is at least 1 to 8. If toddlers or infants are involved, this ratio is 1 to 4. Since adult volunteers rotate their responsibility as 'driver', you will want to recruit as many committed volunteers as possible.

Once the volunteers convene, determine a regular schedule among the 'drivers'. Who can walk with the students and when? Also, include back-up plans for substitute 'drivers' if the scheduled 'drivers' cannot make it on any given day. Volunteers are responsible for finding replacements if they can't make it, so a back-up plan makes this easier. Contact lists with numbers of all the volunteers should be distributed and kept up-to-date.

### 2. Designate the Walking Route

Designate walking school bus routes according to where the volunteers live. Children join the bus at designated 'stops' along the route at set times. Parents are expected to wait with their children for the walking school bus to arrive. If a family arrives too late, it is the parent's responsibility to ensure his/her child gets to school safely.

### 3. Get Parental Consent

Promote the walking school bus to the whole neighbourhood so that all parents will find out about the program. Request written parental consent before a child can walk with the bus. The form should include emergency contact information, outline the parents' responsibilities

and indicate the days and times (morning and/or afternoon) the child will join the walking school bus.

Walking with the bus is a privilege for students, so parents must explain to their children the importance of behaving and being safe. You may want to develop an educational information package that is given to the families participating in the walking school bus that provides valuable safety tips as well as the rules for participation.

### 4. Be Visible!

To be visible, it is recommended that students on the walking bus wear some kind of fluorescent/reflective clothing.\* Usually the 'driver' wears a retro-reflective vest. Bright colours make children more visible to vehicle drivers during the day, while retro-reflective strips shine brightly in the beam of headlights on low-light days and in poor weather. If possible, provide the children with clothing, armbands or hats that incorporate retro-reflective material. Remember, the walking school bus operates in rain or shine!

\*Visibility aids (such as reflectors on clothing and flashing devices on bicycles) increase visibility and enable drivers to detect pedestrians and cyclists earlier; however, the effect on injuries is unknown.<sup>44</sup>

### 5. Start Walking!

Each 'driver' should have a register of students who use their bus each day. The walking school bus should decide what to do if a child is not met at a designated bus stop by a parent or for a child who misses the bus. Many walking school buses make it the parent's responsibility to notify the 'bus driver' (in the morning) or the school (in the afternoon) of any changes to their child's regular travel pattern.

One more tip: consider providing volunteer 'driver' with a wagon or pull cart to carry the children's book bags along the way. This gives the kids extra freedom to enjoy their walk as safe pedestrians.

<sup>43</sup> US Safe Kids, 2003

<sup>44</sup> Kwan et al, 2002



## Pedestrian Safety Community Walkability Checklist

**Describe location studied** (use a map and be very specific) \_\_\_\_\_

**Date, Day of the Week & Time Observed** \_\_\_\_\_

Are there sidewalks along walking routes?  Yes  No

\_\_\_\_\_

Are the sidewalks in good repair (e.g., no cracks, snow/ice removed)  Yes  No

\_\_\_\_\_

Are there crosswalks in good repair (e.g., painted, signage)?  Yes  No

\_\_\_\_\_

Are they at convenient locations (e.g., do people cross elsewhere or between crosswalks)?  Yes  No

\_\_\_\_\_

Are there pedestrian signals at busy streets and intersections?  Yes  No

\_\_\_\_\_

Do they allow sufficient time to cross (e.g., for children, for seniors)?  Yes  No

\_\_\_\_\_

Do drivers yield to pedestrians?  Yes  No

\_\_\_\_\_

Do obstacles block sidewalks?  Yes  No

\_\_\_\_\_

Are there barriers in place to separate pedestrians from traffic (e.g., grass, concrete barrier)?  Yes  No

\_\_\_\_\_

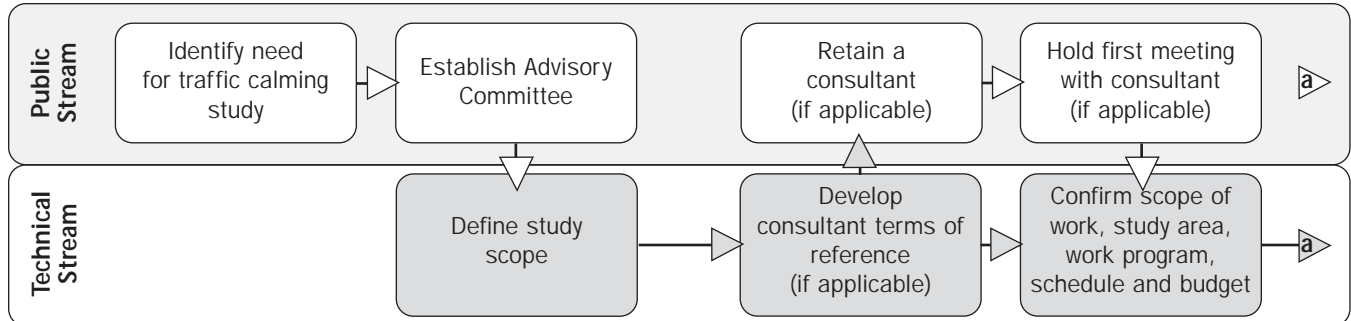
Is there adult supervision where children cross near schools?  Yes  No

\_\_\_\_\_

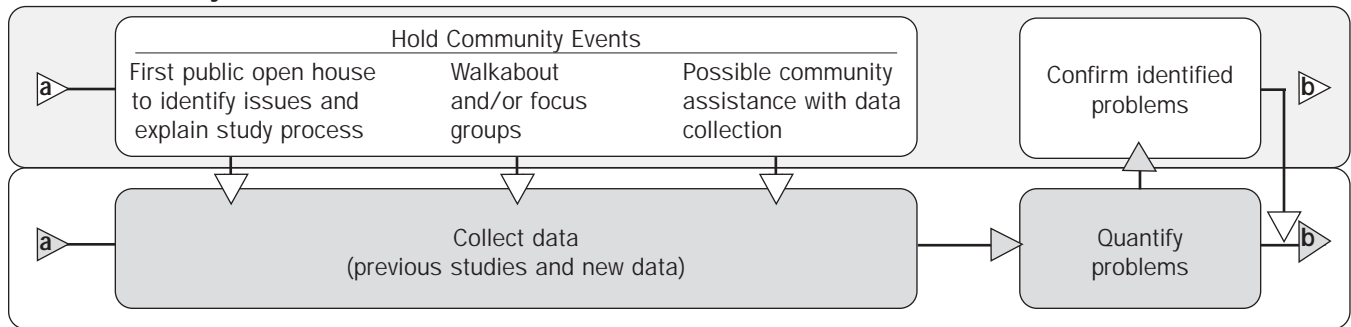
# Environment

## Typical Neighbourhood Traffic Calming Study Process

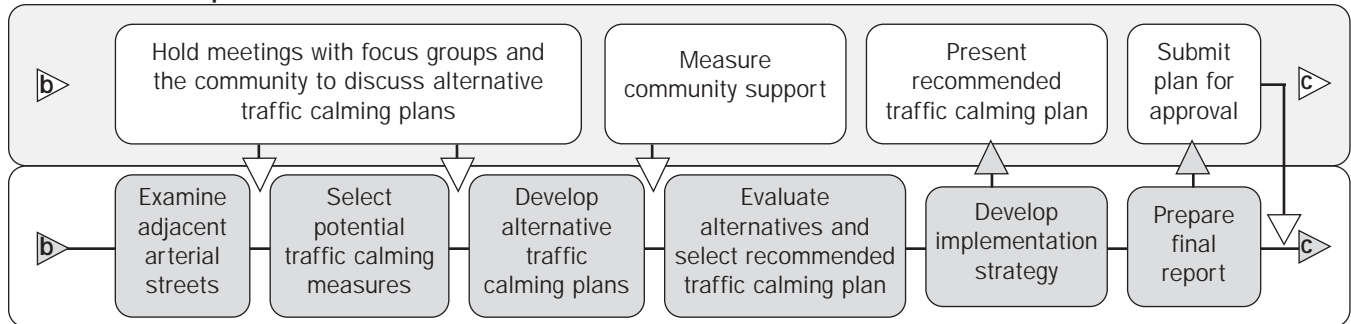
### STAGE 1 - Initiate the study



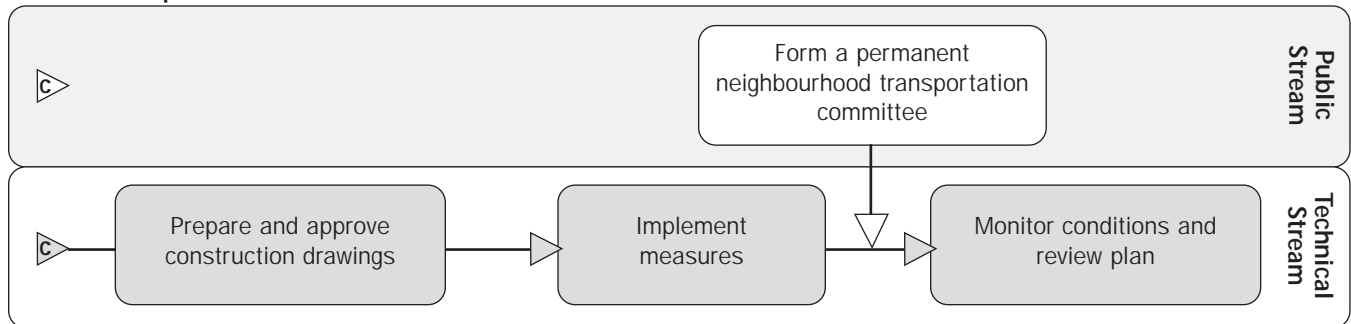
### STAGE 2 - Identify Problems



### STAGE 3 - Develop a Plan



### STAGE 4 - Implement the Plan



Note: Advisory Committee meetings should be held before every public open house to review/confirm the objectives and format of the meeting, and the materials to be presented.

Source: Transportation Association of Canada. Canadian Guide to Neighbourhood Traffic Calming. Ottawa: TAC, 1998.

## Traffic Calming Measures

Adapted from the *Canadian Guide to Neighbourhood Traffic Calming*, Transportation Association of Canada, December 1998, pg. 3-1 – 3-46. For more detailed

descriptions and information, please refer to the original publication (contact information listed in Resources section above).

### Vertical Deflection

Measure	Description	Potential benefits	Potential disbenefits	Estimated costs (1998)
<b>Raised Crosswalk</b>	A marked pedestrian crosswalk at an intersection or mid-block location constructed at a higher elevation than the adjacent roadway.	<ul style="list-style-type: none"> <li>• Reduction in vehicle speeds</li> <li>• Reduction in vehicle volumes</li> <li>• Pedestrian crossing area better defined</li> <li>• Traffic noise may be reduced due to lower speeds</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic may be diverted to parallel streets that do not have traffic calming measures</li> <li>• May result in false sense of security</li> <li>• Impacts and delays to ambulances, fire vehicles and buses</li> <li>• Visually impaired pedestrians may have difficulty differentiating between curb and travelled portion of street</li> <li>• Traffic noise may increase due to braking and accelerating</li> </ul>	\$2,000 to \$10,000
<b>Raised Intersection</b>	An intersection – including crosswalks – constructed at a higher elevation than the adjacent roadway.	<ul style="list-style-type: none"> <li>• Reduction in vehicle speeds</li> <li>• Pedestrian areas better defined</li> </ul>	<ul style="list-style-type: none"> <li>• High cost</li> <li>• Traffic may be diverted to parallel streets that do not have traffic calming measures</li> <li>• Impacts on emergency vehicles, snow clearing</li> </ul>	\$20,000 to \$75,000
<b>Rumble Strip</b>	Raised buttons, bars or grooves closely spaced at regular intervals on the roadway that create both noise and vibration in a moving vehicle.	<ul style="list-style-type: none"> <li>• Reduction in vehicle speeds</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic noise due to vehicles passing over rumble strips</li> <li>• Design issues – stability problems for bicycles and motorcycles unless gaps are provided; may be ice build up in winter months</li> <li>• Maintenance costs depending on materials used</li> </ul>	\$200 to \$1,000

## Vertical Deflection

Measure	Description	Potential benefits	Potential disbenefits	Estimated costs (1998)
<b>Sidewalk Extension</b>	A sidewalk is continued across a local street intersection. For a "raised" sidewalk extension, it is continued at its original elevation with the local roadway raised to the level of the sidewalk at the intersection. For an "unraised" sidewalk extension, the sidewalk is lowered to the level of the roadway.	<ul style="list-style-type: none"> <li>Reinforces pedestrian priority and may reduce conflicts</li> </ul>	<ul style="list-style-type: none"> <li>Snow clearing time slightly increased</li> </ul>	\$5,000 to \$10,000
<b>Speed Hump</b>	A raised area of a roadway, which deflects both the wheels and frame of a traversing vehicle.	<ul style="list-style-type: none"> <li>Reduction in vehicle speeds</li> <li>Evidence of reduction in collisions</li> <li>Traffic noise may be reduced due to lower speeds</li> </ul>	<ul style="list-style-type: none"> <li>Traffic may be diverted to parallel streets that do not have traffic calming measures</li> <li>Traffic noise may increase due to braking and accelerating</li> <li>Impacts and delays to ambulances, fire vehicles, buses and snow clearing</li> </ul>	\$1,000 to \$5,000
<b>Textured Crosswalk</b>	A crosswalk incorporating a textured and/or patterned surface which contrasts with the adjacent roadway.	<ul style="list-style-type: none"> <li>Improved visibility of crosswalk may reduce vehicle-pedestrian conflicts</li> </ul>	<ul style="list-style-type: none"> <li>May have maintenance problems depending on stability of base and frequency of heavy vehicle traffic</li> <li>May create traction and/or stability problems for seniors, the disabled, wheelchairs, bicycles and motorcycles</li> </ul>	\$50/m <sup>2</sup> to \$150/m <sup>2</sup>

## Horizontal Deflection

Measure	Description	Potential benefits	Potential disbenefits	Estimated costs (1998)
<b>Chicane (One-or two-lane)</b>	A series of curb extensions on alternating sides of a roadway, which narrow the roadway and require drivers to steer from one side of the roadway to the other to travel through the chicane. Typically, a series of at least three curb extensions is used.	<ul style="list-style-type: none"> <li>• Reduction in vehicle speeds</li> <li>• Reduction in vehicle volumes</li> <li>• Reduction in reported collisions</li> <li>• Traffic noise may be reduced due to reduced speeds and volumes</li> </ul>	<ul style="list-style-type: none"> <li>• On-street parking must be removed inside and within 5 m of the chicane</li> <li>• Traffic may be diverted to parallel streets that do not have traffic calming measures</li> <li>• Reliance on regulatory signs and driver courtesy</li> <li>• Slight increase in snow clearing time</li> <li>• Must be manually swept</li> </ul>	\$10,000 to \$100,000
<b>Curb Extension</b>	A horizontal intrusion of the curb into the roadway resulting in a narrower section of roadway.	<ul style="list-style-type: none"> <li>• Reduction in vehicle speeds</li> <li>• Reduced pedestrian crossing distance and improved visibility may reduce vehicle-pedestrian conflicts</li> </ul>	<ul style="list-style-type: none"> <li>• Not compatible with bicycle lanes</li> <li>• May require removal of some on-street parking</li> <li>• Large vehicles (e.g., long trucks, buses) may need to cross into adjacent travel lanes to negotiate the turns at intersections with curb extensions</li> <li>• Increased snow clearing costs</li> </ul>	\$3,000 to \$10,000
<b>Curb Radius Reduction</b>	The reconstruction of an intersection corner using a smaller radius, usually in the 3 m-5 m range.	<ul style="list-style-type: none"> <li>• Speed of right-turning vehicles reduced</li> <li>• Reduced pedestrian crossing distance and improved visibility may reduce vehicle-pedestrian conflicts</li> </ul>	<ul style="list-style-type: none"> <li>• Large vehicles (e.g., long trucks, buses) may need to cross into adjacent travel lanes to negotiate the turns at intersections</li> </ul>	\$3,000 or more, depending on the radius of the original curb

## Horizontal Deflection

Measure	Description	Potential benefits	Potential disbenefits	Estimated costs (1998)
<b>On-street Parking</b>	The reduction of the roadway width available for vehicle movement by allowing motor vehicle to park adjacent and parallel to the curb.	<ul style="list-style-type: none"> <li>• Parked vehicles provide a buffer between traffic and pedestrians on sidewalk</li> <li>• Traffic noise may be reduced due to reduction in traffic volumes or speeds</li> </ul>	<ul style="list-style-type: none"> <li>• Can reduce visibility of, and for, pedestrians crossing the roadway; reduce visibility of driveways and motorists entering the roadway</li> <li>• Obstruction of street sweeping and snow clearing operations</li> </ul>	\$50 to \$100
<b>Raised Median Island</b>	An elevated median constructed on the centreline of a two-way roadway to reduce the overall width of the adjacent travel lanes.	<ul style="list-style-type: none"> <li>• Reduction in vehicle speeds</li> <li>• Can function as a pedestrian refuge, and as a result, may reduce vehicle-pedestrian conflicts</li> </ul>	<ul style="list-style-type: none"> <li>• May require removal of on-street parking</li> <li>• May restrict access to driveways from one direction only</li> <li>• Speeds may increase if mid-block left-turn movements are not possible</li> <li>• Increased snow clearing costs</li> </ul>	\$5,000 to \$10,000
<b>Traffic Circle</b>	A raised island located in the centre of an intersection, which requires vehicles to travel through the intersection in a counter-clockwise direction around the island.	<ul style="list-style-type: none"> <li>• Reduction in vehicle speeds</li> <li>• Reduction in vehicle volumes</li> <li>• Reduction in collisions</li> </ul>	<ul style="list-style-type: none"> <li>• Some feel traffic circles force vehicles into the unmarked crosswalk area, increasing potential for vehicle-pedestrian conflicts</li> <li>• May require removal of some on-street parking</li> <li>• May divert a significant volume of traffic to parallel streets without traffic calming measures</li> <li>• Can restrict access for trucks and longer vehicles</li> <li>• May increase response time for emergency and snow clearing vehicles</li> </ul>	\$5,000 to \$10,000, to as much as \$30,000

## Obstruction

Measure	Description	Potential benefits	Potential disbenefits	Estimated costs (1998)
<b>Directional Closure</b>	A curb extension or vertical barrier extending to approximately the centre-line of a roadway, effectively obstructing (prohibiting) one direction of traffic.	<ul style="list-style-type: none"> <li>• Reduction in vehicle speeds</li> <li>• Reduction in vehicle volumes</li> <li>• Reduce pedestrian crossing distances may reduce vehicle-pedestrian conflicts</li> <li>• Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>• Restricts resident access</li> <li>• May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>• Some motorists may deliberately circumvent directional closures</li> <li>• May complicate street sweeping, snow clearing and garbage collection</li> </ul>	\$2,000 to \$10,000 and as much as \$25,000
<b>Diverter</b>	A raised barrier placed diagonally across an intersection, that forces traffic to turn and prevents traffic from proceeding straight through the intersection.	<ul style="list-style-type: none"> <li>• Reduction in traffic volumes</li> <li>• Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>• Restricts resident access</li> <li>• May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>• Reduction in traffic volume may lead to increased traffic speeds</li> <li>• Emergency vehicles may be delayed slightly</li> <li>• May complicate street sweeping, snow clearing and garbage collection</li> </ul>	\$10,000 to \$20,000 and as much as \$40,000
<b>Full Closure</b>	A barrier extending across the entire width of a roadway, which obstructs all motor vehicle traffic movements from continuing along the roadway.	<ul style="list-style-type: none"> <li>• Eliminates all short-cutting or through traffic</li> <li>• Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>• Restricts resident access</li> <li>• May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>• May prevent emergency access, depending on design</li> <li>• Some motorists may deliberately circumvent barrier</li> <li>• May complicate street sweeping, snow clearing and garbage collection</li> <li>• May require on-street parking prohibitions in vicinity of closure</li> </ul>	\$10,000 to \$30,000



## Obstruction

Measure	Description	Potential benefits	Potential disbenefits	Estimated costs (1998)
<b>Intersection Channelization</b>	Raised islands located in an intersection, used to obstruct specific traffic movements and physically direct traffic through an intersection.	<ul style="list-style-type: none"> <li>Islands provide refuge areas for pedestrians and reduce crossing distances – as a result, may reduce vehicle-pedestrian conflicts</li> <li>Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in traffic volume can result in an increase in vehicle speeds</li> <li>Restricts resident access</li> <li>May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>Some motorists may deliberately circumvent channelization</li> <li>May complicate street sweeping, snow clearing and garbage collection</li> </ul>	\$3,000 and up depending on the extent of channelization
<b>Raised Median through Intersection</b>	An elevated median located on the centreline of a two-way roadway through an intersection, which prevents left turns and through movements to and from the intersecting roadway.	<ul style="list-style-type: none"> <li>Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in traffic volume can result in an increase in vehicle speeds</li> <li>Restricts resident access</li> <li>May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>Some motorists may deliberately circumvent channelization</li> <li>May require removal of some on-street parking in order to provide sufficient lane width</li> <li>May complicate street sweeping, snow clearing and garbage collection</li> <li>May obstruct emergency vehicles in locations where median cannot be easily circumvented</li> </ul>	\$10,000 to \$30,000
<b>Right-in/Right-out Island</b>	A raised triangular island at an intersection approach which obstructs left turns and through movements to and from the intersection street or driveway.	<ul style="list-style-type: none"> <li>Reduction in vehicle volumes</li> <li>Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in traffic volume can result in an increase in vehicle speeds</li> <li>Restricts resident access</li> <li>May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>Some motorists may deliberately circumvent channelization</li> <li>May complicate street sweeping, snow clearing and garbage collection</li> </ul>	\$5,000 to \$10,000

## Signing

The primary purpose of signing is to regulate traffic movements, not to calm traffic.

Measure	Description	Potential benefits	Potential disbenefits	Estimated costs (1998)
<b>Maximum Speed</b>	Indicates the maximum legal vehicle speed permitted under ideal driving conditions on the street section where the sign is installed.	<ul style="list-style-type: none"> <li>Reduction in vehicle speeds if accompanied by regular police enforcement</li> </ul>	<ul style="list-style-type: none"> <li>Requires regular police enforcement</li> <li>Collisions may increase with use of inappropriate maximum posted legal vehicle speeds and as the differential increases between the posted and operating speeds</li> </ul>	\$100 to \$200 per sign
<b>Right (Left) Turn Prohibited</b>	Indicate to drivers that they are not permitted to turn right (left).	<ul style="list-style-type: none"> <li>May result in significant reduction in vehicle volumes where supported periodically by police enforcement</li> <li>Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>Restricts resident access</li> <li>May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>Requires regular police enforcement.</li> <li>Some motorists may violate turn prohibitions</li> <li>May complicate street sweeping, snow clearing and garbage collection</li> </ul>	\$100 to \$200 per sign
<b>One-Way</b>	Indicate to drivers that traffic is allowed to travel only in the direction of the arrow on the street or section of street.	<ul style="list-style-type: none"> <li>Eliminates traffic in one direction</li> <li>Vehicle-vehicle and vehicle-pedestrian conflicts at intersections are reduced as there are fewer turning movements</li> <li>Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>May result in increased vehicle speeds due to reduced traffic volumes</li> <li>May increase emergency response times due to longer routes required to circumvent</li> <li>May complicate street sweeping, snow clearing and garbage collection</li> </ul>	\$100 to \$200 per sign  \$2,000 to \$20,000 to convert signalized intersection to one-way operation

## Signing

Measure	Description	Potential benefits	Potential disbenefits	Estimated costs (1998)
<b>Stop</b>	Indicate to drivers that they must stop their vehicles completely before entering the intersection area and must not proceed until it is safe to do so.	<ul style="list-style-type: none"> <li>• Some evidence of reduced speed and volumes</li> <li>• Results in reduction of collisions</li> </ul>	<ul style="list-style-type: none"> <li>• When Stop signs are overused or unwarranted, compliance may decrease and/or vehicle speeds at mid-block locations may increase</li> <li>• Reported delays for emergency vehicles</li> </ul>	\$100 to \$200 per sign
<b>Through Traffic Prohibited</b>	Indicate to drivers that they are not permitted to proceed straight ahead.	<ul style="list-style-type: none"> <li>• May result in significant reductions in traffic volumes, particularly where supported periodically by police enforcement</li> <li>• Traffic noise may be reduced due to reduction in traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>• Restricts resident access</li> <li>• May divert significant volume of traffic to parallel streets without traffic calming measures</li> <li>• Requires regular police enforcement</li> <li>• Some motorists may violate prohibitions</li> <li>• May complicate street sweeping, snow clearing and garbage collection</li> </ul>	\$100 to \$200 per sign
<b>Traffic-Calmed Neighbourhood</b>	Advise drivers that traffic calming measures are in place within a neighbourhood, and through increased driver awareness, discourage short-cutting and speeding.	<ul style="list-style-type: none"> <li>• No data available</li> </ul>	<ul style="list-style-type: none"> <li>• No data available</li> </ul>	\$100 to \$200 per sign
<b>Yield</b>	Indicate to drivers that they must yield the right of way, stopping if necessary, before entering the intersection, and must not proceed until it is safe to do so.	<ul style="list-style-type: none"> <li>• No data available</li> </ul>	<ul style="list-style-type: none"> <li>• May not prevent conflicts between motor vehicles, and pedestrians and cyclists, as motorists often yield only to other motor vehicles</li> </ul>	\$100 to \$200 per sign

## Enforcement

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### Speed survey

Do not inform the community about the speed survey until after the observation is complete.

Before you begin:

- Work with a non-uniformed police officer, if possible. If not, try to capture speeds from a detection device within an unmarked vehicle.
- Use an unmarked police vehicle, if possible. Anticipate that traffic will slow down in the presence of a recognizable officer.
- Bring only the required personnel. Ideally no more than a total of three people should be present in order to minimize driver distraction.
- Select a spot where traffic is visible and speeds can be measured with radar or laser gun.
- Arrive about an hour before the survey is to begin in order to practice calling out speeds over the noise of the traffic and recording the speeds in an efficient manner.

Conducting the survey:

- Conduct a traffic count for fifteen minutes prior to collecting speeds. Count every vehicle that passes in every lane for the full time. This volume assessment will allow comparisons between different sites based on traffic flow. A good average sample size is 100 vehicles.
- Determine which random vehicle speeds will be captured – every vehicle, every other vehicle, or every third vehicle passing through the zone. Spend ten minutes prior to beginning the survey to capture sample data to determine which of these options is most feasible for your location. The site itself, visibility and traffic volume are factors that will influence this decision.
- Capture random vehicle speeds in kilometres per hour (km/h). The officer should call out the speeds of the selected vehicles as they pass the survey location. Two people should record vehicle speeds to ensure accuracy of the data recorded and to provide a back-up source of information should a recorder miss the speed that is called out.
- Capture the speeds of drivers in only one lane if there are multiple lanes of traffic and traffic flow is heavy. The important point is not to seek speeders, but to capture the speed of randomly determined vehicles at the survey locations.

Once the observation is complete, promote the results with an enforcement campaign through the media and neighbourhood newsletters. For a designated period of time, increase police presence at the location and publicize the number of violators when the campaign has ended.

## Speed Survey

Name of Organization/Committee \_\_\_\_\_

Person completing form \_\_\_\_\_

Survey Location \_\_\_\_\_

Date of Survey \_\_\_\_\_ Day of the Week \_\_\_\_\_

### Hours of Assessment

Note the hours of assessment (using the 24 hour clock). Start Time \_\_\_\_\_ Finish Time \_\_\_\_\_

### Weather Conditions

Note what the weather conditions were during the assessment.

\_\_\_\_\_  
\_\_\_\_\_

### Posted speed limit

(during school hours if survey is being conducted in a school zone) \_\_\_\_\_ km/h

### Traffic Volume

For 15 minutes prior to beginning the survey, count how many vehicles pass. This will allow comparison between sites based on traffic volume.

\_\_\_\_\_ # cars passed/15 minutes

### Safety Measures

Note any lights, flashing lights, crossing guards and crosswalks near the survey location (note proximity to survey site).

\_\_\_\_\_  
\_\_\_\_\_

### Vehicle Selection

Note which vehicles were randomly selected for speed assessment – all vehicles, every other vehicle, every third vehicle.

All vehicles  Every other vehicle  Every third vehicle

### Vehicle Speeds

Record the vehicle speeds in km/h as they are called out. Record all speeds for one 30-minute period or until you reach 200 cars (whichever comes first).

**Note:** If you are working with local police, request that they refrain from ticketing during the assessment period in order to maintain the regular flow of traffic.

## Parent Parking Patrol

Here are some simple steps to begin a parent parking patrol:

1. With a police representative, present the need to the principal and parent advisory committee.
2. Promote the program to parents through the school newsletter, a parent advisory committee meeting or other school event.
3. Recruit as many parent volunteers as possible.
4. Ask a parent or teacher to serve as the parking patrol coordinator and lead volunteer recruitment, training, scheduling, distribution of gear and tracking of warning notices and multiple violations.
5. Work with police to provide training to patrollers, especially how to deal with offenders.
6. Remind other parents of the parent parking patrol prior to launching it. This will ensure a clear understanding of how the program works.
7. Schedule several 'Patrol Days' in a row. This way the message is clear – violations will be enforced by the parent parking patrol and unsafe behaviour will not be tolerated.
8. Once the initial program is launched, target a minimum of one day per week to patrol the school area.
9. Realize and take into consideration that during inclement weather, parents and students may ignore the rule of pedestrian and traffic safety and choose convenience over safety.
10. Keep a record of all warning notices issued. Such statistics will help the parking patrol document the success of the program. In addition, repeated violations by a particular individual can be tracked for further action.

Remember the purpose of the program is not to confront violators but to increase awareness of unsafe behaviours and encourage safety over convenience. It is important to remember that a pleasant 'Thank you for driving safely today' can go a long way with drivers obeying the traffic laws near the school.

If an individual repeatedly engages in unsafe behaviours, a formal letter should be sent to that person's home from the principal indicating that the behaviour is inappropriate and, if necessary, the police will be contacted if the violations continue. This should be discussed with local police before the letter is sent but continuous violations could include a fine or citation.

## Neighbourhood Interview Survey

1. Do you see children or other pedestrians crossing the street at a place other than an authorized crossing?

- Yes  No

If yes, where?

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2. How often does this happen?

- Daily  4-6 times/week  2-3 times/week  once/week

3. Does this happen at regular times?

- Yes  No

If so, when?

- Before/After School  Evenings  
 Summer  Winter

4. What would you estimate are the age groups of the pedestrians crossing?

- Under 5 years  5-10 years  Over 11 years

5. Driver behaviour questions (e.g., speed, stopping in a crosswalk, not coming to a full stop at a stop sign)

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6. What do you think would improve pedestrian safety in this area?

- Education option  Enforcement option  Environmental option

7. How do you think the neighbourhood would respond/comply with any changes?

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8. Do you see any challenges to the success of these improvement ideas?

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## Action Plan

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### Gathering Information

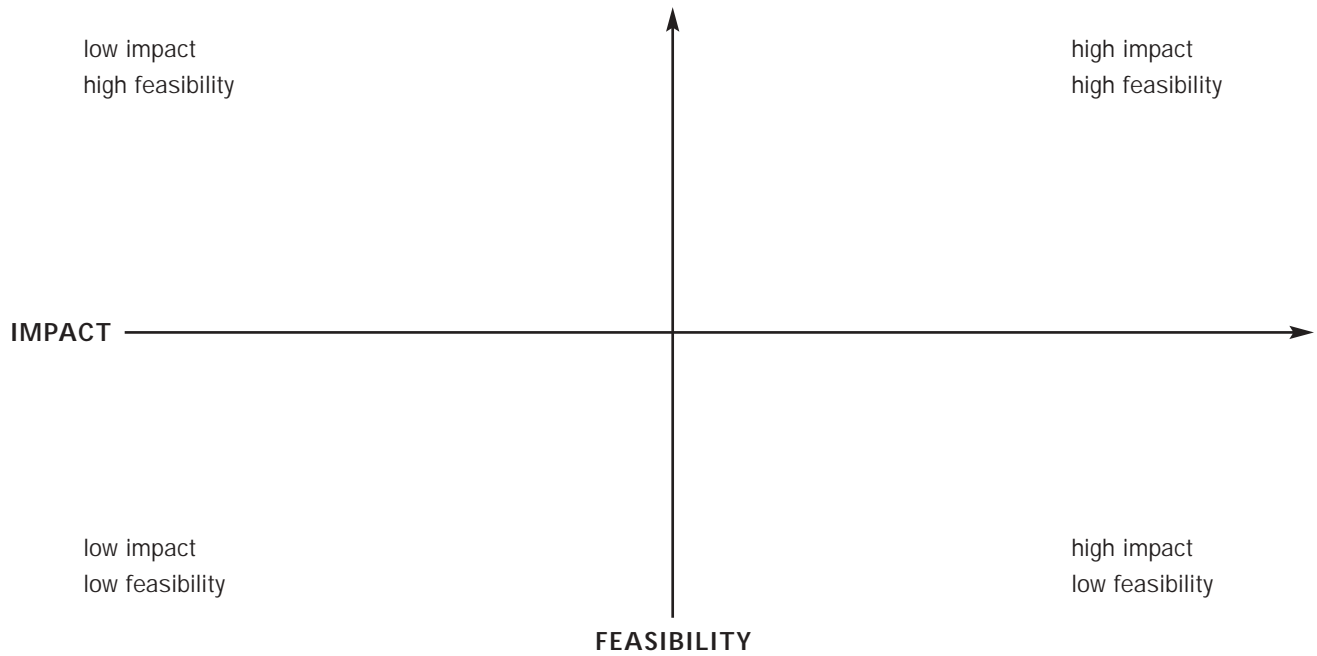
What are the pedestrian safety challenges in our community and the strategies and activities that could improve each? Use the information and data from local

statistics, the walkability checklist, neighbourhood interview and speed survey to brainstorm ideas and complete this template.

Issue(s)	Description of problem	Possible strategies	Estimated resource needed

## Plotting the Issues

Using the list generated on the previous page, plot each issue/activity on the figure below to determine a priority listing.



### High priority

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Medium priority

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Low priority

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Priority Setting/Strategies/Timelines

Using the issues that were identified in the 'Plotting the Issues' chart, select the priorities that the committee will

address, outline and describe the strategy selected, who the target audience will be for each strategy, the responsible member and timeframe for the completion of the project.

Priority issue(s)	Strategy to be initiated	Target audience	Responsible committee member	Timeframe
	<i>Education</i>			
	<i>Enforcement</i>			
	<i>Environment</i>			

## Evaluation

### Formative Evaluation

Suggested examples of issues to measure	Suggested tools	Results
<p>Perceptions of vulnerability to pedestrian injury or hitting a pedestrian. <i>Example</i> How much do you worry about being hit by a car? How much do you worry about hitting a pedestrian? What do feel are the most important traffic safety/road safety issues in this neighbourhood?</p> <p>Knowledge of safe pedestrian and driver behaviours. <i>Example</i> If you have to walk on the road, what is the safest way to do so? As a driver, what do you feel is the best speed limit for residential areas?</p> <p>Knowledge of laws related to pedestrians. <i>Example</i> When do pedestrians/drivers have the right of way?</p> <p>Likelihood to obey traffic laws. <i>Example</i> When approaching a stop sign, how often do you come to a complete stop before proceeding? As a pedestrian, how often do you 'jay walk' across the street, e.g., not at a crosswalk or intersection?</p> <p>Trust in police to enforce pedestrian-related traffic laws. <i>Example</i> How often have you observed police addressing pedestrian safety violations? e.g., pedestrians jay walking or drivers not stopping for pedestrians</p>	<ul style="list-style-type: none"> <li>• Survey</li> <li>• One-on-one interviews</li> <li>• Focus groups</li> <li>• Door-to-door interviews</li>   <li>• Interviews in public places, e.g., schools, shopping malls</li> <li>• Usability tests</li> </ul>	<p>What did you learn?</p> <p>How did it help you design your next steps?</p>

## Process Evaluation

### Summary

Name of Community:

Town/City:

Description of pedestrian problem	Specific projects undertaken & their objectives	Successes	Challenges	Measurable outcomes (see Impact Evaluation)	Lessons learned	Approximate cost of implementation
<i>Engineering</i>	<i>Engineering</i>	<i>Engineering</i>	<i>Engineering</i>	<i>Engineering</i>	<i>Engineering</i>	<i>Engineering</i>
<i>Education</i>	<i>Education</i>	<i>Education</i>	<i>Education</i>	<i>Education</i>	<i>Education</i>	<i>Education</i>
<i>Enforcement</i>	<i>Enforcement</i>	<i>Enforcement</i>	<i>Enforcement</i>	<i>Enforcement</i>	<i>Enforcement</i>	<i>Enforcement</i>

### Media Monitoring

Include name of media outlet, interview person, date of publication/broadcast and attach any clippings.

Print	Radio	Television

**Event**

If you hold an event, use the following chart to document/evaluate the initiative.

Name of Community:

Town/City:

Event goals/ objectives	Successes	Challenges	Lessons learned
Number of schools/intersections	Number of students/pedestrians	Number of volunteers	



## Impact Evaluation (Measurable Outcomes)

Examples of measurable outcomes:

Changes in knowledge, attitudes and beliefs about child pedestrians (pre- and post- surveys)

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Actual increase in yielding to pedestrians (pre- and post- observation)

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Actual decrease in speeds (pre- and post- observation)

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Questions to consider in conclusion:

What are the results of the program/initiative?

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How do the results compare with what was expected?

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## Media

The following samples can be tailored to your campaign. The fictitious community of Anytown has been created to give you an idea of how the pieces could come together in a media plan, media advisory, and news release.

### Sample media plan

Use the questions in this plan to help your group brainstorm your approach. Try not to be too many things to too many people; media strategies are most effective when you are trying to reach one specific group with just a few messages. This fictitious example was created to provide an idea of how a plan might look.

Key questions for consideration	Sample plan
Who do we want to reach through the media, and what do we want them to 'take home' from media coverage (the key messages)?	<p>We want to reach parents of elementary school children primarily. We want them to:</p> <ol style="list-style-type: none"> <li>1. make sure their children under age nine are accompanied by an adult or older child when crossing the street;</li> <li>2. be reminded about the basic pedestrian safety rules, and to teach them to their children;</li> <li>3. discuss possible traffic problems near their local school, and develop possible solutions (such as walking school buses or "kiss &amp; ride" programs to reduce traffic and pedestrian congestion).</li> </ol>
What can we use as a 'hook' to get media attention for this?	<p>We will have a media event in September to report on pedestrian safety hazards around schools in our community.</p> <p>The second week in September, we'll station volunteers outside schools at drop-off time and monitor different safety issues. We will gather information such as the number of children who are jaywalking, not following crossing signals, and crossing the street alone under the age of nine. We might also ask the police to track traffic speed on busy streets near schools.</p> <p>The media story hook will then be, "Kids have been back to school now for a month; most families now have established back-to-school routines. But some of these routines need to be fixed – they're putting children at risk. We watched kids going to school over the last few weeks, and this gave us a snapshot of pedestrian safety issues in our community (then we'll describe what we found). Here's what parents can do...."</p>
How will we make this a good story for television?	<p>We're going to ask a school in the community to pilot a walking school bus and kiss &amp; ride program. We will ask this school to allow us to hold a news conference in the gym, and then allow reporters to film the walking school bus and kiss &amp; ride programs (Note: Always check convenient times with media; early mornings generally don't work well. If you chose an option like this, you might need to stage the demonstration later in the morning.)</p>

## Sample media advisory

Give media a sense of what they will see and hear at your event, but don't give away the details. The purpose of an advisory is to entice media to attend.

### MEDIA ADVISORY (date)

#### **Children are at risk from traffic near schools, says survey by Anytown Pedestrian Safety Committee**

In the first few weeks of September, the Anytown Pedestrian Safety Committee watched the safety habits of more than xxx children as they travelled to school and the actions of the xxx drivers that they encountered.

The results showed that many families may need to change the way their children go to school in order to keep them safe.

Join us to learn more about the results of our survey and what parents can do to keep their children safe. We'll also be discussing some new pedestrian safety programs that Central Elementary School has agreed to test in our community.

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**Where:** Central Elementary School, 55 Main Street

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**When:** Friday, September 20, 10 a.m.

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**Who:** Anytown Safe Kids committee members Constable Joe Johnston and Sue Smith, manager of the Anytown health unit, will describe the recent observational study and give safety advice to parents. Principal Jan Norton of Anytown Central Elementary will discuss the new programs. Pat Connors from the school's parent council will also speak about a parent's perspective on pedestrian safety issues.

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**What:** Thirty-minute news conference in the gym, including time for questions. This will be followed immediately by an outdoor demonstration of the new safety programs, such as a 'walking school bus'. These activities will be demonstrated by parents and kids of the school community.

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**For more information:** Andrea Hall, chair of the Anytown Safe Kids Committee, 555-5555.

## Sample news release

Make sure your news release reflects your key messages. It should begin with your 'news hook' to get attention and describe the problem. From there, move into solutions (safety tips and/or a discussion of the community initiatives). Conclude the news release with a description of your committee, and include the contact name of someone who is both knowledgeable and easily accessible to media.

FOR IMMEDIATE RELEASE (date)

### Local children at risk when traveling to school, reports Anytown Pedestrian Safety Committee

In the second week of September, a group of volunteers with the Anytown Pedestrian Safety Committee observed children going to school every morning at each of the city's elementary schools. Today, the committee released its results; more than 100 children were observed doing something that put them at risk of being injured in traffic. In addition, 28 drivers were seen putting convenience before safety when they dropped children off at school.

More than 4,000 Canadian children are hit by cars every year in Canada, and 60 die. Children aged five to nine are more likely to be killed by being hit by a car than from any other kind of injury.

"Certain behaviours put kids at risk, and unfortunately we saw most of these actions in our observational study," says Sue Smith, manager of the Anytown public health unit and a member of the safety committee. Jaywalking was the most common risky behaviour. "More than 50 kids crossed the street wherever they wanted, even though in some cases the crossing guard was less than half a block away."

The survey volunteers also saw young children, clearly in the primary grades, crossing the street alone. "Many parents don't know just how dangerous that is," says Ms Smith. "Children don't develop the ability to judge safe or unsafe traffic situations until somewhere between age eight and nine. Until that time, they can't process multiple pieces of information, such as how fast a car is going or whether the driver can see them properly in the rain. They just assume drivers will stop."

"Children under the age of nine should always be accompanied by an adult or responsible older child when they cross the street," she advises.

One other area of concern was the way children were dropped off from the car by their parents. A dozen children were spotted hopping out of cars into the roadway. Others jaywalked as soon as the car drove away. Volunteer observers saw two cars stop suddenly for jaywalkers.

The Anytown Pedestrian Safety Committee urges parents to review the way their children travel to school and to be sure their child knows key safety rules, such as:

- Always cross at a crosswalk or intersection. Never jaywalk.
- Before you cross, make sure the driver has stopped completely. Make eye contact to be sure the driver knows you are there.
- Never go onto the street without an adult's permission. Don't run onto the street or around parked cars when you are playing. If you want to get something that has rolled or blown onto the street – like a ball or a piece of paper – leave it there and ask an adult for help.

FOR IMMEDIATE RELEASE (page 2)

And a quick refresher for parents:

- Make sure your child under nine crosses the street with an adult or older responsible child.
- Insist that your child get out of a car on the side that is away from the road; don't allow him or her to get out on the road.
- Always cross at intersections or crosswalks with your child. Although it may be tempting to jaywalk to save time, this sets a dangerous example for your child. He can't judge the traffic the way you can and may try to repeat your behaviour on his own, with tragic results.

In most communities, reducing the traffic near schools would also help reduce the risks. Parents at Central Elementary School are working with the Anytown Pedestrian Safety Committee to pilot two new safety programs that do just that.

The Kiss & Ride program will allow parents to drive up and drop their children at the entrance to the back parking lot. The drop spot will be supervised by parent volunteers who will then escort the child to school. "We hope this will eliminate the dangerous traffic snarl that currently takes place near the school's main crosswalk," says Principal Jan Norton.

The school is also hoping to reduce the volume of traffic by implementing a Walking School Bus. A volunteer will walk through the neighbourhood, picking up children at designated times, and walking them to and from school. "This should encourage more families to send their children to school on foot," adds Ms Norton.

The Anytown Pedestrian Safety Committee is composed of representatives from public health, the police department, (continue to list). The Committee, formed last year, is looking at pedestrian safety problems across the city and is committed to developing solutions. For more information about the Committee, contact public health at xxx-xxxx.

Media contact:

Andrea Hall  
Chair of the Anytown Pedestrian Safety Committee

xxx-xxxx

## Sample Opinion/Editorial

This Opinion/Editorial has been written for publication in the last week of August. The timing of your Opinion/Editorial will affect the lead paragraph. Check with your local newspaper to find out the maximum length for an Opinion/Editorial; this one is 500 words. You may want to add information at the end about strategies that you want to see in your community, starting with a line such as, 'Teaching and supervising children is important, but it's not the only solution. In our community, we are also working to...'

Ideally, the Opinion/Editorial should be signed and submitted by someone in a position of authority who will be viewed as having professional responsibility for this topic. If you have a police officer on your committee, he or she could be a good choice. Doctors and nurses are also viewed as having expertise on injuries. Others that might be included are school principal or president of a parent advisory council.

### OPINION/EDITORIAL (date)

Next week means back-to-school for millions of Canadian families – back to making lunches, supervising homework, and a new season of after-school activities.

Unfortunately, it also marks the start of the most dangerous time of year for pedestrian injuries among children. Every year, more than 4,000 Canadian children are hit by motor vehicles while playing outdoors or walking to school, to friends, or to a neighbourhood store. Sixty die from their injuries. They are most likely to be injured between September and January, in part because drivers are adjusting to decreased daylight hours.

Children between the ages of five and nine are at greatest risk. Pedestrian injuries are the leading cause of injury death among this age group. The reason for this may surprise many families: Children do not develop the ability to judge safe and unsafe traffic situations until about age nine. They cannot juggle multiple pieces of information that are critical for staying safe near traffic; for example, they can't judge the speed of an oncoming car, or remember that it will take longer for the car to stop in the rain. They are also naturally impulsive, still likely to run onto the road when playing ball or tag.

Children under nine also have a distorted perception of traffic. They may think that large cars move more quickly than small cars, or that wide streets are dangerous and narrow ones are safe. They also lack a sense of vulnerability and believe that adults will always look out for them. They don't realize that their small size makes it difficult for drivers to see them, particularly in dwindling daylight or bad weather. They also can't judge accurately where sounds are coming from, and may turn the wrong way searching for the sound of a car.

It's a common misconception for parents to think their smart seven- or eight-year-old must be the exception to the rule. Many children this age are chafing for more independence, and want to walk alone or with a friend. It isn't a matter of intelligence or maturity; young children are simply not biologically ready to make good judgements on their own.

Our advice: If your child under nine needs to cross a street, make sure he is accompanied by an adult or older responsible child. If he is outside playing with friends, make sure they play away from the road. Even older children can be absorbed by playing with friends and forget both the road and traffic hazards.

How can you tell when a child is ready? Children don't magically become capable by their ninth birthdays; their abilities develop gradually between the ages of eight and nine. During this year, walk some regular routes with your child. Have him tell you the safety rules he is following as you walk. Take him to a busy intersection and ask him to tell you what he thinks the cars are going to do, and how he would cross the street. This will give you a good sense of whether he is ready to cross safely without an adult.

[Insert brief description of local community strategies and/or activities.]

Constable Joe Johnston  
Anytown Police Services  
Member, Anytown Pedestrian Safety Committee

## Sample Letter to the Editor

Letters to the Editor are usually written in response to a news story. In this sample, the news story was about a car crash that injured pedestrians. Although it isn't appropriate to discuss details of a particular crash – there are confidentiality issues, and often legal ones – these types of incidents can be used to highlight pedestrian safety issues.

Ideally, the author should be someone in a position of authority on the issue. Although a police officer may be a natural choice, this may be inappropriate if police are investigating the crash.

Keep the letter short (this one is 313 words) and focused on one or two key points, right up front. Close with a paragraph that highlights your committee.

### LETTER TO THE EDITOR (date)

Dear Sir or Madam,

I am writing in response to your story about the tragic car crash that injured a young boy last week. Although I'm not involved in the investigation and couldn't comment on the particulars, one witness mentioned that the boy was in a group that was playing hide and seek near the street. We also know that the crash occurred around 6 p.m., just as daylight was fading.

Both of these factors have played a role in other pedestrian crashes. When children are playing, they get caught up in the game and don't notice the road or the traffic. One way that may reduce the risk is for families to determine safe places you will allow your child to play.

Diminishing daylight is also known to play a role in car crashes. More pedestrians are hit by cars from September to January than any other time of year, in part because drivers are adjusting to a gradual loss of daylight. Children are smaller and harder to see even in good conditions. When driving conditions are more challenging, such as at dusk, night, or in bad weather, it is even more difficult for drivers to see them. Drivers need to use extra care during these conditions.

Reducing speeds is one of the most important things drivers and traffic authorities can do to improve safety. Research shows that child pedestrians are three to six times more likely to be injured where average vehicle speed exceeds 40 km/h.

More than 4,000 children are hit by cars in Canada every year; 60 are killed. The Anytown Pedestrian Safety Committee, formed last year, is looking at child pedestrian hazards in our community. Our first step is to determine the highest-risk areas in Anytown, and look at what measures we can put in place to reduce the risks. The community can expect a first report from us by early spring.

Sue Smith, RN  
Manager, Public Health Department  
Member, Anytown Pedestrian Safety Committee

# Appendix A

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## Glossary

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Definitions provided in this Glossary have been adapted from *The Thesaurus of Injury Prevention Terminology* and the *Transportation Association of Canada's Guide to Neighbourhood Traffic Calming*.

### Arterial street

A major street for which the primary function is to provide for vehicle movement. See *collector street* and *local street*.

### Best practice

Strategies, activities, programs or approaches which have been shown through research and evaluation to be effective in achieving certain objectives. (Note: the term is sometimes used synonymously with *evidence based practice*.)

### Collector street

A street for which vehicle movement and access are of equal importance. See *arterial street* and *local street*.

### Community

A group of individuals with common interests. A community is often defined by neighbourhood boundaries, but may also include individuals who live outside the neighbourhood, but who work or operate businesses in the neighbourhood or whose children attend school in the neighbourhood. See *neighbourhood* and *stakeholder*.

### Conflict

A collision or near-collision that requires evasive action on the part of one or more persons. Conflicts generally occur between two motorists, between a motorist and cyclist, between a motorist and pedestrian and between a cyclist and pedestrian.

### Controlled Intersection

An intersection at which traffic flow is regulated by signage or signal lights.

### Evidence based

The conscientious use of up-to-date information from valid research and empirical evidence in the delivery of health services or health promotion/injury prevention strategies. (Note: the term is sometimes used synonymously with *best practices*.)

### Guideline

A recommended practice, method or value for a specific design feature, but not a requirement. See *standard*.

### Injury prevention

Strategies, interventions, programs or activities designed to reduce the occurrence or severity of injuries.

### Injury surveillance

The ongoing systematic collection, analysis and application of injury data to describe and monitor population health and injury, and to guide public health action.

### Jurisdiction

A legal or other authority with responsibility and control for specific actions within a defined area.

### Local street

A street for which the primary function is access to adjacent properties. See *arterial street* and *collector street*.

### Local traffic

Traffic that originates from or is destined to a location within a neighbourhood. See *through traffic*.

### Measure

A physical device, regulation or action that affects the movement of motor vehicles, bicycles and/or pedestrians. See *device* and *regulation*.

### Mode

A way or manner of travelling. Examples of common modes of transportation include drive-alone automobile travel, carpooling, transit, cycling and walking.

### Neighbourhood

A cohesive urban area defined by geographic features, the street network or socio-economic characteristics. With respect to traffic calming, neighbourhood boundaries are often defined by the arterial street network, which typically presents a significant barrier to travel and interaction. See *community*.

### Pedestrian safety

Road safety awareness by pedestrians and measures taken to protect pedestrians in relation to motor vehicle traffic.



**Program**

Process of formulating a scheme, devising strategies, planning activities with development regard to specific program goals and objectives.

**Plan**

A formulated and sufficiently detailed description of how objectives are to be accomplished. A traffic calming plan typically describes measures to be used, where they are to be located, in what order and at what times they will be implemented, and how the costs of the measures will be funded.

**Regulation**

A prescribed rule, supported by legislation See *device* and *measure*.

**Retrofit**

The reconstruction of a roadway or other transportation facility with physical improvements to the existing design.

**Risk Factors**

Personal behaviours or lifestyles, environmental influences or inborn characteristics that are associated with or cause increased susceptibility to injury, ill health or a specific disease.

**Self-enforcing**

A traffic calming measure that does not require police enforcement in order to be effective. A speed hump is self-enforcing, for example, whereas a posted maximum legal vehicle speed is not self-enforcing.

**Short-cutting**

Traffic that is travelling through a neighbourhood to bypass congestion on the arterial street network, or to make use of a more direct route. See *through traffic*.

**Signalized**

An intersection at which traffic signals have been installed, typically to control vehicle movements on all approaches. May also describe a location that has been signalized to permit pedestrians to actuate signals that stop vehicles on an arterial street or collector street so the pedestrians may cross.

**Stakeholder**

An individual or organization with an interest in transportation issues in a neighbourhood or specific location. Examples of stakeholders include residents' associations, a chamber of commerce, a local transit agency, cycling advocates, an agency assisting disabled persons and school boards. See *community*.

**Standard**

A value for a specific design feature, which practice or theory has shown to be appropriate where the prevailing circumstances are normal, and where no unusual constraints influence the design.

**Through traffic**

Traffic that travels through a neighbourhood and does not originate from, nor is destined to, a location within the neighbourhood. See *short-cutting*.

**Traffic control**

Systems, operations and processes that manage the speed, volume and flow of motor vehicle traffic in the interests of road safety.

**Traffic management**

The change in traffic routing or flow within a neighbourhood street system through a combination of measures that alter route options.

**Unintentional Injury**

Unintentional damage to the body resulting from acute exposure to thermal, mechanical, electrical or chemical energy or from the absence of such essentials as oxygen.

**Volume**

When referring to traffic, volume is a measure of the number of vehicles that travel along a section of roadway or make a particular movement during a specific time period. Most often, traffic volumes are indicated as vehicles per hour during the peak hour or vehicles per 24-hour period.

# Appendix B

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## Toronto Pedestrian Charter

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Walking is the most ancient and universal form of travel. It is also an important form of exercise and recreation. Every personal trip involves walking, alone or in combination with taking public transit, driving, or cycling.

A pedestrian is a person moving from place to place either by foot or by using an assistive mobility device. Pedestrians include residents and visitors to the City of all ages and abilities. In order to travel safely, conveniently, directly and comfortably, they require an urban environment and infrastructure designed to meet their travel needs.

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To ensure walking is a safe, comfortable and convenient mode of urban travel, the City of Toronto respects the following principles:

**ACCESSIBILITY:** Walking is a free and direct means of accessing local goods, services, community amenities and public transit.

**EQUITY:** Walking is the only mode of travel that is universally affordable and allows children and youth and people with specific medical conditions, to travel independently.

**HEALTH AND WELL-BEING:** Walking is a proven method of promoting personal health and well-being.

**ENVIRONMENTAL SUSTAINABILITY:** Walking relies on human power and has negligible environmental impact.

**PERSONAL AND COMMUNITY SAFETY:** An environment in which people feel safe and comfortable walking increases community safety for all.

**COMMUNITY COHESION AND VITALITY:** A pedestrian-friendly environment encourages and facilitates social interaction and local economic vitality.

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To create an urban environment in all parts of the City that encourages and supports walking, the City of Toronto:

- upholds the right of pedestrians of all ages and abilities to safe, convenient, direct and comfortable walking conditions
  - provides a walking environment within the public right-of-way and in public parks that encourages people to walk for travel, exercise and recreation
  - supports and encourages the planning, design and development of a walking environment in public and private spaces (both exterior and interior) that meets the travel needs of pedestrians
  - provides and maintains infrastructure that gives pedestrians safe and convenient passage while walking along and crossing streets
  - ensures that residents' access to basic community amenities and services does not depend on car ownership or public transit use
  - sets policies that reduce conflict between pedestrians and other users of the public right-of-way
  - creates walkable communities by giving high planning priority to compact, human-scale and mixed land use
  - encourages research and education on the social, economic, environmental and health benefits of walking as a form of travel, exercise, and recreation
  - promotes laws and regulations that respect pedestrians' particular needs
  - advocates for improving the provincial and federal regulatory and funding frameworks that affect the City's ability to improve the pedestrian environment
  - works with individual citizens, community groups and agencies, businesses and other levels of government to achieve these goals
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An urban environment that encourages and facilitates walking supports community health, vitality and safety. It will increase use of public transit; decrease car dependence; reduce conflict between vehicles and pedestrians; lead to cleaner air; green public space; and support green tourism. Such an environment creates opportunities for the informal social interaction that is one of the main attributes of a vibrant, liveable city.

*The February 5/02 amended Charter was adopted by the Toronto Pedestrian Committee, February 27/02.*

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# Bibliography

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- Bunn F., Collier T., Frost C., Ker K., Roberts I., Wentz R. Area-wide traffic calming for preventing traffic related injuries (Cochrane Review). In: *The Cochrane Library*, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd.
- Canadian Institute for Health Information. National Trauma Registry Report: Major Injury in Canada, 2001-2002. Ottawa: CIHI, 2003.
- Carlin J., Stevenson M., Roberts I., Bennett C., Gelman A., Nolan T. Walking to school and traffic exposure in Australian children. *Australian and New Zealand Journal of Public Health* 1997; 21:286-292.
- Cohen L., Baer N., Satterwhite P. *Developing Effective Coalitions: An Eight Step Guide*. Oakland, CA: Prevention Institute, 2002. <[www.preventioninstitute.org](http://www.preventioninstitute.org)>
- DiGuseppi C., Roberts I., Li L. Influence of changing travel patterns on child death rates from injury: trend analysis. *BMJ* 1997; 314:710-3.
- Dougherty G., Pless I., Wilkins R. Social class and the occurrence of traffic injuries and deaths in urban children. *Canadian Journal of Public Health* 1990; 81:204-209.
- Dowswell T., Towner E. Preventing childhood unintentional injuries – what works? A literature review. York, UK: University of York, NHS Centre for Reviews and Dissemination, 2000.
- Duperrex O., Roberts I., Bunn F. Safety education of pedestrians for injury prevention (Cochrane Review). In: *The Cochrane Library*, Issue 2, 2002. Chichester, UK: John Wiley & Sons, Ltd.
- Go for Green. Making the case for active transportation: fact sheet #1, 2000. <[www.goforgreen.ca](http://www.goforgreen.ca)>
- Harborview Injury Prevention and Research Center. Best practices – child pedestrians. <[depts.washington.edu/hiprc](http://depts.washington.edu/hiprc)>
- Harré N. Discrepancy between actual and estimated speeds of drivers in the presence of child pedestrians. *Injury Prevention* 2003; 9:38-41.
- Health Canada. Injury Surveillance On-Line. <[www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)>
- Jacobsen P. Safety in numbers: more walkers and bicyclists, safer walking and bicycling. *Injury Prevention* 2003; 9:205-209.
- Klassen T., Mackay M., Moher D., Walker A., Jones A. Community-based injury prevention initiatives. *The Future of Children* 2000; 10: 83-110. [Issue theme: Unintentional Injuries in Childhood] Available at <[www.futureofchildren.org](http://www.futureofchildren.org)>
- Kwan I., Mapstone J. Interventions for increasing pedestrian and cyclist visibility for the prevention of death and injuries (Cochrane Review). In: *The Cochrane Library*, Issue 3, 2004. Chichester, UK: John Wiley & Sons, Ltd.
- Macpherson A., Roberts I. and Pless I. Children's exposure to traffic and pedestrian injuries. *American Journal of Public Health* 1998; 88:1840-1843.
- Macpherson A., Rothman L., McKeag A., Howard A. Mechanism of injury affects 6-month functional outcome in children hospitalised because of severe injuries. *Journal of Trauma, Infection and Critical Care* 2003; 55:454-458.
- Nicholson J. and O'Neill J. *The Case for Active and Safe Routes to School – An Information and Discussion Paper*. Go for Green, 1999.

# Bibliography

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- Peden M. et al. [editors]. *World Report on Road Traffic Injury Prevention*. Geneva: World Health Organization, 2004.
- Pless I. Killing speed [editorial]. *Injury Prevention* 2000; 6:163-166.
- Preventing unintentional injuries in children and 83 young adolescents [bulletin]. *Effective Health Care* 1996; 2(5). NHS Centre for Reviews and Dissemination (University of York) and Nuffield Institute for Health (University of Leeds).
- Rao R., Hawkins M., Guyer B. Children's exposure to traffic and risk of pedestrian injury in an urban setting. *Bulletin of the New York Academy of Medicine* 1997;74:65-80.
- Roberts I., Norton R., Jackson R., Dunn R., Hassall I. Effect of environmental factors on risk of injury of child pedestrians by motor vehicles: a case-control study. *BMJ* 1995; 310:91-94.
- Roberts I., Marshall R., and Lee-Joe T. The urban traffic environment and the risk of child pedestrian injury: a case-crossover approach. *Epidemiology* 1995; 6:169-171.
- Safe Kids Canada. *Resource for Community Action: Pedestrian Safety Kit*. 1999.
- Saelens B., Sallis J., Black J., Chen D. Neighborhood-based differences in physical activity: an environment scale evaluation. *American Journal of Public Health* 2003; 93:1552-1558.
- Schieber R., Vegega M. [editors]. Reducing childhood pedestrian injuries: summary of a multidisciplinary conference. *Injury Prevention* 2002;8 (Supplement 1). Available at <[www.injuryprevention.com](http://www.injuryprevention.com)>
- Speller V., Mulligan J., Law C., Foot B. Preventing injury in children and young people: a review of the literature and current practice. In: *Database of Abstracts of Reviews of Effectiveness*. York, UK: University of York, NHS Centre for Reviews and Dissemination, 1998.
- Tester J., Rutherford G., Wald Z., Rutherford M. A matched case-control study evaluating the effectiveness of speed humps in reducing child pedestrian injuries. *American Journal of Public Health* 2004; 94:646-650.
- Towner E., Dowswell T. Community-based childhood injury prevention interventions: what works? *Health Promotion International* 2002; 17:273-284.
- Transport Canada. *Road Safety in Canada – 2000 – Vulnerable Road Users*. <[www.tc.gc.ca](http://www.tc.gc.ca)>
- Transport Canada. *Pedestrian Fatalities and Injuries 1998-1997 (Fact Sheet #RS2002-01)*, 2001. <[www.tc.gc.ca](http://www.tc.gc.ca)>
- Transport Canada. Pedestrian deaths and injuries, 1998-2001. Traffic Accident Injury Database (TRAID) [unpublished data, received January 13, 2004].
- Transportation Association of Canada. *Canadian Guide to Neighbourhood Traffic Calming*. Ottawa: TAC, 1998.
- U.S. Department of Transportation, Federal Highway Administration. *Pedestrian Facilities Users Guide: Providing Safety and Mobility*. Virginia: U.S. Department of Transportation, 2002.
- U.S. National Safe Kids Campaign. *Safe Kids Walk This Way Task Force Guide*. 2003.
- Wazana A., Krueger P., Raina P., Chambers L. A review of risk factors for child pedestrian injuries: are they modifiable? *Injury Prevention* 1997; 3:295-304.



The national injury prevention program  
of Sick Kids

[www.safekidscanada.ca](http://www.safekidscanada.ca)