

11. Reducing transport's adverse impacts on children and youth

The Guidelines in this section are directed towards reducing all adverse traffic impacts on young people (and others), whether or not they are in a vehicle. Children and youth appear to be particularly vulnerable to traffic impacts. Therefore, reducing traffic impacts could have an especially beneficial effect on young people. Similarly, communities designed around the automobile may be less child- and youth-friendly than communities with a low dependence on automobile use. To the extent this applies, it may follow that all steps taken to reduce road traffic can be steps in the direction of child- and youth-friendly planning.

It is not a coincidence that implementation of the Guidelines in this section (and some of the other Guidelines) could make a substantial contribution to progress towards sustainable transport and particularly towards a transport system that requires reduced levels of fossil fuel use and produces lower emissions of greenhouse gases (GHGs). Transport that meets young people's needs is generally more sustainable than transport that does not meet their needs. Meeting young people's needs would help Canada meet its international obligations to reduce GHG emissions.

Guideline 17. Where destinations cannot be reached by foot, bicycle or transit, arrange land uses so that in-car time is reduced.

To the extent that children's travel by car is undesirable—because of poor in-vehicle air quality, discussed below, and opportunities lost to exercise, gain independence, and experience neighbourhoods—land use and transport planners should help ensure that the distances children travel by car are kept as short as possible.

The desirability of compact urban form applies even where automobile use is required because, other things being equal, a more compact urban form is associated with shorter journeys.

Mixing uses can also help reduce travelling time. When uses are mixed, destinations are likely—although not certain—to be nearer.

Finally, specific knowledge of where children and youth travel—as could be mapped for journeys by foot or wheelchair in respect to Guideline 4—can contribute to locating facilities in ways that reduce travel time. Such facilities would include recreation centres and parks, and even shopping malls, as well as schools.

As discussed above in Section 3.4, a potential hazard to children in vehicles is poor in-vehicle air quality. This can arise from the vehicle's own emissions, but it is more likely to result from emissions from other vehicles.

As well as avoiding the need for children to travel by car, and keeping necessary journeys short, the following actions can be taken to prevent the exposure of children and youth to poor in-vehicle air quality:

- Avoid driving in heavy traffic, driving close to other traffic, especially vehicles with diesel engines, and idling.
- Use vehicles for which the manufacturer has considered the possibility of poor in-vehicle air quality and has taken design steps to minimize it.
- Ensure a free flow of air through the vehicle at all times.

Note that many of these suggestions match those made by the U.S. Environmental Protection Agency for school buses (see Box 8 on Page 47).

Guideline 18. Post and enforce much lower speed limits, particularly in urban areas.

Other things being equal, collisions are more likely to occur and are more likely to be severe when speeds are high. Moreover, speeding traffic frightens cyclists and pedestrians and generally reduces the congeniality of streets. Major reductions in permitted maximum speeds could significantly improve the quality of life for everyone, while having only a relatively small effect on overall average journey times.

To provide a better, safer environment for children and youth, but also to provide a better urban environment generally, maximum traffic speeds should be much lower than are presently permitted. Based on the information in Section 3.3, particularly Figure 1, reasonable limits might be 40 kilometres an hour on arterial roads, and 25 km/h on other roads. In this way, damage might be limited to scrapes and broken bones (see Figure 1).

This may be the most controversial guideline of the present set because it speaks to a radically different relationship between vehicles and the urban environment, in which the speed for which vehicles exist becomes more strongly subordinated to other requirements, notably but not only those of children.

In Manitoba, the speed limit in residential areas is almost always 50 km/h, as it is in most of the rest of Canada. There is reluctance to consider changing this. For example, both Traffic Safety Education & Consulting Manitoba (TSECMB)—“Rural Manitoba’s no-for-profit traffic safety resource”—and the City of Winnipeg argue against lowering the limit below 50 km/h. TSECMB says that “Research on driver behaviors and attitudes has shown that the arbitrary reduction of the speed limit has no significant effect or impact on

average vehicle speeds.”¹¹² The City says that “However, unrealistically low speed limits may cause an increase in collisions.”¹¹³

Only the provincial government has the authority to change this; and the government appears reluctant to do so. This is notwithstanding the campaign by Safe Kids Canada to lower the limit to 30-40 km/h, which notes that “Pedestrians are eight times more likely to be killed by cars traveling at 50 km/h than at 30 km/h.”¹¹⁵

In Europe, low speed limits in residential and other areas are common. However, speed limits on urban arterial roads are at least as high as they are in Manitoba (see Box 9).

Box 9. Traffic speed limits (kilometres/hour) in Europe and Manitoba¹¹⁴

	Residential areas	Traffic calming zones	School areas	Pedestrian streets	Fast urban roads
Austria	10	30, 40		6	
Denmark	30	30	30	30	60, 70, 80
Finland	20, 30, 40	30, 40	30, 40		60, 70
Germany		6, 30	30	6	60, 70
Greece	30	20, 30			70, 80
Netherlands	30	30	30		70
Portugal					
Spain					
Sweden	30	30	30	30	70
UK	32	32	32		64, 96
Hungary	20, 30	20, 30			60, 70, 80
Iceland	50	30			60, 70
Latvia	20		30, 40		
Lithuania	50	40			60
Norway	30, 40	30	30		60, 70
Romania	30				60
Slovakia	20, 30	20, 30		40	60, 80
Slovenia		20, 30, 40	40		
Switzerland	20	30			60, 70
Manitoba	50	50	50		60-80

It’s not necessary to go to Europe to experience a community with low speed limits. Since 1981, there has been a 30-kilometre/hour speed limit on all residential and collector roadways in Airdrie, Alberta, 33 kilometres north of Calgary, 2006 population 28,927.

The City of Airdrie says that “World-wide research indicates a decline in accident frequency and severity when speed limits are reduced. Other secondary benefits include reducing fuel and vehicle operating costs, increased pedestrian safety and significant reductions in vehicle emissions and noise.”¹¹⁶

Children in cars may not be as secure as adults (because seats and seatbelts are designed for adults) and they may be more fearful of speeds. Moreover the consequences of collisions may be more devastating in respect of children in terms of years of life lost, years of life enduring major disability, and years of life suffering from major trauma. Thus the imperative to travel slowly and carefully when children are passengers is strong, as well as the more general requirements regarding vehicle speed set out above.

An additional point is that the ability to view and reflect on what is being passed is reduced with speed. Thus, a child travelling in a slowly moving vehicle can gain more familiarity with a neighbourhood, although much less than if the route were walked or cycled.

Finally, driving habits in adulthood may be influenced by experiences of being driven as a child. A child exposed to speedy dangerous driving may grow up to become a speedy dangerous driver.

Guideline 19. Do what is possible to reduce amounts of motorized traffic generally and reduce its adverse impacts.

Actions that may reduce the amount of motorized traffic overall include:

- Discouragement of car ownership (in that ownership is a major factor determining car use).
- Discouragement of car use when a car is owned.
- Facilitation of alternatives, including provision of pedestrian and bicycling infrastructure and provision of adequate, comprehensive public transport.
- Deployment of land-use arrangements that support low levels of car ownership and use, chiefly high residential densities but also a mix of uses and other arrangements that support non-motorized travel and transit use.
- Ensuring that shared-use paths and trails give priority to active transport modes.

Another action that a municipality can take is to use or require the use of low-emission rather than regular diesel vehicles for urban transit or, where possible, electric vehicles.

Electric vehicles are more ‘at home’ in the city because they emit almost no pollution where they move (and little elsewhere if the electricity is generated from renewable re-

sources). Because Manitoba's electricity is entirely renewably produced, and because North America's major manufacturer of electric trolleybuses is located in Manitoba, there is good reason to consider use of electric transit vehicles, although there are presently no electrically powered transit systems in the province. Calgary's light-rail system is especially interesting because in a province where almost all electricity is generated from coal, it runs on the energy from several wind turbines (see Figure 9).

Figure 9. A light-rail train in Calgary sporting its justified 'Ride the Wind' slogan¹¹⁷



Winnipeg used to have a trolley bus system and Winnipeg and Brandon both had streetcar systems.¹¹⁸

Diesel-powered buses, by contrast, can be major sources of pollution along urban and other roads. Indeed, a regular diesel bus carrying fewer than six passengers can produce more pollution per person-kilometre than the average single-occupancy automobile.

Electric vehicles—trolley buses, streetcars, and electric trains of various kinds—are usually more expensive than buses because of the special infrastructure required, although, for given levels of ridership they generally have lower operating costs. Quite high settlement densities are required to justify electric transit over buses.

Electric vehicles can also be more suited to urban situations because they can be quieter than buses. Moreover, they often provide a more comfortable ride. Their evident infrastructure can be useful as clues to the availability of transit service when negotiating unfamiliar parts of a city.

Lower air pollution and noise, and comfort about availability can all be conducive to children's health and well-being. In a city where children were put first, transit might make more use of electric vehicles.

Where installation of infrastructure for electric vehicles is not possible, the best use should be made of low-emission diesel buses, including hybrid buses, which can result in considerably lower pollution along bus routes (although in some cases higher fuel use and higher rates of emission of greenhouse gases).

Finally, a municipality can seek to influence the way freight moves. It can encourage use of rail for freight, and use of electric vehicles, including hybrid vehicles, where road freight must be used.

Freight transport, notably trucking, is a major source of pollution and noise in urban areas. Movement of more goods by train could be beneficial in this respect, although the first and last few kilometres of each freight movement, usually in an urban area, might still have to be performed by truck, except where major shippers are involved, with their own rail sidings.

Hybrid trucks, which use electric motors to supplement their diesel engines, are coming onto the market. From a children's perspective, their use can be encouraged as they have considerably lower fuel consumption and consequent lower emissions of pollutants. Moreover, within limits, they can operate entirely on battery power, which would be desirable, for example, when operating near schools.

Again, if the needs of children and youth were put at the forefront, shifts to rail and adoption of new technologies could well be implemented earlier.