

Evidence and Promising Practices for A Safer Systems Approach on Municipal Roadways: A guidance document for municipalities in Timiskaming

December 2022

Introduction

This document is intended to support decision-making in lowering road speeds and improving road safety on roadways in municipalities of all sizes in Timiskaming. Municipal roadways are multi-functional and may be used for a number of different purposes such as driving, walking, and cycling. Speeds along these roadways must accommodate the needs of all users including the most vulnerable road users that have no protective shell such as pedestrians, children, seniors, cyclists and motorcyclists.^{1,2,12,13}

Evidence shows that lowering road speeds reduces the risk of injury and fatality among road users.^{3,4} In Ontario many municipalities have lowered road speeds on arterial roads and in neighbourhoods, resulting in positive outcomes for communities, businesses, and road users.⁵ Lowering road speeds is most effective when paired with a safer systems approach to improve road safety along roadways.⁶ Following is a brief overview of speed related considerations and a summary of approaches and resources to guide the lowering of road speeds and the implementation of a safer systems approach within Timiskaming area municipalities.

METHODOLOGY

The Timiskaming Health Unit conducted a scan of municipal websites and social media platforms to gather information on how other municipalities have lowered speeds on municipal roadways. An Internet scan was also conducted to gather evidence pertaining to the risks and benefits of lowering speed limits and to source speed management guidelines and best practice in lowering speeds in municipal jurisdictions. The purpose of this search was to support municipalities in taking an intentional and evidence-based approach to lowering speeds within their jurisdictions. All evidence was reviewed for transferability to all municipalities in Timiskaming.

LIMITATIONS

A search for grey literature was conducted for this brief over a condensed time period in 2021. It is noted due to the time frame this search may not have captured all available evidence on the subject matter. Due to the time constraints of this brief, a formal quality appraisal of literature was not conducted.

EVIDENCE

RISKS OF HIGHER SPEEDS

Research shows speeding has become normative in Canadian culture.⁷ Across Canada, 23% of Canadians admit to driving well over the speed limit.⁷ In Ontario, 3 out of 5 drivers indicate they feel comfortable driving at speeds above the posted limit.⁷ Speed has been identified as a key risk factor world-wide in road traffic injuries influencing both the risk of a crash and the severity of injuries as a result of a crash.^{4,8}

The risks of speeding are not evenly distributed; vulnerable road users including: seniors, children, pedestrians, bicyclists, riders of motorcycles and mopeds, and persons with disabilities are more susceptible to injury than others.^{4,9,10,11,12,13} For example, pedestrians have a 90% chance of survival when struck by a car travelling at 30 km/h, but less than 20% chance of surviving an impact at 50 km/hr, and a zero chance of surviving an impact at 70 km/hr as shown in Figure 1. In Canada vulnerable road users account for almost a quarter of traffic fatalities.⁹

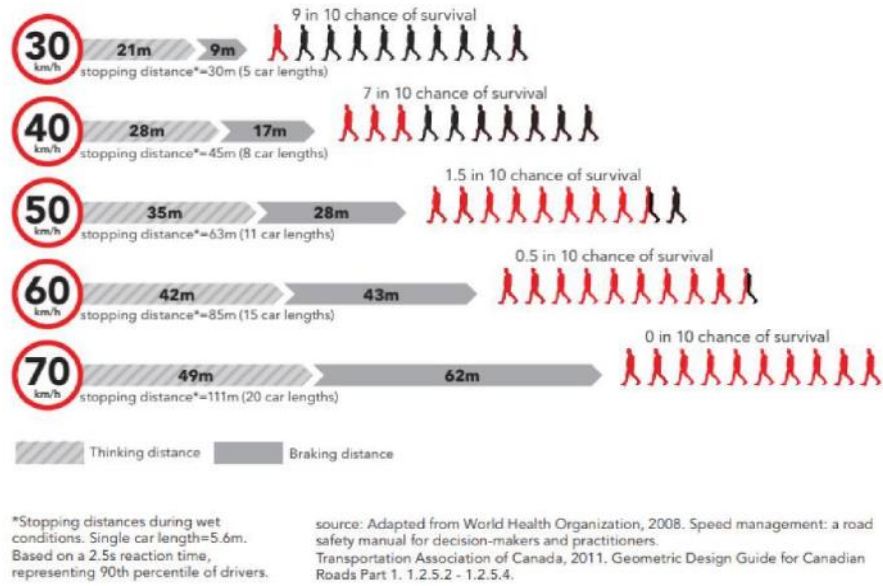


Figure 1 – Vulnerable Road User Chance of Survival

RATIONALE FOR LOWERING SPEED

Lowering speed is critical to improving road safety.^{3,4} A safer systems approach to lowering speed is most effective and may begin with the act of lowering speed limits.^{3,6} Lowering speed limits is proven to be one of the most simple and cost-effective ways of reducing motorist travel speeds and increasing safety and compatibility for all road users.^{3,4} In Ontario speed limits are legislated by the Highway Traffic Act (HTA).¹⁴ The HTA sets the statutory speed limit of 50 km/hr on roadways without the presence of speed limit signs.¹⁴ Research shows however a posted speed limit of 50 km/hr on streets where pedestrians and cyclists reside is not consistent with research findings on safe speeds, best practice or speed management.³ Posted speed limits must balance the needs of all road users and consider the risks to the most vulnerable users.^{3,4}

Many organizations including the Canadian Council of Motor Transport Administrators, Parachute Canada, The Canadian Association of Road Safety Professionals, and the Chief Coroner of Canada endorse lowering speed limits across roadways.^{15,16, 17,18} The Chief Coroner of Canada urges municipalities to consider reducing speed limits to 30 km/hr on residential streets and 40 km/hr on other streets unless otherwise posted, or as required by the Highway Traffic Act.¹⁶

On May 30, 2017, the Province of Ontario passed Bill 65, the *Safer School Zones Act*, which permits municipalities to enact neighbourhood speed limit reductions.¹⁹ Section 128 (2.1) of the Ontario HTA now allows municipalities to pass a by-law to set a speed limit less than 50 km/h for all roads within a designated area.¹⁴ Where previously a speed limit sign would have to be posted on each road, this newer law allows municipalities to designate the whole neighbourhood, not just a school zone or community safety area, as a lower speed

zone.³⁴ In response to this new by-law change many municipalities across Ontario have reduced speeds across neighbourhoods to either 40 km/hr or 30 km/hr. Examples of municipalities that have lowered speed limits can be found in Appendix A and examples of public communications for lowering speed limits can be found in Appendix B.

MAKING THE HEALTH RELATED CASE

Lowering road speeds extends beyond reducing injuries and saving lives. Reducing speed can also improve health in a number of ways including:^{11,20,21}

- Making streets safer and more walkable and bicyclist friendly
- Increasing active travel among the population, including school aged children
- Reducing greenhouse gas emissions and air pollution
- Reducing traffic noise
- Increasing social contact, with safer spaces
- Reducing health inequities
- Improving quality of life for people living or working near the road.

Additionally, reducing roadway speeds can make main streets more attractive, in turn adding value and boosting the local economy.²⁰

PROMISING PRACTICES FOR REDUCING SPEED

Setting an appropriate speed on municipal roadways must balance the needs of all road users.²² Residents and vulnerable road users may seek lower speeds as a way to promote quality of life and security for pedestrians and cyclists, while motorist may seek higher speeds to reduce travel time.²² Consideration for all road users' needs are necessary to ensure road safety and to retain reasonable motorist mobility.^{22,23}

Many resources exist to help support municipalities in lowering road speeds and increasing road safety in their jurisdictions. A summary of approaches to lower road speeds can be found in Appendix C. While various approaches exist to assist to lower road speeds, there continues to be greater emphasis from all levels of government and road safety advocates to adopt a safer systems approach.²⁴

THE SAFER SYSTEMS APPROACH

Lowering speeds on roadways can improve road user safety and reduce injury to motorists and vulnerable road users.^{3,4,15} Research has found however in many situations simply lowering the speed limit and enforcing it is not enough to curb motorist operating speeds; the greatest impact occurs when there are physical changes to the road environment.^{4,11,25,26,27} Physical changes to the road are part of a safer systems approach to road safety.²⁸ The safer systems approach applies all of the 5E's of road safety including engineering, enforcement, education, engagement and evaluation to create meaningful change.^{28,29}

Many organizations are advocating for a safer system approach at national level including the Canadian Council of Motor Transport Administrators and Canada's leading injury prevention organization Parachute .^{15,28} A safer system approach does not imply that crashes are caused solely (or even mainly) by speed, it recognizes that any given crash event is likely to be the result of an interplay of many factors.³⁰ This approach differs from traditional safety practices by focusing on being human-centred and increasing road safety through more

significant use of roadway design rather than relying on road users to change their behaviour to keep all users safe.³¹The safer systems approach anticipates human error and accommodates for human injury tolerance.³¹

A safer systems approach can significantly reduce road user injuries and improve road safety.^{28,32} This approach ensures roads are designed to be safe, convenient and comfortable for every user, regardless of transportation mode, physical ability or age.¹⁶ The safer systems approach is ideal for communities and may be used to strengthen protection for vulnerable road users by integrating their needs into the transportation system.^{31,33} According to Canada's Road Safety Strategy 2025, adopting a safer systems approach would reduce injury and fatalities and help make Canada's roads some of the safest in the world¹⁵

Vision Zero is an example of a safer systems approach to road safety that is based on the philosophy that no one should be killed or seriously injured in the road transportation system.²⁸ In Vision Zero, the responsibility for road safety is shared among all bodies involved in the road system including road planners, politicians, road users and vehicle manufacturing companies.²⁸

The ultimate goal of Vision Zero is to achieve zero fatalities or serious injuries on the road.³² The success of this initiative is evident. In Sweden, where Vision Zero originated more than 20 years ago, traffic related fatalities have been more than halved.³² Since then, multiple other nations including the United States, New Zealand, Australia and Norway have taken note and have adopted this practice as well.³⁸

In 2015, Edmonton became the first Canadian city to adopt and implement Vision Zero.³² Between 2006 and 2018, traffic-related injuries and fatalities in this city dropped by 60 percent as reported by the City of Edmonton.³² Further resources to support a safer systems approach can be found in Appendix D.

CONCLUSION

Municipalities are faced with challenging decisions to help protect the health and safety of their residents. A decision to review and implement lower road speeds requires careful consideration of the rationale and approach for implementing change. Research evidence shows lowering road speeds and adopting a safer systems approach would reduce the risk and severity of injury to motorists and vulnerable road users in a collision, while increasing many health and economic benefits to the community. The decision to lower road speeds and improve road safety must consider many factors including political will and public appetite for change. The evidence in this document presents the best practice for speed management to improve road safety, while advocating for a safer systems approach.

AREAS OF PUBLIC HEALTH SUPPORT

The Timiskaming Health Unit is available to support the integration of health and well-being into municipal decision-making, for example by exploring policy options and supporting the development, implementation and evaluation of speed policies including public communications and signage. The health unit can support the work of road safety through ongoing collaboration, facilitating access to evidence, supporting community engagement and helping the municipality with evaluation. Moving forward, the health unit can work closely with the municipality and seek opportunities to leverage and support the municipality's work.

For more information, please contact Amanda Mongeon, Program Manager, at 705-647-4300, Ext. 2264 or mongeona@timiskaminghu.com.

Contributors:

Janet Smale Research, Planning and Policy Analyst

Krystal Oviatt, Public Health Promoter

Nicki Duke, Graphics

Amanda Mongeon, Program Manager

Kerry Schubert-Mackey, Director

REFERENCES

- ¹ World Health Organization. (2008). *Road traffic injuries among vulnerable road users*. https://www.euro.who.int/data/assets/pdf_file/0004/98779/polbrief_road_injuries.pdf
- ² World Health Organization. (2021). *Fact Sheet: Road Traffic Injuries*. <https://www.who.int/news-room/factsheets/detail/road-traffic-injuries>
- ³ Government of British Columbia. (2018). *BC Community Road Safety Toolkit*. <https://www2.gov.bc.ca/assets/gov/driving-and-transportation/driving/consequences/vision-zero/resource-kit-community-road-safety-toolkit-module2.pdf>
- ⁴ World Health Organization. (2004). *Facts: Road Safety – Speed*. https://www.who.int/violence_injury_prevention/publications/road_traffic/world_report/speed_en.pdf
- ⁵ Sharpe, K. (2021, July 21). Guelph lowering speed limit on dozens of city streets. *CTV News*, Kitchener. <https://kitchener.ctvnews.ca/guelph-lowering-speed-limit-on-dozens-of-city-streets-1.5517293>
- ⁶ Arason, N. (2019). The Safe Systems Approach to Road Safety. *Canadian Institute of Transportation Engineers*, 40(4), 11-16. <https://issuu.com/cite7/docs/40.4-winter20182019/14>
- ⁷ Traffic Injury Resource Foundation. (2020). *Is faster really better when it comes to driving?* <https://tirf.ca/blog/is-faster-really-better-when-it-comes-to-driving/>
- ⁸ City of Hamilton. (2019). *Speeding & Safe Speeds*. <https://www.hamilton.ca/streets-transportation/driving-traffic/speeding-safe-speeds>
- ⁹ Transport Canada. (2019). *Road Safety in Canada*. <https://tc.canada.ca/en/road-transportation/publications/road-safety-canada#s38>
- ¹⁰ Centre for Disease Control and Prevention. (2020). *Older Adult Drivers*. https://www.cdc.gov/transportationsafety/older_adult_drivers/index.html
- ¹¹ European Commission. (2018). *Speed and Speed Management*. European Commission; Directorate General for Transport. <https://www.obserwatoriumbrd.pl/resource/87f3eccb-1c8e-4519-846e-80fe8a3a4394:JCR>
- ¹² Sethi, D. (2008). APOLLO Policy briefing: Road traffic injuries among vulnerable road users. *WHO European Centre for Environment and Health*, Europe. https://www.euro.who.int/data/assets/pdf_file/0004/98779/polbrief_road_injuries.pdf
- ¹³ Organisation for Economic Co-operation and Development. (1998). *Safety of Vulnerable Road Users*. Paris, France. https://safety.fhwa.dot.gov/ped_bike/docs/oecd_safety.pdf
- ¹⁴ Government of Ontario. (2021). *Highway Traffic Act, R.S.O. 1990, C. H.8. Queen's Printer for Ontario*. <https://www.ontario.ca/laws/statute/90H08>
- ¹⁵ Canadian Council of Motor Transport Administrators. (2021). *Canada's Road Safety Strategy 2025*. Ottawa, ON. <https://roadsafetystrategy.ca/en/strategy>
- ¹⁶ Office of the Chief Coroner for Ontario. (2012). *Pedestrian Death Review*. Ministry of the Solicitor General, Ontario. https://www.mcscs.jus.gov.on.ca/english/DeathInvestigations/office_coroner/PublicationsandReports/PedestrianDeathReview/DI_Pedestrian_Death_Review.html#exec-sum
- ¹⁷ Canadian Association of Road Safety Professionals. (2021). *Safe Speeds*. <https://www.carsp.ca/research/resources/road-safety-information/safe-speeds/>
- ¹⁸ Parachute Canada. (n.d.). *What's Speed Got To Do With It?* <https://parachute.ca/wp-content/uploads/2019/08/Pace-Car-Community-Fact-Sheet-1.pdf>
- ¹⁹ Government of Ontario. (2021). *Safer School Zones Act, 2017, S.O. 2017, c. 9 - Bill 65. Queens Printer for Ontario*. <https://www.ontario.ca/laws/statute/s17009>
- ²⁰ Heart Foundation. (2012). *Position Statement: Slow Motion: Why reducing speed will promote walking and cycling*. Adelaide, Australia. <https://www.heartfoundation.org.au/getmedia/c771e0c2-8628-46d3-97c5-9ab2585c6114/ReduceSpeed.pdf>
- ²¹ CBC News. (2020, August 14). *How cutting speed limits could slow climate change*. <https://www.cbc.ca/news/science/what-on-earth-speed-limits-climate-change-1.5684677>
- ²² Lima, B. (2019, March 29). *Report to County Council. Elgin County*. <https://www.elgincounty.ca/wp-content/uploads/2019/04/060-Engineering-County-Road-Speed-Limit-Adjustment.pdf>
- ²³ Forbes, G. (2012, March 30). *Global Approaches To Setting Speed Limits* [Paper presentation]. 2021 Conference of the Transportation Association of Canada, Fredericton New Brunswick. Retrieved from: <http://conf.tac-atc.ca/english/annualconference/tac2012/docs/session17/forbes.pdf>
- ²⁴ Manitoba Infrastructure. (2019). *Guide for setting posted speed limits on Manitoba Roadways*. <https://www.gov.mb.ca/mit/traffic/pdf/speed/guide.pdf>

- ²⁵ Rocca, J. (2019). *Gateway Speed Limits in Residential Areas*. City of Greater Sudbury. <https://pub-greatersudbury.escribemeetings.com/FileStream.ashx?DocumentId=2245>
- ²⁶ Landry, P. (2017, April 5). *Report to Transportation Committee*. Ottawa, ON. <http://ottwatch.ca/meetings/file/609772>
- ²⁷ Homayoun, S., & Saadati, M. (2016). Speed Management Strategies: A Systematic Review. *Bull Emerg Trauma*. 4(3): 126-133.
- ²⁸ Parachute. (2021). *Road Safety*. Toronto, ON: <https://parachute.ca/en/injury-topic/road-safety/>
- ²⁹ Parachute. (2020). *Making A Vision Zero Commitment in Canada*. <https://parachute.ca/wp-content/uploads/2020/02/Making-a-Vision-Zero-Commitment-in-Canada.pdf>
- ³⁰ Federal Highway Administration. (2012). *Methods and Practices for Setting Speed Limits: An Informational Report*. https://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasa12004/fhwasa12004.pdf
- ³¹ Institute of Transportation Engineers. (n.d.) *Safe System*. <https://www.ite.org/technical-resources/topics/safe-systems/>
- ³² Parachute. (2021). *Vision Zero*. Toronto, ON: <https://parachute.ca/en/program/vision-zero/>
- ³³ Institute of Transport Engineers. (2021). *Setting Speed Limits*. <https://www.ite.org/technical-resources/topics/speed-management-for-safety/setting-speed-limits/>
- ³⁴ Legislative Assembly of Ontario. (2017). *Bill 65, Safer School Zones Act, 2017*. <https://www.ola.org/en/legislative-business/bills/parliament-41/session-2/bill-65>
- ³⁵ Tchir, J. (2021, May 30). Shouldn't speed limits be designed for the '85th percentile' of drivers? *The Globe and Mail*. <https://www.theglobeandmail.com/drive/mobility/article-shouldnt-speed-limits-be-designed-for-the-85th-percentile-of-drivers/>
- ³⁶ D. M. Wills. (2014). *Speed Limit Review Study: Municipality of Trent Hills*. <https://trenthills.civicweb.net/document/19575>
- ³⁷ The District Municipality of Muskoka. (2016). *District Road Speed Limit Review Process*. <https://muskoka.civicweb.net/document/27599>
- ³⁸ Parachute. (2019). *Committing to Vision Zero*. <https://parachute.ca/wp-content/uploads/2019/10/VZ-flyer-UA.pdf>

APPENDIX A MUNICIPAL EXAMPLES OF LOWER ROAD SPEEDS

Municipality	Actions	Link
Hamilton ON	Over the next three years, residential streets will be reduced to 40 km/hr and school zones will be reduced to 30 km/hr.	https://www.hamilton.ca/streets-transportation/driving-traffic/neighbourhood-speed-limit-reductions
Toronto ON	<p>Proposed speed limits:</p> <p>20 km/h - public parks (e.g., Exhibition Place and High Park)</p> <p>30 km/hr - streets with traffic calming devices (e.g., speed humps) installed; or local roads approved by Community Council in the absence of traffic calming</p> <p>40 km/h -, local and collector roads adjacent to schools, parks, and in neighbourhood communities</p> <p>50 km/h - local and collector roads - this is the default speed limit in the City in the absence of signage (Note: Signs are posted at all entry points to the City from major roadways, to advise to this effect)</p> <p>60 km/h - busy collector and arterial roadways</p>	<p>https://www.toronto.ca/services-payments/streets-parking-transportation/road-safety/vision-zero/safety-initiatives/speed-limit-reductions/</p> <p>https://www.toronto.ca/311/knowledgebase/kb/docs/articles/transportation-services/district-transportation-services/traffic-operations/minimum-speed-limit-on-streets.html</p>
Waterloo ON	Waterloo will reduce speed limits to 30 km/hr on city streets	https://www.cbc.ca/news/canada/kitchener-waterloo/waterloo-speed-limits-lowered-30-km-per-hour-1.6487249
Ottawa ON	All neighbourhoods in Ottawa have gateway speed limit signs of 40 km/h and many more are reducing to 30km/hr	<p>https://ottawa.ca/en/parking-roads-and-travel/traffic-services</p> <p>https://ottawa.ctvnews.ca/more-residential-speed-limits-going-to-30-km-h-1.5612262</p>
Caledon ON	Many municipal roads have been reduced to 40 km/h	https://www.caledon.ca/en/news/new-traffic-safety-measures.aspx
Mississauga ON	In fall 2019, the City began lowering speeds in 11 different neighbourhoods. In 2020, the City expanded this to reduce speed limits in all of Mississauga’s residential neighbourhoods. This process may take some time to complete as the City works to make these changes neighbourhood by neighbourhood.	https://www.mississauga.ca/services-and-programs/transportation-and-streets/road-safety/neighbourhood-area-speed-limits/

Oshawa ON	Many residential roads have been reduced to 40 km/h	https://www.oshawa.ca/city-hall/resources/trafficman.pdf https://www.oshawa.ca/uploads/17/Schedule17-MaximumRateofSpeed.pdf?ts=637667014013461616
Pickering ON	Many residential roads have been reduced to 40 km/h	https://www.pickering.ca/en/city-hall/resources/schedule-9-speed-limits.pdf
Durham	Durham Region is committed to implementing Vision Zero	https://www.durham.ca/en/living-here/vision-zero.aspx
North Bay ON	Many neighbourhood roads have been reduced to 40 km/h	https://www.northbay.ca/media/j4ifl5gg/2017_25.pdf
Sudbury ON	Neighbourhood gateway speeds are under review.	
Brantford ON	Neighbourhood speed limits have been reduced to 40 km/hr	https://www.brantford.ca/en/transportation/resources/Documents/Appendix-A-Vision-Zero-The-City-of-Brantfords-Road-Safety-Plan.pdf https://www.brantfordexpositor.ca/news/local-news/city-looks-at-reducing-speed-limit-in-neighbourhoods
London ON	<p>The City of London is implementing an Area Speed Limits program lowering speed limits on roads with high levels of pedestrian and cycling activity. Neighbourhood speed limits have been reduced to 40 km/h</p> <p>Dundas Place: The speed limit on Dundas Place, London's flexible street from Ridout to Wellington Streets downtown, was lowered to 30 kilometres an hour to support shared use of the space and improve safety for all road users.</p> <p>School zones: Speed limits of 40 kilometres an hour have been implemented in school zones.</p>	https://london.ca/living-london/roads-sidewalks-transportation/road-safety/area-speed-limits
Windsor ON	Speed limit reductions are currently under review; council paused on implementing.	https://www.cbc.ca/news/canada/windsor/windsor-city-council-speed-limits-1.5993676#:~:text=The%20speed%20limits%20around%20Windsor,h%20to%2040%20km%2Fh.
North Grenville ON	The Municipality of North Grenville has implemented a community wide 40 km/h speed limit in the urban core of Kemptville.	https://www.northgrenville.ca/news/1297-community-wide-speed-limit-reduced-to-40km-hr-in-kemptville
Orangeville ON	Speed limit of the entire municipality (with few exceptions) is reduced to 40 km/h as of March 1, 2021	https://www.orangeville.ca/en/news/default-speed-limit-in-orangeville-changes-to-40-kph.aspx http://citizen.on.ca/?p=20409
Oakville ON	40 km/hour speed zones on roads fronting active parks where there's higher pedestrian traffic and children at play.	https://www.oakville.ca/residents/speeding-traffic-calming.html

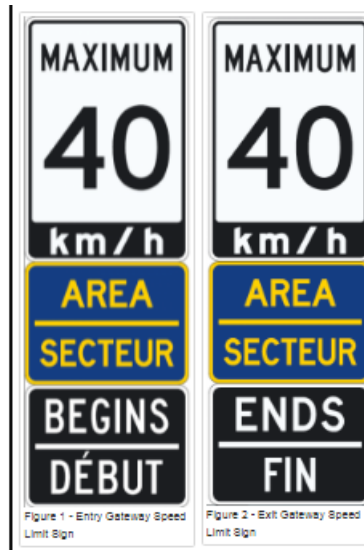
Cambridge ON	Speed limits reduced to 40km/h in Central Cambridge, Lower Preston, North Hespeler and Southwest Galt	https://www.cambridge.ca/Modules/News/index.aspx?feedId=83c8bee0-d7ea-49e8-b20b-09fd40e79682&newsId=6ffebaf3-8f14-4aa8-a621-ab9d79ec2aa8#
Guelph ON	Guelph city council is considering lowering speeds in 48 neighbourhoods to 40 km/h	https://guelph.ca/2021/06/city-staff-propose-lower-speed-limits-across-guelph-to-make-roads-safer-for-everyone/
Burlington ON	Select neighbourhoods lowering speed limits to 40 km/h	https://burlingtonpublishing.escribemeeting.com/filestream.ashx?DocumentId=48230
Sarnia ON	Consultations are being conducted on a city wide speed limit reduction to 40km/h, leaving arterials as currently posted	https://blackburnnews.com/sarnia/sarnia-news/2021/09/14/consultation-citywide-speed-limit-reduction-planned/

APPENDIX B SAMPLE COMMUNICATIONS FOR LOWERING ROAD SPEEDS



**Starting May 31,
we're putting a limit
on injuries**

Driving at 40 km/h
reduces collisions, injuries
and deaths.



GATEWAY SIGNAGE



City of Calgary – Your Local Government
June 8

The speed limit on most neighbourhood streets is now 40 km/h.
Lowering the speed limit is a step towards safer, more accessible streets for all Calgarians, regardless of whether they are driving, cycling or walking.
To find out more ways the new 40km/h speed limit can help drive change in your neighbourhood, visit calgary.ca/saferspeed.

Making neighbourhoods safer every day



City of Edmonton - Local Government
July 26 at 3:35 PM

Starting August 6, the default speed limit on most of Edmonton's residential and downtown roads will be changing from 50 km/h to 40 km/h.
Request signs for your community with the Safe Speeds Toolkit. Let's create safe streets and healthy, vibrant communities. Working together, we can achieve Vision Zero by eliminating traffic-related fatalities and serious injuries.
Visit edmonton.ca/SafeSpeeds to get involved.... See More



Encourage Safe Speeds. Request signs for your community.
Edmonton.ca/SafeSpeeds

247 Comments 119 Shares

City of Edmonton - Local Government
August 7 at 2:02 PM

The default speed limit on most residential and downtown roads is 40 km/h. All speed limit signs are now posted, including at city limits. If you don't see a sign, assume it is 40 km/h. More info available at edmonton.ca/SafeSpeeds.



It's time for drivers to adjust their driving speeds to a maximum of

Heads up, Toronto.
We're reducing speed limits on major roads in the city.

4 5 0 KM/H

Toronto Call 3-1-1 **visionZERO**

We're reducing speed limits on major roads in Toronto.
Slow down. Obey the sign.

5 6 0 KM/H

Toronto Call 3-1-1 **visionZERO**

We're reducing speed limits on major roads in Toronto.
Obey the limit.

6 7 0 KM/H

Toronto Call 3-1-1 **visionZERO**

City of Calgary – Your Local Government
September 1, 2020

Playground zones are in effect year-round from 7:30am-9pm, but we're reminding motorists to slow down as schools are back in session.
Be aware. Be safe. Stay alert.
Reduce your speed to 30km/h when driving through a playground zone.
Parents: If you're driving your children, consider parking a few blocks away and walking to reduce traffic congestion around schools.
<http://www.calgary.ca/~traffic.../school-zone-safety.html>



Playground zones
Designated playground zones serve an important role keeping pedestrians...

125 Comments 56 Shares

APPENDIX C

DESCRIPTION AND SUMMARY OF APPROACHES FOR SETTING SPEED LIMITS³⁰

Approaches to set speed limits vary but are generally applicable on all road types and are capable of being implemented with available resources.³⁰ The rationale to change municipal speed limits would ideally be embedded in a broader strategy to address road safety in the municipal jurisdiction.¹⁶

Statutory Speed Limit

In Ontario, the Highway Traffic Act states that unless otherwise posted, the basic limit for all provincial highways is 80 km/h in rural environments and 50 km/h within urban municipalities.¹⁴ If speeds other than the statutory speeds are required, municipalities are tasked with setting or adjusting the limits.¹⁴ In Ontario legislation exists as an amendment to the HTA through Bill 65 to permit municipalities to set speed limits other than 50 km/h on roadways within a designated area.³⁴ When varying speed limits from the statutory requirement, an engineering study is typically conducted.²²

Engineering Studies:

Engineering approaches to setting speed limits are widely used and have been around the longest, resulting in many variations.^{23,30} Similarities in the mechanics of each variant exist between engineering methods and have been categorized into two groups: Operating speed methods and Road risk methods.²³

Operating Speed

The vehicle operating speed describes the observed speed of a group of motorized vehicles traveling on a specific section of road.³³ A speed study is conducted to determine the operating speed of a group of vehicles who typically do not travel at the exact same speed.³³ The speed study creates a speed distribution and from this the 85th percentile can be determined.³³ The 85th percentile speed is considered the speed at which 85 percent of free-flowing traffic is traveling at or below.³⁰

Setting a speed limit based on the 85th percentile speed was originally based on safety.³⁰ Research from development of this method showed at the time traveling within the 85th percentile yielded the lowest crash risk for drivers.^{23,30} Using the 85th percentile speed as a base speed however is only one factor in setting a target or maximum road speed and may not always result in the safest speed appropriate for that roadway.^{30,33,35} While speeds selected by operating speed method may be appropriate for motor vehicle travel, the impact on others such as pedestrians and residents are generally underestimated and may disproportionately affect the safety of different road users and create quality of life impacts for residents and businesses.²³ Other factors need to be considered for this approach when determining the safest operating speed.³³

Road Risk Method

The road risk method is another engineering approach used to set speed limits.³⁰ The road risk method is used to determine the appropriate speed limit according to the risks associated with the physical design of the road and the expected traffic conditions.³⁶ Unlike the operating speed method that uses the 85th percentile as a base speed limit, the road risk method uses a base speed limit predicted on the functional classification of the road and setting.³⁰ The ideal speed limit is set according to the function or classification of the road and established

according to the levels of risk associated with various road and roadside design features.^{30,36} The higher the level of risk associated with the physical roadway characteristics, the lower the subsequently posted speed limit.³⁶

The road risk method is useful as it considers a broad number of factors according to physical road characteristics, however further information may be needed to set a safe speed limit such as data for pedestrian and cyclist activity.³⁰ Consideration of human factors and other data including crash data is recommended to complement this approach.³⁷

Expert System Approach

The expert system approach uses a methodology whereby speed limits are suggested by a computer program that uses existing knowledge and inference to simulate the judgement and behavior of speed limit experts.³⁰ An expert system may be used to both generate speed limits and validate an engineering approach to setting speed limits.³⁰ The expert system has been critiqued for a lack of data that exists to prove speed limits recommended by the system result in a lower crash risk.²³

Injury Minimization or Safe System Approach

A safe systems approach seeks to find an appropriate balance between safety and mobility.³³ The approach requires holistic planning of the roads and interconnected factors to provide for optimal safety.³³ The safe systems approach is ideal for many urban roads and may be used to strengthen protection for vulnerable road users.³³

This approach has been recommended by the Canadian Council of Motor Transport Administrators, and Parachute Canada among others.^{15,32}

Optimum Speed Limit

The optimal speed limit is one that considers overall transportation objectives.³⁰ This methodology is one that yields the minimum total societal cost, including vehicle operation costs, crash costs, travel time costs, and other social costs.²³ The optimal speed method uses a broad spectrum of data including cost models and data to account for air pollution, crashes and delays etc. to generate effective speed limits.³⁰ This approach considers the total impact that speed has on a community or society.³⁰ Determining the optimal speed limit is a complex task.³⁰ Setting speed limits using optimization techniques is therefore not frequently used due to the difficulty of quantifying key variables.²³

SUMMARY OF APPROACHES FOR SETTING SPEED LIMITS³⁰

Approach	Basic Premise	Data Required	Advantages	Disadvantages
Engineering (Operating Speed)	The speed limit is based on the 85 th percentile speed and may be slightly adjusted based on road and traffic conditions and crash history.	The existing speed profile as well as data on access, pedestrian and/or bicycle traffic, curbside parking, safety performance, etc.	Using the 85 th percentile speed ensures that the speed limit does not place an undue burden on enforcement and provides residents and businesses with a valid indication of actual travel speeds.	Drivers may not be adequate judges of the externalities of their actions and may not be able to self-select the most appropriate travel speed. Speed limits are often set lower than the 85 th percentile speed.
Engineering (Road Risk)	The speed limit is based on the function of the road and/or the adjacent land use and then adjusted based on road and traffic conditions and crash history.	Functional classification of the road, setting (urban/rural) surrounding land uses, access design features of the road.	The speed limit and the function of the road are aligned. The function of the road also dictates many of the design elements for the road, so this method aligns the speed limits with the design of the road.	The road risk methods may result in speed limits that are well below the 85 th percentile speeds, resulting in an increased burden on enforcement if remedial measures are not employed (i.e. traffic calming, etc.)
Expert System	Speed limits are set by a computer program that uses knowledge and inference procedures that simulate the judgement and behaviour of speed limit experts.	Data needs depend on the system, but generally expert systems require the same data as used in the engineering approaches.	A systematic and consistent method of examining and weighing factors other than vehicle operating speeds in determining an appropriate speed limit, it is reproducible and provides consistency in setting speed limits within a jurisdiction.	Practitioners may need to rely on output from the expert system without applying a critical view of the results.
Optimal Speed Limits	The selected speed limit minimizes the total societal costs of transport when considering travel time, vehicle operating costs, road crashes, traffic noise, air pollution, etc.	Cost models and input data to account for air pollution, crashes, delay, etc.	Provides a balanced approach to setting speed limits that is considerate of many (if not all) of the impacts that speed has on society. Allows for the consideration of pedestrian and cyclist traffic in setting speed limits. May be particularly useful in a context sensitive situation.	Data collection and prediction models may be difficult to develop and are subject to controversy among professionals. Resulting speed limits may not be immediately obvious to the user.
Injury Minimization/ Safe System	Speed limits are set according to the crash types that are likely to occur, the impact forces that result and the tolerance of the human body to withstand these forces.	Crash types and patterns for different road types, and survivability rates for different operating speeds.	There is a sound scientific link between speed limits and serious crash prevention. Places a high priority on road safety.	This method is based solely on a road safety premise and may not be accepted as appropriate in some jurisdictions.

APPENDIX D

RESOURCES TO SUPPORT A SAFER SYSTEMS APPROACH

Resource	Description	Link
Speed management: a road safety manual for decision-makers and practitioners	This manual advocates a strong and strategic approach to speed management and the creation of a safe road system. The manual includes a series of 'how to' modules and includes steps needed to assess the situation in any country.	https://www.paho.org/en/node/55122
Canada's Road Safety Strategy 2025	Canada's Road Safety Strategy 2025 serves as a manual for all road safety stakeholders to collaborate in making Canada's roads the safest in the world and unite efforts to reach zero fatalities and serious injuries on our roads.	https://roadsafetystrategy.ca/web/road-safety-strategy/files/public/docs/RS-S-2025-Report-January-2016-with%20cover.pdf
Vision Zero – Parachute Canada	Parachute Vision Zero is a network that brings key players together across sectors, shares current knowledge and best practices, draws attention and access to the importance of data and evidence, and provides access to valuable resources to build capacity.	https://parachute.ca/en/professional-resource/vision-zero-collection/
BC Road Safety Toolkit	British Columbia's Road Safety Toolkit contains a number of evidence based engineering solutions to physically alter the road and increase speed compliance	https://www2.gov.bc.ca/assets/gov/driving-and-transportation/driving/consequences/vision-zero/resource-kit-community-road-safety-toolkit-module2.pdf
Canadian Guidelines for Establishing Posted Speed Limits	This publication offers recommendations to help engineers and traffic practitioners determine speed limit management procedures, which enhance the effectiveness and credibility of posted speed limits.	https://www.tac-atc.ca/en/publications/ptm-postedspeed
Office of the Chief Coroner for Ontario Pedestrian Death Review	A report on the pedestrian deaths that occurred in the Province of Ontario between January 1 and December 31, 2010. The report makes 26 recommendations in the areas of road safety and death prevention.	https://www.mcscs.jus.gov.on.ca/sites/default/files/content/mcscs/docs/ec161058.pdf
Complete Streets for Canada	The Complete Streets for Canada website is a hub for Complete Streets policy, design, case studies, and research. The website	https://www.completestreetsforcanada.ca/

	provides the necessary knowledge base and policy framework for municipalities to move toward streets that provide equitable access to all modes of travel.	
World Health Organization – Speed Manual 3 – What are the tools for managing speed?	World Health Organization manual providing tools for road stakeholders	https://www.who.int/roadsafety/projects/manuals/speed-manual/3-What.pdf
Canadian Guide to Traffic Calming	The Canadian Guide to Traffic Calming provides up-to-date information and guidance related to the planning, design, installation, operation, and maintenance of traffic calming measures on local, collector and arterial roads in Canada	https://www.tac-atc.ca/en/canadian-guide-traffic-calming-second-edition-obtains-tac-approval
The Speed Management Guide: Canadian Road Safety Engineering Handbook	The Speed Management Guide: Canadian Road Safety Engineering Handbook (CRaSH) provides information and tools to facilitate safer Canadian roadways through speed management. The Guide is intended for engineers and those responsible for roadway planning, design, operation, and maintenance, with the focus on infrastructure methods of managing speeds	https://trid.trb.org/view/1417713 .
Love30 Campaign	Love 30 Canada is a campaign to make 30 km/h into the default speed limit for urban and residential streets. This campaign can be the driving force to create safer streets for all and is partnering with cities across Canada to reduce speed limits.	https://love30.ca/
20's Plenty for Us	The 20's Plenty for Us is a non-for-profit group campaigning for speed limits of no more than 20 miles per hour on residential and city streets where people live, work, and play. Over 600 groups have used this campaign around the world to lower speed limits.	https://www.20splenty.org/