

Staff Report



To
Service Area

Committee of the Whole
Infrastructure, Development and
Enterprise Services

Date

Monday, July 5, 2021

Subject

Speed Limit Reductions

Recommendation

1. That staff be directed to bring forward a revised Traffic By-law, including speed limit changes as outlined in report IDE 2021-180 dated July 5, 2021.
2. That staff be directed to bring forward a revised Traffic By-law, including community safety zones in preparation for future automated enforcement programs, as outlined in report IDE 2021-180 dated July 5, 2021.
3. That the Automated Speed Enforcement program implementation plan, as outlined in report IDE 2021-180 dated July 5, 2021, be approved and considered through the 2022 budget process.

Executive Summary

Purpose of Report

The purpose of this report is to seek Council approval to lower speed limits throughout the City and install community safety zones for a future implementation of an automated speed enforcement program.

Key Findings

Throughout the Strategic Plan (Navigating our Future pillar), Community Plan, Transportation Master Plan and Community Road Safety Strategy (CRSS), road safety has been established as one of the community's top priorities. The CRSS identified the community's specific road safety priorities were lowering speeds in areas with vulnerable road users and the need for increased enforcement measures.

In 2017 the province introduced Bill 65 Safer School Zones Act that allowed municipalities to designate areas by by-law where the speed limit can be lower than 50 km/h. It also permitted municipalities to implement automated speed enforcement in community safety zones where the speed limit is less than 80 km/h and/or in designated school zones where a flashing 40 km/h speed limit is not in effect. Municipalities across Ontario are using these policies to improve road safety as reducing operating speed has a significant impact in reducing collision severity.

Feedback from these policies, strategies and plans, community engagement, key stakeholder engagement and research evidence supporting the reduction of speed limits on severe and fatal injury outcomes was used to prepare recommendations

for various speed limit reductions and the implementation of community safety zones and automated speed enforcement.

Financial Implications

Speed limit reduction signs are funded using existing capital funding through the tax-supported capital project (TF0026) at an estimated cost of \$300,000. Automated speed enforcement would be funded through future operating budgets. Funding in the amount of approximately \$120,000 would be required for each year of operation based upon two mobile cameras being rotated every one to two months. Court Services would require an additional three and a half permanent positions to process and litigate charges. The cost of the program is anticipated to be offset by violation revenues. Based on preliminary assumptions the program will operate with revenues of approximately \$1 to \$1.5 million. Staff will continue to refine assumptions and projections for inclusion in the 2022 budget process.

Staff are considering a self-funding reserve strategy that sees excess revenues generated from transportation safety initiatives including automated speed enforcement and red light cameras being used to advance safety improvements in road infrastructure.

Report

Background

According to the [2015-2019 Collision Report](#), the average societal costs of collisions including property damage, emergency response services, disability, and loss of life amounts to over \$100,000,000 annually in the City of Guelph. The loss of life due to a traffic collision is unacceptable has been identified in the City's Strategic Plan. One of the key performance indicators of the Navigating our Future Strategic Plan pillar is to improve road safety by reducing the amount of severe and fatal collisions in the city.

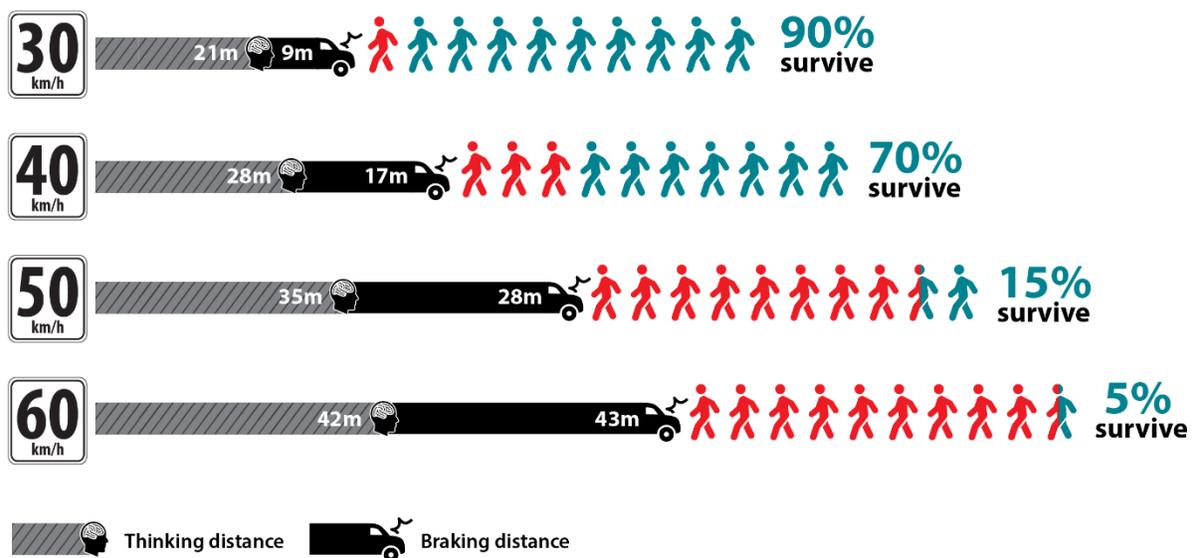
On July 20, 2020 Guelph City Council unanimously approved the [IDE-2020-80 report on the Community Road Safety Strategy \(CRSS\)](#) and updated [Traffic Calming Policy](#). This report is a follow up to speed reduction mitigation measures identified in the CRSS presentation.

Road safety is a top priority in many plans throughout the City including the Strategic Plan (under the Navigating our Future pillar), Community Plan, Transportation Master Plan (TMP), and CRSS. During engagement for the CRSS, speeding was identified as one of the top 5 road safety priority areas in the community. Specifically, "lowering speeds in areas with vulnerable populations" and "the need for increased enforcement using automated measures" were two emergent themes that were suggested by the public. Considering the need to reduce severe and fatal collisions, and the direct connection operating speeds have to severity, the City conducted a review of the impact of reducing speed limits in Guelph.

Slowing Down to Save Lives

Speed is a key risk factor in both road traffic collisions and injuries. As speed increases, the distance travelled, reaction time, and the distance needed to stop all increase (see Figure 1). For example, a study from the City of Toronto showed that severe and fatal pedestrian motor vehicle collisions significantly decreased by 28% when speeds were reduced on local roads.¹ Vulnerable road users (i.e. pedestrians and cyclists) are at increased risk for severe injury as they are not physically protected in the same way drivers are in a vehicle.² While there is a well-established relationship between lower operating speeds and reductions in injury severity, many of these studies do not account for measuring operating speeds. Without enforcement resources in place, it is challenging to see speed limit compliance even when limits are lowered. In 2014 speed limits were lowered to 30 km/h from 50 km/h (a 20 km/h differential) on 53 streets with school zones across the City of Guelph. However, when data was collected on the operating speeds on these streets results showed that drivers only reduced their speed by 1.2 km/h on average. Therefore, speed limits need to be appropriately set to give drivers the ability to improve their driver behavior and comply with the reduced limits on our roads. If the speed is dramatically reduced (e.g. by 20 km/h) there is greater likelihood that this may create a false sense of security for all road users.

Figure 1: The relationship between speed and collision severity



¹ Fridman, L et al. Effect of reducing the posted speed limit to 30 km per hour on pedestrian motor vehicle collisions in Toronto, Canada – a quasi experimental, pre-post study. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-019-8139-5>

² World Health Organization. Why focus on speed? https://www.who.int/roadsafety/projects/manuals/speed_manual/1-Why.pdf

Transportation Master Plan and Vision Zero

At the May 26, 2021 Special Council meeting, Council approved the [Transportation Master Plan](#) preferred solution Alternative 3 “Sustainability and Resiliency Focus”.

Included in the Road Safety Strategic Directions paper, there is a road safety recommendation that the City formally adopt Vision Zero when the final TMP is presented to Council. Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.³

A key part of the Vision Zero strategy is speed management. As shown in Figure 1 above, reducing vehicular operating speed leads to a reduction in injury severity and ultimately a reduction in traffic fatalities.

Municipal Authority to Reduce Speed Limits

The province of Ontario passed [Bill 65 - safer school zones act](#) in 2017 to allow municipalities to designate areas by by-law where they can impose speed limits that are lower than 50 km/h. With this new law, municipalities can create neighbourhood area-wide speed limit reductions where only the entrances to the neighbourhoods are signed with speed limit signs.

Without Bill 65, speed limit signage would be required on every street at every intersecting roadway (street specific). This would require a large amount of signage which would create sign clutter in neighbourhoods and a large signage budget (for both initial installation and ongoing operations/maintenance).

Municipal Comparison Review

Staff have completed a municipal scan to determine how other municipalities are introducing Bill 65. The following municipalities have implemented speed limit reductions from 50 km/h to 40 km/h on local streets:

- Wellington County (street specific)
- City of Waterloo (street specific; 2 area-wide neighborhoods)
- Cambridge (area-wide)
- St. Catharines (area-wide)
- Greater Sudbury (area-wide)
- Kitchener (area-wide)
- London (area-wide)
- Hamilton (area-wide)
- Mississauga (area-wide)
- Ottawa (area-wide)

Additionally, Chatham-Kent, Barrie, and Oakville are all exploring speed limit reductions to 40 km/h in school zones or parks only.

The majority of these reductions are applied to local/residential roads with some exceptions for collector roadways (e.g. downtown core). To date, there have been no municipalities contacted that have directly lowered neighborhood area-wide speed limits to 30 km/h from 50 km/h. Some municipalities (e.g. Kitchener) have

³ Vision Zero Network. What is Vision Zero? <https://visionzeronetwork.org/about/what-is-vision-zero/>

outlined a plan to pilot 40 km/h area-wide speed limits with further intentions to potentially lower to 30 km/h at a later date. Due to Covid-19, many of these municipalities have not had the opportunity to do data collection to evaluate the effects of lowering speed limits on operating speeds and collisions. However, Kitchener has reported that when speed limits were lowered using a street specific approach rather than area-wide neighborhood signage there was no significant difference in operating speeds.

The implementation time frame for many of these municipalities depends mainly on the size of the municipality, budget, and staff capacity.

Reducing Speed Limits in Guelph

Based on the strategic directions, evidence, municipal authority, and a municipal scan, it is clear that the City should reduce speed limits in Guelph to achieve Council’s and the community’s road safety goals. City staff reviewed how to implement a reduction and based on this analysis, staff recommend that 48 neighbourhoods, outlined the [online mapping tool](#), would have speed limits lowered area-wide to 40 km/h from 50 km/h. School zones that are currently posted as 30 km/h would remain unchanged as would 40 km/h flashing school zones. In addition to these local area-wide reductions, Table 1 below indicates the collector/arterial roads that would be reduced by 10 km/h from their current posted speed limit. These can also be viewed in the [online mapping tool](#).

Table 1: Collector/arterial streets for speed limit reductions

Street name	Segment	Current speed limit	Proposed new speed limit
Central business district	All streets (excluding Carden and Wilson Streets currently posted at 30 km/h)	50 km/h	40 km/h
Clair Road West	Laird Road to Gordon Street	60 km/h	50 km/h
College Avenue	Edinburgh Road South to Dundas Lane	50 km/h	40 km/h
Eastview Road	Victoria Road North to Summit Ridge Drive	50 km/h	40 km/h
Gordon Street	Maltby Road to Clair Road	70 km/h	60 km/h

Street name	Segment	Current speed limit	Proposed new speed limit
Gordon Street	Clair Road to Hands Drive	60 km/h	50 km/h
Gordon Street	Stone Road to Waterloo Avenue and Wilson Street	50 km/h	40 km/h
Imperial Road North	Willow Road to Speedvale Avenue West	50 km/h	40 km/h
Norfolk Street	Waterloo Avenue and Wilson Street to Norwich Street	50 km/h	40 km/h
Paisley Road	Western City limit to Imperial Road South	60 km/h	50 km/h
Waterloo Avenue	Edinburgh Road South to Gordon Street and Norfolk Street	50 km/h	40 km/h
Watson Parkway North	Couling Crescent (north intersection) to Eastview Road	60 km/h	50 km/h
Watson Road South	Watson Parkway North to York Road	60 km/h	50 km/h
Wellington Street East	86 metres west of McCrae Boulevard to Macdonell Street	50 km/h	40 km/h
Woolwich Street	Norfolk Street to Macdonell Street	50 km/h	40 km/h
Woolwich Street	Marilyn Drive to Speedvale Avenue	50 km/h	40 km/h

The following is a list of collectors/arterials that are not a part of the review, as they are primarily industrial/rural type roadways:

- Dawson Road, north of Speedvale Avenue West
- Laird Road, west of Hanlon Creek Boulevard
- Clair Road West, west of Laird Road
- Maltby Road
- Watson Road South

Staff are recommending arterial/collector speed limit reductions for various reasons. The roadways listed in Table 1 above are roadways where high vulnerable road users are expected (i.e. central business district, University of Guelph, seniors centres and schools) and mix with high vehicle volume roadways, and where the City has grown in recent years, but the speed limits have not been reviewed or changed since they were originally set years ago.

As per the TMP, the average trip in Guelph is 7.6 km. If an average trip is completely on roadways that have a posted speed limit of 60 km/h, by applying a speed limit reduction of 10 km/h the average trip time would increase by 91 seconds. If an average trip is completed on roadways that have a posted speed limit of 50 km/h, by applying a speed limit reduction of 10 km/h the average trip time would be increased by 137 seconds.

Transit and Goods Movement Can Still Thrive with Reduced Speed Limits

An integral part of Guelph's road network is transit and goods movement. These services ensure all citizens of Guelph have access to the City and supports businesses and the needs of our community.

Approximately 8 km (10 percent) of the City's Permissive Truck Route is identified for a speed limit reduction, meaning there is little impact to the primary goods movement routes through Guelph. As a part of the TMP preferred alternative, a goods movement strategy has been identified which could look to address any impact speed limit reductions have on the network.

Guelph Transit's ability to maintain their schedules are impacted when speed limits are reduced. In consultation with Guelph Transit, there are opportunities to adjust traffic signal timing and operation which will reduce some of the impact to increased travel times throughout the network due to lower speed limits. These signal operation changes will be completed prior to speed limit reductions on arterial and collector roads to minimize the impact to Guelph Transit.

Transportation and Transit staff will continue to monitor impacts to ensure schedules are not impacted to the point an additional transit vehicle or route modification is required.

Automated Speed Enforcement (ASE)

Lowering speed limits will help improve road safety by reducing collision severity, but to achieve this goal compliance of these new limits is crucial. To ensure compliance of the new limits, Staff are recommending the implementation of ASE where road safety is of the utmost importance.

ASE is an automated system that uses a camera and speed measurement device to enforce speed limits.⁴ ASE improves safety by increasing compliance of the posted speed limit, altering driver behavior, and increasing public awareness. ASE has been operating in school zones and community safety zones across a number of municipalities in Ontario since Spring 2020. During engagement interviews with Guelph Police Services (GPS), staff heard that GPS anticipates an increase in speeding complaints if the limit were lowered. The Guelph Police Service Traffic Unit consists of one supervisor and 11 full time officers and one part time officer working a 12-hour shift rotation. These officers are responsible for the investigation and reporting on motor vehicle collisions that result in personal injury or property damage in excess of \$2,000. They also enforce the various provincial and criminal statutes in place to protect the public using the city roadways. There is currently no plan on increasing the number of officers in the Traffic Unit. More information about ASE can be found in Attachment 1.

Community Safety Zones

As a part the provincial legislation (Bill 65, Safer School Zones Act, 2017), ASE is only authorized for use in designated community safety zones where the speed limit is below 80 kilometres per hour and in school zones.

Community safety zone signs inform drivers that they are entering a zone that the community has designated as an area where the safety of its children/citizens is paramount.⁵ Across Ontario municipalities reserve the use of community safety zones for roadways near schools, parks, senior citizen zones or collision prone areas, where public safety is of special concern.

There are 53 streets throughout the city that are currently designated as school zones (posted at 30 km/h or flashing 40 km/h). As area-wide speed limit reductions are adopted throughout the city, these streets would be signed as community safety zones in preparation for future ASE. Through the provincial legislation the fines associated with speeding will be doubled within the community safety zone.

Due to provincial regulations ASE is unable to be implemented in flashing 40 km/h school zones. Staff will continue with implementing community safety zones in these areas in case of future regulations change and to enhance road safety in these areas.

The [online mapping tool](#) outlines the existing designated school zones and community safety zones.

Implementation Plan

To implement this strategy, City staff will install reduced speed limit and community safety zone signs starting in Q2 2022 and finishing by Q3 2023. ASE would be implemented starting in Q3 2023 with an initial deployment of two mobile cameras rotating to different roadways every one to two months.

⁴ Automated Speed Enforcement in Ontario. <https://www.aseontario.com/about-ase>

⁵ Ontario Traffic Manual Book 5 Regulatory Signs

Implementation of these speed limit reductions and community safety zone installations would take approximately one to two years to complete. As such, the work will be phased in and neighborhoods would be prioritized based on the following criteria:

- Equity (e.g. areas with high marginalization and no current speed mitigation measures)
- Neighbourhoods that lack existing road safety infrastructure (e.g. sidewalks)
- Neighbourhoods with high pedestrian generators (e.g. schools, senior centres, plazas, etc.)
- Neighbourhoods with high collision history

Similar to red light cameras, staff will work on site selection for ASE deployment and will report the locations back to Council once confirmed.

Speed Limit Reduction Implications to Traffic Calming Policy

When speed limits were lowered to 30 km/h in school zones, the average operating speeds were reduced by 1.2 km/h. Staff anticipate a similar reduction in speed if limits are lowered to 40 km/h using a neighborhood area-wide approach. To see potential improvements in driver behaviour (i.e. compliance with lower speed limits), drivers should be given adequate time to adjust to the new changes. As such, staff do not expect to see a significant decrease in speeds within the first year of limit reductions. There will likely be an increase in the number of streets that are eligible for traffic calming once the speed limit reductions are put into effect. Therefore, staff will be placing all traffic calming requests on hold for one year after speed limits are reduced to account for drivers getting accustomed to the new speed limits.

Post Implementation Monitoring

It is important to measure operating speeds on roadways before and after speed limit reductions are implemented. The change in operating speeds can be used as a performance indicator to measure the effectiveness of speed limit reductions on driver behaviour. Another indicator that should be measured over time are collision trends, particularly severe and fatal injury collisions that occur between pedestrians/cyclists and drivers. Since there is a well-established relationship between speed and injury severity, a decrease in the number of injury-related collisions throughout the city could also be used as a metric of success. However, trends in both operating speeds and collision history will need to be measured multiple times over the course of 5 to 10 years to establish long term effects of speed limit reductions.⁶

Financial Implications

Speed limit reduction signs are funded using existing capital funding through the tax-supported capital project (TF0026) at an estimated cost of \$300,000. Automated speed enforcement would be funded through future operating budgets. Funding in the amount of approximately \$120,000 would be required for each year of operation based upon two mobile cameras being rotated every one to two months. Court Services would require an additional three and a half permanent

⁶ World Health Organization. How to evaluate the programme.
https://www.who.int/roadsafety/projects/manuals/speed_manual/5-How.pdf

positions to process and litigate charges. The cost of the program is anticipated to be offset by violation revenues. Based on preliminary assumptions the program will operate with revenues of approximately \$1 to \$1.5 million. Staff will continue to refine assumptions and projections for inclusion in the 2022 budget process.

Staff are considering a self-funding reserve strategy that sees excess revenues generated from transportation safety initiatives including automated speed enforcement and red light cameras being used to advance safety improvements in road infrastructure.

Consultations

Community engagement

An engagement quiz/survey was available through haveyoursay.guelph.ca between November 9 and November 30 2020. Staff reviewed over 1,200 responses from the community that helped inform the speed limit reduction recommendation.

Based on the responses received, 49% of respondents wanted to see the speed limit lowered. Of those 49% of respondents, 55% would like to see a 10 km/h reduction from 50 km/h to 40 km/h, reserving 30 km/h speed limits for school zones.

More information on community engagement can be found in Attachment 2.

Key stakeholder engagement

In addition to the comprehensive community engagement, the following stakeholders were consulted and provided information, review and insight:

- Transportation Planning
- Operations
- Guelph Transit
- Emergency Services
- Guelph Police Services
- Guelph Chamber of Commerce
- Accessibility Advisory Committee

More information on key stakeholder engagement can be found in Attachment 2.

Strategic Plan Alignment

This project aligns with the directions within the City's 'Navigating our Future' strategic priority by expanding, modernizing and enhancing the transportation network within the City to encourage active transportation and enhance the safety of the transportation network by reducing the amount of severe or fatal collisions.

Attachments

Attachment-1 Automated speed enforcement information

Attachment-2 Community and stakeholder engagement results

Attachment-3 Speed Limit Reductions presentation

Departmental Approval

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