

Region of Waterloo
Transportation Services
Transportation

To: Planning and Works Committee
Meeting Date: November 7, 2023
Report Title: Update on Posted Speed Limits in School Zones

1. Recommendation

That the Regional Municipality of Waterloo approve the permanent lowering of posted speed limits in school zones on regional roads by amending the Region's Traffic and Parking By-law 16-023, as per the changes to Schedule 17, Rates of Speed, outlined in Attachment A in Report TSD-TRP-23-014, dated November 7, 2023.

2. Purpose / Issue:

In 2022, the Region launched a pilot project that involved lowering the speed limits in 31 school zones on Regional roads during specified school hours. One year after the start of the pilot project, observations collected from the field and a review of current policy direction were used to form the basis of an analysis for the next steps. This report summarizes the observations and recommends a series of actions to apply to school zones on Regional roads.

3. Strategic Plan:

The recommendations of this report are aligned with the Region's Strategic Plan in the following key areas:

- Climate Aligned Growth:
 - Foster car-alternative options through complete streets and extended alternative transportation networks.
- Equitable Services and Opportunities:
 - Design equitable regional services that meet local community needs.

4. Report Highlights:

- Following a request by Council to review posted speeds in regional school zones, Staff proposed a pilot project that involved the introduction of lower posted speed limits at 31 schools from 7:00 a.m. to 5:00 p.m., Monday to Friday, September to June. This plan was endorsed by Council in June 2022 and enacted prior to the

start of the school year in September 2022.

- Following the on-street deployment of the new posted speed limit strategy, staff conducted speed surveys to understand the impacts of the changes. Overall, it was observed that the lower speed limits during school hours produced some amount of reduction in average vehicle speeds, but created a higher rate of non-compliance. As a separate subset, the locations with reduced speed limits and Automated Speed Enforcement saw improvements in both average speeds and speed-limit compliance.
- Staff recommend adopting static posted speed limits in all school zones, using the lower speed limit 24 hours per day, 7 days per week, 12 months per year. Moving away from time-of-day restrictions helps to reduce confusion among the driving public, eliminate barriers that minimize the effectiveness of Automated Speed Enforcement, help to build safe and inclusive communities centred around schools at all times (not just during school hours), and encourage more people to walk, roll, and cycle at and near schools – a key Regional Strategic Plan initiative. The cost to convert to static speed limits is relatively minimal (no more than \$20,000).
- At this time, Staff do not recommend further reductions in speed limits at the four school zones with 50 or 60 km/h posted speeds because those sites were generally observed to have the worst compliance issues even at higher posted speed limits. Staff recommend revisiting the opportunity to reduce the posted speed limits at those four school zones to 40 km/h when Automated Speed Enforcement is scheduled for deployment and supportive physical road changes can be implemented.

5. Background:

On January 26, 2022, Regional Council crafted a motion which directed staff to review and consider options for setting appropriate speed limits in all 35 school zones on regional roads that do not currently have speed limits of 40 km/h.

In response to this request, staff brought forward a report to members of the Planning & Works Committee on June 7, 2022 (TES-TRP-22-06) with a series of recommendations for revised speed limits in school zones as a pilot project. That report, including the full set of recommendations and associated rationale has been attached in Attachment B.

Existing Conditions

A short overview of the recommendations, which were enacted in the Region's Traffic & Parking By-law in June 2022 and rolled out on-street prior to the start of the school year in September 2022, is provided in Table 1. Table 1 shows a comparison of regular posted speed limits versus the corresponding posted speed limit during the designated school zone hours, along with the hours, days, and months in which the school zone

designation is enacted.

Table 1: Current School Zone Speed Limits by Time, Day, and Month.

Regular Posted Speed Limit	School Zone Time-of-Day Speed Limit	School Zone Hours	School Zone Days	School Zone Months
40 km/h	N/A	N/A	N/A	N/A
50 km/h	40 km/h	7 a.m. – 5 p.m.	Mon – Fri	Sept – Jun
60 km/h	40 km/h	7 a.m. – 5 p.m.	Mon – Fri	Sept – Jun
70 km/h	50 km/h	7 a.m. – 5 p.m.	Mon – Fri	Sept – Jun
80 km/h	60 km/h	7 a.m. – 5 p.m.	Mon – Fri	Sept – Jun

There are a total of 4 regional school zones that currently have a posted speed limit of 40 km/h at all times. One site has a posted speed of 70 km/h with 50 km/h enacted during the prescribed school zone hours. Three sites have a posted speed limit of 80 km/h with 60 km/h during the prescribed school zone hours. The 27 remaining sites all have a regular posted speed of 50 or 60 km/h with 40 km/h enacted during the prescribed school zone times, days, and months. A series of maps showing the existing school zones along regional roads is provided in Attachment C.

Following the 2022 school zone posted speed limit changes, regional staff conducted speed surveys at most regional school sites to understand the operational realities of the strategy that has been implemented in the field. Some metrics from those speed studies are shown in Table 2.

In Table 3, the same speed survey metrics have been isolated for locations that have been equipped with Automated Speed Enforcement (ASE).

Table 2 shows a comparison of the posted speed, observed average speed, and observed high-end speed during school hours versus outside school hours, along with the number of sites included in the surveys for each school zone configuration. There are a total of 30 sites included in the comparison data in Table 2. The information in Table 3 is presented identically, but is limited to only sites that are equipped with Automated Speed Enforcement, bringing the total number of sites down to 6.

Table 2: Results of Speed Surveys at School Zones

No. of Sites	During School Hours (7 am - 5 pm, Mon - Fri, Sep - Jun)			Outside School Hours (All Other Times)		
	Posted Speed (km/h)	Observed Average Speed (km/h)	Observed High-end Speed (km/h)	Posted Speed (km/h)	Observed Average Speed (km/h)	Observed High-end Speed (km/h)
4	40	50	62	40	58	67
17	40	50	60	50	54	64
6	40	57	69	60	63	77
1	50	59	70	70	66	73
2	60	70	84	80	76	94

Table 3: Results of Speed Surveys at School Zones with Automated Speed Enforcement

No. of Sites	During School Hours (7 am - 5 pm, Mon - Fri, Sep - Jun)			Outside School Hours (All Other Times)		
	Posted Speed (km/h)	Observed Average Speed (km/h)	Observed High-end Speed (km/h)	Posted Speed (km/h)	Observed Average Speed (km/h)	Observed High-end Speed (km/h)
5	40	47	57	50	53	63
1	40	45	54	60	61	68

From the metrics shown in Table 2 and 3, staff were able to draw the following conclusions:

- When considering averages, each of the posted speed limit strategies produced lower observed travel speeds during school hours compared to during non-school hours. However, the improvements are relatively marginal, since the average speed reduces by an average of 4-7 km/h, while the posted speed reduces by 10-20 km/h. Hence, while the speeds are a little bit lower during school hours, overall speed compliance is actually worse.
- Similarly, when looking at high-end speeders, there is an observed reduction in high end speeders during school hours compared to non-school hours; however, speed limit compliance is actually worse during school hours since the high-end speed reduces by 4-10 km/h while the posted speed reduces by 10-20 km/h.
- The worst performing sites, on average, are those with 40 km/h posted speed limits during school hours and 60 km/h posted speed during non-school hours. In those cases, the average speed during school hours was observed to be 57 km/h, or 17 km/h above the posted speed limit.

- Based on the data from the 6 school zones that are equipped with Automated Speed Enforcement, there are clear improvements in both compliance and speed profiles when ASE is present. This is further evidence of the effectiveness of the ASE program and shows some of the challenges of introducing reduced posted speed limits in the absence of any other physical or enforcement improvements.

Speed survey results for each individual school zone are included in Attachment D.

Proposed Modifications to School Zones:

At the conclusion of the variable by Time, Day, and Month speed limit pilot project, staff are recommending the following:

- i. Adopt static speed limits at all regional school zones, enacting the reduced speed limits 24 hours per day, 7 days per week, 12 months per year; and
- ii. At the 4 regional school zones with posted speed limits greater than 40 km/h (i.e. 50 km/h and 60 km/h), maintain the existing reduced speed limits at this time and revisit the potential to lower the speed limit to 40 km/h in parallel with the adoption of physical roadway changes and/or Automated Speed Enforcement at those sites.

There are several rationale behind the recommendation to adopt static speed limits, including the following:

- The data from the speed surveys clearly show there is an opportunity to achieve lower travel speeds with the introduction of lower posted speeds. This potential benefit would expect to be further realized as the Region's Automated Speed Enforcement program expands or, even better, with the introduction of physical changes that would help to induce lower speeds.
- Regional staff receive a lot of inquiries from members of the public who express confusion around the specifics of variable speed limits in regional school zones. This confusion could be alleviated by adopting static speed limits.
- The signage requirements for variable speed limits presents some major challenges to the operation of Automated Speed Enforcement such that the enforcement operates with a loss of efficiency where there are variable speed limits. Enforcement issues would be mitigated through the adoption of static speed limits.
- From a community-building perspective, it should be a goal to make school zones safer at all times to facilitate and encourage more members of the community to access schools and their yards outside of regular school hours (e.g. after-hour performing arts events during the school year, or children who wish to use a soccer field or baseball diamond during summer months). Lower speed limits at all times would help in this regard.

- Regional staff receive a lot of positive feedback from members of the local community where lower speeds in school zones have been achieved.
- Removing the variable speed limits might also help with some of the observed speed compliance issues during school hours, with expectations for drivers being more clearly laid out and some confusion eliminated.
- Lower speed limits at all times can help to encourage more active transportation at and around the school since the vulnerable road users in the area are treated to safer and more hospitable roadways. The goal for increased active transportation is a significant part of the Region's 2023-2027 Strategic Plan.

Staff do not recommend further reductions to the 4 sites with school zone speed limits of 50 and 60 km/h at this time. This is because, as seen in the recent speed surveys, there are already significant compliance issues at the sites with higher speed limits and staff anticipate compliance issues would only worsen with the adoption of lower speed limits in the absence of physical roadway changes, or effective enforcement that would help induce lower travel speeds.

As part of the package of recommendations brought forward in this report by Staff, it is proposed to enact a static posted speed limit of 40 km/h at the school zone along Regional Road 8 (King Street) from 51 m South of Pine Street to 145 m South of Agnes Street which was previously outside of the scope of changes enacted in June 2022. This proposed by-law change would bring the posted speed limits at this King Street location in line with similar school zones in the Region.

6. Communication and Engagement with Area Municipalities and the Public

Area Municipalities:

Owing to the fact that some of the area municipalities have been awaiting final recommendations at regional school zones, Region staff have shared the recommendations and rationale contained in this report with counterparts from all area municipalities. This information may be helpful for the area municipalities who are currently developing their own strategy for school zones within their respective municipalities.

Public:

Nil.

7. Financial Implications:

The cost to convert to static posted speed limits at 31 of the 35 schools along regional roads would be minimal, involving only the replacement of the variable speed limit signs. The cost to replace these signs would be approximately \$20,000. The Region's

approved 2023-2032 Transportation Capital Program includes a budget of \$125,000 in 2023 for Pedestrian and Cycling Countermeasures (Project #09646) to be funded from the Transportation Capital Reserve.

8. Conclusion / Next Steps:

Based on the findings and rationale discussed above, staff recommend adopting static speed limits in regional school zones. If endorsed by Council, staff will work to complete the signage changes in the field as soon as possible after the Traffic & Parking By-law is formally amended. Staff will also investigate further reductions to the 4 remaining schools with 50 and 60 km/h speed limits when those sites become due for Automated Speed Enforcement deployment, or if there are road capital projects planned for those sites that might help to induce lower speeds.

9. Attachments:

Attachment A: Full Set of Proposed Amendments to Traffic & Parking By-Law 16-023, Schedule 17, Rates of Speed.

Attachment B: TES-TRP-22-06: Posted Speed Limits in School Zones (June 2022).

Attachment C: Maps of Regional School Zones by Municipality.

Attachment D: Results of 2023 School Zone Speed Survey Analysis.

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