

Infrastructure Improvement Requests and Supporting Data to Improve School Zone Safety around Arden Elementary

1. Speed Humps in School Zone

The Arden Green Team is requesting the installation of at least two speed humps in Arden Elementary's school zone on Lake Trail Road placed at most 150 metres apart.

- The American Journal of Public Health [found](#) that installing a speed hump is “associated with a 53%-60% reduction in injury or death in neighborhood children struck by a vehicle... the most severe injuries are often related to vehicles exceeding the speed limit, installation of speed bumps helps to ensure that drivers abide by the posted speeds.”
- “Humps placed 150 metres apart can ensure 85th percentile speeds of 40 to 48 km/h”, and even lower speeds the closer together they are spaced.
[BC Community Road Safety Toolkit](#) p.9

2. Lower Speed Limit between School Zones

We are requesting that the speed limit on Lake Trail Road between the Lake Trail Community School and Arden Elementary school zones be reduced from 50km/h to 30km/h.

- The reduction in fatal and injury collisions even from 40km/h to 30km/h is significant. Regarding the impact of lower speed limits in school zones, the Canadian Journal of Civil Engineering (2018) [shares](#) that “fatal/injury collisions were significantly reduced by 45.3% and injuries to vulnerable road users were reduced by 55.3%. In fact, for every 1 km/h reduction in mean speed, fatal/injury crashes were reduced by about 4%...”
- In 2020, the WHO [called for](#) all urban streets worldwide to be posted at 30 km/hr to help improve collision outcomes.
- A [study in the UK](#) found that children cannot judge the speed of cars traveling more than 30km/h, suggesting that children make risky crossing judgements at higher speeds.

3. School Zone Improvements

We are requesting two improvements to Arden's school zone:

a) that it be extended on Lake Trail Road west of the hill just east of Camco Road for eastbound traffic and just east of Powerhouse Road for westbound traffic.

b) for “SCHOOL” pavement markings to be painted at each of the extended boundaries of the school zone.

- The placement of Arden's current school zone sign in the middle of the hill eastbound on Lake Trail Road creates an unnecessary challenge for drivers to slow down from 50km/h to 30km/h while the gravity from the hill works against them. Considering the significant risk for pedestrians, and particularly children, walking or cycling next to eastbound traffic on the south side of Lake Trail Road and the correlation between reduction in speed and reduction in fatal/injury collisions cited above, Arden families need Arden's school zone to be extended to the top of the hill on Lake Trail Road in order to mitigate risk of collision, reduce severity of collision injuries, and ensure safety of our students, families, and staff.
- The extension just east of Powerhouse Road for westbound traffic on Lake Trail Road would ensure that eastbound traffic has slowed to 30km/h *before* vehicles encounter children walking out onto the north side shoulder of Lake Trail Road from Powerhouse Road, rather than after, again reducing the risk of fatal/injury collisions.
- "Simple visual gateways such as signs and pavement markings have been found to reduce speeds by up to 3%, while more elaborate combination of treatment with physical features have been found to reduce speeds by up to 27%."
[BC Community Road Safety Toolkit](#) (2018, p. 11).

4. Speed Reader Board

We are requesting a permanent flashing speed reader board be installed on the school zone sign for westbound traffic just east of Powerhouse Road.

- "Speed reader boards are best used in areas that transition to low speeds, and around schools, bikeways, parks, or work zones. Speed reader boards can also be used to help address excessive speeding at problem locations. Periodic police speeding enforcement should be used to complement this measure."
[BC Community Road Safety Toolkit](#) (2018, p. 10).
- "For speed reader boards used in school zones, a Canadian study by Hildebrand and his colleagues showed a sustained and statistically significant reduction in the average speeds ranging from 5 to 14 km/h."
[BC Community Road Safety Toolkit](#) (2018, p. 10).

5. Raised Crosswalks

We are requesting for raised crosswalks to be included in the plan for the proposed pathway on Lake Trail Road at the crossings across Powerhouse Road and Webb Road where they would intersect with the pathway on Lake Trail Road.

- "Elementary children (grades kindergarten to 3) represent the age group most at risk, and [more than half](#) of all pedestrian deaths and injuries to children ages 5 to 9 involve crossing or entering residential streets" (Federal Highway Administration).
- Moreover, raised crosswalks are a recommended improvement to crosswalks from [one of the largest studies done](#) on marked crosswalks, as marked crosswalks themselves were not found to reduce pedestrian collision rates on their own.