



THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council

File No.: 5460-06

From: City Manager (CAO)

Date: June 14, 2023

Subject: Arden Elementary School Green Team – Traffic Calming Requests

PURPOSE:

The purpose of this report is to review and make recommendations on the traffic calming requests made by the Arden Elementary Green Team.

BACKGROUND:

At the November 21, 2022, Regular Council meeting, the Arden Green Team appeared as a delegation to Council to advocate for changes to active transportation infrastructure on Lake Trail Road adjacent to Arden Elementary, summarized in Attachment 3.

At the January 11, 2023, Council meeting, Council resolved:

WHEREAS school active travel planning has many benefits for students, the community, and the environment, and

WHEREAS the Arden Green Team wishes to develop safe active travel opportunities for Arden Elementary students and families,

THEREFORE BE IT RESOLVED THAT Council direct staff to prepare a report that outlines the options, costs and feasibility for the safety improvements requested by the Arden Green Team Delegation on Nov 21, 2022,

AND THAT Council direct staff to develop a Safe and Active Schools Program for all schools in Courtenay, in conjunction with the School District that will identify traffic safety issues on fronting and adjacent streets to schools, recommend short- and long-term mitigation measures, and create a capital program, including an implementation plan, for school traffic safety improvements across the City.

DISCUSSION:

In response to direction by Council, Public Works Services conducted a review of road characteristics on Lake Trail Road from the City boundary east of Arden Elementary and Salisbury Road to Edgett Road. A map of the area is included in Attachment 1.

Location Description

The area along Lake Trail Road from Salisbury Road to Edgett Road is generally comprised of rural properties with single family dwellings in a low density environment with parks and woodlots.

West of Arden Road, properties are mostly located within Regional District boundaries. Arden Elementary is located at the west end of Lake Trail Road, within City of Courtenay boundaries. The Parks Master Plan proposes a trail on Lake Trail Road from Arden Road to Comox Logging Road.

The study area consists of 7 intersections (listed west to east):

- Salisbury Road (t-intersection)
- Webb Road (t-intersection with pedestrian crossing)
- Powerhouse Road (t-intersection)
- Timberlane Road (t-intersection)
- Arden Road (4-leg intersection with stops on Arden Road, with pedestrian crossing)
- Edgett Road (t-intersection)

While one religious and one educational institution are located directly across from Arden Elementary School, only the religious institution and Arden Elementary School have an entrance/exit point onto Lake Trail Road. In addition to generating traffic, these properties imply the presence of vulnerable road users (pedestrians).

Parking regulations on along Lake Trail Road from Salisbury Road to Edgett Road are generally as follows:

- Parking is permitted where the shoulder is wide enough.

Existing Conditions

In 2023, Lake Trail Road from Salisbury Road to Edgett Road is characterized by the following conditions:

- Road Classification: arterial road with two lanes and bi-directional traffic. The pavement width is approximately 9.5m wide including two 1.5m wide shoulders.
- Cycling Network Plan (CNP) Implications: Lake Trail Road currently has painted shoulder bike lanes from Willemar Avenue to Arden Road. In the CNP's Interim Plan those painted shoulder bike lanes will be extended to the City boundary to connect with the Comox Valley Regional District's (CVRD's) Active Transportation Network Plan (ATNP). Ultimately the CNP proposes a multi-use path on one side of Lake Trail Road between Lake Trail Community School and Arden Elementary.
- Transit Route: the #7 bus offers limited service on Lake Trail Road between Willmar Avenue and Arden Road three times on weekdays and twice on Saturdays
- Traffic Volume: the average daily two-way traffic volume is not currently collected
- Posted Speed Limit: currently 50 km/h and 30 km/h for the school zone from 8am to 8pm
- Alternate use: designated truck route, no loading zones in the immediate area
- Pedestrian Access: sidewalks are generally not available with the exception of three sections, installed in various locations to legacy rural standards.

Collision Data

Collision data is tracked by ICBC. A review of the collision data within the study area was undertaken for the five-years ending Jan 1, 2022. The results of the review are summarized in Table 1, below. As shown, there were three vehicle collisions recorded by ICBC between 2017 and 2021.

Table 1: 2017-2021 Collision Summary: Lake Trail Road between Salisbury Road and Edgett Road

Year	Vehicle Collisions
2017	2
2018	1
2019	0
2020	0
2021	0

Review Matrix

Traffic Operations Staff conducted a detailed review on Lake Trail Road between Salisbury Road and Edgett Road. This review included all aspects of the road's operation. The results are summarized below. A map of the traffic control devices for the study area is included in Attachment 2.

A. Signage

The signage within the study area was generally found to be in good condition and was visible to road users. The existing street name signs are also visible. The current signage conforms to Transportation Association of Canada standards with regard to location and placement with the exception of non-compliant crosswalk signs within the school zone areas.

B. Pavement markings

The pavement markings within the study area were in good condition and will be refreshed as part of the Public Works Services annual painting program, as required.

C. Sightlines

Sightlines on Lake Trail Road at intersections with side streets within the study area were reviewed and there were no impediments identified for road users, with the exception of the intersection of Lake Trail Road and Salisbury Road where the crest of the hill on Lake Trail Road limits the sightline to the west from Salisbury Road.

D. Sidewalks

Sidewalks along Lake Trail Road within the study area were inspected and found to be in various states of condition from excellent to very poor and generally conformed to the City's specifications.

While there are no sidewalks on either side of Lake Trail Road in front of Arden Elementary, sidewalks are installed in the following locations along Lake Trail Road between Salisbury Road and Edgett Road:

- Adjacent to Lake Trail Community School, on the north side of Lake Trail Road in excellent to good condition.
- Approximately 30m west of Edgett Road, on the south side of Lake Trail Road in very poor condition.

- Approximately 85m between 2140 and 2160 Lake Trail Road, on the south side of Lake Trail Road in excellent to good condition.

E. Street Lighting

There is limited street lighting on Lake Trail Road from Salisbury Road to Edgett Road. Existing street lighting is installed sporadically along the corridor on BC Hydro poles.

F. Parking Regulations

Parking is permitted on Lake Trail Road where the shoulder is wide enough to accommodate a parked vehicle. No changes to the existing parking regulations are recommended at this time.

G. Traffic Control Devices

Traffic control devices are marked on the map included in Appendix A. All traffic control devices meet current Transportation Association of Canada standards, with the exception of non-compliant crosswalk signs within the school zone areas.

H. Speed and Volume Data

Speed and volume data were collected in the study area between April 17 and April 30, 2023. Data showed the overall 85th percentile speed of vehicles on Lake Trail Road was 54 km/h. Inside of school zone hours the 85th percentile speed was 44 km/h.

In comparison, data collected between 2019 and 2022 showed the 85th percentile speed of vehicles on Lake Trail Road ranged from 55 km/h to 60 km/h, depending on when the data was taken. This data is provided below in Table 2.

Additionally, the daily traffic volume data in the study area ranged from approximately 1146 - 1726 vehicles per day, depending on when the data was taken for an average of 397 vehicles per day.

Table 2: 2019-2023 85th Percentile Speed of Vehicles Summary: Lake Trail Road between Salisbury Road and Edgett Road

Year	Dates	85 th Percentile Speed Overall	85 th Percentile Speed During School Zone Hours	85 th Percentile Speed Outside School Zone Hours
2019	June 3 - July 8	57 km/h	47	58
	Aug 31 - Dec 13	56 km/h	46	59
2020	March 11 - April 8	60 km/h	COVID	COVID
	Sept 9 - Dec 21	54 km/h	45	59
2021	March 23 - July 6	57 km/h	47	59
	Sept 2 - Oct 4	57 km/h	45	60
2022	Sept 12 - Oct 19	55 km/h	44	59
2023	April 12– May 3	54 km/h	44	58

Feasibility of Safety Improvements: Arden Green Team Delegation

The Arden Green Team is a group of parents and educators planning for increased safe active school travel for Arden Elementary School's students and families. The group was founded after receiving a grant from the BC Healthy Communities Active School Travel Pilot Program.

The goal of the pilot is to support more students to walk, bike, and scoot to and from school. After receiving the grant, the Arden Green Team conducted a family survey, and a neighbourhood walkabout safety audit of the streets surrounding Arden Elementary School.

Based on their findings, at the November 21, 2022, Council meeting the Arden Green Team outlined a number of requests for modifications to active transportation infrastructure around Arden Elementary School.

The Green Team requested speed humps, a reduced speed limit, modifications to signs and pavement markings, permanently installed speed reader boards, and raised crosswalks, on Lake Trail Road.

1. Speed Humps

While speed humps can offer some reduction in operating speeds, the Transportation Association of Canada (TAC) does not recommend them for arterial roads such as Lake Trail Road. Speed humps delay emergency vehicle response times for as much as 15 seconds per installation. There are also negative effects for snow plowing and snow removal, as plow operators must manage the blade carefully to avoid damaging the speed hump surface. Speed humps also increase traffic noise levels due to braking and accelerating, and cause an increase in gas consumption and emission levels.

Lake Trail Road is a 50 km/h road outside of school zone hours so speed humps would need to be built to accommodate traffic travelling 50 km/h, and would not slow vehicles down to the reduced speed limits applicable on school days and times.

In addition, speed humps have a crash reduction factor (CRF) of -28% for vehicle/bicycle crashes. As such, streets with speed humps see a 28% increase in incidents between vehicles and bicycles. Lake Trail Road is a designated cycling route in the current Cycling Network Plan, so speed humps would not be recommended.

2. Reduced Speed Limit

The B.C. Community Road Safety Toolkit discusses the success of reduced speed limits on residential streets, but not on arterial roads. TAC discourages reduced speed limit school zones on arterial roads entirely, and would therefore recommend against the existing 30 km/h school zone adjacent to Arden Elementary. TAC explains that school zones should be avoided on arterial roads because they can appear to motorists as contradicting the roadway function, and hence may be disrespected.

Although the existing 30 km/h school zone speed limit on Lake Trail Road would not be recommended by TAC, it has been in place for many years and staff do not recommend removing it at this time.

3. Modifications to School Zone Signs and Pavement Markings

The speed limit of the roadway dictates the location of the required signs and pavement markings for a school zone. The speed limit is used to determine the required perception and reaction time of the school areas, as well as the additional braking distance required to slow a vehicle down. The distance travelled

during perception and reaction time plus the required braking distance from 50 km/h to 30 km/h is approximately 65 metres. In order to meet this criteria, the westbound school zone sign can be moved further west by roughly 15 metres.

To supplement the existing school zone signs, staff suggest installing an advance notice sign for the westbound direction. Additionally, transverse markings can be added. “Advanced Yield to Pedestrians” lines can be installed at the pedestrian crossing in the school zone. “Advance Yield to Pedestrians” lines are used in advance of marked pedestrian crossings to discourage the approaching vehicle from stopping too close to the crossing. Advance yield markings can also be used to increase awareness that the approaching vehicle must yield to those in the crossing. Finally, the word “SCHOOL” could be added to the asphalt just inside the school zone for traffic travelling in each direction.

4. Speed Reader Boards

A speed reader board is an interactive sign that detects and electronically displays the speed of approaching vehicles. Speed reader boards enhance compliance by drawing drivers’ attention to their speed and can reduce operating speeds between 3 and 14 km/h. Speed reader boards are most successful shortly following installation but that effectiveness decreases after motorists pass the board. Studies have also shown that over time drivers may become immune to the signs. For these reasons, staff recommends installing the speed reader boards for 3 month periods, with a minimum of 1 month between installations.

5. Raised Crosswalks

The purpose of raised pedestrian crossings is to slow motor vehicles and to improve the visibility of pedestrians. They are not recommended for use on arterial roads for the same reasons that speed humps are not recommended.

Conclusion

A result of this review, action will be taken to address the requests that are both feasible and determined to be the most successful for addressing the concerns identified by the Arden Green Team. This includes:

- Pedestrian crosswalks and centre lines be refreshed as required – annual program.
- Relocate the westbound school zone sign by 65 metres to match the required braking distance from 50 km/h to 30 km/h – complete.
- Update the crosswalk signs within the school zone areas to Transportation Association of Canada standards – complete.
- Increase the frequency of speed reader board installations for 3 month periods, with a minimum of 1 month between installations – pending approval.
- Install transverse markings “Advanced Yield to Pedestrians” lines at the pedestrian crossing in the school zone with the word “SCHOOL” added to the asphalt just inside the school zone for traffic travelling in each direction and refresh as required – pending approval.

In addition to the measures above, the staff will develop a Safe and Active Schools Program for all schools in Courtenay, in conjunction with the School District that will identify traffic safety issues on fronting and adjacent streets to schools, recommend short- and long-term mitigation measures, and create a capital program, including an implementation plan, for school traffic safety improvements across the City.

POLICY ANALYSIS:

Traffic calming policy developments are proposed to include a logical framework that addresses which measures are considered acceptable and when they are applicable for installation on City streets.

The Arden Local Area Plan (Arden LAP), which is recognized in the City’s OCP, commits the City to working with School District 71, the school principal, and Parent Advisory Committees, to designate safe walking/cycling routes to Arden Elementary, and to address issues related to student drop-off/pick-up.

FINANCIAL IMPLICATIONS:

There are no financial implications associated with this report. Additional information on the financial implications of implementing a Safe and Active Schools Program for all schools in Courtenay will be included in the annual budget cycle following the successful execution of a contract with a qualified external consultant.

ADMINISTRATIVE IMPLICATIONS:

The addition or adjustment of traffic control devices are part of Public Works Services core duties. A consultant will need to be engaged in order to develop a Safe and Active Schools Program for all schools in Courtenay. Staff time to forward this work is included in Public Works Services work plan for 2023.

Grants from external parties will be continually pursued as they are available, which will require staff time for administration and reporting. Further staff capacity will be required to engage effectively with consultants, various members of the community and School District 71 for the Safe and Active Schools Program and speed reduction initiatives with speed reader boards.

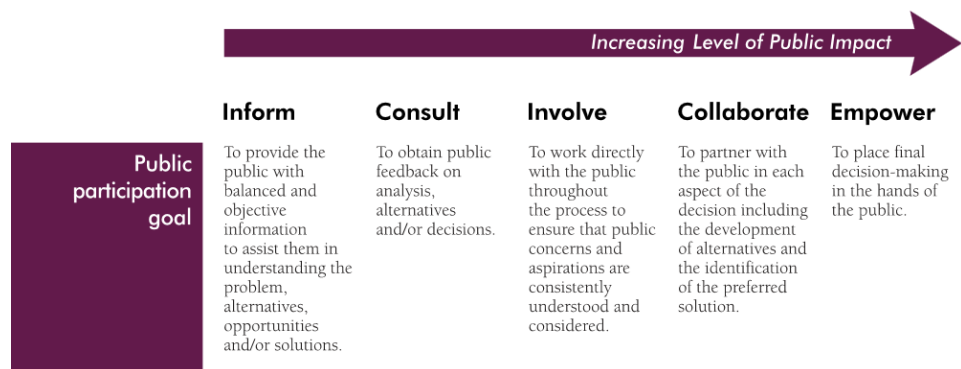
STRATEGIC PRIORITIES REFERENCE:

This initiative addresses the following strategic priorities:

- Streets and Transportation - Develop traffic calming plans, related policies, and specific implementation when and where, speed limits, school zones, cycling education/awareness
- Streets and Transportation - Implementation of traffic calming plans
- Streets and Transportation - Update cycling network plan and implementation strategy

PUBLIC ENGAGEMENT:

Staff would inform the public based on the IAP2 Spectrum of Public Participation:



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OPTIONS:

1. THAT Council direct staff to install the recommended signs, pavement markings, and speed reader boards on Lake Trail Road adjacent to Arden Elementary.
2. THAT Council provide alternate direction to staff.
3. THAT Council receives this report for information only.

ATTACHMENTS:

1. Area map of Lake Trail Road, from Willemar Avenue to City boundary
2. Map of traffic control devices on Lake Trail Road, from Willemar Avenut to City boundary
3. Arden Green Team delection handout

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