



MEMORANDUM

To: Mayor and Members of Council

From: Loy Cheah, Acting Director, Engineering Department

Prepared by: David Porretta, Acting Senior Manager, Transportation

Date: July 8, 2021

Re: Copper Creek Drive Traffic Calming Project Update (Ward 7)

RECOMMENDATION:

1. That the information memorandum entitled, “Copper Creek Drive Traffic Calming Project Update (Ward 7)” be received; and
2. That the Copper Creek Traffic Calming Project construction proceed to completion as scheduled; and
3. That staff monitor the performance and effectiveness following project completion to ensure satisfactory mitigation of traffic speeds and improved opportunities for safe pedestrian crossings; and
4. That staff implement intersection traffic control measures, such as all-way stops and traffic signals, subject to meeting Provincial warrant criteria prescribed by the Ministry of Transportation of Ontario; and further
5. That staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

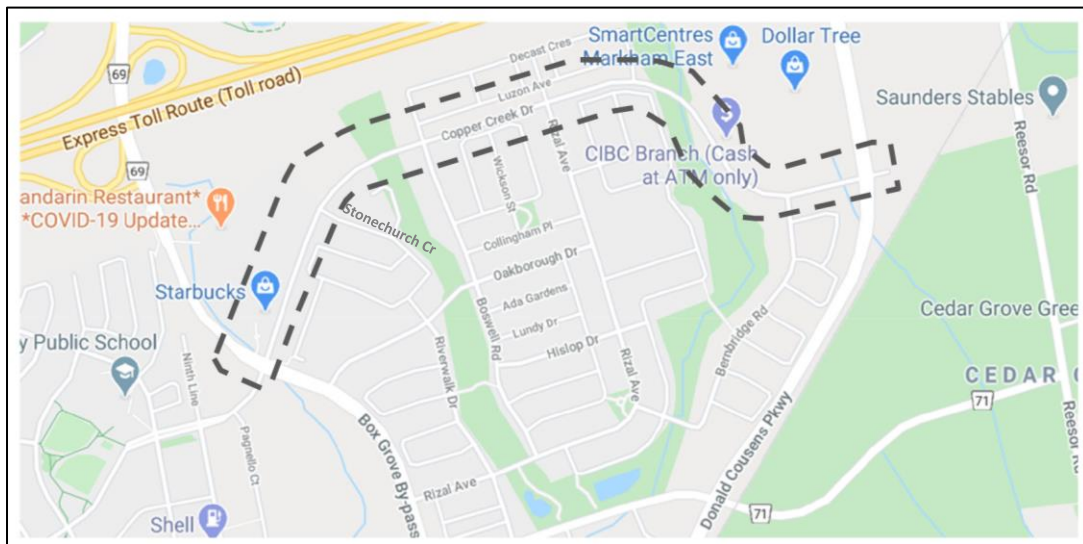
This memorandum provides Council with an update regarding the current progress of the 2021 Copper Creek Drive Traffic Calming project. Specifically, the scope of the project includes a “road diet” and the implementation of a Pedestrian Cross-over (PXO).

BACKGROUND:

Copper Creek Drive roadway characteristics

Designated as a major collector road, Copper Creek Drive is a two-way, four-lane roadway, with bicycle lanes. Copper Creek Drive extends from Box Grove By-pass to Donald Cousens Parkway. The study area for this project runs the full extent (approximately 1.9 km), as shown in Figure 1.

Figure 1: Project Limits



Copper Creek Drive has a posted speed limit of 50 km/h from Box Grove By-pass to Bernbridge Road and 40 km/h between Bernbridge Road and Donald Cousens Parkway. Average daily traffic volume is approximately 6,000 – 8,000 vehicles per day.

Vehicle speeding and lack of pedestrian crossing opportunities on Copper Creek Drive

Over the past several years, local area residents have routinely expressed concerns about excessive vehicle speeds along Copper Creek Drive. City staff confirmed excessive speeding is occurring; operating speed measurements along this corridor varied between 60 km/h – 70 km/h. Speed mitigation measures, such as increased enforcement, implementation of radar speed display boards, and encouraged use of the Road Watch program, did not yield favourable results.

Furthermore, Copper Creek Drive between Box Grove Bypass and Bernbridge Road is a roughly 1.9 km stretch where no controlled pedestrian crossing opportunities exist. Several York Region Transit services operate along Copper Creek Drive, and retail and commercial activities are on the north side of Copper Creek Drive while most residents live on the south side. While these pedestrian traffic generators exist along Copper Creek Drive, the current volumes of pedestrian crossing are still low.

All-way stop controls are not currently warranted throughout the Copper Creek Drive corridor

Over the past several years, staff have received requests for all-way stop controls along the Copper Creek corridor. An all-way stop control may be considered at an intersection where the minimum Provincial warrant criteria are satisfied, as outlined by the Ministry of Transportation of Ontario (MTO). The warrant considers both the total vehicular volume and the volume distribution at the intersecting roadways during the busiest hour of the day. City staff have conducted an all-way stop warrant analysis at three intersections along the Copper Creek Drive corridor, with results summarized in Table 1.

Table 1: Copper Creek Drive – All-way Stop Intersection Warrant Results

Study Year	Intersection	CRITERIA #1 Peak Hour Traffic (All approaches)			CRITERIA #2 % of Traffic on Minor street approach			All-way Stop Warranted?
		Minimum Criteria	Recorded Value	Criteria Met?	Minimum Criteria	Recorded Value	Criteria Met?	
2016	Copper Creek Dr. @ Stonechurch Cres.	>= 350	594	YES	> = 35%	14%	NO	NO
2020	Copper Creek Dr. @ Boswell Rd. / Decast Cres.	>= 350	395	YES	>= 35%	10%	NO	NO
2019	Copper Creek Dr. @ Rizal Ave. / Villa Ada Dr.	>= 350	588	YES	>= 35%	13%	NO	NO

Study results have concluded that the minimum justification criteria have not been satisfied for all three of the intersections. Specifically, traffic volume approaching from the minor streets (Criteria #2) constitutes only 10% - 14% of overall intersection volume (at least 35% is required). Therefore, all-way stop controls at these locations are not being recommended.

An unwarranted all-way stop can create a higher risk and a less safe condition for all road users

The intent of all-way stops is to regulate right-of-way at two intersecting roads of similar traffic volume; they should not be used as a speed control measure or where the intent is to facilitate pedestrian crossings. Implementation of an unwarranted all-way stop, particularly on a multi-lane roadway with vehicle speeds in excess of 60 km/h, encourages stop sign running behaviour, thereby increasing the risk of angle collisions with other vehicles, cyclists and pedestrians. Should a collision occur at an intersection where an unwarranted all-way stop is provided, it can increase the City's liability risk.

DISCUSSION:

Staff recommended a road diet and PXO to improve road safety on Copper Creek Drive

Based on the characteristics of the corridor, staff identified Copper Creek Drive as a candidate for implementation of a road diet to reduce vehicle speeds and create an environment that is safer and more hospitable to pedestrians and cyclists. Staff consulted with and received endorsement from the Ward 7 Councillor before proceeding with the project including obtaining budget approvals. Detailed design was completed in 2020 and construction is currently underway.

Further project details and illustrations can be viewed in the presentation appended to this memo (see Attachment "A").

A road diet is a common traffic calming technique with several benefits

As defined in the project scope, a road diet is a form of traffic calming involving reconfiguring the existing 4-lane cross-section (2 lanes per direction) into 3 lanes (one travel lane per direction, including a centre left-turn lane). Also, the existing bicycle lanes will be enhanced to provide greater separation from the adjacent travel lanes, thereby increasing cyclist safety and comfort.

A road diet provides several benefits including:

- Reducing the number of vehicular travel lanes to provide for improved pedestrian crossing opportunities,
- Narrowing the lane widths to mitigate speeding along the corridor,
- Allowing left-turning vehicles to make their move from a dedicated lane rather than from a through traffic lane, thus improving traffic safety, and
- Providing a buffer from the travel lane for the existing on-street bike lanes.

A PXO provides a controlled and safe pedestrian crossing opportunity

Also included in the project scope was the provision of a PXO on Copper Creek Drive, located 120 metres west of Stonechurch Crescent. This location experiences higher pedestrian crossing volumes, generated by the adjacent Box Grove Shopping Centre and nearby York Region Transit stops. The PXO is a pedestrian activated pedestrian crossing; upon activation, flashing beacons require vehicles to stop to allow safe passage for pedestrians to cross the street.

The project is currently underway and is anticipated to be complete by July 2021

The Copper Creek Drive road diet project is currently underway. Civil work, consisting of minor concrete works such as sidewalk ramps, curb modifications, have already been completed. Road resurfacing and pavement marking applications for the new road configuration, including the PXO work, is to be completed by early July, weather permitting.

Staff will monitor performance of the corridor following project completion

Once the project is complete, staff will monitor and evaluate operations of the corridor to determine the effectiveness and performance of the new road configuration and PXO, starting in Fall 2021 to Spring 2022. This timeframe is subject to COVID-19 restrictions and their associated impacts on traffic patterns and vehicle speeds. As such, monitoring and evaluation may take longer.

Measurements of effectiveness and performance include a satisfactory reduction in vehicle speeds, thereby creating additional opportunities for pedestrian crossings and safer traffic operations overall.

Additional PXOs and traffic control measures may be warranted following project completion

Under the new road configuration, traffic, cycling and pedestrian (including transit passengers) patterns are anticipated to change. As these travel patterns stabilize, staff will re-evaluate the aforementioned intersections to determine if additional PXOs, all-way stops or other intersection control measures are warranted.

ATTACHMENTS:

Attachment “A” – Copper Creek Drive Reconfiguration Project Update (*Presentation*)

