The Corporation of the City of Courtenay

Staff Report

To: Council **File No.:** 5420-02

From: Director of Operational Services **Date:** October 1, 2025

Subject: Cliffe Avenue and 5th Street Intersection Review

PURPOSE:

The purpose of this report is to present Council with the results of an intersection review at Cliffe Avenue and 5th Street and to seek supportive direction for improvements for increased pedestrian movements and improved road safety.

BACKGROUND:

Operational Services, though Urban Systems undertook an intersection review at 5th Street and Cliffe Avenue in response to the 2023-2026 Strategic Priorities as set by Council; Streets and Transportation:

> *"Prioritizing walking, wheeling, cycling, and transit modes of transportation – and integrating them with land use and urban form – are the greatest steps Courtenay can take to supporting mobility in the community and reducing the amount of energy used in the transportation system, the greatest source of Courtenay's GHG emissions."*

This intersection is and will remain a key intersection within the City of Courtenay's overall transportation network. It is directly adjacent to Downtown Courtenay and facilitates significant daily travel demand between South Courtenay, Downtown Courtenay, and East Courtenay via the 5th Street Bridge.

The Cliffe Avenue south leg and 5th Street east leg are designated as Arterial – Major corridors. Average daily traffic (ADT) volumes are approximately 15,000 vehicles per day (vpd) for Cliffe Avenue and 22,000 vpd for 5th Street. The high-volume northbound right-turn and westbound left-turn movements are supported by dedicated turn lanes and signal phases. Traffic volumes are more modest on the Cliffe Avenue north leg and 5th Street west leg, both designated as Arterial – Minor streets. 5th Street west of Cliffe Avenue is the main street for Downtown Courtenay, with wide sidewalks and angled on-street parking.

The intersection includes pedestrian crossings on the south, west, and north legs. The south leg crossing includes two stages due to the channelized northbound right-turn lane and dedicated signal phase. Pedestrian crossing is not facilitated on the intersection's east leg (5th Street).

DISCUSSION:

The City of Courtenay is committed to making its streets safe for all users, with a strong focus on pedestrian and active transportation safety. Encouraging active transportation aligns with our strategic priorities for healthy living, sustainability, and investment in multi-modal infrastructure.

The above principles guided the intersection studies objectives as defined below:

- *Support more efficient pedestrian crossing, including reduced crossing time, less dwell time, and more crossing opportunities;*
- *Support safer pedestrian crossing movements;*
- *Identify any broader benefits realized by pedestrian crossing improvements; and*
- *Mitigate adverse impacts created by pedestrian crossing improvements, including traffic delay, transit services, and emergency response services, capital costs associated with signal or civil infrastructure, and other impacts.*

The following are pedestrian crossing enhancement opportunities. Each is described below and is the basis for the technical study contained in the following sections.

Option 1. Pedestrian Scramble

A pedestrian scramble involves a dedicated signal phase that temporarily stops all traffic (vehicles, cyclists) and allows pedestrians to cross in all directions. A pedestrian scramble is typically most applicable in locations with high pedestrian volumes, particularly with demand for two-stage /diagonal crossing, and where vehicle traffic volumes are low or of reduced importance relative to pedestrian accommodation.

Pedestrian scrambles are uncommon. Examples on Vancouver Island include the Government Street / Wharf Street intersection in Victoria and a previously trialled scramble at the Canada Avenue/Ingram Street intersection in Duncan.

Option 2. Leading Pedestrian Interval (LPI)

A leading pedestrian interval (LPI) is created through signal timing that permits a pedestrian to begin crossing before green time is granted to conflicting vehicle turn movements, allowing pedestrians to enter the crosswalk and become more visible to motorists. It is assumed this would be accommodated by audible signal supports to aid those with vision loss. A leading interval of 3-7 seconds in advance of vehicle movements is most commonly pursued.

Option 3. No Right-Turn-on-Red (RTOR)

Turning right on a red signal after stopping and yielding is currently permitted along all four legs of the intersection. Studies have shown significant reductions in accidents with vulnerable road users (e.g., people walking and cycling) when RTOR has been prohibited. This allows pedestrians to cross without conflict with right-turning vehicles.

Option 4. East Leg Crossing

A fourth crossing opportunity may be added on the intersection's east leg (5th Street). This would allow pedestrians to cross directly between the northeast (Sid Williams Theatre) and southeast (Cliffe & 5th Park) corners in a single crossing, while introducing conflict and delay for the dominant vehicle turn movements through the intersection (northbound right-turn, westbound left-turn). It is anticipated that this would be facilitated via an expanded pedestrian refuge island on the southeast corner, while still allowing for uninterrupted channelized northbound right-turn movements.

Option 5. Northbound Right-Turn Channel Removal

The northbound right-turn channel could be removed to eliminate one of the intersection crossing legs. It is assumed that a dedicated right-turn lane (unchanneled) would be established directly adjacent to the northbound through lane and that the current dedicated signal phase to facilitate northbound right-turn movements would remain. Note that this option does not include a new crossing of the east intersection leg; this is modelled in Option 4 and could be combined with northbound right-turn channel removal in the future if desired.

RESULTS

The intersection crossing improvement options identified were assessed, as defined below, to provide comparison and include evaluation on other factors beyond motor vehicle traffic performance.

Criteria Definition Chart

Evaluation Summary

	Base Case	Option 1 (Scramble)	Option 2 (LPI)	Option 3 (NRTOR)	Option 4 (E Leg X)	Option 5 (NB Right)
Walking Comfort + Safety	~	+	+	+	+	+
Reduced Walking Crossing Time	~	+	~	~	+	+
Motor Vehicle Traffic Performance	~	-	-	-	-	-
Placemaking / Vitalization	~	+	~	~	+	+
Construction Impact	~	~	~	~	-	-
Capital Cost	~	~	~	~	-	-

Option 1: Pedestrian Scramble

Benefits:

- Highest improvement to pedestrian comfort, safety, and connectivity
- Incorporates elements of all other options

Drawbacks:

- Significant negative impact on motor vehicle traffic, particularly at a key intersection that is a main alternative to the 17th Street Bridge
- Transit delays, including Route 1 (frequent service), and emergency service impacts
- Would require broader investments in road infrastructure to maintain traffic flow

Option 2: Leading Pedestrian Intervals (LPIs)

Benefits:

- Pedestrian comfort and safety are improved due to reduced motor vehicle conflicts
- Intersection crossing time remains constant for people walking
- Mild-moderate impact on motor vehicle performance due to reduced green time being allocated to motor vehicles and less capacity for right-turning vehicles
- No construction impact or capital cost signal timing updates and signage

Drawbacks:

- Intersection crossing time remains constant for people walking
- Low improvements on important evaluation elements

Option 3: Restrict Right-Turns on Red

Benefits:

- Pedestrian comfort and safety are improved due to reduced motor vehicle conflicts
- Intersection crossing time remains constant for people walking
- Mild-moderate impact on motor vehicle performance due to reduced green time being allocated; to motor vehicles and / less capacity for right-turning vehicles
- No construction impact or capital cost signal timing updates and signage

Drawbacks:

- Intersection crossing time remains constant for people walking
- Low improvements on important evaluation elements

Option 4: East Leg Crossing

Benefits:

- Pedestrian comfort and safety improved with upgrades/expansion to the pedestrian refuge island
- Pedestrian crossing time is reduced with an additional crossing leg
- Moderate impact on the westbound motor vehicle performance due to increased north-south phase length
- Expanded pedestrian refuge island supports vitalization and increases walking connectivity

Drawbacks:

- Mild construction impact from minor civil works to reconfigure the pedestrian refuge island

- Moderate capital cost associated with civil works and signal infrastructure upgrades
- Requires new pedestrian signals and pushbuttons
- Low improvements on important evaluation elements

Option 5: Remove Northbound Right-Turn Channel

Benefits:

- Pedestrian comfort and safety improved by removing the channelized turn and island
- Slight pedestrian crossing time improvement by removing the two-stage crossing along the south leg
- Mild impact on motor vehicle performance due to reduced turning speed and capacity
- Significant placemaking and vitalization benefits due to additional public space
- Mild construction impact from minor civil works to remove the channelized turn

Drawbacks:

- Moderate capital cost associated with civil works and signal infrastructure changes

Recommendation:

Upon reviewing all options and the comprehensive evaluation as defined above, it is recommended to progress with option 5.

FINANCIAL IMPLICATIONS:

The estimated cost associated with the design and construction of the pedestrian safety improvements as recommended in the report is approximately $600,000. If supported, these improvements are recommended to be funded through the annual Traffic Signal Renewal Program capital fund.

STRATEGIC PRIORITIES REFERENCE:

Under the Council Strategic Priorities 2023-2026, Streets and Transportation (page 8):

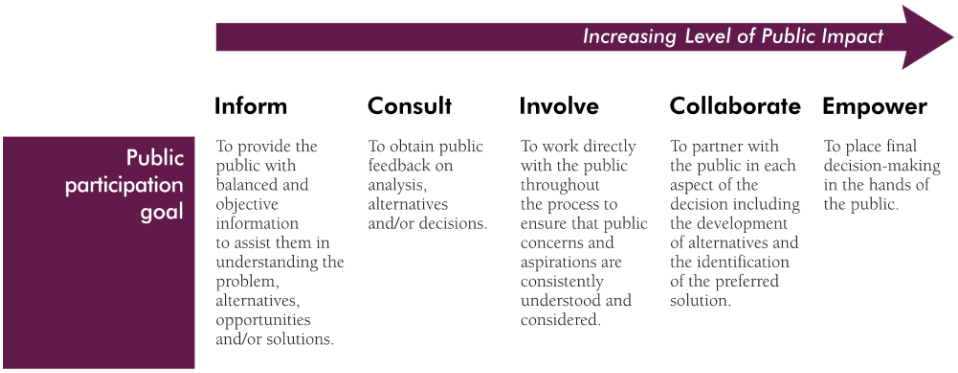
- Improve Cliffe Avenue and 5th Street intersection pedestrian facilities

As staff reflected on existing and future policies—such as the Downtown Vitalization Local Area Plan—they seek to identified opportunities to recommend corridor improvement that incorporate key elements: enhanced community services, inviting public spaces, and a safe, supportive infrastructure for active transportation. These improvements aim to create a more pedestrian-friendly, vibrant, and sustainable urban environment.

By implementing these changes, the City will support the overall delivery of the Downtown Vitalization Local Area Plan, ensuring that the area's heritage is honored while embracing modern urban planning principles.

PUBLIC ENGAGEMENT:

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



OPTIONS:

1. THAT Council endorse Option 5: Remove Northbound Right-Turn Channel and direct staff to add the Cliffe Avenue and 5th Street Intersection Improvement Project to the 2026 Financial Plan.
2. THAT Council provide alternative direction to staff.

ATTACHMENTS:

1. 5th Street and Cliffe Avenue Intersection Review Report
2. 5th Street and Cliffe Avenue Intersection Design Concept

Prepared by: Matthew Brown, Manager of Transportation Services
Reviewed by: Kyle Shaw, AScT, CPWI, CWP, CWWP, Director of Operational Services
Concurrence: Geoff Garbutt, M.PI., MCIP, RPP, City Manager (CAO)