

Maygen Kardash – Traffic Light at Cornish Road and Preston Avenue

ISSUE

This report summarizes the Administration's review of traffic operations and potential improvements at the intersection of Preston Avenue South and Cornish Road/Hunter Road.

BACKGROUND

At its meeting held on May 7, 2024, the Standing Policy Committee on Transportation received a delegation from Maygen Kardash about the Traffic Light at Cornish Road and Preston Avenue and resolved:

“That the correspondence be forwarded to the Transportation Department to report back to Standing Policy Committee on Transportation on the traffic flow at the intersection of Cornish Road, Preston Avenue South and Hunter Road and any potential improvements.”

CURRENT STATUS

Preston Avenue South is a major arterial street with average daily traffic volumes of 21,500 vehicles per day north of the intersection with Cornish Road/Hunter Road and 11,600 vehicles per day south of the intersection with Cornish Road/Hunter Road. Cornish Road, west of the intersection, is a major collector street with average daily traffic volumes of approximately 8,400 vehicles per day. Hunter Road, east of the intersection, is a major collector street with average daily traffic volumes of 7,500 vehicles per day.

The Preston Avenue South / Cornish Road/Hunter Road intersection is signalized and provides access to residential and commercial areas in the Stonebridge neighborhood. The traffic signals along Preston Avenue South from Cornish Road/Hunter Road to the Circle Drive overpass are coordinated, with priority given to north-south traffic.

The north and south legs of the intersection (i.e. the Preston Avenue approaches) include a left turn bay, one through lane and one shared through-right lane. The west leg of the intersection (i.e. Cornish Road approach) has one shared left-through lane and a right turn bay. The east leg of the intersection (i.e. Hunter Road approach) has one shared left-through lane and one shared through-right lane. The study area for the traffic operations review is shown in Appendix 1.

DISCUSSION/ANALYSIS

The Administration previously received concerns from residents regarding eastbound delays on Cornish Road and requests for a protected eastbound left turn phase. The eastbound left turn operation is permissive, meaning left turning drivers must yield to oncoming traffic when they have a green signal (i.e. drivers do not have an arrow to

provide a protected left turn). The intersection was reviewed for a protected eastbound left turn phase in 2021 and did not meet the criteria for installation.

Traffic data was collected at the intersection and the Administration completed field observations in April 2024 to prepare for a traffic signal coordination study along the Preston Avenue South corridor. According to the data collected, under existing conditions, the eastbound left turn and through movements may experience delays over three minutes during the afternoon peak hour. Queues often extend past the Cory Common commercial access, located approximately 70 metres to the west (Appendix 1), and may reach the adjacent intersection of Lewin Way during the busiest time of the day. During both the morning and afternoon peak hours, eastbound queues block access to the right turn bay, contributing to delays for eastbound traffic.

Opposing traffic volumes on Hunter Road are low as most westbound traffic is turning right at the intersection. There are sufficient gaps in oncoming traffic for eastbound drivers to make the left turn. The collision history at the intersection does not indicate any patterns or trends related to the current eastbound left turn operation. Delays and queuing for eastbound traffic on Cornish Road are due to insufficient intersection capacity, rather than a lack of safe turning opportunities.

The Administration observed driver behaviors that are contributing to delays for eastbound traffic. Vehicles on Cornish Road often stop or leave gaps for vehicles entering or exiting the Cory Common access. This reduces the number of left turns that can occur at Preston Avenue during the green phase. Eastbound left turning drivers also cause delays when they avoid turning at the same time as westbound right turning drivers. Both movements have a dedicated receiving lane; however, some drivers are waiting to turn into the curb lane to avoid changing lanes downstream of the intersection.

The Administration reviewed potential improvements at the intersection.

Traffic Signal Timing

Optimizing the traffic signal timing would reduce delays for eastbound traffic on Cornish Road but Preston Avenue South traffic would experience increased delays. However, it is expected that the delays for Preston Avenue South traffic would remain acceptable. Eastbound queues may continue to block the right turn bay during the morning and afternoon peak hours. Queues are expected to block the Cory Common access during the afternoon peak hour.

It is common practice on major arterial streets throughout the city to operate traffic signals in coordination to facilitate commuter traffic patterns. The intent of these coordinated traffic signals is to reduce travel times, stops, delay and fuel consumption for traffic on the major street. In a coordinated system, traffic signal timing changes at one intersection may impact the adjacent intersections and traffic flow along the corridor. As a result, traffic signal timing is reviewed along entire coordinated corridors, rather than at individual intersections.

Operating the traffic signals at Preston Avenue South and Cornish Road/Hunter Road in isolation (i.e. not in coordination) would impact traffic flow and safety along the corridor. Northbound and southbound drivers would be required to stop more frequently at both Cornish Road/Hunter Road and the adjacent signalized intersection to the north, increasing delays for traffic on the major street. The introduction of additional stops along Preston Avenue South would also increase the risk of rear-end collisions.

Funding is included in the 2024-2025 Transportation Capital Budget for a traffic signal coordination study along Preston Avenue South. The Administration has completed the data collection at all intersections along the corridor. Updated traffic signal timing along the Preston Avenue South is anticipated to be implemented in 2025.

Protected Left Turn Phase

The City of Saskatoon implements protected left turn phases at intersections in accordance with the Transportation Association of Canada's Requirements for a left turn phase (Appendix 2). This ensures that traffic control and information provided to drivers and road users is consistent throughout the city and across Canada. Protected left turn phases are most effective when an exclusive left turn lane or bay is provided at the intersection.

Protected left turn phases are typically used when there are exclusive lanes for transit or double left turns are permitted where there is opposing traffic. Protected left turn phases may also be used at other locations based on traffic volumes, pedestrian volumes, collision history, queue lengths, delays, intersection geometry, visibility and approach speeds. There are several criteria related to these items that must be satisfied.

The intersection of Preston Avenue South and Cornish Road/Hunter Road does not meet the criteria for the installation of a protected left turn phase. Traffic data collected at the intersection indicated approximately 1,100 drivers made the eastbound left turn during the six peak traffic hours. Less than 20 per cent of left turns were delayed by one traffic signal cycle and only 2 per cent of left turns were delayed more than one traffic signal cycle.

Based on the most recent five years of collision data provided by Saskatchewan Governance Insurance, there were five collisions involving eastbound left turns in last five years, with only one collision occurring during the peak hours.

Implementing protected left turn phases when they are not warranted may negatively impact the overall traffic operations at the intersection, result in increased delays and set a precedence for implementing left turn phases at other locations within the city that do not meet the criteria for a protected left turn phase.

Lane Designation

Separating the eastbound left turn movement from the through movement on Cornish Road would reduce eastbound delays. However, the current intersection geometry does not support a change in the eastbound lane designation. The receiving lane on Hunter Road aligns with the upstream shared left-through lane, rather than the right turn bay. While some drivers were observed using the right turn bay to bypass left turning traffic, the lateral shift through the intersection exceeds the distance recommended by City of Saskatoon design standards and Transportation Association of Canada guidelines. Geometric modifications would be required to support a change in the eastbound lane designation.

Changing the westbound lane designation to include a dedicated right turn lane and a shared left-through lane would also reduce delays for eastbound traffic. Eastbound left turn operations would be improved because drivers would only be required to yield to one oncoming lane, rather than two. Westbound delays on Hunter Road would increase but remain acceptable. Geometric modifications would be required to prevent westbound through drivers from continuing to use both lanes.

Access Management

Removing the Cory Common access or converting the access to a right-in/right-out would reduce delays caused by vehicles entering and exiting the access, improving eastbound traffic operations. Alternate accesses to Cory Common are available on Preston Avenue South and Stonebridge Common. Geometric modifications would be required to restrict westbound left turns into Cory Common and northbound left turns out of Cory Common.

Geometric Modifications

Geometric modifications to the intersection would increase eastbound capacity and improve traffic operations. This could include changing the eastbound and/or westbound lane designation and extending the eastbound curb lane, which is often blocked by left and through vehicles. Geometric modifications to the intersection would require property acquisition and may require full closure of the Cory Common access.

Summary

It is anticipated that traffic signal timing changes will be adequate to improve overall traffic operations at the intersection of Preston Avenue South and Cornish Road/Hunter Road, including reduced delays for eastbound traffic. The Administration has plans to undertake a traffic signal coordination study for the Preston Avenue South corridor this year and to implement the new timings in 2025 once the study is complete. No other work is currently planned to improve traffic flow at the intersection of Preston Avenue South and Cornish Road/Hunter Road.

FINANCIAL IMPLICATIONS

The traffic signal coordination study along Preston Avenue South will be funded through Capital Project P.02290 – Traffic Control Systems. Sufficient funds are available in the 2024-2025 budget for the study.

OTHER IMPLICATIONS

There are no privacy, legal, social or environmental implications identified.

NEXT STEPS

1. Retain engineering services to complete the traffic signal coordination study along Preston Avenue South.
2. Implement traffic signal timing updates along the Preston Avenue South corridor.

APPENDICES

1. Study Area
2. Transportation Association of Canada's Requirements for a Left Turn Phase

Report Approval

Written by: Michelle Buchko, Senior Transportation Engineer

Reviewed by: Nathalie Baudais, Engineering Manager, Transportation
Jay Magus, Director of Transportation

Approved by: Terry Schmidt, General Manager, Transportation and Construction

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