

University Avenue Corridor Improvements

Recommendation

That the September 3, 2019, City Operations report CR_6830, be received for information

Previous Council/Committee Action

At the January 21, 2019, City Council Public Hearing, the following motion was passed:

That Administration explore improvements to the University Avenue Corridor generally between 115 Street NW and 114 Street NW, specifically the 115 Street intersection and west pedestrian crossing at 114 Street, and return to Committee.

Executive Summary

Administration has reviewed and applied changes to improve vehicle and pedestrian movement at the intersection of 114 Street and University Avenue. Several traffic signal timing changes have resulted in added time for vehicles and pedestrians on University Avenue with marginal impact on LRT operation. A pedestrian crossing on the west portion of 114 Street could be constructed, however the additional time to allow pedestrians to cross safely would impact time available for vehicle movement over the LRT tracks. Pedestrians can currently cross on the east part of the intersection and at 115 Street.

Report

Background

At the January 21, 2019 City Council Public Hearing, residents of Belgravia outlined concerns about traffic congestion in relation to a proposed development. Council made a motion for Administration to look into traffic flow and pedestrian improvements.

Prior to the motion from January 2019, Administration implemented a change at 115 Street to allow pedestrians to cross at the same time the LRT crosses University Avenue at 114 Street. Since the Council motion, additional signal timing measures have been tested to improve traffic flow in the corridor, which could add some capacity for vehicles to turn off 115 Street onto University Avenue.

LRT Timing Changes

Administration adjusted the LRT signals system to allow more time for vehicle traffic across the LRT tracks at the University Avenue and 114 Street intersection. The length of time that trains stay at both Health Sciences and McKernan/Belgravia stations was nominally increased without impacting train schedules. The change did not result in notable additions in time for traffic movement so LRT operations were reverted to the previous timing.

Traffic Signal Changes

In May 2019, Administration implemented new traffic signal programming in coordination with the LRT signals system at University Avenue and 114 Street. The new programming allows the traffic signal to go through every pedestrian and vehicle movement before allowing the train to proceed through the intersection, meaning that the LRT crossing signals may only be activated once every traffic cycle. Prior to the changes, the train could interrupt the traffic signal multiple times per cycle. Pedestrian and vehicle traffic have more green light time to move across the intersection and the changes have minimal impact to LRT operations.

Traffic Signal Red Light Time Impacts

Due to the changes described above, the average time to wait for a red light has changed at the 114 Street and University Avenue intersection. Vehicle red light times along University Avenue generally decreased, while vehicle red light times for southbound on 114 Street increased. Southbound traffic volumes are low in the morning rush hour. Even though the red light time increased for the southbound movement, it is offset by increased green light time due to less disruption by the train. The impacts were as follows:

Direction	Traffic Peak Time	Average Red Light Time Change
Northbound	Morning	No increase or decrease
	Afternoon	3 second increase
Northbound Left Turn	Morning	8 second decrease
	Afternoon	5 second decrease
Southbound	Morning	24 second increase
	Afternoon	18 second increase
Eastbound	Morning	6 second decrease

	Afternoon	6 second decrease
Westbound	Morning	6 second decrease
	Afternoon	6 second decrease
Westbound Left Turn	Morning	1 second decrease
	Afternoon	7 second decrease

Possible Pedestrian Crossing

The intersection of 114 Street and University Avenue currently has pedestrian crossings permitted on the east, north and south approaches to the intersection. An LRT crossing is at ground level on the west approach with no pedestrian crossing at present.

Following a review of the intersection, Administration has identified an opportunity to provide a north/south pedestrian crossing on the west approach to the 114 Street and University Avenue intersection. This addition would provide improved active transportation connections. However, signal timing changes, including increased pedestrian crossing time, would be required to accommodate the new crosswalk. An increase in crossing time may result in increased signal cycle time and delays for vehicle traffic. The cost for this crossing is estimated to be \$40,000 with a range of between -50 percent and +100 percent.

Next Steps

With the changes to the traffic signal and train wait times, Administration will monitor and adjust traffic signal timings to optimize and balance delays at both University Avenue and 114 and 115 Street intersections. Administration does not recommend construction of the west pedestrian crossing, as it is unlikely to improve travel times for the corridor.

Corporate Outcomes and Performance Management

Corporate Outcome(s): Goods and services move efficiently			
Outcome(s)	Measure(s)	Result(s)	Target(s)
Goods and services move efficiently	Vehicle movement time along University Ave corridor	Decrease in red light time for East/West movements	Maintain red light time improvements for E/W

Others Reviewing this Report

- A. Laughlin, Acting Deputy City Manager, Financial and Corporate Services
- C. Owen, Deputy City Manager, Communications and Engagement
- J. Meliefste, Acting Deputy City Manager, Integrated Infrastructure Services
- K. Armstrong, Deputy City Manager, Employee Services
- R. Smyth, Deputy City Manager, Citizen Services
- S. McCabe, Deputy City Manager, Urban Form and Corporate Strategic Development
- B. Andriachuk, City Solicitor