

**Minutes – Standing Policy Committee on Infrastructure Renewal and Public Works –
June 25, 2019**

REPORTS

**Item No. 24 Traffic Study – Wellington Avenue and Arlington Street
(Daniel McIntyre Ward)**

STANDING COMMITTEE DECISION:

The Standing Policy Committee on Infrastructure Renewal and Public Works concurred in the recommendation of the Winnipeg Public Service and received the report as information.

**Minutes – Standing Policy Committee on Infrastructure Renewal and Public Works –
June 25, 2019**

DECISION MAKING HISTORY:

Moved by Councillor Browaty,

That the recommendation of the Winnipeg Public Service be concurred in.

Carried

STANDING COMMITTEE RECOMMENDATION:

On January 8, 2019, the Standing Policy Committee on Infrastructure Renewal and Public Works concurred in the recommendation of the City Centre Community Committee and directed the Winnipeg Public Service to conduct a traffic study at the intersection of Wellington Avenue and Arlington Street to determine additional traffic control measures to facilitate the flow of traffic, and report back to the Standing Committee within 180 days.

COMMUNITY COMMITTEE RECOMMENDATION:

On November 13, 2018, the City Centre Community Committee passed the following motion:

WHEREAS traffic has increased significantly along Arlington Street from vehicles traveling via Wellington Avenue;

AND WHEREAS during peak traffic hours vehicles are often lined up on Wellington Avenue waiting to turn onto Arlington;

THEREFORE BE IT RESOLVED that the Standing Policy Committee on Infrastructure Renewal and Public Works be requested to direct the Winnipeg Public Service to conduct a traffic study at the intersection of Wellington Avenue and Arlington Street to determine additional traffic control measures to facilitate the flow of traffic.

ADMINISTRATIVE REPORT

Title: Traffic Study – Wellington Avenue and Arlington Street

Critical Path: Standing Policy Committee on Infrastructure Renewal and Public Works

AUTHORIZATION

Author	Department Head	CFO	CAO
D. Patman, P.Eng.	J. Berezowsky	N/A	M. Ruta, Interim CAO

EXECUTIVE SUMMARY

The performance of the eastbound left turn at Wellington Avenue and Arlington Street was reviewed in accordance with City's guidelines for protected left turn phases. The level of service is considered acceptable and warrant criteria for a left turn phase was not met. Therefore, a protected left turn phase is not recommended at this time. Installation of an eastbound left turn phase would have a negative effect to the higher volume movements on Arlington Street, and provide a marginal improvement to the lower volume eastbound approach on Wellington Avenue. The Winnipeg Public Service will continue to monitor the left turn performance and will make changes to the intersection traffic control, if warranted, in the future.

RECOMMENDATIONS

1. That this report be received as information.

REASON FOR THE REPORT

On January 8, 2019; The Standing Policy Committee on Infrastructure Renewal and Public Works concurred in the recommendation of the City Centre Community Committee and directed the Winnipeg Public Service to conduct a traffic study at the intersection of Wellington Avenue and Arlington Street to determine additional traffic control measures to facilitate the flow of traffic, and report back to the Standing Committee within 180 days.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications as a result of this recommendation.

HISTORY/DISCUSSION

CURRENT TRAFFIC CHARACTERISTICS

Arlington Street, in the vicinity of Wellington Avenue, is: a two-lane undivided roadway, a regional street, a part-time truck route, and a Transit route; with an Average Weekday Daily Traffic (AWDT) volume of approximately 19,800 vehicles, and a speed limit of 50 km/h.

Wellington Avenue, in the vicinity of Arlington Street, is: a two-lane undivided roadway, and a Transit Route (west of Arlington Street); with an AWDT volume of approximately 5,900 vehicles, and a speed limit of 50 km/h.

LEFT TURN PHASE – WARRANT CRITERIA

Motorists may turn left on a green ball signal indication at signalized intersections after yielding the right-of-way to opposing vehicular and pedestrian traffic. Under certain conditions, an additional conflict-free left turn phase (green arrow) may be provided. The Winnipeg Public Service has a Technical Guideline and Practice it uses for guidance for consideration of implementing a left turn phase, developed from the Manual of Uniform Traffic Control Devices for Canada (MUTCDC); a national guideline.

Adding a separate left turn arrow phase generally results in an increase of overall average delay and reduces the total intersection vehicular capacity because the time for the left turn arrow phase must be taken from other movements at the intersection, or added to the total cycle length. Therefore, to benefit from a left turn phase, the left turn vehicular volume must represent a significant portion of the total intersection volume and experience delays in excess of one signal cycle on a regular basis. Gaps in the opposing traffic flow and/or the amber clearance phase generally accommodates at least two left turning vehicles per signal cycle, or 60 vehicles per hour based on the cycle length of 120 seconds.

To warrant installation of a separate left turn phase at either of these intersections, the primary criterion of the Technical Guideline and Practice must be fulfilled: the left turn demand must exceed two vehicles per signal cycle (60 vehicles per hour) for at least four hours of a typical weekday. If the primary criterion is fulfilled, the applicable secondary criteria are then considered:

1. More than 25% of the left-turning volume must be delayed by more than one signal cycle during the highest hour during the peak traffic period;
2. More than 12 collisions involving left-turning motorists (same approach) for the most recent three year reporting period;
3. The average number of left turns during the intergreen (the time between the green signal displays, i.e. the amber and red signal displays) exceeds 2.0 PCUs (Passenger Car Units). The PCU count does not include vehicles established in the intersection during the green phase and clearing on the amber/red phases.
4. The left-turn transit demand exceeds 3 in-service vehicles per hour.

Adding a left turn phase is undesirable under any of the following circumstances:

1. There is insufficient green time within the current cycle length to allow a left turn phase;
2. The left turn phase will encourage neighbourhood traffic infiltration;
3. The left turn phase will increase stops and delays significantly.

EASTBOUND LEFT TURN REVIEW AT WELLINGTON AVENUE AND ARLINGTON STREET

A summary of the intersection turning movement manual vehicle count for the AM Peak Hour (between 07:00-09:00) and PM Peak Hour (between 15:30-17:30) is provided below:

Time	NORTHBOUND ON				SOUTHBOUND ON				EASTBOUND ON				WESTBOUND ON				TOTAL
	ARLINGTON ST				ARLINGTON ST				WELLINGTON AVE				WELLINGTON AVE				
Time Ending	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
AM Peak Hour	AM Peak Hour (between 7:00 and 9:00), based on total volume, is from: 8:00 - 9:00																
		35	539	14		21	667	100		139	83	57		17	100	31	1,803
AM Peak Period	AM Peak Period is from: 7:00 - 9:00																
		56	1,017	25		36	1,231	161		236	119	86		28	169	49	3,213
PM Peak Hour	PM Peak Hour (between 15:30 and 17:30), based on total volume, is from: 15:45 - 16:45																
		37	629	14		26	931	131		135	93	55		37	153	43	2,284
PM Peak Period	PM Peak Period is from: 15:30 - 17:30																
		78	1,185	34		59	1,750	219		277	166	112		78	263	88	4,309
4 hr		134	2,202	59		95	2,981	380		513	285	198		106	432	137	7,522
TOTAL		2,395				3,456				996				675			

During the PM Peak Hour, being the hour of highest demand, the eastbound left turn demand averages 3.0 vehicles per signal cycle. During the four busiest hours of the day, the eastbound left turn demand averages 2.3 vehicles per signal cycle. With average left turn demand being greater than 2.0 vehicles per cycle, the City’s primary criterion for an eastbound left turn phase is met. The eastbound left turn volume is higher than the combined northbound, southbound and westbound left turn volumes; these three approaches to the intersection do not meet the primary criterion for a left turn phase at this time.

As the primary criterion for consideration of a left turn are phase was satisfied, a cycle-by-cycle observation was undertaken during the PM peak period, for the northbound left turn movement to determine if more than 25% of the left-turning volume was delayed by more than one signal cycle (refer to 1. of the secondary criteria listed above). During the observation, all vehicles were able to complete the eastbound left turn maneuver on the first cycle. An additional observation was undertaken on a different weekday and it was noted that there was some variability to the prior observation, however the delay was much less than the 25% criterion and confined to an approximate 20 minute timeframe. There is a brief period from approximately 15:30-15:50 where eastbound traffic increases substantially, which corresponds to the dismissal times at the nearby schools.

A review of the reported collision data within the most recent reporting period indicates that the correctable collisions involving the eastbound left turn are not over represented such that a left turn phase would be a collision counter-measure (refer to 2. of the warrant criteria listed above).

During the observation, the only instances of vehicles turning on the intergreen (amber plus red signal phase, between green signal phase) were when a vehicle established in the intersection on a green completed the turn, which does not fulfill the applicable criterion (refer to 3. of the warrant criteria listed above).

Winnipeg Transit “Route 12 – William” makes an eastbound left turn from Wellington Avenue to Arlington Street. Depending on the time of day and day of the week, there are in-service buses operating approximately every 22-33 minutes, which does not exceed the three 3 in-service vehicles per hour criterion (refer to 4. of the warrant criteria listed above).

Based on the above results, sufficient secondary warrant criteria are not met, and a protected left turn phase is not recommended at this time. Installation of an eastbound left turn phase would have a negative effect to the higher volume movements on Arlington Street, and provide

a marginal improvement to the lower volume eastbound approach on Wellington Avenue. The Winnipeg Public Service will continue to monitor the left turn performance and will make changes to the intersection traffic control, if warranted, in the future.

FINANCIAL IMPACT

Financial Impact Statement Date: May 22, 2019

Project Name:

Traffic Study – Wellington Avenue and Arlington Street

COMMENTS:

There are no financial impacts associated with the recommendation of this report.

"Original Signed by J. Ruby, CPA, CA"
J. Ruby CPA, CA
Manager of Finance & Administration

CONSULTATION

This Report has been prepared in consultation with: n/a

OURWINNIPEG POLICY ALIGNMENT

The recommendation of this report is aligned with the key strategic goal of a safe, efficient and equitable transportation system for people, goods and services in the Sustainable Transportation Direction Strategy that supports OurWinnipeg.

SUBMITTED BY

Department: Public Works
Division: Transportation
Prepared by: T. Jangula, C.E.T., Traffic Analyst
C. Flather, P.Eng., M.Sc., Traffic Management Engineer
D. Patman, P.Eng., Manager – Transportation
Date: May 24, 2019
File No.: C-09