Agenda – Standing Policy Committee on Infrastructure Renewal and Public Works – February 27, 2018

REPORTS

Item No. 16 **Traffic Study – Intersections of Pandora Avenue East at Day Street, Pandora Avenue East at Wayoata Street and Day Street at Kildare Avenue**
(Transcona Ward)

STANDING COMMITTEE RECOMMENDATION:

On November 21, 2017, the Standing Policy Committee on Infrastructure Renewal and Public Works laid over the matter to its meeting in February 2018 to allow the Winnipeg Public Service time to report back on whether or not roundabouts are warranted at Day Street at Kildare Avenue.

Agenda – Standing Policy Committee on Infrastructure Renewal and Public Works – February 27, 2018

DECISION MAKING HISTORY:

STANDING COMMITTEE RECOMMENDATION:

On November 21, 2017, the Standing Policy Committee on Infrastructure Renewal and Public Works laid over the matter to its meeting in February 2018 to allow the Winnipeg Public Service time to report back on whether or not roundabouts are warranted at Day Street at Kildare Avenue.

On September 11, 2017, the Standing Policy Committee on Infrastructure Renewal and Public Works directed the Winnipeg Public Service to report back to its meeting on November 21, 2017 on the following:

1. Conduct a study on whether or not roundabouts are warranted at the following intersections:

    A. Pandora Avenue East at Day Street.

    B. Pandora Avenue East at Wayoata Street.

    C. Day Street at Kildare Avenue.

COMMUNITY COMMITTEE RECOMMENDATION:

On July 11, 2017, the East Kildonan-Transcona Community Committee passed the following motion:

That the Standing Policy Committee on Infrastructure Renewal and Public Works be requested to direct the Winnipeg Public Service to report back to Community Committee on the implications of installing a roundabout at the following intersections:

1. Pandora Avenue East and Day Street.

2. Pandora Avenue East and Wayoata Street.

3. Day Street and Kildare Avenue.

On September 20, 2016, the East Kildonan-Transcona Community Committee laid over the matter to its July 2017 meeting.

ADMINISTRATIVE REPORT

Title: Traffic Study – Intersections of Pandora Avenue East at Day Street, Pandora Avenue East at Wayoata Street and Day Street at Kildare Avenue

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

AUTHORIZATION

Author	Department Head	CFO	CAO
L. Escobar, P.Eng.,P.T.O.E.	J. Berezowsky Acting Director of Public Works	n/a	D. McNeil

EXECUTIVE SUMMARY

A traffic analysis was completed at the intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street, as requested by the Standing Policy Committee on Infrastructure Renewal and Public Works (an analysis will be completed at the intersection of Day Street & Kildare Avenue pending new traffic count in November 2017). Results of the analysis indicate that the existing two-way stop control at the intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street provides acceptable delays and level of service; the intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street do not warrant consideration of a single-lane roundabout at this time.

RECOMMENDATIONS

That this report be received as information.

REASON FOR THE REPORT

At its September 11, 2017 meeting, the Standing Policy Committee on Infrastructure Renewal and Public Works directed the Winnipeg Public Service to report back to its meeting on November 21, 2017 on the following:

1. Conduct a study on whether or not roundabouts are warranted at the following locations:
    A. Pandora Avenue East at Day Street.
    B. Pandora Avenue East at Wayoata Street.
    C. Day Street at Kildare Avenue.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications as a result of this recommendation.

HISTORY/DISCUSSION

Background

Pandora Avenue East (from Day Street to Ravenhurst Street) is a Regional Arterial Street, Snow Route, Transit Route and Full Time Truck Route. Pandora Street East contains a two-lane undivided roadway with a speed limit of 50 km/h from Day Street to Redonda Street, and a posted speed of 60 km/h from Redonda Street to Ravenhurst Street.

Day Street is a Regional Arterial Street, Snow Route, Transit Route, Full Time Truck Route and contains a two-lane undivided roadway. The intersection of Pandora Avenue East & Day Street is a three-legged intersection. Wayoata Street is a non-Regional collector street, non-Regional Snow Route and contains a two-lane undivided roadway. The intersection of Pandora Avenue East & Wayoata Street is a four-legged intersection; the south approach is a private approach (northbound traffic exiting the private approach must stop before entering Pandora Avenue East as per the Highway Traffic Act). The speed limit on Day Street and Wayoata Street is 50 km/h.

The intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street are stop controlled for traffic on the minor approaches; vehicular traffic on Pandora Avenue East is free-flow.

Kildare Avenue is a non-Regional Collector street, non-Regional Snow Route, Transit Route and contains a two-lane undivided roadway. Day Street, north of Regent Avenue, is a non-Regional Collector Street, non-Regional Snow Route, Transit Route, Full Time Truck Route and contains a two-lane undivided roadway. The intersection of Day Street & Kildare Avenue is a four-legged intersection with all-way stop control. The speed limit on Day Street and Kildare Avenue is 50 km/h.

The intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street do not meet the warrant criteria for all-way stop control, as previously reported in 2016.

Traffic Analysis

Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street

A traffic analysis (using the Synchro program) using 2016 traffic volumes was completed at the intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street analyzing three traffic control options: the existing two-way stop control (TWSC), all-way stop control (AWSC) and a single-lane roundabout.

Review of the analysis results for existing conditions (stop control on Day Street and Wayoata Street) indicates that the southbound approach on Day Street and Wayoata Street experiences a delay of approximately 13 seconds per vehicle with a level of service (LOS) B, and eastbound/westbound Pandora Avenue East experiences minimal delay, approximately 2 seconds per vehicle with a LOS A, due to free-flow conditions (at the intersections at Day Street and Wayoata Street). The existing stop control at the intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street are above the City's acceptable performance level of LOS D during the p.m. peak period (when traffic volumes are highest).

The results of the analysis for all-way stop control and a single-lane roundabout indicate a delay of approximately 9 & 6-7 seconds per vehicle and a LOS A on Day Street and Wayoata Street respectively. The analysis of the all-way stop control and the single-lane roundabout options

offer minimal improvement in terms of delay and level of service for southbound motorists on Day Street and Wayoata Street while introducing delay for motorists on Pandora Avenue East, which experiences a higher volume of traffic. Furthermore, the all-way stop control reduces the overall intersection LOS from A to B (see Table 1).

Table 1: Traffic Analysis Results for the P.M. Peak Period

Design Options	Pandora Ave E & Day St		Pandora Ave E & Wayoata St	
	LOS	**Delay (sec/veh)**	**LOS**	**Delay (sec/veh)**
Existing Two-Way Stop Control				
Southbound Approach	B	13.1	B	12.8
Overall Intersection	A	1.6	A	2.4
All-Way Stop Control				
Southbound Approach	A	8.9	A	8.8
Overall Intersection	B	12.2	B	11.2
Roundabout				
Southbound Approach	A	6.2	A	6.7
Overall Intersection	A	7.4	A	6.9

Day Street and Kildare Avenue

The intersection of Day Street and Kildare Avenue requires a traffic count to be completed (there is no recent count on file) to analyze existing conditions (i.e. all-way stop control) and roundabout option. Construction on Kildare Avenue near Plessis Road is currently underway and is scheduled for completion in late October 2017. There is also ongoing construction at Plessis Road & Gunn Road and on Peguis Street at the CPR Keewatin crossing. Therefore, a count has been requested for late November 2017 once traffic patterns normalize.

Traffic Control - Roundabout

The roundabout is an alternative traffic control option to two-way stop control (TWSC), all-way stop control (AWSC), and/or traffic control signals at an intersection. Generally, a roundabout may be considered when traffic volumes meet the warrant for AWSC and/or traffic control signals at an intersection.

The Federal Highway Administration (from *"Roundabouts: An Information Guide*") states that a roundabout is unlikely to offer better performance in terms of lower overall delays than TWSC at intersections with minor movements that are not experiencing, nor predicted to experience, operational problems under TWSC. The Federal Highway Administration reports that TWSC intersections with low-volume cross street traffic and heavy through volumes on the major street generally do not benefit from a roundabout because they create a significant impediment to the major movements (due to the fact that all movements are given equal priority at a roundabout).

The installation of a roundabout at a TWSC intersection that is operating satisfactorily is difficult to justify on the basis of performance improvement alone. There needs to be significant improvements to the intersection performance to benefit from costs associated with construction, property acquisition, and maintenance of a roundabout.

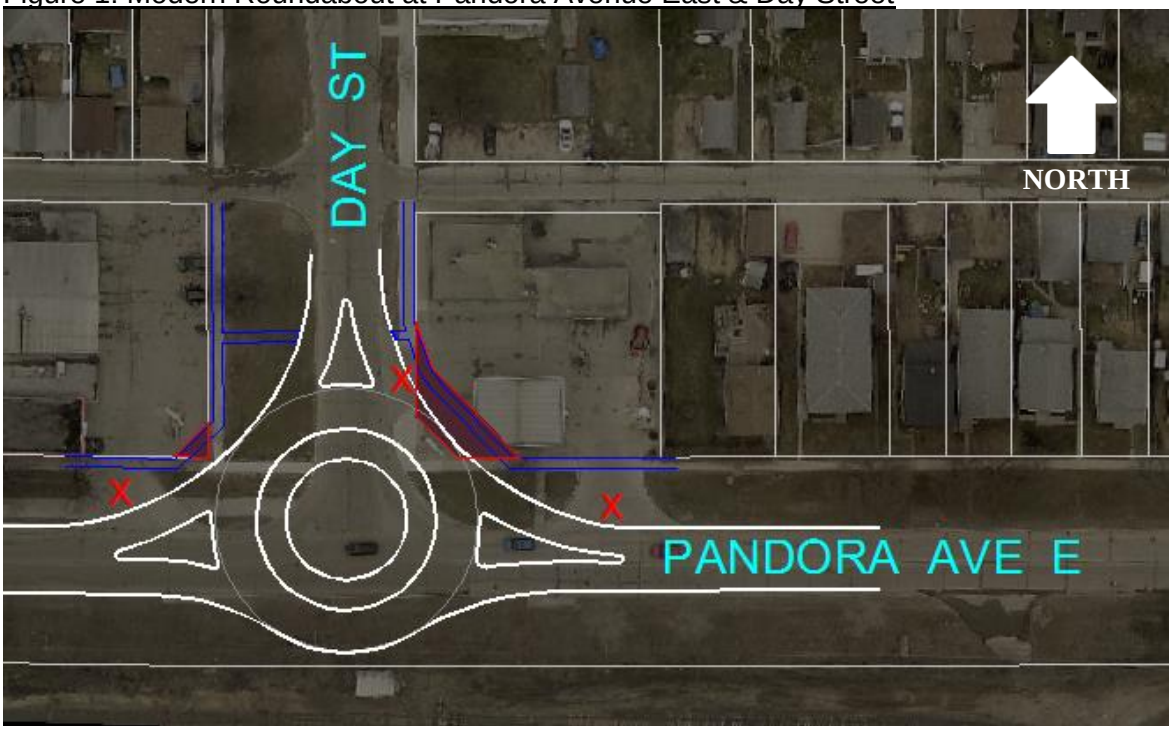
In recent years, the City of Winnipeg has installed roundabouts at locations (i.e. Molson Street & Grassie Street and Beaverhill Boulevard & Lakewood Boulevard) that have exceeded the capacity of all-way stop control during peak periods, creating performance and capacity issues resulting in vehicle queues and increasing delays to motorists; that is not the case for the

intersections at Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street.

Roundabout Design

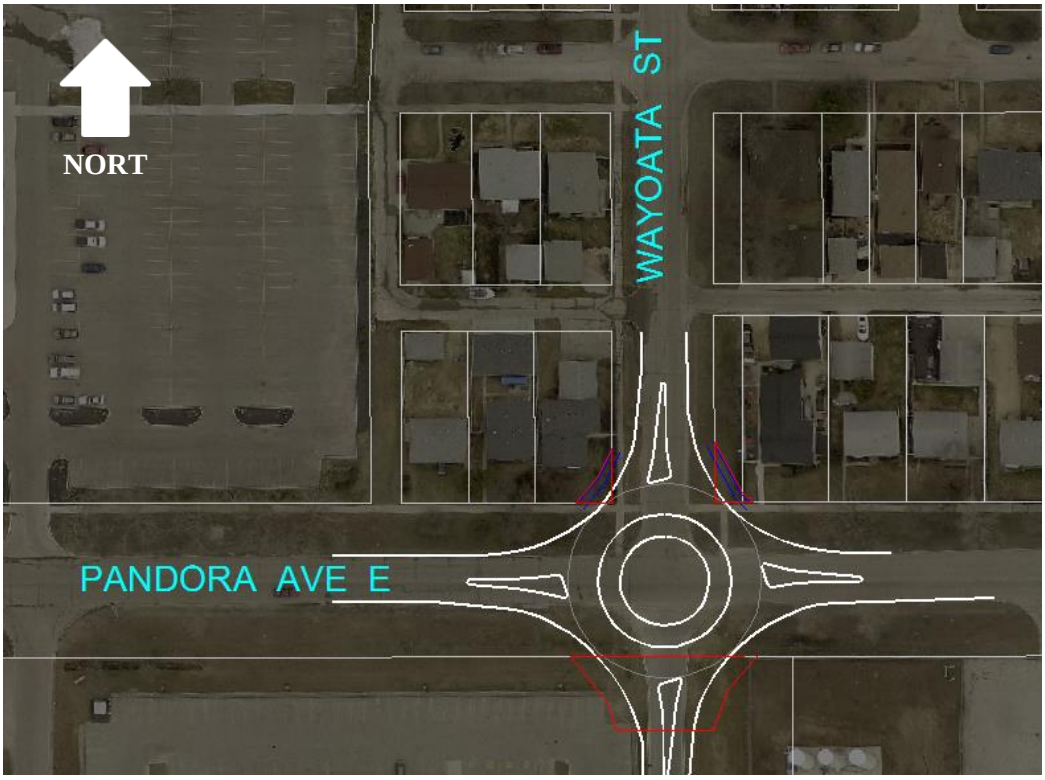
A modern roundabout is a one-way unsignalized circular intersection in which traffic flows around a centre island. Roundabouts are designed to maximize safety and minimize traffic delays. Traffic is managed with yield control at the entry points and right-of-way is given to vehicles already in the roundabout. Pedestrians are accommodated with signed and marked crosswalks at each approach to the roundabout and cross only one direction of traffic at a time. Low approach speeds help to improve safety performance of roundabouts.

Figure 1: Modern Roundabout at Pandora Avenue East & Day Street



To implement a standard roundabout design at the intersection of Pandora Avenue East & Day Street would require land acquisition in the north-east and north-west corners to accommodate construction of a single-lane roundabout and the reconfiguration of sidewalks. It should also be noted that existing accesses to private property would not be permitted this close to the roundabout; this may cause businesses to be inoperable depending on their delivery access (i.e. fuel trucks may not be able to enter/exit the properties).

Figure 2: Modern Roundabout at Pandora Avenue East & Wayoata Street



To implement a standard roundabout design at the intersection of Pandora Avenue East & Wayoata Street would require land acquisition in all four corners to accommodate construction of a single-lane roundabout and the reconfiguration of sidewalks. It should also be noted that the south leg is a private approach to a CN commercial building which would likely require a more extensive property acquisition and right-of-way opening plus a revised private approach approval.

The roundabout designs shown above for the intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street are a standard design considered for a collector street. It should be noted that Pandora Avenue East and Day Street are Full Time Truck Routes and would require a larger roundabout design to accommodate the movement of heavy vehicles. It should be noted that a larger roundabout design will have a greater impact on the corner properties with respect to land acquisition.

Winnipeg Public Service Recommendation

With current traffic volumes and conditions, the existing two-way stop control at the intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street results in acceptable delays and level of service. The intersections of Pandora Avenue East & Day Street and Pandora Avenue East & Wayoata Street do not warrant consideration of a single-lane roundabout at this time.

FINANCIAL IMPACT

Financial Impact Statement **Date:** October 5, 2017

Project Name:

Traffic Study - Intersections of Pandora Avenue East at Day Street, Pandora Avenue East at Wayoata Street and Day Street at Kildare Avenue

COMMENTS:

There is no financial impact 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:	Transportation
Division:	Public Works
Prepared by:	Michelle Chester, C.E.T., IntET(Canada) Traffic Analyst
	Stephen Chapman, P.Eng., Traffic Management Engineer
Date:	September 27, 2017
File No:	E-01, E-04