Minutes – Standing Policy Committee on Infrastructure Renewal and Public Works – April 2, 2019

REPORTS

Item No. 12 Northbound Turning Lane – East Mint Place along Lagimodiere Boulevard toward Highway No. 1 (Transcona 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.

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DECISION MAKING HISTORY:

Moved by Councillor Browaty,

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

Carried

STANDING COMMITTEE RECOMMENDATION:

On March 6, 2019, the Standing Policy Committee on Infrastructure Renewal and Public Works granted an extension of 60 days for the Winnipeg Public Service to report back on the matter.

On September 7, 2018, the Standing Policy Committee on Infrastructure Renewal and Public Works concurred in the recommendation of the Riel Community Committee and directed the Winnipeg Public Service to report back to its March 2019 meeting on the feasibility and cost of creating a northbound turning lane from East Mint Place along Lagimodiere Boulevard heading towards Highway #1.

COMMUNITY COMMITTEE RECOMMENDATION:

On July 9, 2018, the Riel Community Committee passed the following motion:

WHEREAS it has been a longstanding request of the Southland Park community to create a proper northbound turning lane up Lagimodiere;

WHEREAS there is considerable anecdotal evidence that exiting the neighbourhood northbound is extremely difficult and possibly dangerous during rush hour conditions;

WHEREAS considerable development is poised to occur in the area around Southland Park, prompting additional outbound traffic;

THEREFORE BE IT RESOLVED that the City of Winnipeg public service report back on the feasibility and cost of creating a northbound turning lane from East Mint Place along Lagimodiere Blvd heading towards Highway #1.

ADMINISTRATIVE REPORT

Title: Northbound Turning Lane – East Mint Place along Lagimodiere Boulevard

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	D. McNeil

EXECUTIVE SUMMARY

A preliminary design and project cost estimate were prepared in November 2018, for the requested acceleration lane. A traffic study and field observation were subsequently conducted, showing that an acceleration lane from the Southland Park community at East Mint Place onto northbound Lagimodiere Boulevard would not improve congestion or safety for drivers exiting East Mint Place onto Lagimodiere Boulevard with a plan to proceed westbound on Fermor Avenue.

In addition, an acceleration lane would be in close proximity to the deceleration lane for traffic going from northbound Lagimodiere Boulevard to eastbound Fermor Avenue, potentially causing safety concerns of motorists proceeding on the shoulder connecting the two lanes.

In consideration of the above, a westbound to northbound acceleration lane from East Mint Place to Lagimodiere Boulevard is not recommended to be implemented at this time.

The improvement of Dawson Road and Fermor Avenue, taking place in 2019/2020, could potentially relieve some queueing of East Mint Place and Lagimodiere Boulevard. The Public Service will expand the study of this intersection to include a video study, signal timing review and construction of a traffic simulation model to aide in identifying problems and solutions, once the Dawson Road and Fermor Avenue intersection upgrades have been constructed and traffic patterns have established themselves. Future work in the area may include a corridor study of Lagimodiere Boulevard, depending on the outcomes of the Transportation Master Plan.

RECOMMENDATIONS

That this report be received as information.

REASON FOR THE REPORT

On September 7, 2018; the Standing Policy Committee on Infrastructure Renewal and Public Works concurred in the recommendation of the Riel Community Committee and directed the Winnipeg Public Service to report back to its March 2019 meeting on the feasibility and cost of

creating a northbound turning lane from East Mint Place along Lagimodiere Boulevard heading towards Highway #1.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications to receiving this report as information.

HISTORY/DISCUSSION

CURRENT TRAFFIC CHARACTERISTICS

Lagimodiere Boulevard in the vicinity of East Mint Place is a four-lane divided roadway, a regional street, a full time truck route, and a Transit route; with an average weekday daily traffic (AWDT) volume of approximately 46,600 vehicles, and a speed limit of 80 km/h.

East Mint Place in the vicinity of Lagimodiere Boulevard is a divided residential-collector roadway and a Transit route, with a speed limit of 50 km/h. East Mint Place serves as the primary access/egress for the Southland Park neighbourhood. There is a deceleration lane for vehicles exiting Lagimodiere Boulevard (northbound to eastbound), but an acceleration lane does not exist for vehicles entering Lagimodiere Boulevard (westbound to northbound).

The average daily traffic (ADT) volumes recorded in 2017 at the intersection are:

- 22,672 for NB Lagimodiere Blvd
- 22,478 for SB Lagimodiere Blvd

Traffic volumes making the right turn from westbound East Mint Place to northbound Lagimodiere are:

- 177 during the AM peak hours (7:00 – 9:00), and
- 93 during the PM peak hours (15:30 – 17:30).

The traffic signal timings have three daily plans. These are an AM traffic peak plan, a PM peak plan, and an average traffic plan. The AM and PM plans are very similar, offering a total of 70 seconds for a complete cycle, with 45 seconds (65%) of the cycle to the northbound and southbound through (Lagimodiere) traffic. The average plan has a 120 second cycle length, with 80 seconds (66%) assigned to the Lagimodiere Boulevard traffic.

The accident data collected between 2001 and 2017 indicates three rear end collisions for the westbound to northbound movement. The data also indicates the entire intersection had 67 collisions between 2001 and 2017. This collision data is considered low for an intersection of this type and volume. This is likely attributed to westbound motorists coming to a complete stop and waiting for the signal lights to turn red for northbound traffic, before entering Lagimodiere Boulevard, as the gaps between vehicles on Lagimodiere Boulevard may be too short to safely accelerate to the speed of traffic. This approach is safe but inefficient for drivers and queues can develop.

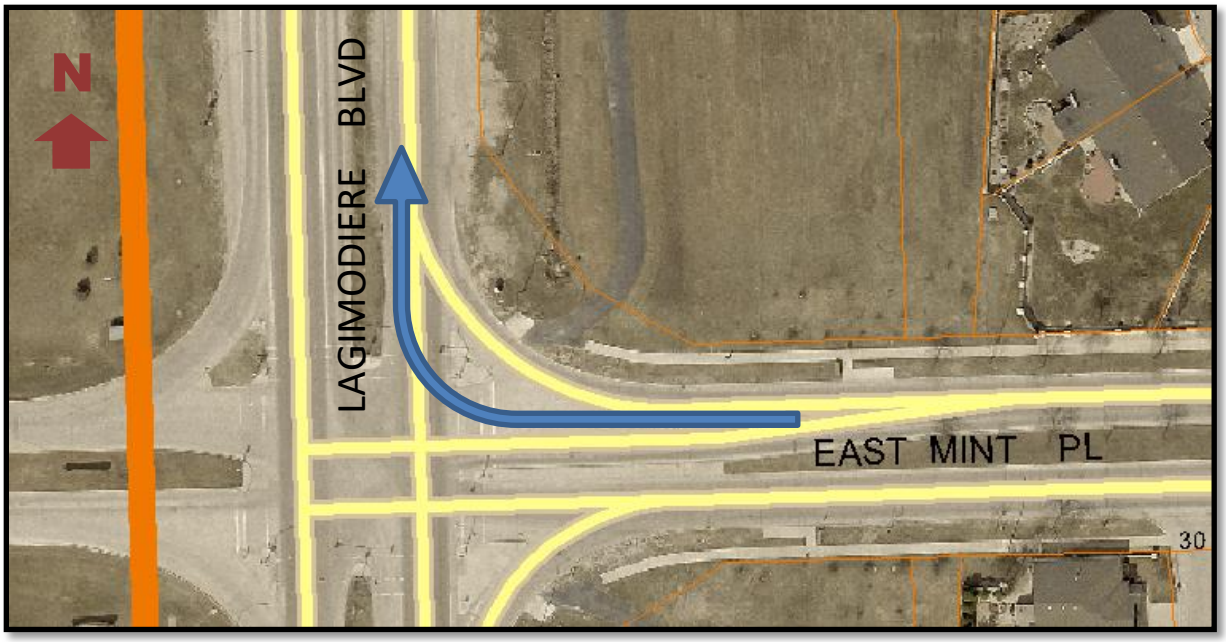


Figure 1: Lagimodiere Boulevard at East Mint Place

ACCELERATION / MERGE LANE – GENERAL INFORMATION

The Transportation Association of Canada (TAC) Geometric Design Guide recommends acceleration lanes along arterial streets with high speeds to provide improved safety for merging vehicles.

Acceleration lanes may be recommended along arterial streets with high speeds to provide improved safety for merging vehicles. Additions of acceleration lanes are prioritized based on conflicting traffic volumes / delays. Many intersections along Lagimodiere Boulevard and other Regional Streets with 80km/h speed limits lack acceleration lanes. Due to the cost of many potential locations along a route, acceleration lanes are usually considered as part of a major reconstruction project and funded through the Capital Program. Installing acceleration lanes as a standalone project are costly and outside of the resources of the Traffic Engineering Improvement Project budget and would therefore require capital funding. Public Works prepared the attached Preliminary Design (Drawing T-3492, attached as Appendix A) and project cost estimate of $660,000.00 (attached as Appendix B), which includes construction, engineering design, and relocation of traffic signals.

The proposed design requires ditch embankment work which lies within Manitoba Hydro lands, and will require coordination and/or an agreement with Manitoba Hydro to complete the work. The cost of this work would be in addition to the estimate of $660,000.00 for the acceleration lane construction.

Acceleration lanes do not function well if there are closely spaced signals or congestion immediately upstream of the merge area. Acceleration lanes work best when the through traffic is moving at a constant pace so that merging traffic can predictably target a specific gap in traffic. They work poorly when the through traffic is closely queued together accelerating away from a signal or when through traffic is slowing for a signal ahead, which reduces the size of acceptable gaps; both of which occur at Lagimodiere Boulevard and East Mint Place.

ACCELERATION / MERGE LANE – WESTBOUND EAST MINT PLACE TO LAGIMODIERE BOULEVARD

There is often northbound queuing from the signal at Fermor Avenue located 500 m north of the East Mint Place and Lagimodiere Boulevard intersection; this is not conducive to the needed traffic gaps for an acceleration lane at East Mint Place. An acceleration lane at this location might be used reliably off-peak, but during the peak hours motorists may not find a predictable traffic gap before reaching the end of the merge lane. This will cause queueing in the acceleration lane, effectively making the acceleration a yield controlled stacking lane and would likely operate as a yield, especially if the intent is to cross several lanes immediately to prepare for a left (westbound) turn onto Fermor Avenue.

The westbound right turn volume from East Mint Place during the AM Peak Period (07:00-09:00 MON-FRI) averages approximately 1.5 vehicles per minute, and even lower off-peak. During a recent observation during the AM Peak Period it was noted that there was northbound queuing from Fermor Avenue. An observed desired movement showed vehicles leaving East Mint Place northbound, crossing the two travel lanes to exit in the left median lane to turn on westbound Fermor Avenue. Currently, there is 500 m to accomplish this task, adding an acceleration lane would reduce this to less than 300 m increasing the difficulty of safely achieving the maneuver.

As shown in the Preliminary Design (Drawing T-3492, attached as Appendix A) the addition of an acceleration lane would be 220 m. The deceleration lane for Lagimodiere Boulevard and Fermor Avenue would start 180 m north of the end of the acceleration lane. Past experience in Winnipeg shows that motorists will use the mountable curb and shoulder between the acceleration/deceleration lane as an activity lane. This is a dangerous practice. The safest solution would be to incorporate the existing deceleration lane, and a future acceleration lane into an activity lane. Again, this is beyond the resources of the Traffic Engineering Improvement Program and would need to be considered as a separate capital project.

In consideration of the above, a westbound to northbound acceleration lane from East Mint Place to Lagimodiere Boulevard is not recommended to be implemented at this time.

ANTICIPATED CHANGES TO TRAFFIC OPERATIONS

The City will be implementing improvements to Fermor Avenue from Lagimodiere to the City's east limit, which is planned for 2019 and 2020. This project will extend Royal Mint Drive north from Dawson Road South to Fermor Avenue creating a second exit from Southland Park onto eastbound Fermor Avenue. This improvement may potentially improve the queueing at East Mint Place onto northbound Lagimodiere Boulevard.

The aforementioned Fermor Project may not fully address the traffic queuing on northbound Lagimodiere Boulevard. A future project has been under review which would result in a diamond interchange at Lagimodiere Boulevard and Fermor Avenue. The geometric enhancements at the East Mint Place and Lagimodiere Boulevard intersection, as well as northbound Lagimodiere Boulevard approaching Fermor Avenue will be reviewed as a part of the "Fermor & Lagimodiere Diamond Interchange Project" to improve the traffic operations. This project is in the long term planning stage.

As indicated, a possible interchange at Lagimodiere Boulevard and Fermor Avenue could possibly be many years in the future. Adding an activity lane for northbound Lagimodiere Boulevard from East Mint Place to Fermor Avenue will require capital funding and will likely be several years in the future. The construction of the intersection upgrades at Dawson Road and Fermor Avenue, to relieve some vehicle congestion at East Mint Place and Lagimodiere Boulevard, will take approximately two years.

As the Public Service is focusing on a proactive approach to traffic management, rather than a reactive approach, the following expanded scope study will take place after the Dawson Road and Fermor Avenue intersection improvements take place and baseline traffic patterns are established:

1. Conduct a traffic study at Lagimodiere Boulevard and East Mint Place using video monitoring to identify congestion times, turning movements and queuing lengths. This study and analysis will be conducted internally using current resources.
2. Signal timing along the Lagimodiere Boulevard corridor will be considered for optimization, including the intersections of Bishop Grandin Boulevard, East Mint Place and Fermor Avenue.
3. A traffic simulation model will be developed to identify congestion causes and to help identify possible solutions.

Lagimodiere Boulevard in its entirety has been identified as a potential corridor study, which would look at optimization of traffic, a safety audit and future planning. The Transportation Master Plan will identify plans and goals for the traffic network of Winnipeg. Prioritization of major corridor studies, such as this, will result from those plans and goals identified in the Transportation Master Plan.

FINANCIAL IMPACT

Financial Impact Statement

Date: March 14, 2019

Project Name:

Northbound Turning Lane – East Mint Place along Lagimodiere Boulevard

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

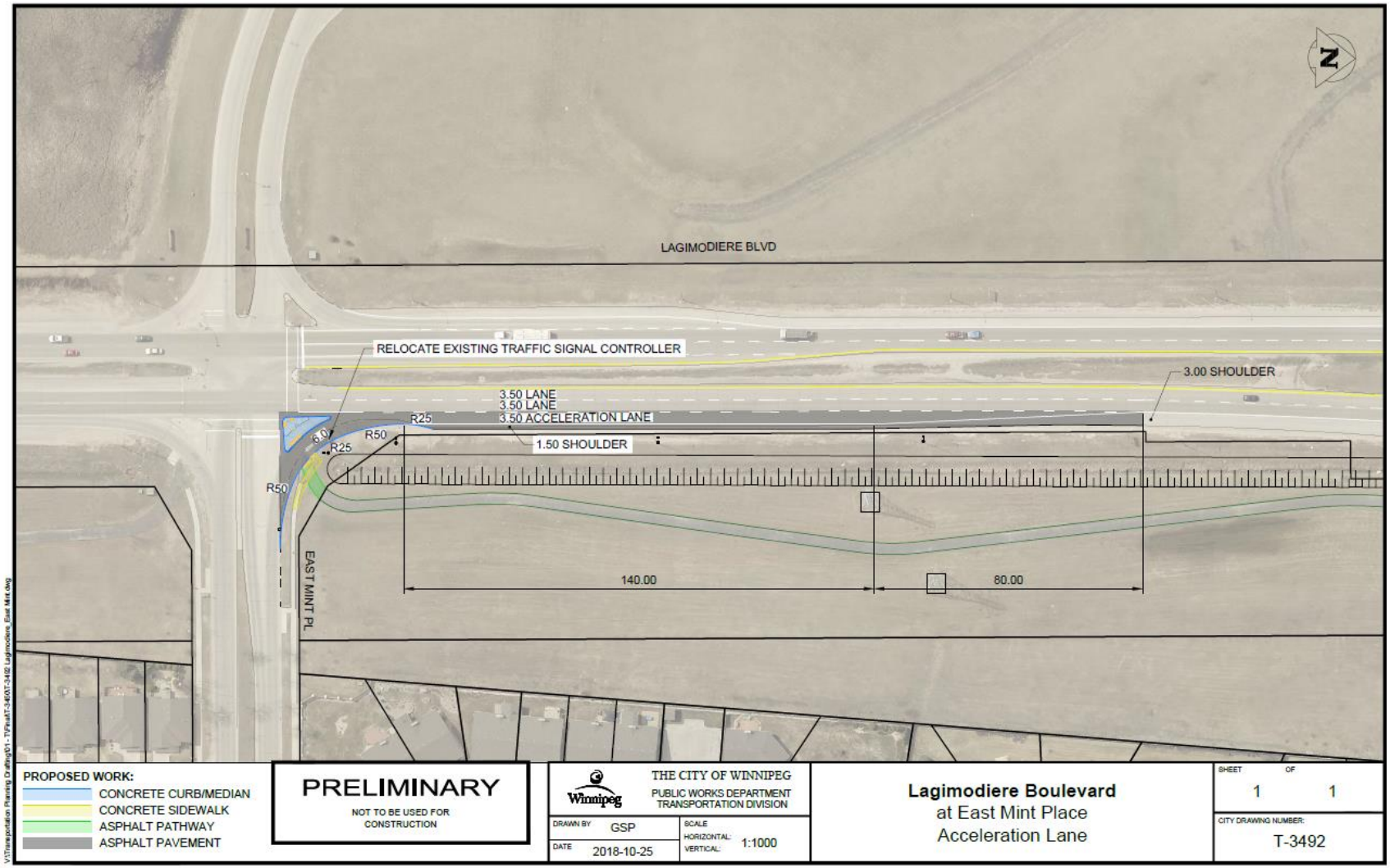
The recommendation of this report is aligned with the Transportation Master Plan key strategic goal Number 3: To provide a safe, efficient and equitable transportation system for people, goods and services.

SUBMITTED BY

Department: Public Works
Division: Transportation
Prepared by: M. Doucet, P. Eng., Transportation Facilities Planning Engineer
C. Flather, P. Eng., Traffic Management Engineer
T. Jangula, C.E.T., Traffic Analyst
Date: March 14, 2019

Attachments: Appendix A - T-3492
Appendix B - Project cost estimate

Appendix A - T-3492



Appendix B - Project cost estimate

1/10/2019

CAPITAL PROJECT ESTIMATE SUMMARY

LOCATION:	Lagimodiere Blvd. at East Mint Place T-3492	WORK TYPE:	Improvement
LIMITS:	Acceleration Lane	LANES:	one
ESTIMATED BY:	A. Purdy	LANE WIDTH:	3.5m
LENGTH METRES:	265m	PAVEMENT AREA (m^2):	1550m^2
CHECKED BY:		DRAWING NUMBER:	T-3492
DATE:	13-Nov-18	CONST. COST PER m^2:	
		PROJECT COST PER m^2:	

PROJECT COST BREAKDOWN		PERCENT	COST ESTIMATE BASE YEAR	TOTALS
CONSTRUCTION COST ESTIMATE (A1)			2018	297,884.08
CONTINGENCY ALLOWANCE (A1% = A2)		20.0%		59,576.82
CONSTRUCTION ESTIMATE WITH CONTINGENCY(A1+A2= A)				357,460.90
INFLATION FACTOR TO YEAR 2019		5.0%		17,873.04
INFLATION FACTOR TO YEAR 2020		0.0%		0.00
INFLATION FACTOR TO YEAR 2021		0.0%		0.00
INFLATION FACTOR TO YEAR 2022		0.0%		0.00
TOTAL INFLATION COSTS (B)				17,873.04
REVISED CONSTRUCTION ESTIMATE (A+B = C)				375,333.94
ENGINEERING (C'% = D)		15.0%		56,300.09
TESTING (C'% = E)		1.5%		5,630.01
CONSTRUCTION CAPITAL BUDGET SUBTOTAL (C+D+E =F)				437,264.04
NON-CONTRACT ESTIMATES				
INTERNAL ESTIMATES:				
TRAFFIC SIGNALS	2/11/2018			105,000.00
TRAFFIC SERVICES				
LAND DRAINAGE SEWERS				
OTHER				
SUB TOTAL (G1)				105,000.00
UTILITY ESTIMATES:				
MANITOBA HYDRO - STREET LIGHTING				
MANITOBA HYDRO - OTHER				
MTS				
CENTRA GAS				
RAILWAY				
OTHER:				
PRELIMINARY P.W. BUDGET FOR NON-CONTRACT ESTIMATES		20.0%		75,066.79
SUB TOTAL (G2)				75,066.79
TOTAL OF NON-CONTRACT ESTIMATES (G1+G2) =(G)				180,066.79
PROPERTY COSTS (H)				
GOODS & SERVICES TAX (F+G2+H)'% = (I)		0.0%		0.00
AL SALES TAX ON 30% OF 6% (DESIGN) OF ENGINEERING 30%(6%'D)'8% = (J)		8.0%		81.07
PROVINCIAL SALES TAX ON UTILITY ESTIMATES (G2)'% = (K)		8.0%		6,005.34
STRATEGIC RESEARCH & INNOVATIVE PARTNERSHIP (C'%) = (L)		0.5%		1,876.67
FINANCE ADMINISTRATION (C+H)'% = (M)		1.250%		4,691.67
INTEREST (C+E+G+H)'% = (N)		2.0%		12,346.62
EIA/PP (O)				
PUBLIC WORKS ENGINEERING ADMIN. (F+G+H+I+J+K)'% = (P)		3.0%		18,702.52
TOTAL PROJECT ESTIMATE				**661,034.72**