

Prairie Avenue – Design Recommendations Update

RECOMMENDATION:

That Committee of Council approve the Prairie Avenue road design option as presented in the April 7, 2020 staff report, “Prairie Avenue - Design Recommendations Update” and direct staff to proceed with detailed design.

PREVIOUS COUNCIL/COMMITTEE ACTION

At the June 11, 2019 Committee of Council meeting, the following motion was passed:

That Committee of Council approve the Prairie Avenue road design options as presented in the June 4, 2019 staff report, “Prairie Avenue Improvements – Public Consultation – Shaughnessy to Fremont” for public consultation to inform the detailed design.

At the November 19, 2019 Committee of Council meeting, staff presented a report detailing the feedback received from the community during the public consultation and further recommended an option to proceed with detailed design. Committee of Council requested updated concept drawings and passed the following motion:

That staff provide a report outlining high-level design options for the entire Prairie Avenue corridor.

REPORT SUMMARY

This report brings forward concept drawings which show the recommended improvements to the corridor, as recommended in the November 19, 2019 report, with the feedback provided by the public consultation. The report also provides additional information relating to roundabouts at intersections throughout the corridor. Furthermore, it provides an update on the proposed multiuse path (MUP) between Fremont Street and Burns Road.

BACKGROUND

The 2017-2018 draft capital plan included a proposed project to rehabilitate Prairie Avenue, from Coast Meridian Road (CMR) to Fremont Street. The decision to include Prairie Avenue in the plan was driven by the substandard and exacerbating condition of the existing asphalt. The project included rehabilitation within the existing roadway only and did not include replacement of any pedestrian facilities or site improvements such as sidewalk, curb and gutter, utility replacement or boulevard improvements. The Budget and Infrastructure Committee directed staff to prepare options for additional scope, which were presented at the May 1, 2017 committee meeting.

The first option proposed replacing the curb, gutter and sidewalk along the entire project limits, planting new grassed and treed boulevards where right-of-way was available, reviewing street

Prairie Avenue – Design Recommendations Update

lighting, and introduction of bicycle lanes on both sides of the road, at a total estimated cost of \$4.3M. The second option proposed relocating only the curb, gutter and sidewalk between Toronto and Newberry (the hydro poles in this area are located in the travel lane and are a safety hazard), spot repairs to existing sidewalk panels which pose tripping hazards, and introduced bicycle lanes on both sides of the road at a total estimated cost of \$3M. Each of these options is accommodated by the existing asphalt width to align with the goal of the MTP to include marked bike lanes, which resulted in the loss of significant on-street parking.

Committee did not endorse either option, and instead approved \$50,000 in the 2018 budget to develop a strategy for the corridor, from Fremont to CMR, which would determine the appropriate cross section and a financially feasible approach to implementation. Staff are aware that this is a major corridor through the City that Council wishes to improve aesthetics and functionality, and that Council has specified by resolution that Prairie Avenue shall remain 2 lanes of traffic, requiring a minimum of 7.0m road surface for travelling vehicles.

At the May 1, 2018 Finance and Budget Committee meeting, two additional options were proposed, which included two travel lanes (one in each direction), dedicated parking on both sides (matching the existing parking available), a sidewalk on one side of the road and a multi-use path (MUP) on the other, and grass boulevards with street trees where possible. Option one achieved all of these elements with no impact to parking whereas option two included curb extensions which aid in delineation of parking and improved sight lines and pedestrian safety at intersections, however, have a minor impact on parking at the curb extension locations. Following discussion of the two proposed options, Committee confirmed their interest in a third cross section that would include vegetated median islands and directed staff to provide a subsequent report including this third option, prior to going to public consultation.

At the March 12, 2019 Committee of Council meeting staff presented 3 cross sections and optional roundabouts for Prairie Avenue east of Coast Meridian as per Committee's request. After further review, Committee of Council requested the scope of public consultation be expanded to include Prairie Avenue west of Coast Meridian as well, resulting in project extents of Shaughnessy St to the West and Fremont St to the east. Staff were directed to revise the concepts and provide a subsequent report prior to going to public consultation.

At the June 11, 2019 Committee of Council meeting staff presented the revised concepts from Shaughnessy St. to Fremont St. and were approved to initiate public consultation on the three options.

At the November 19, 2019 Committee of Council meeting, staff presented a report detailing the feedback received from the community during the public consultation and made a recommendation to proceed to detailed design. Committee of Council requested updated concept drawings which

Prairie Avenue – Design Recommendations Update

reflected the recommendations, including the public feedback, and directed staff to return with a report outlining these changes.

As per the November 19, 2019 Committee of Council report the recommended option (Option 4) was as follows:

Two Travel lanes	6.7m
Parking pockets (curb extensions) located strategically on both sides of the road in high pedestrian traffic areas and at crosswalk locations	4.8m
Rectangular rapid flashing beacon at Vincent crosswalk	
Boulevard on north side without trees	1.0m
Sidewalk on south side	1.8m
Boulevard on south side with trees	2.0m
Off Street MUP on north side	3.0m
Roundabouts at Newberry and Fremont Streets	
	19.3m

This cross section was developed utilizing individual elements of the public feedback, combined with staff's recommendations. This design, like others before it, utilizes the entire minimum corridor width. Should Committee of Council wish to see alternative design features incorporated, other design features would need to be forfeited.

Regarding the roundabouts, residents were asked to comment on the inclusion of roundabouts at various intersections throughout the corridor as part of the public consultation. The results were varied; however, the majority of the commentary alluded that due to lack of education and understanding on how to use roundabouts, their addition would result in increased congestion and delays along Prairie Avenue (which impacts traffic flow, residents' number one concern). The remainder of the commentary received suggested that roundabouts at busy intersections, such as Cedar Drive, would not be appropriate due to perception of reduced pedestrian safety, and volume/frequency of pedestrians. Taking this in to consideration, staff recommended proceeding with roundabouts at Newberry and Fremont Streets.

During the November 19, 2019 Committee of Council meeting, there was significant dialogue and debate regarding the inclusion of roundabouts as part of the design at multiple intersections throughout the corridor, not just the two (Newberry and Fremont Streets) being recommended as part of the detailed design. There was also discussion about how the design interacts with the north side business area and concerns with visualizing the multi-use path and street tree locations. This report brings forward revised concept drawings showing the recommended improvements, as well as additional information about the roundabout analysis for each location.

DISCUSSION

Concept refinement

As discussed in the November 19, 2019 report, the concept drawings have been revised to show the multi-use path on the north side of Prairie Ave and the street trees on the south.

Interaction with North Side Business Area

The road design provides a signature corridor from Shaughnessy Street to Fremont Street including a multi-use path, wider sidewalks, street trees and consistent street lighting throughout the corridor. As well, a planted median on the east leg of Prairie Avenue and Coast Meridian Road has been proposed. The only traffic maneuvers which have been restricted for safety reasons are at the intersection of Prairie Avenue and Ulster Street (including the left turn from the shopping center opposite Ulster St.). Accordingly, staff believes this design, while independent of development, will support the beautification and future re-development of the north side business area.

Roundabouts

Transportation analyses were performed at six intersections along the corridor to assess the impact of roundabouts on the level of service of the intersections. The intersections studied include: Shaughnessy Street, Oxford Street, Wellington Street, Newberry Street, Cedar Drive and Fremont Street.

Roundabouts reduce the frequency and severity of vehicle on vehicle collisions when compared to stop or signal controlled intersections for a variety of reasons:

- Travel speeds are reduced as vehicles approach to enter roundabouts;
- Travel is one way, reducing contact points with other vehicles;
- Flow of traffic is continuous and thus drivers are not encouraged to speed as they may at a stale green light; and
- When used along a busy corridor, they can act as “choke points” slowing the overall movement of vehicles along a corridor

However, roundabouts are not as friendly for pedestrians compared to signalized intersections, as they are yield controlled which results in lower compliance rates from motorists. At signalized intersections, vehicles are required to stop completely at red lights and can even be programmed to provide fully advanced phases for pedestrians, whereby vehicles are stopped completely and pedestrians can cross. Furthermore, crosswalks at roundabouts are usually set back, outside of the vehicle path, which can be unsettling to pedestrians, especially those who are visually impaired and not familiar with the unique geometry which differs from a typical intersection.

Prairie Avenue – Design Recommendations Update

From an operational perspective, roundabouts will not have an adverse impact on traffic operations, and will continue to provide a high level of service; however, signalization for some of these locations will better serve our pedestrians. A summary of the analysis for each intersection is as follows (full assessments can be found in attachments 5 and 6):

- **Shaughnessy** – This intersection has high vehicle volumes and is already signalized, providing a higher level of service than a roundabout. Collision data does not indicate high crash frequencies. The current intersection accommodates approximately 25 pedestrian movements in the morning peak hour and 40 pedestrians in the afternoon peak hour. Given the higher level of service already provided, a roundabout is not recommended.
- **Oxford** – This intersection has high vehicle volumes and is already signalized, providing a higher level of service than a roundabout. Collision data does not indicate high crash frequencies. The current intersection accommodates approximately 57 pedestrian movements in the morning peak hour and 73 pedestrians in the afternoon peak hour. Given the higher level of service already provided, a roundabout is not recommended.
- **Newberry and York** – Are situated at the midpoint of each section of the corridors. These are opportune locations to choke the traffic mid-way along the corridor. Also, both intersections are currently stop controlled and therefore roundabouts would provide an improved level of control and safety. Furthermore, the inclusion of roundabouts would serve these neighborhoods by providing easier access in and out.

The current Newberry intersection accommodates approximately 39 pedestrian movements in the morning peak hour and 69 pedestrians in the afternoon peak hour. Pedestrian counts are not available for York, however are estimated to be similar. As they would provide a higher level of service, roundabouts are recommended at these intersections.

- **Cedar** – This intersection has high vehicle volumes, as well as pedestrian volumes. The intersection is already signalized, providing a higher level of service than a roundabout. A roundabout provides on demand pedestrian crossing opportunities. Infrequent pedestrian patterns such as school start/stop would directly conflict with motorists demands and would impact the level of service of the intersection during that period. The current intersection accommodates approximately 118 pedestrian movements in the morning peak hour and 114 pedestrians in the afternoon peak hour.
- **Wellington** – This intersection has high vehicle volumes, as well as pedestrian volumes. The intersection already has a pedestrian signal. Collision data does not indicate high crash frequencies. The current intersection accommodates approximately 58 pedestrian movements in the morning peak hour and 122 pedestrians in the afternoon peak hour. A roundabout is not recommended at this intersection.

- Fremont - A roundabout is recommended at this location, improving the current stop controlled intersection, reducing congestion and improving safety. East/west traffic flows are significantly higher than north/south movements, therefore, competing movements and capacity issues will not result, and the level of service will not be compromised. There are limited pedestrian movements at this intersection as well. The current intersection accommodates approximately 5 pedestrian movements in the morning peak hour and 16 pedestrians in the afternoon peak hour.

MUP – Fremont to Burns

In an effort to minimize environmental impact or conflict with potential routing for the future Fremont Connector, it was proposed to construct the MUP on the north side of Prairie Avenue, north of the existing open ditch (“AO” stream classification). Upon initial site reconnaissance and comparing property lines to the ditch bank from online mapping, it appeared there was adequate width to build a three meter path without impacting the stream. Upon further investigation with survey equipment, now that the approved design work has commenced, it was determined that a portion of the stream at the east end meanders towards the property lines and that the path cannot be constructed without culverting this portion. Therefore, the City’s consultant is in the process of securing the required permits through the Provincial Waster Sustainability Act and anticipates an approval process of approximately 7 to 12 months.

Furthermore, environmental compensation for impacts to the stream will be required as part of the application process which will increase the overall cost of the project. It should be noted that if this alignment is preferred for the future Fremont Connector, the stream will be impacted along that entire alignment and that this untimely exercise would need to be carried out again at that time for the remainder.


This limits the City’s ability to tender the work for construction in 2020. However if approvals are received within the anticipated timeframe, the work will be able to proceed with the Prairie Avenue road works project between CMR and Fremont Street in the 2021 construction year.

FINANCIAL IMPLICATIONS

The additional cost for environmental compensation in order to construct the MUP will be determined as the design is advanced and staff will bring forward during the 2021 budget deliberations should additional funding be required.

Prairie Avenue – Design Recommendations Update

OPTIONS (✓ = Staff Recommendation)

	#	Description
	1	Approve the design recommendations as presented in this report for detailed design, the cross section proposed in the November 19, 2019 report with an additional roundabout at York Street.
	2	Provide direction for an amended scope.

ATTACHMENTS

Att#1: Option 4 concept west of CMR
Att#2: Option 4 concept east of CMR
Att#3: Roundabout concepts west of CMR
Att#4: Roundabout concepts east of CMR
Att#5: Roundabout Analysis east of CMR
Att#6: Roundabout Analysis west of CMR

Lead author(s): Jason Daviduk