

Agenda – Standing Policy Committee on Public Works – May 7, 2024

REPORTS

Item No. 16 Safety Study at Main Street and Assiniboine Avenue

WINNIPEG PUBLIC SERVICE RECOMMENDATION:

1. That this report be received as information.

Agenda – Standing Policy Committee on Public Works – May 7, 2024

DECISION MAKING HISTORY:

STANDING COMMITTEE RECOMMENDATION:

On October 10, 2023, the Standing Policy Committee on Public Works considered the recommendation of the City Centre Community Committee and directed the Winnipeg Public Service to study the intersection of Assiniboine Avenue at Main Street and report back to the Standing Committee in 210 days with options to improve safety for pedestrians and cyclists.

COMMUNITY COMMITTEE RECOMMENDATION:

On September 25, 2023, the City Centre Community Committee passed the following motion:

WHEREAS troublesome pedestrian death and near misses involving both pedestrians and cyclists on Assiniboine and Osborne within the Fort Rouge East Fort Garry Ward necessitate pedestrian-prioritized safety plans;

AND WHEREAS the built structures on both Assiniboine and River are built to increase car speeds, are aligned for drivers only, and have little buffer for pedestrians;

AND WHEREAS Assiniboine Avenue has frequent conflicts between pedestrians and cyclist in all directions;

AND WHEREAS South Osborne Street has had too many pedestrian deaths where speed was a factor, and Osborne Village has slip lanes on River resulting in high conflict places for pedestrians;

AND WHEREAS the local Councillor hears from pedestrian and cycling frequently on concerns and vehicular traffic conflicts on Assiniboine and Main, and River and Osborne and South Osborne where drivers routinely fail to completely stop at the red lights; and/or fail to look in all directions for pedestrians and cyclists; or fail to adhere to posted speeds;

AND WHEREAS Council's Strategic Priorities Action Plan prioritizes a green and growing City with Sustainable Renewal of Infrastructure with the view towards the outcome of achieving a comprehensive, safe, and well-maintained walking and cycling network that eliminates gaps on collector and arterial streets;

Agenda – Standing Policy Committee on Public Works – May 7, 2024

DECISION MAKING HISTORY (continued):

COMMUNITY COMMITTEE RECOMMENDATION (continued):

THEREFORE BE IT RESOLVED that the Standing Policy Committee on Public Works be requested to direct the Winnipeg Public Service to report back on a Pedestrian-prioritized pilot that closes Assiniboine Avenue at the block of Fort to Main to vehicular traffic, and eliminate the slip lane at River and Osborne; and consider continuous sidewalks and/or other positive interventions like scramble intersections, wider sidewalks on Osborne Street.

ADMINISTRATIVE REPORT

Title: Safety Study at Main Street and Assiniboine Avenue

Critical Path: Standing Policy Committee on Public Works

AUTHORIZATION

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

EXECUTIVE SUMMARY

The Public Service was directed to report back on options to improve safety for pedestrians and cyclists at the intersection of Assiniboine Avenue and Main Street.

An independent consultant specializing in road safety was retained to identify key risk factors and opportunities to improve safety for all users.

The consultant identified two serious risk factors that require mitigation:

1. The existing eastbound right turn from Assiniboine Avenue onto southbound Main Street puts pedestrians and cyclists using the south crossing at significant risk.
2. The permissive left turn from northbound Main Street onto Assiniboine Avenue puts both drivers completing the turn and pedestrians crossing on the west crosswalk at significant risk.

To mitigate risk related to the eastbound right turn from Assiniboine Avenue, eastbound Assiniboine Avenue will be closed between Fort Street and Main Street. All vehicles travelling eastbound on Assiniboine Avenue will be required to turn left onto Fort Street.

To mitigate risk related to the permissive left-turn from northbound Main Street onto Assiniboine Avenue, the permissive left-turn signal phase will be changed to a fully protected phase. Left turns will be prohibited during the afternoon peak period (15:30-17:30 Monday to Friday) due to the delay the fully protected left-turn phase would cause to southbound Main Street traffic.

The Public Service intends to install these mitigation measures in summer 2024 and will report back in spring 2025 with an overview of how the installation performed.

RECOMMENDATIONS

1. That this report be received as information.

REASON FOR THE REPORT

On October 10, 2023, the Standing Policy Committee on Public Works considered the recommendation of the City Centre Community Committee and directed the Winnipeg Public Service to:

1. Study the intersection of Assiniboine Avenue at Main Street and report back to the Standing Committee in 210 days with options to improve safety for pedestrians and cyclists.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no direct implications to receiving this report as information. The cost to implement the Assiniboine Avenue eastbound closure at Fort Street with temporary traffic control for a one-year period is \$7,900. The cost to implement the traffic signal modifications to change the northbound left turn to protected-only phasing is \$80,000. These will be funded through the Road Safety Improvement Program budget.

HISTORY/DISCUSSION

STUDY AREA

The intersection of Main Street and Assiniboine Avenue is controlled by a pedestrian half signal. Cyclists and pedestrians crossing Main Street use a push button to activate the signal and stop vehicle traffic on Main Street. The intersection provides a critical crossing of Main Street for both pedestrians and cyclists connecting Assiniboine Avenue to the Forks. There is a two-way bike crossing on the south side of the intersection and pedestrian crosswalks on both the north and south side of the intersection. Figure 1 shows the study area and the bike connections to the surround network.

Main Street is a north-south Regional Street with an eight-lane divided urban cross-section and it is part of the full-time truck route network. It is the primary connection between north Winnipeg, downtown and south Winnipeg as it transitions to St Mary's Road south of the Norwood Bridge. The Average Weekday Daily Traffic (AWDT) volume on this section of Main Street is approximately 48,100 vehicles (2022 Traffic Flow Map). The posted speed limit is 60 km/h through the intersection but transitions to 50 km/h just north. Numerous transit routes travel along this segment.

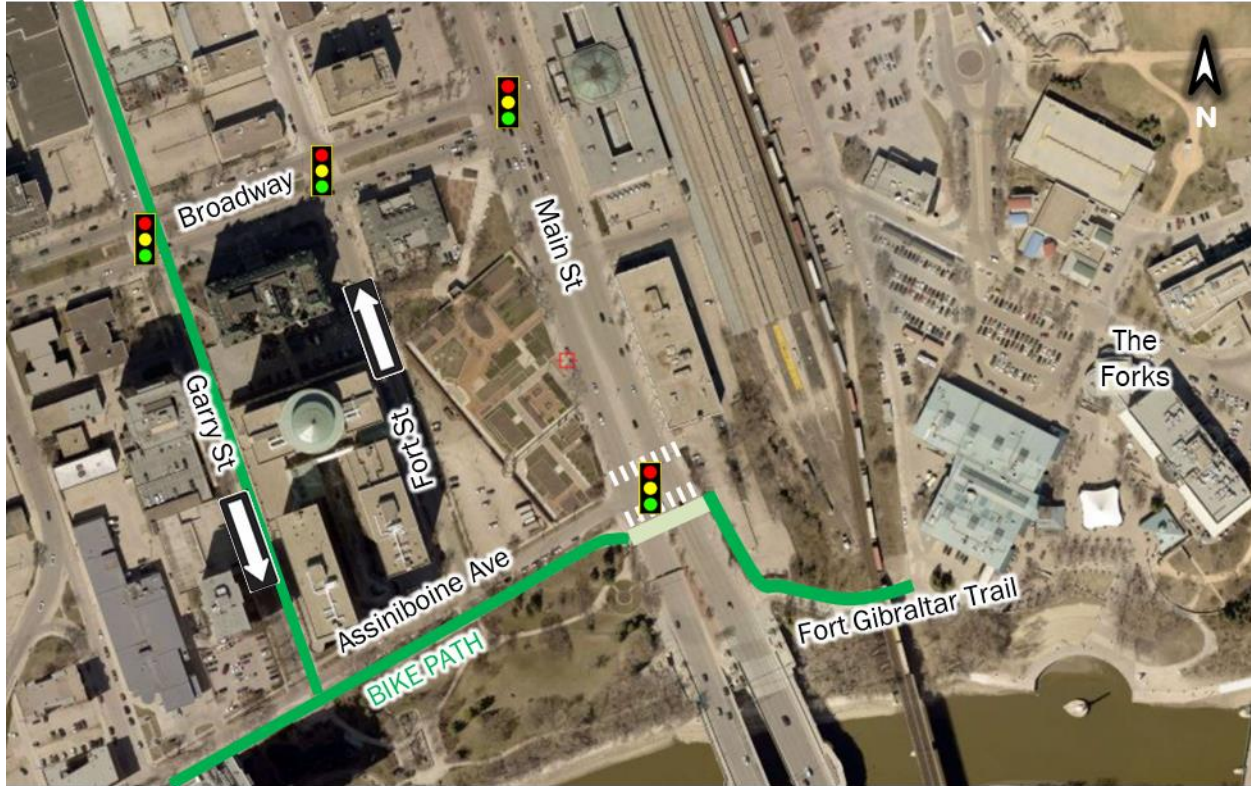


Figure 1: Main Street and Assiniboine Avenue Intersection

Assiniboine Avenue forms the west leg of the intersection. It is a collector road with one through lane in each direction and a default urban speed limit of 50 km/h. The AWDT volume on this section of Assiniboine Avenue is approximately 4,500 vehicles (based on expansion factors applied to a 12-hr count from 2023). It is not used for long east-west movements across downtown by vehicles but the two-way bike lane along the south side of it forms a critical component of the city bike route network.

The vehicle approaches to the intersection have the following lane configuration:

- The eastbound approach on Assiniboine Avenue has a single lane that is stop-controlled and must turn right.
- The northbound approach on Main Street has four through lanes and one left-turn lane.
- The southbound approach on Main Street has three through lanes and one shared through/right-turn lane.

ROAD SAFETY REVIEW

The City retained an independent consultant specializing in road safety to complete an in-service road safety review of the intersection to identify key risk factors and opportunities to improve safety for all users. The review included the following:

- Collision analysis using collision data from the period 2017-2021.
- Video conflict analysis (VCA) to provide a better understanding of the conflicts or “near-misses” between vehicles and pedestrians and cyclists. A total of 60 hours of video was

recorded over 5 days (October 18, 19, 20, 21, 23) during the 12-hour period 7 a.m. to 9 p.m. each day.

- Review of Bike Winnipeg Dangerous Intersections Survey (October 2023) responses and submissions formally made to the Standing Policy Committee on Public Works attached to the October 10, 2023, disposition.
- Assessment of roadway geometry, traffic operations, traffic control, and human factors.

A summary of key safety issues is identified in Figure 2 and described further below.

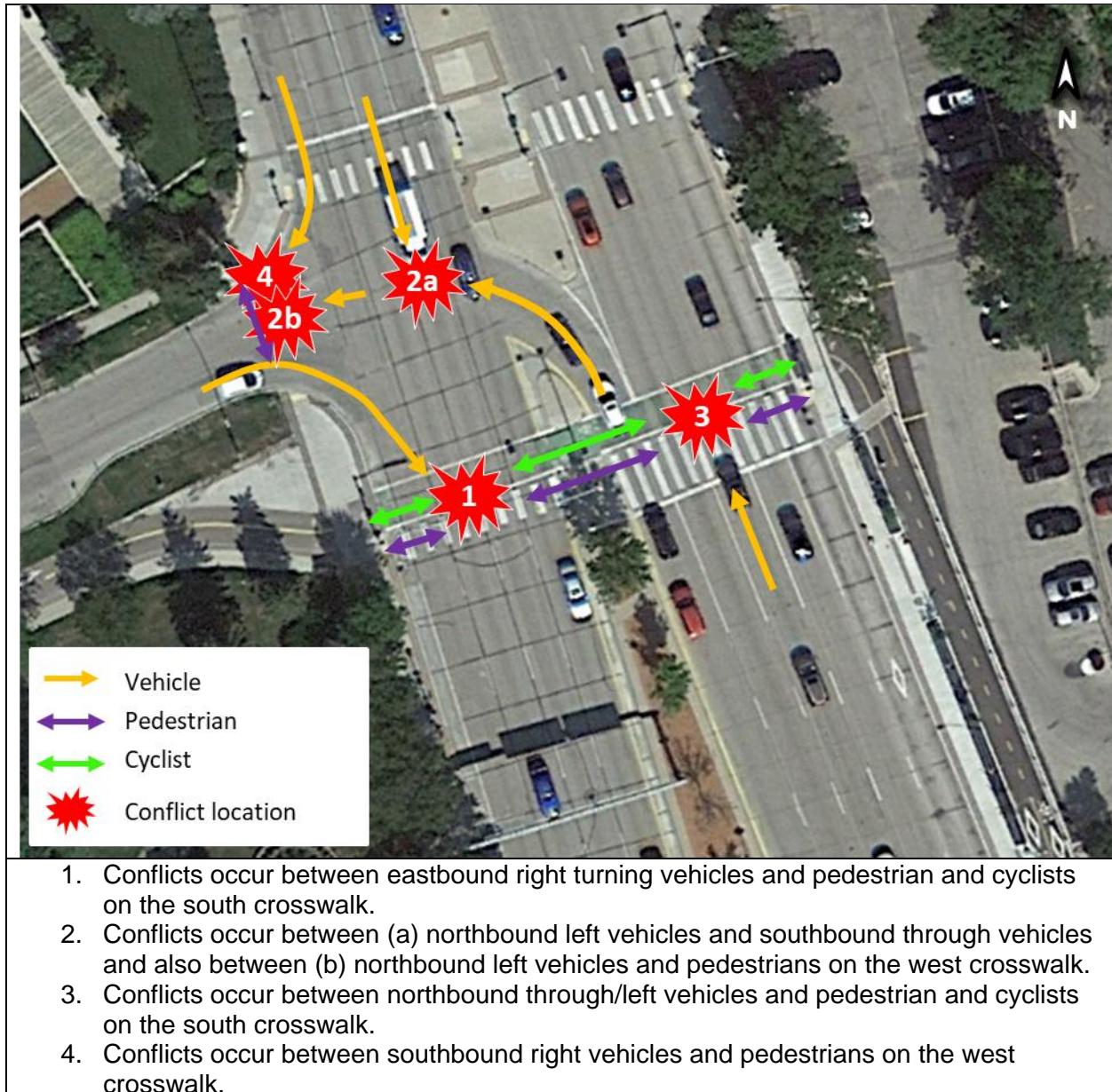


Figure 2: Key Safety Issues and Key Conflict Locations

1. The eastbound right turn from Assiniboine Avenue onto southbound Main Street puts pedestrians and cyclists using the south crossing at significant risk. Issues include:

- Although the pedestrians and cyclists have the right of way when Main Street traffic is stopped, the eastbound right turning vehicles use this time to turn right aggressively, because otherwise there are few gaps in southbound traffic.
- The VCA showed a total of 71 vehicle versus pedestrian medium risk conflicts during the five-day period. The involvement rate in medium risk pedestrian right hook conflicts was about 1.1 times higher than the benchmark rate for right hook movements on urban arterials in North America.
- The VCA showed a total of 88 vehicle versus cyclist medium risk conflicts during the five-day period. The involvement rate in medium risk cyclist right hook conflicts was almost two times higher than the benchmark rate for right hook movements on urban arterials in North America.
- The consultant road safety review identified this as a serious risk factor that should not be left as-is.

2. The permissive left turn from northbound Main Street onto Assiniboine Avenue puts both drivers completing the turn and pedestrians crossing on the west crosswalk at significant risk. Issues include:

- Permissive left-turn signal phasing is highly problematic at this location due to the requirement to cross four lanes of opposing southbound through traffic, low gap availability, and high speeds of some southbound traffic. Low gap availability in southbound traffic contributes to aggressive behaviour by left-turning vehicles which in turn leads to many of the conflicts observed in the VCA and collisions observed in the collision history.
- The VCA showed a total of 600 conflicts between northbound left-turning and southbound vehicles, representing an average of 120 per day. Of these, 465, or 77.5 percent, were high or critical risk, meaning that the speed of the southbound vehicle was above 50 km/h. The involvement rate in high risk left-turn conflicts was six times higher than the benchmark rate for permissive left turn movements on urban arterials in North America.
- Left-turning drivers have such difficulty judging gaps in southbound traffic that they have little attention left for monitoring the west crossing of the intersection for pedestrians. The VCA showed a total of 37 vehicle versus pedestrian medium risk conflicts during the five-day period. The involvement rate in medium risk left turn versus crossing pedestrian conflicts was almost four times higher than the benchmark rate for permissive left turn movements on urban arterials in North America.
- The consultant road safety review identified this as a serious risk factor that should not be left as-is and should be either made fully protected with signal phasing or closed / prohibited.

3. Red light violations by northbound vehicles result in near-misses with pedestrians and cyclists on the south crosswalk. Issues include:

- During a 12-hour period, almost 20 percent of left-turning turning vehicles committed a red light violation (284 out of 1539). The peak violation rates were 6

p.m. to 7 p.m. (30 percent) and 4 p.m. to 5 p.m. (28 percent). This is an indication of how difficult it is to make this left turn across four lanes of heavy traffic, resulting in drivers seeking to take advantage of stopped southbound traffic when the pedestrian or bicycle signal is active.

- The VCA showed a total of 18 pedestrian and cyclist medium risk conflicts occurred between a northbound vehicle and a person in the south crossing. These conflicts generally only occur as a result of a vehicle running the red light or a pedestrian/cyclist crossing phase violation. A significant quantity of violations by both user groups was observed during the site visit and video review.

4. The southbound right turn from Main Street onto Assiniboine Avenue presents a moderate risk for pedestrians crossing on the west crosswalk. Issues include:

- The right-turn radius is relatively high, this leads to higher speed right-turn movements and the angle of visibility at the conflict point is not very good.
- The VCA showed a total of four pedestrian medium risk conflicts occurred between a right-turning vehicle and a person in the west crosswalk.

MITIGATION MEASURES

The below mitigation measures are recommended by the Public Service to address each of the key safety issues identified. The recommendations rely on the safety issues and conflicts identified in the consultant led in-service road safety review and also consider impacts to the surrounding transportation network.

1. The eastbound right from Assiniboine Avenue onto southbound Main Street puts pedestrians and cyclists using the south crossing at significant risk.

Recommended mitigation:

- This risk movement should be eliminated by closing eastbound Assiniboine Avenue between Fort Street and Main Street. All vehicles travelling eastbound on Assiniboine Avenue will be forced to turn left onto Fort Street.
- Much of the vehicle traffic volume turning right from Assiniboine Avenue is cut-through traffic leaving the downtown to travel southbound on Main Street. It is anticipated that this traffic will be displaced to Broadway or York Avenue to turn right onto Main Street.
- Fully signaling the intersection to provide a fully protected right-turn (with no right turn on red restriction) was considered but is not recommended. It would rely on motorist compliance to not turn right on red and would have very negative impact to traffic operations on southbound Main Street due to the signal phase time it would take away from southbound to fully accommodate the eastbound right-turn during the afternoon peak period.
- The cost to implement the Assiniboine Avenue eastbound closure at Fort Street with temporary traffic control for a one-year period is \$7,900.

2. **The permissive left turn from northbound Main Street onto Assiniboine Avenue puts both drivers completing the turn and pedestrians crossing on the west crosswalk at significant risk.** Two options were considered for mitigating this risk.

Option A - Fully Protected Northbound Left with PM Peak Period restriction.

This option would include the following:

- Changing the permissive left-turn signal phase to a fully protected signal phase for the northbound left-turn. Left turns will be prohibited during the afternoon peak period (15:30-17:30 Monday to Friday) due to the delay the fully protected left-turn phase would cause to southbound Main Street traffic.
- Left Turns Prohibited signage for the afternoon peak would be installed and left-turning traffic would be displaced to Broadway.
- This option would remove many of the most significant risk factors at the intersection if drivers comply with it. Although there are known motorist compliance issues at the site, the signal phasing strategy is likely to maximize compliance during most hours of the day. The main residual risk in this option is non-compliance with the prohibited left-turn during the afternoon peak period. The types of collisions that can occur from such non-compliance are potentially serious. Although it is not possible to quantify these residual risks, the residual risk of these collision types is not expected to be higher than it is under current conditions during the afternoon peak period.
- Vehicle circulation and access to the surrounding roadways would be maintained except during the afternoon peak period.
- Traffic operations at surrounding intersections would be mostly unaffected except for during the afternoon peak period when there would be noticeable increased delays to turn left at the Main Street and Broadway intersection.
- The cost to implement the required signal timing modifications is approximately \$80,000.

Option B - Fully Close the Northbound Left

This option would include the following:

- The northbound left-turn lane would be fully closed and left-turns prohibited at Assiniboine Avenue. All northbound left-turn traffic would be displaced, mostly to Broadway.
- This is the safest option as it effectively eliminates all risks associated with the northbound left-turn. At the same time, even though a full left-turn closure would remove these residual risks from this intersection, it is possible that the same risks are displaced to one or more intersections downstream that absorb the alternative routing.
- Vehicle circulation and access to the surrounding roadways from northbound Main Street would be greatly impacted.
- Noticeable increased delays to turn northbound left at the Main Street and Broadway intersection during both the morning and afternoon peak periods.
- The closure could be completed for approximately \$28,000 using temporary traffic control for a one-year period. Maintenance of the temporary traffic control would have an on-going cost associated with it until a permanent change to the roadway was completed to remove the left turn lane. To close the approximately 160 metre

left turn lane across the bridge in the longer term would have significant cost implications.

Recommended mitigation:

- The Public Service intends to implement Option A - Fully Protected Northbound Left. Motorist compliance and resulting safety impacts will be monitored to determine how it is performing. If significant safety issues persist a full closure of the northbound left-turn would be the next step.

3. Red light violations by northbound vehicles result in near-misses with pedestrians and cyclists on the south crosswalk. Recommended mitigation:

- This safety issue should be reduced by changing the traffic signal phasing from permissive to protected for the northbound left-turn movement. This new protected left-turn phase will provide safe gaps each signal cycle and reduce the likelihood of red light violations.
- Motorists running the red light or a pedestrian/cyclist crossing phase violation may still occur.

4. The southbound right turn from Main Street onto Assiniboine Avenue presents a moderate risk for pedestrians crossing on the west crosswalk. Recommended mitigation:

- Major changes to this southbound right movement are not recommended at this time. Winnipeg Transit currently uses this southbound right turn as part of Route 23 and will continue to do so until the future Primary Transit Network is launched (planned for June 2025).
- In the future, a design drawing and cost estimate will be developed to reduce the radius of the turn and slow turning vehicles.

NEXT STEPS

The Public Service intends to implement the following mitigation measures in summer 2024 (these are also illustrated in Attachment A):

1. To mitigate risk related to the eastbound right turn from Assiniboine Avenue, eastbound Assiniboine Avenue will be closed between Fort Street and Main Street. All vehicles travelling eastbound on Assiniboine Avenue will be forced to turn left onto Fort Street. The estimated cost to install and maintain the temporary traffic control for one-year is \$7,900.
2. To mitigate risk related to the permissive left-turn from northbound Main Street onto Assiniboine Avenue, the permissive left-turn signal phase will be changed to a fully protected phase. Left turns will be prohibited during the afternoon peak period (15:30-17:30 Monday to Friday) due to the delay the fully protected left-turn phase would cause to southbound Main Street traffic. The cost to implement the traffic signal modifications necessary for the northbound left turn protected-only phasing is \$80,000.
3. The existing paid parking along the south side of Assiniboine Avenue between Main Street and Fort Street will be converted from parallel parking (seven stalls) to back-in-angled parking which will result in a net gain of 5 parking stalls. This is not a mitigation

measure to a safety issue but is a result of the Assiniboine Avenue eastbound closure at Fort Street.

The Public Service will inform the public of these changes via:

- Social media posts on Twitter, Facebook, and Instagram;
- Letters and posters distributed to residents and businesses of Fort Garry Place and to Hotel Fort Garry.

An additional report will be submitted to the Standing Policy Committee on Public Works in spring 2025 with an overview of how the 2024 installation performed. Motorist compliance and resulting safety impacts of the protected northbound left-turn will be monitored to determine how it is performing. If significant safety issues persist, a full closure of the northbound left-turn would be the next step.

There is planned construction in 2024 for westbound Broadway which will greatly impact traffic operations at the Main Street and Broadway intersection for most of summer 2024. Traffic operational impacts of the recommended changes will be assessed once the Broadway construction is completed.

FINANCIAL IMPACT

Financial Impact Statement Date: April 5, 2024

Project Name:

Safety Study at Main Street and Assiniboine Avenue

COMMENTS:

As this report is for information purposes, there are no financial impacts.

For clarity, the estimated cost of traffic signals modifications and one year of temporary traffic control measures is \$94,053 including capital overheads. These improvements will be completed and charged to existing budgets within the 2020 Road Side Safety Improvements capital project #1831000120.

J. Ruby, 2024-04-05
J. Ruby CPA, CA
Manager of Finance & Administration

CONSULTATION

This Report has been prepared in consultation with: N/A

OURWINNIPEG POLICY ALIGNMENT

OurWinnipeg 2045

This report is in accordance with OurWinnipeg2045 as per:

Goal: Economic Prosperity

- **Policy 3.17 Sustainable Transportation Connectivity:** Prioritize enhancement to the integrated and sustainable transportation system that improve its viability and access to places such as educational institutions, employment opportunities, recreation and library facilities, providers of essential goods and services and health providers, especially for children, and for neighbourhoods most impacted by poverty.

Goal: Good Health and Well-Being

- **Policy 4.10 Transportation Safety:** Design, construct, maintain, and regulate an integrated and sustainable transportation system and related infrastructure that optimize safe, connected, and reliable mobility, and minimize severe injuries and fatalities for all road users.

Transportation Master Plan (2011)

Section 5.2.1 Direction 1 - Ensure that the pedestrian network is planned, designed, implemented, and maintained to increase the competitiveness of walking as a transportation mode choice.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

There is a linkage between making Winnipeg's transportation network safer and more efficient with Key Directions 3.4 "Increase Active Transportation Rates".

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

Consideration was given as to whether this report connects to the Winnipeg Poverty Reduction Strategy (PRS) and its Goals and Objectives, and it was determined that the PRS is not applicable to this specific report.

SUBMITTED BY

Department: Public Works
Division: Transportation
Prepared by: Keenan Patmore, M.Sc., P.Eng., Regional Traffic Engineer
Date: April 9, 2024

Attachment:
Attachment A: Recommended Mitigation: Main Street and Assiniboine Avenue

