

**Subject: All Way Protected/Permitted Left-Turn Signals at Intersection of Bank
and Mitch Owens**

File Number: ACS2023-OCC-CCS-0084

Report to Transportation Committee on

28 September 2023

and Council 11 October 2023

Submitted on June 8, 2023 by Councillor G. Darouze, Osgoode Ward (20)

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Ward: Osgoode (20)

**Objet : Installation d'une flèche de virage à gauche protégé dans toutes les
directions à l'intersection de la rue Bank et du chemin Mitch Owens**

Dossier : ACS2023-OCC-CCS-0084

Rapport au Comité des transports

le 28 septembre 2023

et au Conseil le 11 octobre 2023

Soumis le 8 juin, 2023 par Conseiller G. Darouze

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REPORT RECOMMENDATION(S)

That Transportation Committee recommend that Council approve the installation of protected/permitted left turn phasing (advance left-turn arrow) in all directions at the intersection of Bank St and Mitch Owens Rd.

RECOMMANDATION(S) DU RAPPORT

Que le Comité des transports recommande au Conseil d'approuver l'installation de feux de virage à gauche avancés et verts dans toutes les directions à l'intersection de la rue Bank et du chemin Mitch Owens.

BACKGROUND

This intersection, and the abutting streets nearby, have been a point of concern amongst residents in recent years. I have engaged in consultation with many residents concerned with through-traffic on neighbourhood streets, intersection driver safety, and cyclist/pedestrian safety at this intersection. This intersection is where two large arterial roads meet, connecting the easternmost and southernmost boundaries of the city. Given that there are left turn lanes available in all directions at the intersection, it is appropriate to implement appropriate traffic-mitigation and neighbourhood protective measures, respectively.

DISCUSSION

The intersection of Bank St and Mitch Owens Rd is an outlying example to the City requirements for implementation of left-turn arrows. The intersection is approximately 300m away from Marco St and Mason St, two small residential roads that barely accommodate two vehicles at one time. Due to fact there are not left-turn signals at this intersection, residents report examples of vehicles utilizing Marco St and Mason St as a neighbourhood cut-through.

The studies for left-turn signals do not always account for the impacts of through-traffic and the subsequent impacts on active transportation. The implementation of protected/permitted left turn signals will also aid this intersection (which sees high volumes during rush hour) in facilitating seamless traffic movement to areas such as Findlay Creek, Manotick, and Greely/Metcalf.

Overall, through consultation with local communities, and with concerns for pedestrian traffic particularly within a school zone, I feel that the implementation of these left-turn signals will be beneficial for the intersection and community as a whole. Although there is not a great deal of active transportation at the intersection as of yet, the future development of active transportation in Greely will likely lead to more pedestrians at the intersection.

FINANCIAL IMPLICATIONS

If approved, this project for an unwarranted installation would consume \$15,000 of the \$75,000 annual budget for this type of traffic signal change and could cause insufficient budget to be available for other installations that are warranted in 2023.

LEGAL IMPLICATIONS

There are no legal impediments to implementing the recommendation as outlined in the report.

COMMENTS BY THE WARD COUNCILLOR(S)

As the Councillor bringing this report forward, I am aware and supportive of the report.

CONSULTATION

Ongoing consultation with the local community, as well as drivers who use the intersection prior to this report.

Public Works Comment

The intersection of Bank Street and Mitch Owens is controlled through a traffic signal which includes the operation of a protective/permissive left turn arrow for the southbound movement. All other directions have a green ball whereby any left-turning vehicles must wait for a gap in opposing traffic to safely turn left. A protected permissive left turn arrow provides for a left turn arrow at the start of green phase, if there are left-turning vehicles in the left turn lane, followed by a green ball so that any left turning vehicles approaching the intersection can safely turn left when there is a gap in opposing traffic.

Staff Position/Recommendation

At this time Traffic Services does not support the implementation of additional permissive-protected left turn signal displays at the intersection of Bank Street and Mitch Owens Road. The location does not meet the necessary criteria established as part of the warranting process for the installation of these traffic signal operation features. Should Council approve the report, 20% of the yearly budget available for Traffic Services to implement these types of warranted traffic signal changes city-wide will be used for this unwarranted location. Therefore, any warranted signal changes to provide a left turn arrow may be delayed to 2024 should funding allocated to the installation of left turn arrows exceed the 2023 funding envelope.

Staff recommend that the traffic signal-controlled intersection continue to be monitored and that signal operations continue to be adjusted to balance overall intersection performance. Further, staff will continue to assess changes in traffic volumes in the area and if they meet warrants in the future, staff will install the permissive-protected left turn signal displays.

Rationale

Traffic Services reviews all requests for the installation of dedicated left turn signals in a consistent manner. Permissive-protected left turn signals are only installed when the staff review confirms that such a measure is warranted by meeting specific criteria. The city's permissive-protected left turn signal warrant criteria aligns with guidelines and regulations identified in the Ministry of Transportation's Ontario Traffic Manuals.

The City of Ottawa considers the installation of a permissive-protected left turn phase when the following four warrant conditions are met:

1. a dedicated left turn lane is present to permit detection of left turning vehicles within the lane waiting to turn left;
2. the provision of the left turn phase would not significantly impact the overall level of service of the intersection in a negative manner;
3. the average left turn volume is at least two vehicles per cycle of the signals; and,
4. more than 50% of vehicles waiting to turn left must wait more than one cycle of the traffic signal's phase change.

It is important to note that a permissive-protected left turn signal is already in operation for the southbound movement of the intersection.

Traffic Services staff regularly monitor, evaluate, and adjust signal operations based on formal infield studies, infield observations, and through the Traffic Control Center's traffic monitoring cameras which show vehicle movements in real time. Over the years, Traffic Services staff have completed multiple reviews of the Bank Street at Mitch Owens Road intersection and have concluded that the data indicates that this location does not meet the warrant criteria to install any additional Permissive-protected left signals for the northbound, eastbound, and westbound movements.

Over the last five years, staff have completed 12 formal field studies of the intersection, five during the AM peak period, five within the PM peak period and two within off-peak periods. Both an AM peak and PM peak period field study was completed on:

- February 6, 2018;
- January 15, 2020;
- November 29, 2022;
- March 8, 2023; and on,
- March 9, 2023.

The off-peak field studies occurred on March 8th, 2023, and on March 9th, 2023.

An analysis of data collected during the 12 studies identifies that all left turn movements at this intersection are operating at very high level of service. According to the analysis, between 90% and 100% of left turning vehicles able to complete their turn within one green signal cycle.

Included in Table 1 below are the average left turn volume movements based on staff's review of available traffic volume data at the intersection:

Table 1 – Average Left Turn Volume and Opposing Through-Traffic Volume

| Movement | Left Turn Traffic Volume | | | Opposing Through-Traffic Volume | | |
|-----------------|---------------------------------|----------------|-----------------|--|----------------|-----------------|
| | AM Peak | PM Peak | Off-Peak | AM Peak | PM Peak | Off-Peak |
| Northbound Left | 152 | 95 | 99 | 132 | 457 | 311 |
| Westbound Left | 14 | 21 | 10 | 176 | 275 | 109 |
| Eastbound Left | 232 | 176 | 142 | 160 | 172 | 74 |

In addition to the 12 studies conducted to review warrant criteria, staff also performed a review of the history of reported collisions at the Bank Street and Mitch Owens Road intersection to determine whether there were any collision trends that would raise safety concerns. Staff's review of the collision data found that turning movement collisions are not disproportionately high at this location; more specifically, they are not currently statistically over-represented. As such, they are not on the list of locations Traffic Services is currently reviewing through the Road Safety Action Plan for over-represented locations as engineering intervention is unlikely to result in collision reductions or safety improvements.

It is staff's experience that the implementation of unwarranted permissive-protected left turn signals in all directions of the Bank Street and Mitch Owens Road intersection may result in an overall:

- Reduction of the capacity of the intersection;
- Increased cycle lengths;
- Increased vehicle queuing;
- Increased vehicle stopping;
- Increased vehicle delays; and,
- Increased resident complaints.

Staff anticipate increased resident complaints on the overall operation of the traffic control signals for reasons identified in the bulleted list above. Currently, drivers can effectively complete left turn movements at the intersection within one cycle of signal phasing given gaps in opposing traffic. It should also be noted that implementing unwarranted protected permissive left-turn signals in all directions will lead to a low occurrence of the arrow being triggered as most of the time, there will be fewer than the two vehicles in a queue on a red-light phase required to activate the left turn arrow.

Cost Estimate

Staff estimate that the cost to implement permitted-protected left turn signals for the three remaining movements at this location will be approximately \$15,000. The cost includes labour, materials, fleet, and Ottawa Police Services to manage traffic as the work is completed.

Should Council approve the implementation of the permitted-protected left turn signal in all directions at this location, work at this intersection will be prioritized over the installation of warranted signal changes. This means that, \$15,000, or 20% of the available budget of \$75,000 per year allotted for these type of signal changes will be directed towards unwarranted installations. As such, the installation of warranted permitted-protected left turn signals city-wide may be delayed should the cost to implement warranted locations exceeds the allocated budget for 2023. These delayed locations would have to wait until 2024 for installation, subject to approval of the 2024 Capital Budget for this program.

ACCESSIBILITY IMPACTS

No specific accessibility impacts have been identified.

RISK MANAGEMENT IMPLICATIONS

No specific risk implications have been identified.

RURAL IMPLICATIONS

The proposed changes occur at an intersection in a rural ward.

TERM OF COUNCIL PRIORITIES

Not applicable

DISPOSITION

The Public Works Department will take appropriate action based on the recommendations made by the Committee and Council.