

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

File Number: ACS2024-OCC-CCS-0083

**Report to Agriculture and Rural Affairs Committee on 3 October 2024
and Council 16 October 2024**

Submitted on September 23, 2024 by George Darouze, Councillor

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Ward: Osgoode (20)

**Objet : Installation de feux de virage à gauche avancés et verts dans toutes
les directions à l'intersection du chemin River et chemin Mitch Owens**

Dossier : ACS2024-OCC-CCS-0083

Rapport au Comité de l'agriculture et des affaires rurales

le 3 octobre 2024

et au Conseil le 16 octobre 2024

Soumis le 23 septembre 2024 par George Darouze, conseiller

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REPORT RECOMMENDATION(S)

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

RECOMMANDATION(S) DU RAPPORT

Que le Comité de l'agriculture et des affaires rurales recommande au Conseil d'approuver l'installation de feux de virage à gauche avancés et verts dans toutes les directions à l'intersection du chemin River et chemin Mitch Owens.

BACKGROUND

The intersection of River Rd and Mitch Owens Rd has not been considered through previous reports or motions regarding left-turn signals. This is an intersection that does not meet the City's requirements for implementation of left-turn arrows, and so it is being sought through committee.

DISCUSSION

The intersection of River Rd and Mitch Owens Rd is an example of an important intersection that connects the communities of Manotick, Barrhaven, Findlay Creek, and Greely. There is a high volume of traffic that travels through this intersection, and it is the beginning of a 40km/h zone when travelling westbound on Mitch Owens Rd.

The intersection does not meet the requirements for staff implementation of left-turn signals, but it is an intersection that has been of high priority for residents. The nearby retirement homes and residential neighbourhoods, in combination with the nearby high school, have created great desire for active transportation.

Active transportation, in combination with a high volume of vehicular traffic, are the reasons that the left turn signals are being sought at this intersection. The potential for high volumes of traffic travelling straight through the intersection mean that cars will feel pressured to make potentially dangerous left turns during yellow lights, potentially compromising pedestrian safety or the safety of oncoming drivers.

Overall, this intersection is an important arterial connection in rural Ottawa which has been a concern for local residents, and the implementation of protected/permitted left turn phasing at this intersection will be an enormous positive for various communities that use this intersection.

FINANCIAL IMPLICATIONS

This unwarranted project will consume 40% of the budget available for these projects (i.e. \$40,000 of the \$100,000 budget) and could impact planned warranted signal changes in 2024.

LEGAL IMPLICATIONS

There are no legal impediments to approving 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 has occurred with residents who frequent the intersection over previous years.

Public Works Department Comment:

CONSULTATION

Public Works Department Comment:

The intersection of River Road and Mitch Owens Road is controlled through a traffic signal which includes the operation of a protected/permissive left turn arrow for the eastbound movement. All other directions have a green ball whereby any left-turning vehicles can complete left turns during gaps in opposing traffic. A protected/permissive left turn arrow allows for a left turn prior to the green ball signal display. The advance left turn signal activates only if there are vehicles queued in the left turn lane. Following the advanced left turn signal, a green ball is displayed.

Staff Position/Recommendation:

Currently Traffic Services does not support the implementation of additional protected/permissive left turn signal displays at the intersection of River Road 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, 40% 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 new additional warranted signal changes to provide a left turn arrow at an intersection may be delayed to 2025 or later should funding allocated to the installation of left turn arrows exceed the 2024 funding envelope. Traffic Services' ability to implement warranted signals depends on Council's yearly approval of the Capital Budget for this program.

Staff recommend that the 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 warrants are met in the future, staff will install the protected/permissive left turn signal displays.

Rationale

Traffic Services reviews all requests for the installation of dedicated left turn signals in a consistent manner. Protected/permissive left turn signals are only installed when staff review confirms that such a measure is warranted by meeting specific criteria. The City's protected/permissive 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 protected/permissive 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 protected/permissive left turn signal is already in operation for the eastbound movement of the intersection.

Traffic Services staff regularly monitor, evaluate, and adjust signal operations based on formal field studies, field 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 River Road 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 protected/permissive left turn signals for the northbound, westbound, and southbound movements.

Over the last seven years, staff have completed 21 formal field studies of the intersection, eight during the AM peak period, eight within the PM peak period and five within off-peak periods. Field studies have been completed on:

- May 23, 2018 (AM peak period study);
- June 19, 2018 (PM peak period study);

- April 8, 2021(AM and PM peak period studies);
- April 13, 2021 (AM and PM peak period studies);
- May 11, 2023 (AM, Off and PM peak period studies);
- May 25, 2023 (AM, Off and PM peak period studies);
- June 29, 2023 (AM, Off and PM peak period studies);
- September 4, 2024 (PM peak period study);
- September 5, 2024 (AM, Off and PM peak period studies); and,
- September 10, 2024 (AM and Off-peak period studies).

An analysis of the data collected during the 21 studies identifies that all left turn movements at this intersection are operating at very high levels of service. According to the analysis, between 93% and 100% of left turning vehicles can 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	93	122	84	71	230	105
Southbound Left	102	145	102	174	110	93
Westbound Left	27	50	41	342	626	414

In addition to reviewing the location against warrants for protected/permissive left turn signals, the location was also reviewed for fully protected lefts. Fully protected left turn signal installations at signalized intersections are a tool used to mitigate left-turn collisions. These types of installations provide left turn motorists time to complete their turning movement without opposing traffic or conflict; left turn movements may only occur during the left turn indication.

As a part of the 2020-2024 Strategic Road Safety Action Plan, the city developed a systematic approach to review and prioritize locations for implementation city-wide. Staff have performed a review of the currently available reported left-turn collision data from 2017 to 2022 at the River Road and Mitch Owens Road intersection. The outcome of the review indicates that there are no left-turn collision trends that raise safety concerns, or for which the implementation of a fully protected left turn signal phasing would be beneficial. The intersection does not meet the criteria for this type of engineering measure.

It is staff's experience that the implementation of unwarranted protected/permissive or fully protected left turn signals in all directions of the River Road 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 arrows being triggered as most of the time, there will be fewer than the two vehicles in the left turn queues required to activate the left turn arrow.

Cost Estimate

Staff estimate that the cost to implement protected/permissive left turn signals for the three remaining movements at this location will be approximately \$40,000. 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 protected/permissive left turn signals in all directions at this location, the work will be completed as soon as practicable based on staff resource availability. This will allocate \$40,000, or 40% of the available \$100,000 budget for 2024 warranted signal changes, to this non-essential and

unwarranted project. Currently \$30,000 of the \$100,000 budget is allocated for warranted signal phasing changes at intersections in the city.

If any new locations meet warrants for signal phase changes before the end of 2024, and this report is approved by Committee and Council, their implementation may be postponed to 2025 or later if costs exceed the remaining \$30,000 budget. The implementation of any warranted signal phases in 2025 will depend on Council's approval of the 2025 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.