

RECOMMENDATION:

That Committee of Council

- *Endorse the preliminary design concepts for Kingsway Avenue as outlined in the staff report titled Kingsway Avenue Design dated February 18, 2020;*
- *Add to the scope a northbound left hand turn lane at the McLean Avenue intersection (as per Scenario 2 within this report);*
- *Direct staff to proceed with detailed design; and*
- *Direct staff to Consider a new north/south connection from Kingsway Avenue to McLean Avenue as part of the Master Transportation Plan update.*

PREVIOUS COUNCIL/COMMITTEE ACTION

At the February 18, 2020 Committee of Council meeting, staff presented the proposed Kingsway Avenue concept design, and Committee provided feedback.

At the March 17, 2020 Committee of Council meeting, the following motion was passed:

That Committee of Council direct staff to remove the intersection improvements at Tyner Street/Kingsway Avenue from the scope of work for the PCCC off-site works, and include the work as part of the Kingsway Avenue corridor improvements.

REPORT SUMMARY

Further to the February 18, 2020 report which recommended improvements to Kingsway Avenue, this report provides additional information regarding the intersections at McLean Avenue and Kingsway Avenue and Tyner Street and Kingsway Avenue.

BACKGROUND

Kingsway Avenue is classified as a major road network (MRN) which supports efficient movement of large volumes of people and goods and connecting provincial highways to municipal road networks. Currently, Kingsway has one travel lane in each direction for the majority of the corridor with parking permitted on both sides of the road. It is surrounded primarily by industrial and commercial developments and is a designated truck route.

Funding was approved in September 2018 to develop a conceptual design in 2019 with the objective of assessing existing and future traffic performance and determining preferred design criteria for the interim and future horizons. Additionally, funding was approved to prepare a detailed design in 2020 once the concept was endorsed by Committee of Council (CoC).

Kingsway Avenue Design Update

At the February 18, 2020 CoC meeting, staff presented the concept design which was developed for the Kingsway Avenue corridor between Tyner Street and the Mary Hill Bypass. The concept design was informed by a comprehensive traffic study which included provisions for ongoing and future development in the area, identifying measures of the effectiveness at each of the intersections along the corridor, as well as traffic demands compared to capacity of the travel lanes.

Committee was generally supportive of the concept design, but requested additional information relating to the Tyner Street intersection and the McLean Avenue intersection. The Tyner Street intersection was originally proposed as a roundabout to be constructed as offsite works in conjunction with the Port Coquitlam Community Centre (PCCC) development, in addition to a roundabout which is proposed at Kelly Avenue. This was based on a traffic impact assessment performed in 2016. At the March 17, 2020 CoC meeting, this scope was removed from the PCCC offsite scope given the revised recommendation flowing from the updated corridor traffic assessment, and added to the capital project scope to be considered as part of the overall project planned for 2022.

At McLean Avenue, CoC requested staff explore the potential for a northbound left hand turn lane from McLean Avenue onto Kingsway Avenue, a phase that does not currently exist in the signal cycle.

Finally, the previous report recommended a future north / south connector road between Kingsway Avenue and McLean Avenue, and is again recommended in this follow up report.

DISCUSSION

Tyner/Kingsway:

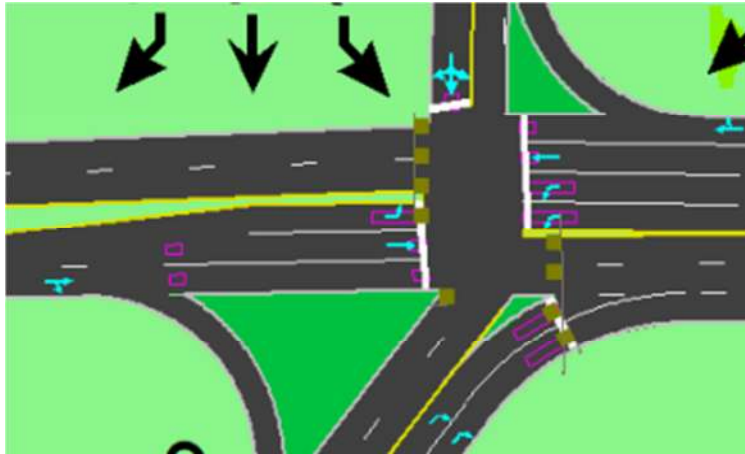
Due to the proximity of the intersections at Kelly Avenue and Tyner Street, a roundabout is not recommended at Tyner Street due to spillback that will occur, limiting the available movements at the Tyner Street intersection. A right in right out (RIRO) configuration results in the best level of service and eliminates the most critical movements at this intersection: left hand turns from Tyner Street onto Kingsway Avenue and left hand turns from Kingsway Avenue onto Tyner Street, resulting in an intersection which operates with a high level of service.

Alternate routing for those motorists no longer able to make left turns at Tyner Street was outlined in the March 17, 2020 report, however, CoC expressed their concern for movements in and out of this area, indicating their support for this configuration would be influenced by the ability to accommodate a northbound left turn at McLean, which will be discussed further below. The staff recommendation at this intersection has not changed.

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McLean/Kingsway:

The concept design prepared by staff did not include a northbound left hand turn lane at the McLean Avenue intersection as shown in the schematic below. The concept did however include dual left hand turns from Kingsway Avenue on to McLean Avenue, and dual right turns from McLean Avenue to Kingsway Avenue.

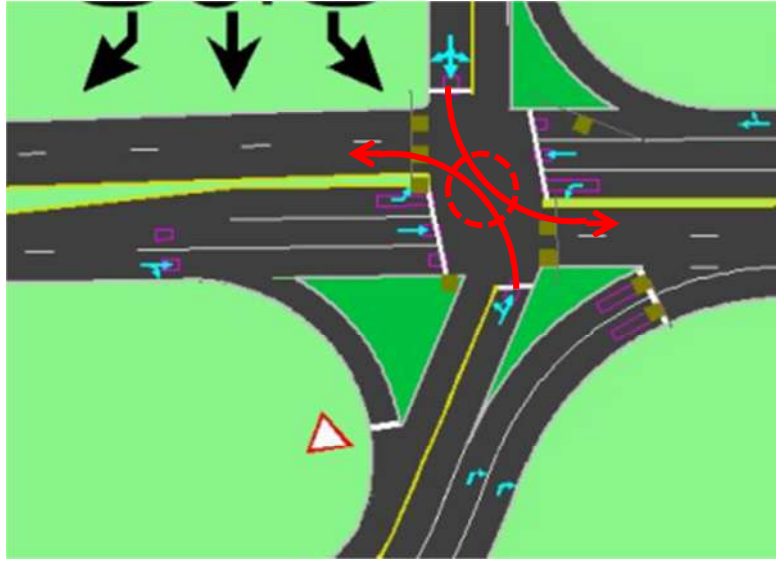


Staff modelled two additional scenarios further to CoC's request, both of which introduce a northbound left hand turn lane at McLean Avenue.

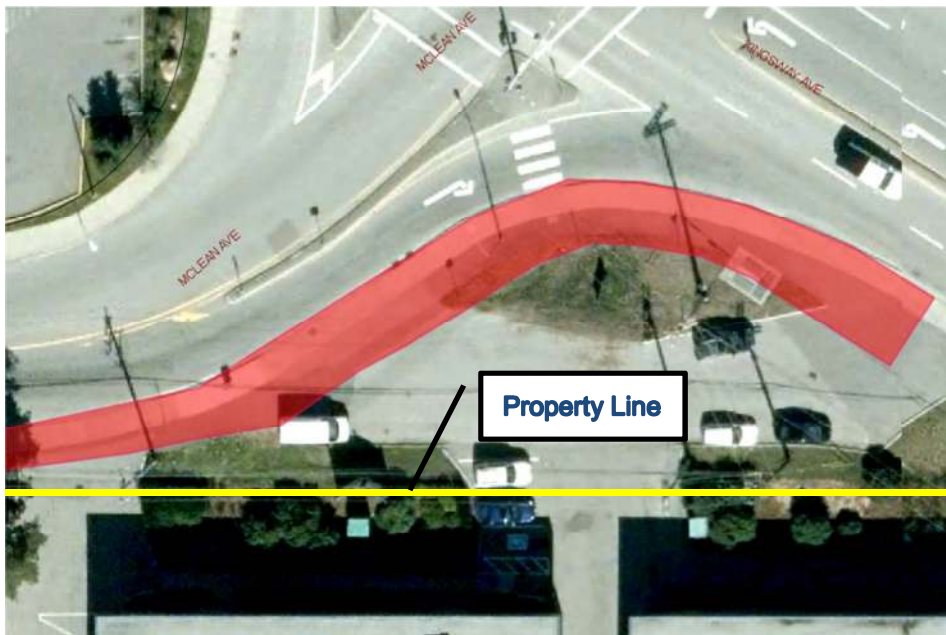
Scenario 1 (Not Recommended)

Due to the geometric constraints, scenario 1 involves removing the proposed dual westbound left hand turn lanes from Kingsway Avenue onto McLean Avenue, thereby removing the necessary receiving lane on McLean Avenue, allowing additional width for the northbound left hand turn lane. The dual westbound left hand turn bays were proposed to avoid traffic backup from McLean Avenue to the Broadway Street / Coast Meridian Overpass intersection and therefore, removing one of these lanes would not mitigate this operational issue. Additionally, there would be less green light time on Kingsway Avenue which causes the through traffic to be poor by 2029 and failed by 2044; this is exacerbated by the fact that there is a commercial driveway access to the north and the southbound left hand turn movement would conflict with a northbound left hand turn movement (shown in the red dashed circle area). To mitigate this safety issue, the left hand turns would have to be set up as split phase (occurring separately rather than simultaneously), increasing the signal cycle time and lessening the green light time on Kingsway.

Kingsway Avenue Design Update



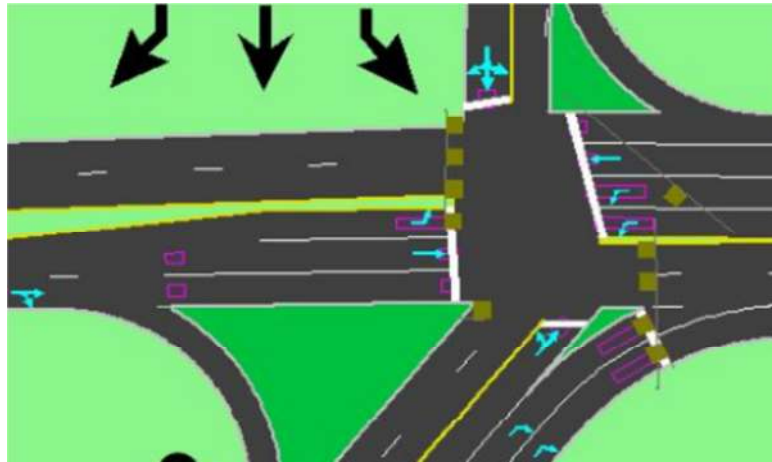
The results of this scenario are as follows: insignificant impact to the overall performance of the intersection in the interim (2029) horizon, however, eastbound through movements along Kingsway would be compromised. By the future (2044) horizon, with the inclusion of a northbound left hand turn bay, the intersection would operate in a failed condition. The following figure depicts the approximate road widening which would be required for this option, which is relatively insignificant and avoids relocation of a significant overhead utility pole.



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Scenario 2 (Recommended)

Staff also modelled a scenario introducing the northbound left hand turn lane without removing the proposed dual left hand turn lanes from Kingsway to McLean, shown below.



This scenario results in overall acceptable levels of service for both the 2029 and 2044 horizon years, however, would require significant widening and impacts to the currently utilized boulevard space, as well as relocation of the complex overhead utility pole. The approximate required widening is depicted below:



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Although this option would result in additional cost to the project and impact to the boulevard space which is currently being used for private parking from the adjacent businesses, it provides the greatest overall benefit to the road network, introducing opportunity to turn left onto Kingsway Avenue, whilst not compromising overall performance of the intersection. It should be noted however, that at this conceptual stage, survey and detailed design has not been performed and the viability of constructing Scenario 2 needs to be confirmed, including: geometry considerations, design standards and feasibility of pole relocation(s) (relocation of the conflicting pole could require relocation of adjacent poles which would bring further cost implications). If at the preliminary design stage, anticipated mid to late summer, it is determined that this scenario is not achievable, staff will report back to Council with an alternative recommendation.

Future North / South Connector:

As discussed in the February 18, 2020 report, the intent for consideration of a north south connector between the intersections at Tyner Street and McLean Avenue is to improve access for businesses along Kingsway Avenue, splitting the approximately 980m currently between the intersections. This alignment should be reviewed and considered as part of the Master Transportation Plan update which is commencing Q2 2020.


FINANCIAL IMPLICATIONS

Eliminating the roundabout at Tyner Street in favour of a right in right out intersection would reduce project costs by \$300,000.

Additional costs to include a northbound left hand turn lane at McLean Avenue as identified in scenario 2 (recommended) is estimated to be \$190,000. This includes assumed road widening and pole relocation.

Additional costs to include a northbound left hand turn lane at McLean Avenue as identified in scenario 1 would be negligible.

OPTIONS (✓ = Staff Recommendation)

| | # | Description |
|---|---|--|
|  | 1 | Support the staff recommendation identified in this report |
| | 2 | Provide direction for an amended scope |

Kingsway Avenue Design Update

ATTACHMENTS

Att#1: February 18, 2020 Kingsway Avenue Design Report

Att#2: Kingsway Interim Concept Design

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