

Tyner Street/Kingsway Avenue Intersection Review

RECOMMENDATION:

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.

PREVIOUS COUNCIL/COMMITTEE ACTION

None.

REPORT SUMMARY

This report summarizes the progression of analysis relating to the Tyner Street/Kingsway Avenue intersection, which started with a review of the road network as part of the off-site works for the new community centre, and has more recently been re-assessed in the context of the overall Kingsway Avenue corridor. The report recommends that the scope of work currently approved for the intersection (a roundabout scheduled for 2021) be removed from the community centre off-site works, and be discussed/considered as part of the Kingsway Avenue corridor improvements projects (tentatively scheduled for 2022).

BACKGROUND

A traffic impact assessment (TIA) was undertaken as part of the initial project planning in 2016 for both the new Port Coquitlam Community Centre as well as the neighboring Quantum development. The traffic study assessed the traffic operations before construction commenced, after opening the facility and completing the neighboring development (2021), as well as 5-years later (2026). The full report can be found in Attachment 1. The assessment was limited to the area directly adjacent to the two properties, and did not include analysis of the remainder of the Kingsway corridor. It also did not assume specific redevelopments along Kingsway, but rather applied overall estimated traffic growth to the network.

This analysis was used to inform the scope of work for the off-site upgrades, and while there were some concerns about how the two roundabouts would operate (at Kelly and Tyner) given their close proximity, ultimately the City chose to include construction of a roundabout at Tyner Street and Kingsway Avenue as part of the scope of the off-site works that are currently scheduled for completion in 2021.

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Since the 2016 TIA was completed, the City has received a number of development applications along the corridor, which prompted the City to undertake a comprehensive review of the corridor to plan for upgrades to meet the City's long term needs. This review included an analysis of the near future (2029) conditions, as well as a longer term (2044) conditions; longer time horizons than the previous TIA. The review was informed from details of known re-developments along the corridor, and their specific traffic demands, and considers the entire corridor from Tyner to the Mary Hill Bypass. This corridor review can be found in Attachment 2. Staff presented the recommendations for the corridor to Committee on February 18, 2020, and committee has provided feedback to further refine the plans before proceeding to detailed design.

One of the key areas that Committee discussed was the Tyner Street/Kingsway Avenue intersection, where staff has changed our recommended approach from a roundabout, to a right-in/right-out access only. Based on the information presented, Committee was not comfortable with the impacts this would have, and requested additional information.

However, the roundabout is currently included with the off-site works for the community centre project, which will be finalized very soon. As such, staff requested that Committee delete this scope of work from the community centre works (scheduled for 2021) and include them with the Kingsway Avenue works tentatively planned for 2022. This would allow for further discussion of this intersection as part of the overall corridor plans. Committee directed staff to bring forward the previous work completed for consideration and identify what has changed, prior to considering this request.

DISCUSSION

The key issue associated with the roundabout that was noted in both studies, is the spillback from one roundabout to the other due to the limited spacing between the intersections of Kingsway Avenue/Kelly Avenue, and Kingsway Avenue/Tyner Street. As volumes increase, the spillback and queueing will increase which limits the available movements at the intersection. Both studies conclude that the Kingsway Avenue/Tyner Street roundabout will function at a reasonable level of service, until spillback conditions start to exist during peak periods causing the roundabouts to fail. The updated assessment that reflects the growth along the corridor, as well as the longer time frame, predicts this is likely to occur by 2026.

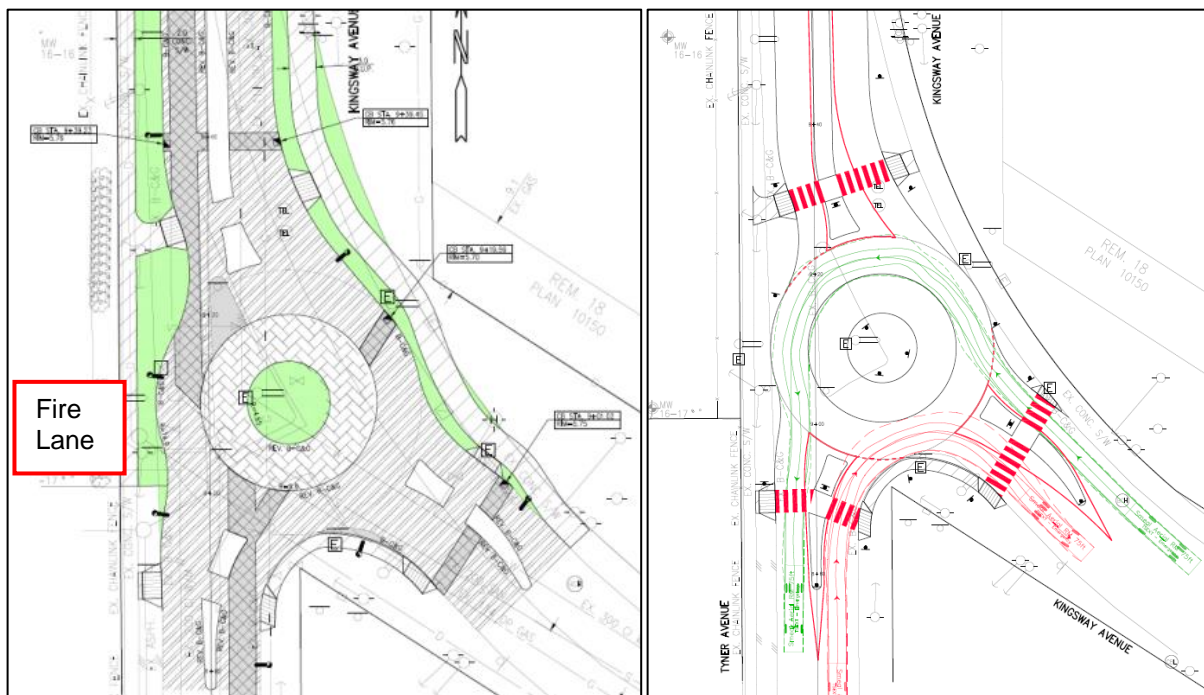
Roundabout operations are based on several variables including: wait times, volume versus capacity and queue lengths. When volume exceeds capacity, the intersection essentially operates like a stop controlled intersection instead of free flowing with a lower level of service. Specifically at roundabouts, motorists must make judgments about entering gaps; these judgments become more challenging at higher volume to capacity ratios because priority is given to motorists within the roundabout. Back up and queueing into roundabouts further causes motorists to stop at the entry legs.

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In addition, now that further design work has been concluded, there are some challenges identified with the turning movements at the Tyner Street/Kingsway Avenue that the Committee should be aware of and consider. Given the skew of the intersection and limited land available for the radius of the roundabout, it will be challenging for larger trucks (including fire trucks) to make the westbound left turn onto Tyner and the westbound thru movements along Kingsway Avenue without mounting adjacent curbs, or the interior truck apron. This will have maintenance implications for this infrastructure in the long term.

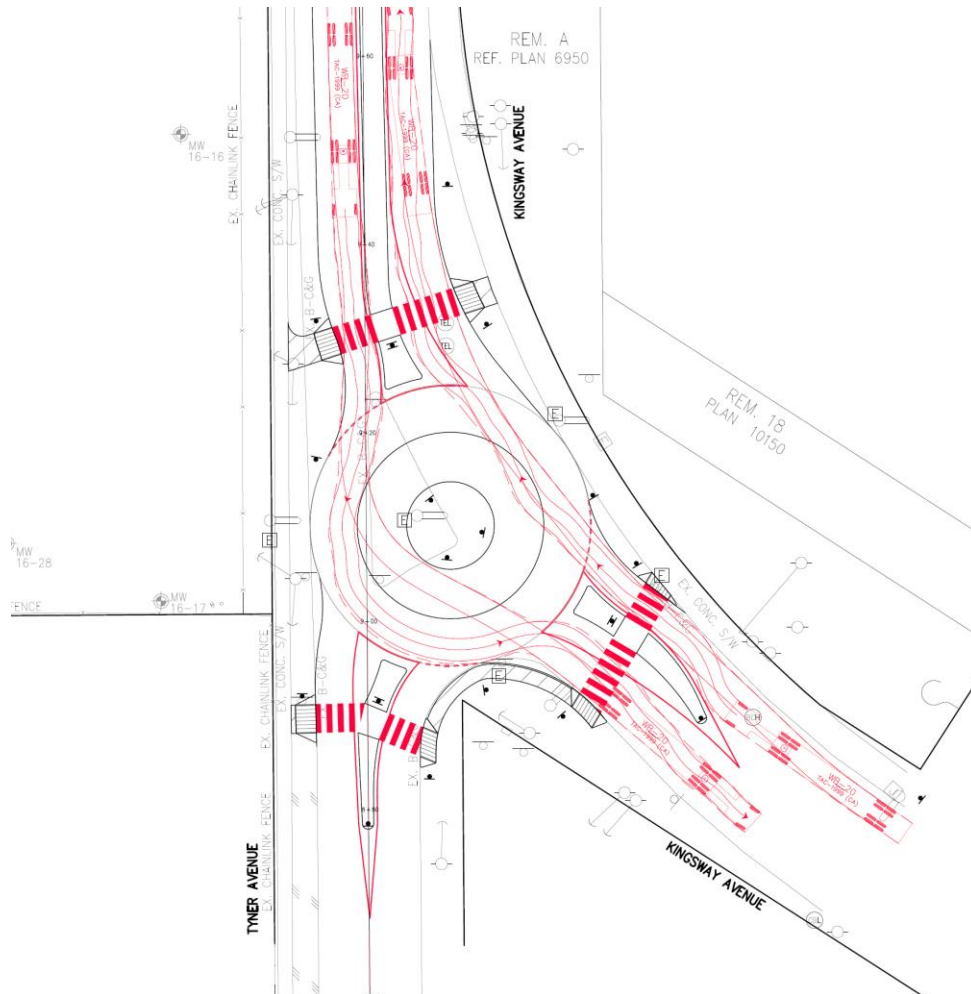
And finally, subsequent to completion of this design (and through the building permit process for the adjacent Quantum development), we now know that lane access is required to the rear of the Quantum site (this would be restricted to fire access only). If the City proceeds with a roundabout, modifications will be required to allow for Fire access to this new lane.

The draft design drawings and turning template for the fire truck are shown below.



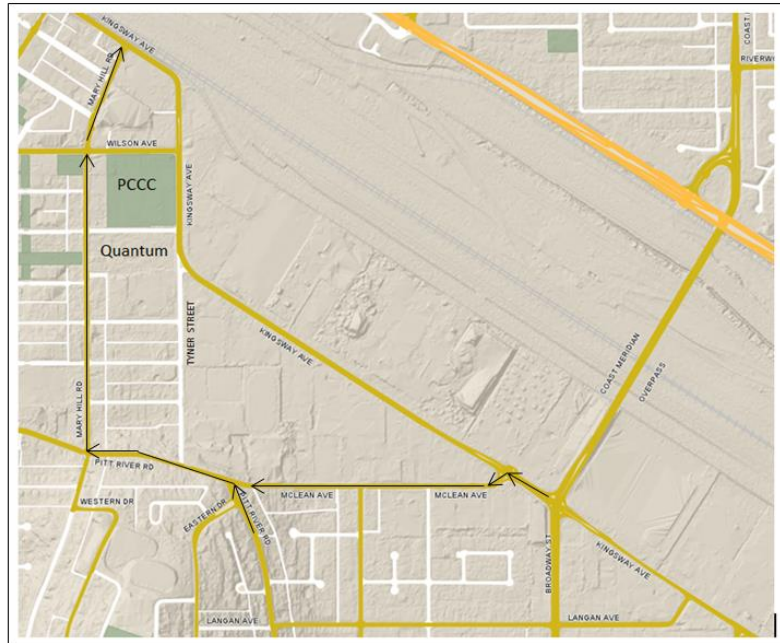
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The draft design drawings and turning template for a tractor trailer are shown below:



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One of the key concerns that staff heard from Committee in the discussion of this specific intersection, was the limited option to re-route traffic who would no longer be able to make left turns. A map of the road network in and around this area is shown below.



The traffic assessments estimate that approximately 65 vehicles are making the left on to Tyner Street, and approximately 60 off of Tyner Street on to Kingsway, during the peak hours. The alternate routes would be as follows:

- For limited local traffic that is already on Tyner Street and wishing to head north on Kingsway Avenue, the alternate routes are via Hawthorne, Central or Rindall Avenues, to Mary Hill Road, which connects to Kingsway Avenue.
- For traffic coming from the south (ex. via Pitt River Road), the alternate route would be to stay on Pitt River Road, to Mary Hill Road, to Kingsway.
- For traffic heading westbound on Kingsway that currently turns left on to Tyner Street, the alternate routes would be either to turn left at McLean Avenue/Pitt River Road, and then right on Tyner Street. Or alternatively, to stay on Kingsway, left on Wilson Avenue, left on Mary Hill Road, and then access the area using any one of the local streets.

Re-routing this limited traffic has no impact on the level of service of the alternate routes.

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As noted in the most recent traffic impact assessment, the current level of service for the intersection is acceptable (ie. there is no imminent need to change/upgrade the intersection). Therefore, staff recommend that the intersection work be removed from the PCCC off-site scope of works, and be considered with the overall corridor improvements. Alternatively, if Committee believes that something must be done at this intersection sooner than later, staff would recommend that the restriction to right-in/right-out be included in the scope of work for the off-site works (and constructed in 2021 with the other works).

Committee may also wish to consider continuing with the current scope of work (roundabout) as part of the PCCC off-sites, recognizing the level of service will be reduced over time as traffic volumes increase in the area.

FINANCIAL IMPLICATIONS

Under current market conditions, the additional costs to construct a roundabout instead of a right-in/right-out configuration is approximately \$300,000.

OPTIONS (✓ = Staff Recommendation)

	#	Description
	1	Remove the Tyner Street/Kingsway Avenue intersection from the PCCC offsite scope of work, and assess/complete with the Kingsway Avenue corridor improvements.
	2	Revise the scope of work to construct the RIRO at Tyner Street and Kingsway Avenue as part of the PCCC offsite work
	3	Continue with current plans including a roundabout at Tyner Street and Kingsway Avenue as part of the PCCC off-site works.

ATTACHMENTS

Att#1: 2017-05-30 Traffic Impact Assessment

Att#2: 2020-02-13 Traffic Impact Assessment

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