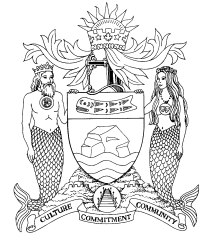


**THE CORPORATION OF THE
CITY OF WHITE ROCK
CORPORATE REPORT**



DATE: September 28, 2020
TO: Mayor and Council
FROM: Jim Gordon, P.Eng., Director, Engineering and Municipal Operations
SUBJECT: Enhanced Crosswalks, Speed and Traffic Analysis (various locations)

RECOMMENDATIONS

THAT Council:

1. Direct Staff to install an LED in-road, flashing pedestrian crosswalk system on Johnston Road, south of North Bluff Road in 2021; and
2. Direct Staff to submit a funding request for \$70,000 in the 2021 Financial Plan for a curb extension at Marine Drive and Parker, and pavement markings along Marine Drive east of Maple Street and that City of Surrey be requested to do the same.

EXECUTIVE SUMMARY

The City is developing an Integrated Transportation and Infrastructure Master Plan (ITIMP) in consultation with the community. Due to the COVID-19 pandemic, this plan is delayed due to the inability to hold the final four community consultations.

In the interim, Council asked staff to provide options in advance of the ITIMP to address resident traffic concerns on northern Johnston Road and eastern Thrift Avenue. Council also received requests for traffic calming on Marine Drive between Maple Street and Stayte Road.

The City commissioned reports from Urban Systems Ltd. (Consultant) to address the technical transportation aspects at each of the three (3) locations. This report summarizes and provides recommendations consistent with best transportation engineering practices and provides options for Council consideration.

PREVIOUS COUNCIL DIRECTION

Resolution # and Date	Resolution Details
December 2, 2019 2019-564	That Council receives for information the corporate report dated December 2, 2019 from the Director of Engineering & Municipal Operations, titled “Thrift Avenue Traffic Study”;
2019-565	and Endorses the installation of pedestrian activated rectangular rapid flashing beacons at the Kent Street crosswalks at Thrift Avenue and the installation of flashing beacons on the stop signs at the north and south intersection approaches.

	Amendment That Council directs staff to place additional signage along Thrift Avenue noting the 50 km/h speed limit.
April 14, 2020 2020-199	That Council directs staff to bring forward a corporate report outlining an assessment to determine whether the speed limit should be changed from 50km to 30km on the streets surrounding Maccaud Park.
June 1, 2020 2020-317	That Council directs staff to send a letter in response to the petition (agenda item 4.2) to notify of the current situation in regard to the area and the City's future plan to conduct a Master Transportation Plan.
2020-321	That Council directs staff and RCMP to present an overview of posted speed limits in White Rock on the main arteries for future discussion at an upcoming Council meeting.
2020-322	That Council directs staff to bring forward for discussion a corporate report in regard to installing a solar lit flashing crosswalk for White Rock Elementary School at Johnston Road and Prospect Avenue (by the Tower Clock).

INTRODUCTION/BACKGROUND

The City retained the Consultant to conduct speed reviews and traffic studies at the locations noted below in order to formulate “best practices” recommendations to address resident concerns:

1. Thrift Avenue from Maple Street to Stayte Road;
2. Johnston Road at Prospect Avenue;
3. Johnston Road, south of Thrift Avenue (midblock);
4. Johnston Road, south of North Bluff Road (midblock); and
5. Marine Drive at Parker Street.

The Consultant collected traffic data, including pedestrian counts, vehicle speed data, and vehicle turning movements to use in conjunction with the Transportation Association of Canada (TAC)’s Guidelines to determine if further transportation enhancements, including crossing upgrades, speed reductions and traffic calming are warranted.

The Consultant’s analyses are provided in the following memorandums:

1. Speed Limit Changes on Municipal Roadways (refer to Appendix A);
2. City of White Rock Speed Limit Signage Review (refer to Appendix B);
3. Pedestrian Crossing Control Device Study (refer to Appendix C); and
4. Traffic Calming Study for Marine Drive (refer to Appendix D).

Summaries of the Consultant’s findings related to each of the five (5) locations are provided below.

Thrift Avenue from Maple Street to Stayte Road – Speed Limit

The *BC Motor Vehicle Act* sets the standard municipal speed limit at 50km/h. Although there is no specific traffic warrant system to set speed limits, traffic engineering professionals sometimes

recommend speeds less than 50km/h depending on multiple factors including roadway sightlines, geometrics, land use, activity and ambient speeds. Speed limits are often reduced adjacent to unfenced playgrounds or schools; however, there are no unfenced playgrounds or schools along Thrift Avenue.

R.F. Binnie and Associates (Binnie) completed a Thrift Avenue Traffic Study in November 2019 and recommended no change to the posted speed limit. Similarly, the Consultant does not recommend a change to the posted speed limit in its May 2020 review.

Although Binnie and the Consultant did not recommend speed reductions in their studies, Council may establish reduced speeds on Thrift Avenue by Bylaw. Signage advising motorists of the non-standard speed limit would need to be posted in each affected block.

The TAC Design Guidelines note that “the conventional approach to road design includes design speed choices of 30-50 km/h for local roads and 50-80 km/h for collector roads.” Thrift Avenue is a Primary Collector; potential consequences of speeds reduced to 30km/h may include drivers rerouting off this Primary Collector and truck route onto neighbouring local streets, driver frustration leading to tailgating, reduced safety because vehicles have diverted onto local streets, and reduced accessibility for goods movement and residents.

Given that there is no identified need to reduce speeds on Thrift Avenue below the municipal standard and that there are likely to be unintended negative consequences, it is recommended that the speeds remain unchanged.

Johnston Road between North Bluff and Five Corners - Speed Limit

The Consultant collected pedestrian counts, vehicle speed data, and vehicle turning movements for the speed analysis, signal warrant, and pedestrian crossing control warrant analysis for Johnston Road between North Bluff and Five Corners.

The consultant’s data showed that drivers are in compliance with the posted speed of 50 km/hr along Johnston Road. The data was collected when schools were closed due to COVID-19 and the school zone 30 km/h was not in effect. There are no unfenced playgrounds, unfenced schools or areas of high activity or conflict density that would warrant speeds reduced below the standard 50 km/h. The accident history does not support a reduction in speeds.

Given that there is no identified need to reduce speeds on Johnston Road below the municipal standard and that there are likely to be unintended negative consequences similar to those noted for Thrift Avenue, it is recommended that the speeds remain unchanged.

Johnston Road between North Bluff and Five Corners - Pedestrian Crossings

The consultant used TAC’s Traffic Signal Warrant Handbook and TAC’s Pedestrian Crossing Control Guide to determine the appropriate pedestrian crossing control device for each of the three study locations. Based on the data collected, the Consultant concluded that side mounted signs (currently in place) are appropriate at all three (3) study locations. Enhanced pedestrian crossing devices such as overhead flashers are not required at these three (3) locations.

Although the warrant analysis does not support further enhancement to the pedestrian crossings, \$47k is in the 2020 Financial Plan for one LED in-road flashing pedestrian crosswalk system and these systems do provide enhanced pedestrian crossing opportunities. Council may wish to consider prioritizing the installation of this type of crosswalk system along Johnston Road as follows:

1. Johnston Road south of North Bluff Avenue – This location has the highest traffic volumes at 9,800 vehicles per day and has increasing pedestrian volumes. Many of the pedestrians are elderly and may have mobility challenges thereby benefitting from an upgraded crosswalk.

2. Johnston Road at Prospect Avenue – The two crosswalks at this location have a high degree of enhancement when the crossing guard is present; however, there are times when the crossing guard is not present and children may be crossing to access the school playgrounds. The challenge is that there are two crosswalks, so the costs would be doubled. Council may wish to consider this as a \$100k budget item for 2021.
3. Johnston Road south of Thrift Avenue – Upgrades at this location should be deferred until roadway improvements scheduled within the next five (5) years are constructed.

Unintended consequences of installing an LED in-road flashing pedestrian crosswalk system include cost and possibly include increased rear-end accidents. The possible increase in accidents is likely more than offset by enhanced crosswalk safety for nearby residents.

Marine Drive between Maple Street and Stayte Road – Speed Limit and Traffic Calming

The memorandum attached as Appendix D, discusses the decision-making process for appropriate posted speeds and potential traffic calming devices for implementation along Marine Drive.

Given the pedestrian activity, modal mixing, traffic volumes and other factors, Marine Drive is considered an area with a high activity level and conflict density thereby warranting the 30 km/h speed limit. The 85th percentile travel speeds are more than 10 km/h beyond the posted speed limit east of Parker and rise more towards Stayte Road indicating that traffic calming is warranted in this area.

The Consultant reviewed TAC's Traffic Calming Guide for treatment options. Their review includes an assessment of the advantages, disadvantages, and implementation costs of 23 traffic calming devices. Speed humps are not recommended as it is not suitable for emergency and transit vehicles. Given the ease of installation and relatively low costs, the consulting team recommends that the City consider implementing pavement markings, at an estimated cost of \$10k. Staff also reviewed the data and finds that a curb extension at Parker Street would provide increased sightlines for motorists and pedestrians. The cost of a curb extension at Marine Drive and Parker Street is \$60k.

The southern half of the roadway is in the City of Surrey (Surrey). Staff have had discussions with Surrey staff and are encouraging them to request funding in their 2021 Financial Plan for pavement markings and for a matching curb extension at Parker Street.

If Council agrees to proceed with the pavement markings and curb extension, \$70k will need to be approved in the 2021 Financial Plan. It is preferable that the work be done together with Surrey but could proceed, at a less effective level, without Surrey's participation.

ITIMP Further Review North Bluff and Stayte Roads

Staff and the Consultant are having ongoing discussions with Surrey on the shared roadways of North Bluff and Stayte Roads as part of the ITIMP and will update Council as the ITIMP progresses.

FINANCIAL IMPLICATIONS

There is \$47k in the 2020 Financial Plan for an LED in-road, flashing pedestrian crosswalk system at the midblock crosswalk on Johnston Road, south of North Bluff Road. It is proposed that this be recommended for carryover into the 2021 Financial Plan.

An estimated cost of \$70k is required for curb extensions at Marine Drive and Parker (\$60k), pavement markings along Marine Drive (\$10k). Funding these improvements can be requested in the 2021 Financial Plan.

LEGAL IMPLICATIONS

The City of White Rock's municipal boundary at Marine Drive between Finlay Street and Stayte Road is at the centre of the Marine Drive Road Right of Way. Therefore, any transportation improvements spanning Marine Drive cannot be completed without the City of Surrey's cooperation and consent.

COMMUNICATION AND COMMUNITY ENGAGEMENT IMPLICATIONS

The Integrated Transportation and Infrastructure Master Plan (ITIMP) is in process, albeit delayed due to the inability to conduct the four remaining public consultation sessions during the COVID-19 pandemic. These meetings will be an appropriate forum for residents to provide input on transportation issues, including the topics discussed in this report.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Comments from Fire Chief, Edward Wolfe of the White Rock Fire Department and Staff Sergeant Kale Pauls of the White Rock RCMP are attached as Appendix E. Staff propose to work closely with the White Rock RCMP to discuss and implement proposed signage improvements consistent with TAC standards and the *Motor Vehicle Act*.

CLIMATE CHANGE IMPLICATIONS

Inefficient traffic movements, congestion and delays contribute to greenhouse gas production. The measures discussed in this report should not significantly contribute to climate change.

ALIGNMENT WITH STRATEGIC PRIORITIES

The recommendations in this report are consistent with Council's Strategic Priorities, specifically the mission to build community excellence that supports a safe and effective transportation system. Additionally, Council's vision of the community feeling safe and secure is addressed through traffic calming on Marine Drive.

OPTIONS / RISKS / ALTERNATIVES

Following are the main options available for Council's consideration:

1. Thrift Avenue from Maple Street to Stayte Road – Speed Limit
 - a) Leave the speed limit at the municipal standard of 50 km/h.
 - b) Lower the speed limit with the understanding that potential consequences of reduced speeds could result in drivers rerouting off this Primary Collector and truck route onto neighbouring streets, driver frustration leading to tailgating and reduced accessibility for goods movement and residents.

2. Johnston Road between North Bluff Road and Five Corners – Speed Limit
 - a) Leave the speed limit at the municipal standard of 50 km/h.
 - b) Lower speed limit with the understanding of potential consequences similar to those described for Thrift Avenue.

3. Johnston Road between North Bluff Road and Five Corners – Pedestrian Crossings

- a) Proceed with the installation of an LED in-road, flashing pedestrian crosswalk system at Johnston Road, south of North Bluff Road in 2021. Carryover \$47K budget into 2021 Financial Plan.
- a) Proceed with the installation of an LED in-road, flashing pedestrian crosswalk system at Johnston Road, at Prospect Avenue in 2021. Funding of \$100K would need to be approved in the 2021 Financial Plan.
- b) Proceed with the installation of LED in-road, flashing pedestrian crosswalk systems at Johnston Road, south of North Bluff Road and at Prospect Avenue in 2021. Funding of \$147K would need to be approved in the 2021 Financial Plan.
- c) It recommended that Pedestrian Crossing enhancements not be carried out at this time on Johnston Road south of Thrift Avenue due to future street redevelopment.
- d) No construction of pedestrian crosswalk enhancements. Although crosswalk enhancements are not technically required, the opportunity to improve pedestrian opportunities would be lost.

4. Marine Drive between Maple Street and Stayte Road – Speed Limit and Traffic Calming:

- a) Install curb extensions and pavement markings together with Surrey to provide traffic calming for speeds that are typically more than 10 km/h above the warranted posted speed limit.
- b) Raise speed limit to seek better compliance. Not recommended as a “best practice” review indicates the 30 km/h speed limit is appropriate.
- c) Leave speed at 30 km/h and not undertake traffic calming. This is not recommended as it indicates a failure to respond to data that indicates traffic calming is appropriate.

CONCLUSION

Council asked staff to provide options in advance of the ITIMP to address traffic concerns raised by residents on northern Johnston Road and eastern Thrift Avenue. Council also received requests for traffic calming on Marine Drive between Maple Street and Stayte Road.

The City retained a Consultant to conduct speed reviews and traffic studies consistent with best practices and the TAC guidelines at the locations noted above. The Consultant collected pedestrian counts, vehicle speed data, and vehicle turning movements for the speed analysis, signal warrant, and pedestrian crossing control warrant analysis.

The technical study confirmed that the posted speed limits on Thrift Avenue, Johnston Road and Marine Drive are appropriate; however, 85th percentile speeds on Marine Drive are above the posted speed limit of 30 km/h. Traffic calming on Marine Drive east of Maple Street consisting of pavement markings and a curb extension at Parker Street is recommended.

The study of the three (3) pedestrian crosswalks on Johnston Road confirmed that the existing enhancements are adequate; however, given increased focus on alternative modes of transportation, including walking, improvements will be beneficial. It is recommended that an

LED in-road, flashing pedestrian crosswalk system at Johnston Road, south of North Bluff Road
be installed in 2021.

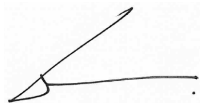
Respectfully submitted,



Jim Gordon, P.Eng.,
Director, Engineering and Municipal Operations Department

Comments from the Chief Administrative Officer

I concur with the recommendations of this corporate report.



Guillermo Ferrero
Chief Administrative Officer

- Appendix A: Speed Limit Changes on Municipal Roadways
- Appendix B: City of White Rock Speed Limit Signage Review
- Appendix C: Pedestrian Crossing Control Device Study
- Appendix D: Traffic Calming Study for Marine Drive
- Appendix E: Comments from Fire Chief, Edward Wolfe of the White Rock Fire Department
and Staff Sergeant Kale Pauls of the White Rock RCMP