



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Roads and Traffic Division

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	February 6, 2019
SUBJECT/REPORT NO:	Speed Limit Reduction Feasibility Study on the Lincoln M. Alexander and the Red Hill Valley Parkways (PW19014) (City Wide) Outstanding Business List Item
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Stephen Cooper, C.E.T. (905) 546-2424, Extension 2558 Martin White, C.E.T (905) 546-2423, Extension 4345
SUBMITTED BY:	Edward Soldo, P.Eng. Director, Roads & Traffic Public Works
SIGNATURE:	

RECOMMENDATION

- (a) That the existing speed limit be reduced to 80 km/h on the Red Hill Valley Parkway from the Greenhill Interchange to the Queen Elizabeth Way;
- (b) That Hamilton Police Services be requested to continue to undertake regular speed and aggressive driving enforcement on both the Lincoln M. Alexander and the Red Hill Valley Parkways, and that the results be reported annually to the Public Works Committee as part of the Hamilton Strategic Road Safety Program Annual Report;
- (c) That the Outstanding Business List Item, Speed Limit Reduction Feasibility Study on Lincoln M. Alexander Parkway and the Red Hill Valley Parkway be identified as completed and removed from the Public Works Outstanding Business List.

EXECUTIVE SUMMARY

At the meeting of August 18, 2017, Hamilton City Council approved the following motion:

That staff be directed to study the feasibility and safety benefits of reducing the speed limit on the Lincoln M. Alexander Parkway (LINC) and the Red Hill Valley Parkway (RHVP) from 90 km/h to 80 km/h and report the findings back to the Public Works Committee in one year's time.

Staff retained a consultant to complete the study and utilize various industry standards to identify safety benefits from the current and possible reduced speed limit to 80 km/h, as well as identify the appropriate posted speed limit on the Parkways.

The purpose of the study was to conduct a detailed review of the operating speeds along the LINC and RHVP and recommend a safe posted speed limit consistent with sound engineering practices and driver expectations. To achieve this objective, a comprehensive literature review was conducted to identify the best approaches for setting posted speed limits.

In parallel to the literature review, 24-hour speed traffic data were collected continuously for one week to evaluate the prevailing traffic conditions. The existing posted speed limit on the LINC and the RHVP is 90 km/h. A review of the speed data collected along both highways revealed that traffic was traveling at average speeds of 90 km/h to 100 km/h at various points along the parkways. The 85th percentile speed along the length of these facilities also lies between 90 km/h and 100 km/h. Similar observations were made during peak and off-peak periods. It should be noted that the speed differentials between the travel lanes along the LINC were found to be significant. Consequently, any increase in the posted speed limit of 90 km/h may increase the speed differentials and create additional safety concerns.

Following the review utilizing the three methods, attached to Report PW19014 as Appendix "A", the consultant recommended that the speed limit of 90 km/h is appropriate for the LINC and the RHVP.

Notwithstanding the consultant's recommendation, taking into consideration the collision history of the RHVP and the geometry of the roadway north of the Greenhill Interchange, it is recommended that the speed limit be reduced to 80 km/h from the Greenhill Interchange to the Queen Elizabeth Way.

It is also recommended that bi-annual monitoring of the traffic conditions be undertaken to assess the compliance of the posted speed limit change and any changes to the

safety performance of the roadway. The results of this analysis will be incorporated into the Annual Collision Report.

In order to be effective, regular enforcement is required, and as such, it is recommended that a targeted education and enforcement campaign be developed in conjunction with Hamilton Police Services.

Alternatives for Consideration – See Page 6

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The additional speed compliance monitoring will be accommodated within the existing operating budget.

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

At the meeting of August 18, 2017, Hamilton City Council approved the following motion:

That staff be directed to study the feasibility and safety benefits of reducing the speed limit on the LINC and the RHVP from 90 km/h to 80 km/h and report the findings back to the Public Works Committee in one year's time.

RELEVANT CONSULTATION

No internal or external consultation was required as part of this project.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

A consultant was hired to conduct a detailed review of the operating speed along the LINC and RHVP and recommend a safe posted speed. To achieve this objective, a comprehensive literature review was conducted to identify the best approaches for setting posted speed limits. Taking into account the specific function of the LINC and RHVP, three methodologies were selected for setting the speed limit: Transportation Association of Canada, Northwestern method, and USLIMITS2 which are widely used as methods of determining posted speed limits throughout the transportation industry.

In parallel to the literature review, 24-hour speed traffic data was collected continuously for one week to evaluate the prevailing traffic conditions. The existing posted speed limit on the LINC and the RHVP is 90 km/h. A review of the speed data collected along both highways revealed that traffic was traveling at average speeds of 90 km/h to 100 km/h at various points along the parkways. The 85th percentile speed along the length of these facilities also lies between 90 km/h and 100 km/h. Similar observations were made during peak and off-peak periods. It should be noted that the speed differentials between the travel lanes along the LINC were found to be significant. Consequently, any increase in the posted speed limit of 90 km/h may increase the speed differentials and create additional safety concerns.

The above-noted observations were coupled with the following findings from each of the three selected methodologies:

1) Transportation Association of Canada (TAC) Approach

The proposed speed limit from the TAC road risk method is 110 km/h for both Parkways. However, having the same posted and design speed for a corridor would be an uncommon and controversial policy, while creating several operational and safety issues. A posted speed limit of 110 km/h would be noticeably higher than the operating speed of approximately 94 km/h.

The posted speed limit of 110 km/h will lead to upward trend in average operating speeds over time. Some drivers will eventually travel faster than the posted speed limit which would then exceed the design speed and consequently impose significant safety concerns to all drivers. It is noted the TAC guidelines acknowledges several provisions to the core methodology, including engineering judgement, which allows roadway agencies to evaluate the recommended speed limit against the prevailing traffic condition and roadway safety.

2) Northwestern Approach

On the RHVP, the proposed speed limits from the Northwestern approach suggest zones of 80 km/h, 90 km/h, and 110 km/h. As discussed above, the speed limit of 110 km/h is not recommended along these two highways. The potential for an 80 km/h zone was identified in the section from Greenhill to Queenston. Variable speed limit zones may create enforcement, operational, and safety issues along both the LINC and RHVP. It is also noted that the proposed speed limit from both approaches were close to the existing 90 km/h. Based on these observations, it was recommended the existing posted speed limit of 90 km/h for the RHVP be maintained.

3) USLIMITS2 Approach

Based on Northwestern approach, the proposed speed limit along the majority of the LINC is 90 km/h, while the USLIMITS2 proposes a slightly higher speed limit of 100 km/h. As discussed above, increasing the speed limit on the LINC may increase the speed differentials between the two lanes and create safety concerns. In addition, the traffic was moving at or slightly above the existing posted speed limit.

Comparison of Speed Limit Methodologies

On the RHVP, the proposed speed limit from the Northwestern approach suggests zones of 80 km/h, 90 km/h and 110 km/h. In the USLIMITS2, the recommended speed limits are in zones of 90 km/h and 100 km/h. As discussed above, the speed limit of 110 km/h is not recommended along these two highways. In addition, the variable speed limit zones may create enforcement, operational, and safety issues along both the LINC and RHVP. It is also noted that the proposed speed limit from both approaches were close to the existing 90 km/h. Based on these observations, it was recommended the existing posted speed limit of 90 km/h for the RHVP be maintained.

On the LINC, the proposed speed limit along the majority of the LINC is 90 km/h based on Northwestern approach, while the USLIMITS2 proposes a slightly higher speed limit of 100 km/h. As discussed above, increasing the speed limit on the LINC may increase the speed differentials between the two lanes and create safety concerns. In addition, the traffic was moving at or slightly above the existing posted speed limit. The report identified for consistency with the RHVP, it is recommended to keep the speed limit along the LINC as 90 km/h.

As a result of the analysis, the consultant recommended that the speed limit of 90 km/h is appropriate for the LINC and the RHVP.

Reduction of Posted Speed Limit to 80 km/h – Greenhill to Queen Elizabeth Way

The potential for an 80 km/h zone was identified in the section from Greenhill interchange to Queenston interchange utilizing the Northwestern approach. Variable speed limit zones are not recommended for short sections as they may create enforcement, operational, and safety issues.

Notwithstanding the consultant's recommendation of maintaining the 90 km/h posted speed, taking into consideration the collision history of the RHVP as identified in the City of Hamilton Annual Collision Report – 2017 (PW19012) and the geometry of the

roadway north of the Greenhill Interchange, it is recommended that the speed limit be reduced to 80 km/h from the Greenhill Interchange to the to the Queen Elizabeth Way.

It is also recommended that bi-annual monitoring of the traffic conditions be undertaken to assess the compliance of the posted speed limit change and any changes to the safety performance of the roadway. In order to be effective, regular enforcement is required and as such, it is recommended that a targeted education and enforcement campaign be developed in conjunction with Hamilton Police Services.

ALTERNATIVES FOR CONSIDERATION

Council may choose to not lower the speed limit to 80 km/h on the Red Hill Valley Parkway from the Greenhill Interchange to the Queen Elizabeth Way.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Healthy and Safe Communities

Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” – Hamilton LINC and RHVP Speed Study