



**CITY OF HAMILTON**  
**PUBLIC WORKS DEPARTMENT**  
**Engineering Services Division**  
**and**  
**Roads and Traffic Division**

<b>TO:</b>	Mayor and Members General Issues Committee
<b>COMMITTEE DATE:</b>	February 6, 2019
<b>SUBJECT/REPORT NO:</b>	Lincoln M. Alexander Parkway (LINC) and Red Hill Valley Parkway (RHVP) Transportation and Safety Update (PW18008a) (City Wide) (Outstanding Business List Item)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>PREPARED BY:</b>	Gord McGuire (905) 546-2424, Extension 2439 Edward Soldo, P.Eng. (905) 546-2424, Extension 4622
<b>SUBMITTED BY:</b>	Gord McGuire Director, Engineering Services Public Works Edward Soldo, P.Eng. Director, Roads and Traffic Public Works
<b>SIGNATURE:</b>	

**RECOMMENDATION**

- (a) That staff be directed to develop a Terms of Reference (TOR) for a functional design of the LINC and RHVP. The TOR will address the long term needs of these facilities as per PW18008. The undertaking would generate a Request for Proposal (RFP) to include a review of overall operating conditions on the LINC and RHVP. The RFP would address the implementation of potential future widening and connections with Highways 403 and Queen Elizabeth Way, truck movements; transit opportunities and safety enhancements (lighting, medians, geometrics). Funding is available in account 4031711015 RHVP Rehabilitation to an upset limit of \$150,000;

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- (b) That staff present the RFP to council for the review and approval prior to issuance;
- (c) That the Outstanding Business List Item, Lighting on the Red Hill Valley Parkway (RHVP), be identified as complete and removed from the Public Works Outstanding Business List.

### **EXECUTIVE SUMMARY**

The LINC opened in 1997 and was subsequently followed by the opening of the RHVP in 2007. This report will outline the immediate program for the parkways and the longer-term studies required to enhance the roadways for future needs.

The purpose of this report is to provide a summary of works and actions that have occurred over the last several years relative to operational and safety enhancements on the RHVP and LINC as well as to seek approval for the development of a TOR and approval process for the issuance of an RFP.

The purpose of the RFP is to establish a comprehensive scope of work that considers a variety of elements that respond to questions and concerns raised by council over time, the changing needs of the parkway, future use and potential expansion and the capital needs identified through the study. Staff will report back with the results of the study and propose a comprehensive plan as determined by the study and to seek further approval from Council.

Staff retained a consultant (CIMA) to review and consider illumination on the parkways and the consultant has submitted their findings. The illumination review found that lighting is warranted, however to install these lighting systems a lengthy Environmental Assessment (EA) process will be required. The EA process is more appropriately done holistically to address all the parkways needs as noted above.

### ***Alternatives for Consideration – Page 9***

### **FINANCIAL – STAFFING – LEGAL IMPLICATIONS**

**Financial:** The project budget can be accommodated in the RHVP and LINC rehabilitation programs. Funds has been included in the 2018 (\$6.75M) and 2019 (\$8.75M) capital budget for the RHVP and funding is programmed for the LINC in 2020 and 2021.

**Staffing:** None

**Legal:** None

### **HISTORICAL BACKGROUND**

The Lincoln M. Alexander Parkway (LINC) opened in 1997 and was subsequently followed by the opening of the Red Hill Valley Parkway (RHVP) in 2007. Since January 2013, there have been a total of 10 motions issued from Council related to these parkways, and they have been the subject of a series of reports.

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These motions have focused specifically on two areas, widening of the LINC and RHVP and the safety operations of both parkways.

This report will outline the immediate program for the parkways and the longer-term studies required enhance the parkways for future needs.

Previously Report PW18008 addressed several outstanding motions and consolidated them into one report.

That report was approved at Public Works Committee on January 15, 2018 and by Council on January 24, 2018.

Appendix "A" attached to Report PW18008a outlines in detail the actions taken by staff and the associated costs to monitor, enhance, study and implement various safety related elements along these parkways since 2015 and identified in Report PW18008. Completed initiatives include the following:

- Install Oversized Speed Limit Signs
- Install "Slippery When Wet" signs
- Install "Merge and Bridge Ices" signs
- Upgrade Guiderail end treatments
- Install Digital Feedback Signs
- Install Recessed Pavement Markers (cats eyes)
- Guiderail Treatments

The City has spent \$1.6M in the last 3 years on these items and they are described in more detail in Appendix "A" attached to Report PW18008a.

Other actions are addressed through the Bill 65 - Automated Speed Enforcement (PW19002), Hamilton Strategic Road Safety Program and Vision Zero Action Plan 2019 (PW19015), City of Hamilton Annual Collision Report - 2017 (PW19012) and Speed Limit Reduction Feasibility Study on the Lincoln M. Alexander and the Red Hill Valley Parkways (PW19014).

➤ Street Lighting

Council passed a motion to review the lighting on the RHVP and LINC parkways via

Public Works Committee Report 17-014

(ii) Lighting on the Red Hill Valley Parkway (Added Item 11.2)

Staff were directed to report back to the Public Works Committee on the cost of installing brighter lights on the southern portion of the Red Hill Valley Parkway (RHVP) and that the report also address what, if any, impact the brighter lighting may have on the Environmental Assessment currently in place for the RHVP.

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Staff have retained a consultant (CIMA) to review and assess the need for lighting on both the LINC and RHVP parkways using industry accepted processes to determine the needs.

The findings can be summarized as follows:

- (a) Lighting is warranted using both the Ministry of Transportation of Ontario (MTO) and Transportation Association of Canada (TAC) methods. For the RHVP, the results of both the TAC and MTO illumination warrant analyses, completed using current operational conditions and considering collision data indicated that continuous lighting is warranted. For the LINC, the results of MTO illumination warrant analysis indicated that continuous lighting is warranted. The TAC illumination warrants were not met, but TAC warrant thresholds are close to being achieved.
- (b) No documentation from any previously completed environmental studies identified a specific prohibition or listed defined parameters that would preclude the implementation of continuous illumination on either the LINC or the RHVP. The review of the full range of past environmental assessment studies completed as well as associated relevant documents revealed that continuous roadway illumination was not considered during the original design of both parkways.
- (c) Neither the LINC nor the RHVP were found to have a disproportionate number of collisions occurring during hours of darkness. The proportions of collisions occurring along both Parkways during hours of darkness was found to be consistent with the Provincial averages on similar parkways with partial illumination.
- (d) The costs to implement lighting would range from \$12.5M (conventional) to \$18M (high mast) for just the lighting infrastructure. This cost estimate does not include protection for the poles such as a median barrier, or enhanced guide rail. Those costs are currently unknown.
- (e) To deliver lighting alone the project would require a significant Environmental Assessment process and should be included in part of a larger overall parkway review as recommended above.

➤ Friction Testing

As identified in Report PW18008, Appendix "A", friction testing on the parkways was completed. Engineering Services retained a consultant in November of 2017 to review 3 elements of the RHVP materials.

The consultant (Golders and Associates) reviewed 30 locations and supplied this information on the study:

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- British Pendulum Test (BPN) - This test method covers the procedure for measuring surface frictional properties using the British pendulum skid resistance tester. The British pendulum tester is a dynamic pendulum impact-type tester used to measure the energy loss when a rubber slider edge is propelled over a test surface. Unfortunately, the field conditions during the night of the test were poor with snow and below zero temperatures, rendering these results inconclusive and varied.
- Measured Texture Depth (MTD) – This test method describes a procedure for determining the average depth of pavement surface macrotexture by careful application of a known volume of material on the surface and subsequent measurement of the total area covered.

The results of this testing ranged from 0.57mm to 1.98mm with an average of 1.25mm which is considered to be generally good as referenced by the consultant.

- Polished Stone Values (PSV) - The Polished Stone Value of an aggregate gives a measure of resistance to the polishing action of vehicle tires under conditions similar to those occurring on the surface of a road. In our results the value returned of the tested aggregate was 45. This number is considered average / medium by the consultant.

➤ Expansion of the RHVP and LINC

Regarding item (f) of PW18008 that addressed the motion: Expansion of Redhill Valley Parkway (RHVP) and Lincoln M. Alexander Parkway (LINC) (PW16084) (City Wide) (Item 8.1) (Public Works Committee, October 3, 2016).

Staff recommends the development of a Request for Proposal through a preliminary to outline the scope through which upgrades to the LINC and RHVP will be reviewed. The scope will address capacity constraints, goods and services movement, potential transit opportunities and safety enhancements as noted in PW18008 along with other considerations that align with the approved Transportation Master Plan (TMP).

These factors were identified in previous reports and will provide the background details needed to develop the framework study terms.

The widening of these parkways will provide opportunities to improve connectivity between the Parkways and Provincial Highways. In coordination with the Transportation Planning group of Planning and Economic Development (PED), Public Works recommends initiating this process as it will be a complex RFP to prepare. It is recommended that this work start shortly to allow the process to develop a comprehensive and inclusive scope of work.

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The terms will identify the potential stakeholders and processes that need to be engaged. As identified in the Street Light review a comprehensive EA process is required solely for lighting. Consolidating all the considerations, as described above would be more effective and develop a complete process.

➤ Rehabilitation of the RHVP – LINC Schedule

The Engineering Services Division has scheduled the repaving of the LINC and RHVP between 2018 and 2021.

In order to determine an inclusive scope of work, the Roads and Traffic Division initiated a roadside safety assessment of the parkway, including the mainline and all on- and off-ramps. The main purpose of the study is to provide recommendations to reduce roadside related collision frequency and/or severity by upgrading roadside safety devices to current standards (new guidance was published in 2017 by the Transportation Association of Canada – TAC and by the Ministry of Transportation Ontario – MTO).

Implementation of the study recommendations as part of the repaving will assist in providing positive guidance for motorists, enhance the safety of the parkway and reduce the potential for collisions.

The RHVP project is in preparation and will be tendered in mid-February, the LINC projects are programmed for 2020 and 2021 with the expectation that one direction per year will be rehabilitated. The 2019 RHVP project budget is currently \$15.5M and is expected to be sufficient to achieve the goals of the tender document. The scope of work includes the addition of a number of the elements proposed by the Roadside Safety Assessment and include:

- Guiderail – replace and update to current standards.
- End treatments – replace and update to current standards.
- Marker replacements – replace and update to current standards.
- Higher quality durable pavement markings are proposed.
- Shoulder rumble strips will be implemented for the entire length of the parkway.
- Shoulder and median structures were evaluated, and it is recommended to cover and protect various protruding objects if possible.
- Installation of reflective markers along centre medians and guide rails along with post mounted reflective markers will be installed in lieu of reflective recessed pavement markers to avoid unnecessary milling into the asphalt that reduces the life of the pavement.

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- Oversized speed feedback signs will be installed at three locations: Northbound, approximately 550 m north of Greenhill Ave, southbound, approximately 700 m north of Queenston Road and southbound, approximately 300 m north of King Street. In total, 6 signs on both right and left sides of the road at each location will be installed on their own post.
- Hamilton Police Services had requested median cross overs at 6 locations be built up and formalized. The late 2018 completed safety analysis does not recommend the construction of the requested cross over locations to be undertaken at this stage, and therefore will not be addressed during the resurfacing project.
- Hamilton Water has two (2) parkways that access and exit onto the roadway, of which needs to be addressed and requires detailed design and approval of Hamilton Conservation Authority. Due to the timing required to obtain the required approval, this undertaking will also not be addressed through the resurfacing project at this time.
- The sediment traps and catch basin replacements and/or maintenance will be undertaken during the resurfacing project, where required.

Engineering Services will be delivering the project using rolling closures of the parkway to allow the contractor full access to the site. The closure will be coordinated with the Roads and Traffic Division to minimize impacts.

Weekday and weekend closures in each direction will be done one section at a time in one direction. The repaving closure approach:

- Is the least expensive delivery option and the fastest way to complete the repaving;
- Provides for the highest quality repaving process;
- Allows for increased health and safety for workers that are working on the repaving and associated guiderail works; and
- Results in the RHVP being restricted to residents/commuters for approximately 3 weeks per direction and the overall construction timeframe would be approximately 1.5 months (June/July).

Traffic Operations will provide input into the preferred construction staging options and determine the detour (and EDR) options, signage and traffic signal modifications required to address the detours.

Finally, Ministry of Transportation (MTO) permits will be required as the works are within the Ministry zone of influence of the Queen Elizabeth Way (QEW). Detour signs will have to implemented along the QEW, LINC and other internal roads to facilitate the implementation of this project.

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➤ Further Safety Recommendations

As per the recommendation in Report PW15016, staff is continuing to implement the remaining short-term and medium-term collision counter measures as identified in Appendix “A” attached to Report PW18008a. Implementation of these counter measures will continue to assist in addressing the collision patterns that have been identified and assist in reducing the number of collisions occurring.

**POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS**

There are no Policy Implications as a result of this report.

**RELEVANT CONSULTATION**

Roads and Traffic together with Engineering staff have consulted with Public Works staff in Transportation Management, Operations Division, and Engineering Services, Legal Services and external Consultants.

**ANALYSIS AND RATIONALE FOR RECOMMENDATION**

In order to achieve a complete Environmental Assessment and develop overarching terms of reference for future widenings the City is best advised to consolidate all desired elements into one process.

To address the lighting component alone and address the below motion requires and EA Schedule B or C. This process will be lengthy and complex for just lighting as other elements such as ultimate width will impact the scale of the lighting infrastructure.

i. Motion:

Expansion of Redhill Valley Parkway (RHVP) and Lincoln Alexander Parkway (LINC) (PW16084) (City Wide) (Item 8.1) (Public Works Committee, October 3, 2016)

(d) That the matter respecting the Expansion of the Redhill Valley Parkway (RHVP) and Lincoln Alexander Parkway remain on the Outstanding Business List off the Public Works Committee and also be referred to the consideration of the development of the Transportation Master Plan.

The consideration for widening the LINC and RHVP will be considered under a number of different operating conditions. These conditions can include capacity issues, improved goods and services movements and for safety improvements.

The City of Hamilton will work with the MTO to investigate and understand the need for widening the Highway 403 and QEW through Provincial Capital programming. This has recently been further supported by the Planning and Economic Development Department in which it was identified that congestion of the Provincial parkways has negative impacts to the Economic Growth of the City of Hamilton (PED16161a).

On March 24, 2017, the City of Hamilton received written notice from the Honourable Steven Del Duca, Minister of Transportation, (Appendix “B” of Report PW18008) noting



that both Highway 403 and QEW have been identified for one additional lane per direction and is subject to environmental assessments and approvals before implementation. The timing to initiate the next phases will be dependent on further review and prioritization of the expansion needs across the province. Minister Del Duca had committed to ensure that City of Hamilton staff will be invited to participate in the studies related to the design of these parkways.

The widening of these parkways will provide opportunities to improve connectivity between the Parkways and Provincial Highways.

Staff will continue to monitor traffic patterns including traffic volumes, MTO progress, truck activity, vehicle speeds and the requirement for widening in order to coordinate potential widenings with MTO improvements on the 403 and QEW. Staff will further report back to Public Works Committee regarding this issue on an annual basis identifying operation patterns as part of the Hamilton Strategic Road Safety Program Annual Report.

#### **ALTERNATIVES FOR CONSIDERATION**

Not performing any works is an option but will create a scenario that positions the City unfavourably in managing these assets. If the MTO proceeds with any projects the City would be in a better position to coordinate works.

The City can proceed with an Environmental Assessment for the lighting systems as a stand-alone process. That would create a need for additional EA works to facilitate widenings, along with the ancillary works required to widen.

Neither alternative is recommended as it would be an inefficient use of staff and consultant resources.

#### **ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN**

##### **Community Engagement & Participation**

*Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.*

##### **Healthy and Safe Communities**

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

##### **Built Environment and Infrastructure**

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

#### **APPENDICES AND SCHEDULES ATTACHED**

Appendix “A” - List of Counter Measures