In the matter of the Public Inquiries Act, 2009, S.O. 2009, c 33, Sch 6

And in the matter of the Resolution of the Council of the City of Hamilton dated April 24, 2019, establishing the Red Hill Valley Parkway Inquiry pursuant to section 274 of the Municipal Act, 2001, S.O. 2001, c 25

COMPENDIUM OF COMMISSION COUNSEL (NON-DISPUTED DOCUMENTS)

July 28, 2022

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Lawyers for the City of Hamilton

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12. Judicial Investigation Red Hill Valley Parkway (LS19017) (City Wide) (Item 10.14)

- (a) That the Terms of Reference for the Judicial Investigation on the Red Hill Valley Parkway matter, attached as Appendix "B" to Report 19-008, be approved and be forwarded to the Chief Justice of the Superior Court;
- (b) That the City Manager be authorized and directed to take such actions and to execute such documents in a form satisfactory to the City Solicitor as required to give effect to Council's decision to initiate a Judicial Investigation on the Red Hill Valley Parkway matter, including such actions required by the Justice presiding over the Investigation;
- (c) That the costs of the Judicial Investigation on the Red Hill Valley Parkway matter be paid from the Tax Stabilization Reserve (110046);
- (d) That staff provide regular status reports identifying the costs to date associated with the Judicial Investigation on the Red Hill Valley Parkway; and,
- (e) That the law firm of Lenczner Slaght Royce Smith Griffin LLP be appointed as legal counsel for the City of Hamilton for the Judicial Investigation on the Red Hill Valley Parkway.

I hereby certify the foregoing to be a true copy of Item 12, General Issues Committee Report 19-008, approved by City of Hamilton Council of April 24, 2019.

Dated at the City of Hamilton on this 25th day of April, 2019.

J. Pilon Acting City Clerk

Appendix "B" to Item 12(a) of GIC Report 19-008 Page 1 of 4

WHEREAS under s. 274 of the *Municipal Act, 2001* S.O. 2001, c. 25, the council of a municipality may, by resolution, request a judge of the Superior Court of Justice to inquire into or concerning any matter connected with the good government of the municipality, or the conduct of any part of its public business;

AND WHEREAS any judge so requested shall make inquiry and shall report the results of the investigation or inquiry to the council as soon as practicable;

AND WHEREAS on February 6, 2019, Council of the City of Hamilton ("Council") was advised that a draft report by Tradewind Scientific Ltd. with respect to friction on the Red Hill Valley Parkway (the "RHVP"), dated November 20, 2013 (the "Report"), was not disclosed to Council;

AND WHEREAS the Report was provided to the City of Hamilton's Department of Engineering Services in January, 2014 by Golder Associates Ltd;

AND WHEREAS the Ontario Ministry of Transportation (the "MTO") conducted friction testing on the RHVP in 2007, but did not disclose the results of the testing (the "MTO Report") to Council or to the public;

AND WHEREAS concerns have been raised about why the Report, or the information and recommendations in the Report, were not disclosed to Council;

NOW THEREFORE Council does hereby resolve that:

- An inquiry is hereby requested to be conducted pursuant to s. 274 of the *Municipal Act*, S.O. 2001, c. 25, which authorizes the Commissioner to inquire into any matter related to a supposed malfeasance, breach of trust, or other misconduct on the part of a member of Council, or an officer or employee of the City of Hamilton or of any person having a contract with it, in regards to the duties or obligations of the member, officer, or other person to the corporation, or to any matter connected with the good government of the municipality, or the conduct of any part of its public business; and
- The Honourable Chief Justice Smith, Chief Justice of the Superior Court of Ontario, be requested to designate a judge of the Superior Court of Ontario as Commissioner for the inquiry and the judge so designated as Commissioner is hereby authorized to conduct the inquiry in two stages:
 - (a) To obtain, bearing in mind cost and the principles of proportionality, all documents necessary to answer the following questions:

Appendix "B" to Item 12(a) of GIC Report 19-008 Page 2 of 4

- Identify all individuals who received a copy of the Report or were advised of the Report or the information and recommendations contained therein after it was provided to the City's Department of Engineering Services in January, 2014;
- (ii) Based on the City's by-laws, policies and procedures, as they were in 2014, should Council have been made aware of the Report, or the information and recommendations contained therein, once the Report was submitted to the Department of Engineering Services in 2014?
- (iii) Why was the information in the Report, or the information and recommendations contained therein, not provided to Council or the public once the Report was submitted to the Department of Engineering Services in 2014?
- (iv) Who, if anyone, was responsible for the failure to disclose a copy of the Report, or the information and recommendations contained therein, to Council in 2014?
- (v) Was there any negligence, malfeasance or misconduct in failing to provide the Report, or the information and recommendations contained therein, to Council or the public?
- (vi) How was the Report discovered in 2018?
- (vii) Identify all individuals who received a copy of the Report or were advised of the Report or the information and recommendations contained therein, in 2018;
- (viii) Were appropriate steps taken to disclose the Report, or the information and recommendations contained therein, once it was discovered in 2018?
- (ix) Was there any negligence, malfeasance or misconduct in failing to disclose the Report, or the information and recommendations contained therein, once the Report was discovered in 2018?
- (x) Were users of the RHVP put at risk as a result of the failure to disclose the Report's findings?
- (xi) Did the Report contain findings or information that would have triggered Council to make safety changes to the roads or order further studies?

Appendix "B" to Item 12(a) of GIC Report 19-008 Page 3 of 4

- (xii) Did the failure to disclose the Report, or the information and recommendations contained therein, contribute to accidents, injuries or fatalities on the RHVP since January, 2014?
- (xiii) Did anyone in the Public Works Office or Roads Department request, direct or conduct any other friction test, asphalt assessment, or general road safety reviews or assessments on the RHVP?
- (xiv) Did subsequent consultant reports provide additional support or rebuttal to the conclusions contained in the Report?
- Identify any changes to the City's bylaws, policies and procedures to prevent any such future incidents of non-disclose of significant information to Council;
- (xvi) Did the MTO Report provide additional support or rebuttal to the conclusions contained in the Report?
- (xvii) Why was the MTO Report not provided to Council or made publicly available?
- (xviii) Who was briefed within the MTO's office about the MTO Report?
- (xix) Did the MTO Report contain findings or information that would have triggered Council to make safety changes to the roads or order further studies?
- (xx) Did the failure to disclose the MTO Report, or the information and recommendations contained therein, contribute to accidents, injuries or fatalities on the RHVP since January, 2014?
- (xxi) Did the MTO request, direct or conduct any friction tests, asphalt assessments, or general road safety reviews or assessments on the RHVP other than the MTO Report?
- (xxii) What is the standard in Ontario, if any, with respect to the acceptable levels of friction on a roadway?
- (xxiii) Is information with respect to the friction levels of the roadways in Ontario publicly available?
- (xxiv) To what extent do other factors, including, but not limited to, driver behaviour, lighting and weather conditions, contribute to motor vehicle accidents when compared to the impact of friction levels on motor vehicle accidents on the RHVP?

Appendix "B" to Item 12(a) of GIC Report 19-008 Page 4 of 4

- (b) Having concluded the documentary review, to hold a public hearing to answer the questions listed in items 2 (a) (i) (xxiv).
- 3. AND IT IS FURTHER RESOLVED THAT the Terms of Reference of the Inquiry shall be to inquire into all aspects of the above matters listed in items 2 (a) (i) (xxiv), their history and their impact on the ratepayers of the City of Hamilton as they relate to the good government of the municipality, or the conduct of its public business, and to make any recommendations which the Commissioner may deem appropriate and in the public interest as a result of the inquiry.

LSRSG 100936599

18. City Council disbanded the Parkway Implementation Committee for the 2014-2018 Council term.³⁹

E. Relevant Departments and Staff

19. The City of Hamilton is organized into five major departments: the City Manager's Office, Healthy & Safe Communities, Corporate Services, Planning and Economic Development, and Public Works.⁴⁰

1. City Manager

- 20. The General Manager of the Public Works Department reports to the City Manager. The City Manager also oversees the Office of the City Auditor and Human Resources, among other departments.⁴¹
- 21. The City Manager/Chief Administrative Officer is the senior-most administrator at the City of Hamilton. The City Manager is "responsible to the Mayor and the Council for the general control and management of the administration of the government and affairs of the City."⁴² In a May 4, 2016, Information Report to Council, the City Manager's focus was described as "increasing the value of future strategies and mitigating risks, the effectiveness of the organization as a whole, leveraging collaboration across business units and sectors."⁴³
- 22. The following chart lists the City Managers from 2001 to present:

⁴¹ RHV0000621 at image 2; RHV0000692 at image 1

³⁹ RHV0000644 at images 16, 86 and 115

⁴⁰ RHV0000692

⁴² RHV0000628 at image 1

⁴³ HAM0061796 0001 at image 2

Name	Start Date	End Date
Doug Lychak ⁴⁴	January 2001	March 2002
Robert Robertson ⁴⁵	March 2002	February 11, 2004
Glen Peace ⁴⁶	February 11, 2004	June 2008
Joseph Rinaldo (interim) ⁴⁷	July 2008	December 2008
Chris Murray ⁴⁸	January 2, 2009	August 13, 2018
Mike Zegarac (acting) ⁴⁹	August 13, 2018	May 6, 2019
Janette Smith ⁵⁰	May 6, 2019	_

2. Public Works

23. The Public Works Department is responsible for, among other things, the design and maintenance of the City's road system. In the department's 2019 to 2022 Multi-Year business plan, this mandate was described as:

designing roads that are safe for all road users and pedestrians...

[and] planning, designing and providing minor rehabilitation work of the City's road systems, as well as operating and maintaining them in adherence to legislated standards and regulations in a safe, cost effective and efficient manner.

assessing and implementing solutions to provide improved traffic road safety and operations throughout Hamilton. 51

- 24. The Public Works Department, overseen by the City Manager's office has significant responsibility for the construction and oversight of the Red Hill Valley Parkway.
- 25. City Council created the Public Works Department in 2003 by combining the Transportation, Operations & Environment Department and part of the former Community

⁴⁴ RHV0000665 at images 1-2

⁴⁵ RHV0000635 at image 2

⁴⁶ RHV0000622; and RHV0000876

⁴⁷ RHV0000877. Committee of the Whole Report 08-025, which is the first report that makes reference to Mr. Rinaldo serving as Acting City Manager, also indicates that a City Manager Recruitment Sub-Committee met three times, beginning at least as of April 11, 2008.

⁴⁸ RHV0000624

⁴⁹ RHV0000626

⁵⁰ RHV0000628

⁵¹ HAM0048068 0001 at image 1

Services Department.⁵² Peter Crockett who was the General Manager of the Transportation, Operations & Environment Department became the General Manager of the Public Works Department. ⁵³

26. The following chart lists the General Managers of the Public Works Department from 2003 to present:

Name	Start Date	End Date
Peter Crockett ⁵⁴	2003	2004
Scott Stewart ⁵⁵	2004	2009
Gerry Davis ⁵⁶	2009	March 2016
John Mater (acting) ⁵⁷	March 2016	August 2016
Dan McKinnon ⁵⁸	August 2016	September 2021

- 27. Hamilton has restructured the Public Works Department several times since its formation.⁵⁹ Some of these restructuring efforts are detailed below.
- 28. On March 30, 2015, City Council directed the City Manager to review the size and scope of the Public Works Department. Beginning in the fall of 2015, City staff retained COREinternational Inc. "to help senior management with their review of the organizational

Overview Document #2: City of Hamilton: Governance and Structure Doc 4005201 v1

⁵² HAM0020093 0001 at image 8

⁵³ HAM0019628 0001 at image 2; and RHV0000679 at image 2

⁵⁴ HAM0019628 0001 at image 2

⁵⁵ RHV0000679 at images 10 and 18

⁵⁶ RHV0000679 at images 21, 38, 46, 52, 58, 69, 80, 93, 105, 117, 130 and 142

⁵⁷ RHV0000679 at image 153; and RHV0000686

⁵⁸ RHV0000679 at images 165, 170, 172, 175, 177, 188; RHV0000686; and RHV0000874

⁵⁹ Organizational charts of the Public Works department, which reflect the various restructurings of Public Works from 2002-2019, can be found in the following document: <u>RHV0000679</u>. Note: This document was compiled by Commission Counsel based on the organizational charts produced by the City of Hamilton in this Inquiry and City documents that were publicly available. As such, the organizational charts included in this document may not be a complete reflection of the Public Works department as it existed from 2002-2019.

33. The following sections and departments of the Public Works Department were involved in the construction, design, maintenance and/or oversight of the Red Hill Valley Parkway.

(a) Roads & Maintenance Section

- 34. The Roads & Maintenance section "plans and delivers maintenance service programs for City roadways." 66
- 35. In 2002, Roads & Maintenance existed under the Roads & Traffic division of the Transportation, Operations & Environment Department, one of the precursor departments to Public Works. From approximately 2003 to 2018, Roads & Maintenance existed under the Operations division.⁶⁷

(b) Traffic Operations & Engineering Section

36. Traffic Operations & Engineering is:

[r]esponsible for the design, installation, inspection, maintenance, review and capital replacement of traffic signs, traffic signals, roadway pavement markings and roadway safety initiatives.⁶⁸

37. From 2003 to 2008, Traffic Engineering & Operations existed under the Operations & Maintenance division.⁶⁹ From 2009 to 2012, Traffic Operations and Traffic Engineering were housed in separate divisions. Traffic Operations existed under the Energy, Fleet, Facilities & Traffic section in the Transportation, Energy & Facilities division. Traffic

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⁶⁶ RHV0000655 at image 40

 $^{^{67}}$ The Operations Division had multiple name changes over this period. It was known as Operations division from 2013-2017, Operations and Waste Management division from 2010-2013 and Operations and Maintenance division from 2005-2008. See <u>RHV0000679</u>.

⁶⁸ RHV0000664 at image 5

⁶⁹ RHV0000679 at images 4, 8 and 12. Note: an Operations & Maintenance division organizational chart has not been produced for 2007 but it is assumed this same structure continued.

Engineering was under the Engineering Services section of the Environmental,

Sustainable Infrastructure division.⁷⁰

38. In approximately 2013, Traffic Operations and Traffic Engineering were again

combined to form Traffic Operations & Engineering. From approximately 2013 to

February 2017, Traffic Operations & Engineering existed under the Energy, Fleet & Traffic

section of the Corporate Assets & Strategic Planning division.⁷¹

39. From around February 2017 to December 2017, Traffic Operations & Engineering

existed under the Transportation division.⁷²

40. In 2018, Traffic Operations & Engineering was under the Roads & Traffic division,

which was created on January 1, 2018.73

41. In February 2019, following divisional restructuring, the Traffic Operations &

Engineering section was renamed the Transportation Operations section. It remained

under the Roads & Traffic division, which was renamed the Transportation Operations &

Maintenance division. Some of the Transportation Operations section's functions were

transferred to Engineering Services at the time of restructuring.⁷⁴

⁷⁰ RHV0000679 at images 21-23, 31-32, 38-40, 43-44, 46-48, 50, 52-53, 55

⁷¹ RHV0000679 at images 58-60, 69-71, 80-82, 93-95, 105-107, 117-119, 130-132, 142-144, 153-155 and

165-166

⁷² RHV0000679 at images 170 and 172

⁷³ RHV0000679 at image 175, 183 and 190

⁷⁴ <u>HAM0061813_0001</u> at images 5-7; <u>HAM0061806_0001</u>; <u>HAM0061807_0001</u>; and <u>RHV0000679</u> at images 192-193

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(c) Engineering Services Division

42. The departments overseen by Engineering Services division include the Construction, Design, Asset Management, and Geomatics & Corridor Management sections of the Public Works Department.⁷⁵

43. The Asset Management section:

provides city wide condition assessment, life cycle analysis, risk assessment, prioritization of needs, and long term capital programming for Hamilton's entire right of way infrastructure networks, and assistance of the same processes for Facilities and Parks infrastructure.⁷⁶

44. The Design section:

provides preliminary engineering to final detailed design services for the delivery of the Capital Program projects which include bridges, culverts, road, water and wastewater infrastructure.⁷⁷

45. The Construction section:

provides construction administration, inspection services and contract management for road, park, sewer, water, bridge and capital works construction projects throughout the City of Hamilton

. . .

[is] responsible for overseeing and documenting the Contractor's performance with respect to the terms and conditions of the contract, including the quality control of materials and workmanship.⁷⁸

46. The Geomatics & Corridor Management section:

manage[s] all utility permits, agreements, costing agreements and strategic direction

provide[s] all engineering survey/legal survey services to support capital program and land acquisition

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⁷⁵ RHV0000679. In 2017, the Waterfront Development section was added to Engineering Services division: HAM0061797_0001 at image 3.

⁷⁶ RHV0000656 at image 172

⁷⁷ RHV0000656 at image 173

⁷⁸ RHV0000656 at image 174

Manager of Public Works. The Director of Engineering Services reported to a Senior

Director, who reported to the General Manager of Public Works.⁸⁴

51. In 2013, Engineering Services became its own separate division. Since then the

director of Engineering Services has reported directly to the General Manager of the

Public Works Department.85

52. Gary Moore (Director, Engineering Services, Environment and Sustainable

Infrastructure Division, Public Works, Hamilton) was the Director of Engineering Services

from September 2007 to May 2018.86 Gord McGuire (Director, Engineering Services,

Public Works, Hamilton) became the Director of Engineering Services on June 18, 2018.87

(d) Red Hill Valley Project

53. Prior to the opening of the Red Hill Valley Parkway, from 2002 until in and around

2007, a Red Hill Valley Project team operated under the Public Works Department (or its

predecessor the Transportation, Operations & Environment Department).88

54. The Project team's Charter, dated March 25, 2003, set out the team members'

roles and responsibilities as follows: Peter Crockett (General Manager, Public Works) as

the Executive Sponsor, Chris Murray as the Project Director (Red Hill Valley Project,

Public Works, Hamilton), Gary Moore as the Manager of Design (Red Hill Valley Project,

Public Works, Hamilton), Michele Braun as the Administrative Assistant (Red Hill Valley

84 RHV0000679 at images 21, 38-39, 46-47 and 52-53

85 RHV0000679 at images 58, 69, 80, 93, 105, 117, 130, 142, 153, 165, 170, 172, 175, 177 and 188

⁸⁶ GOL0000248; and RHV0000679 at images 21, 38, 48, 58, 69, 80, 93, 105, 116, 130, 142, 153, 165, 170, 172 and 175.

87 HAM0058798 0001

88 RHV0000679 at images 2, 6, 10, 13 and 16

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Project, Public Works, Hamilton), Marco Oddi as the Senior Project Manager (Red Hill

Valley Project, Public Works, Hamilton), and Jennifer DiDomenico as the Program

Support Analyst (Red Hill Valley Project, Public Works, Hamilton).89

55. As the Project Director, Mr. Murray was responsible for reporting the team's

progress to the General Manager of Public Works, other senior management levels and

Committees. He also held "all the decision-making authority for the operation of the

Project on a day-to-day basis."90

56. Mr. Moore, as Manager of Design was responsible for managing the "consultant

team developing the preliminary engineering and design blueprint of the Project", as well

as overseeing the award of construction tenders and monitoring the progress of these

contracts.91

57. Ms. Braun, the Administrative Assistant on the team, was to "provide confidential"

administrative support to the Director", filter correspondence to the appropriate persons,

and respond to Freedom of Information inquiries regarding the Project. 92

58. Mr. Oddi, the Senior Project Manager, reported to Mr. Moore. Mr. Oddi's primary

duties were to assist Mr. Moore in carrying out his role. 93

89 HAM0010101 0001 at images 9-11

90 HAM0010101 0001 at images 9-10

91 HAM0010101 0001 at image 10

92 HAM0010101 0001 at image 11

93 HAM0010101 0001 at image 11



Friction Testing Survey Summary Report

Lincoln Alexander & Red Hill Valley Parkways (Hamilton)

November 20th, 2013



Prepared for:

Golder Associates Ltd. Mississauga, Ontario, Canada

By:

Tradewind Scientific Ltd. Ottawa, Ontario, Canada January 2014

BOX 3262, POSTAL STATION D OTTAWA, ONTARIO K1P 6H8 (613) 238-1246 C.P. 3262, SUCCURSALE D OTTAWA, ONTARIO K1P 6H8 (613) 238-1246

Friction Testing Survey

Lincoln Alexander & Red Hill Valley Parkways (Hamilton) November 20th, 2013

I. Introduction

A special road friction testing project was undertaken on designated sections of the Lincoln Alexander and Red Hill Valley Parkways in Hamilton, Ontario.

Friction measurements for the present survey were made using a GripTester instrument (manufactured by Findlay Irvine Ltd. of Scotland) which is an ICAO listed and FAA approved runway friction measurement device and one that is used extensively by road authorities in the U.K., Australia and New Zealand. For the current survey, a tow vehicle owned and operated by Tradewind Scientific Ltd. was configured with a 500 litre flexible water tank and an electric pump and ball-valve flow regulation system in order to undertake the friction test runs under controlled self-watering conditions. Project coordination and on-site assistance was provided by Vimy Henderson, Pavement and Materials Engineer, Golder & Associates Ltd.

II. Survey Description

In Canada and the U.S., there are currently no directly applicable reference standards or guidelines with which to compare data collected by CFME (Continuous Friction Measurement Equipment) for roads and highways, although these are well established for airport runways. The U.K. transportation authorities have, however, developed a reference 'Investigatory Level' table for GripTester measurements on roads (values based on correlation with the standard SCRIM equipment) which is shown as Appendix I. While not explicitly recognized by the Ontario MTO or other provincial transportation authorities as being applicable to Canadian roads, the listed reference values for different types of road and highway surfaces provide an established and reasonable guideline with regard to interpreting the recorded data from the current survey. The company responsible for the maintenance of the Highway 407 Express Toll Route owns and operates a GripTester provided by Tradewind Scientific and uses the collected data to monitor friction levels along its entire route. Engineering companies and some provincial highway authorities in Canada have also used GripTester measurements to assess road surface friction performance.

GripTester Friction measurements were undertaken on the Lincoln Alexander and Red Hill Valley Parkways under standard test conditions of 50 km/hr and 0.25mm applied water film depth, using an ASTM 1844 Test Tire inflated to 140 KPa (20 psi).

It should be noted that friction tests under controlled self-watering conditions as performed during this survey are not suitable for the assessment of possible hydroplaning or flooding that could lead to the loss of vehicular control under natural rain-wet conditions.

Five full length test runs were completed on both the Lincoln Alexander and Red Hill Valley Parkways. One test run was conducted in the right hand wheel path of each lane of each road in both directions (Eastbound and Westbound) as well as a single reference centreline run in the right hand lane on both roads (Eastbound).

Figure 2 shows the approximate locations of the surveyed road sections, both of which are near the periphery of the city of Hamilton, Ontario, adjacent to the western end of Lake Ontario.

In order to ensure that the friction measurements met high standards of accuracy and repeatability, the GripTester was subjected to full primary load/drag calibration procedures prior to the test survey and both the load zero and drag zero offsets were verified following the work.

III. Friction Measurement Results

When compared to the available Risk Rating Table referring to Grip Number Data for UK Roads (see Appendix I), the average GripTester Friction Numbers of the tested sections of the Lincoln Alexander Parkway were found to be generally *comparable to or above* the reference Investigatory Level 2 (Grip Number = 48). The Investigatory Level 2 applies to Dual Carriageway lane sections on relatively straight and level roads. More stringent levels apply to road sections near intersections.

The measured average friction values on the Eastbound outside (right) lane right-hand wheel path and Westbound outside lane right-hand wheel path of the Lincoln Alexander Parkway had the same full-length values (GN of 53). The measured average friction values on the Eastbound inside lane left-hand wheel path and Westbound inside lane left-hand wheel path of the Parkway had slightly higher, but similar, full-length values (GN of 56 & 58, respectively).

The data from all four test runs in the wheel path areas of the Lincoln Alexander Parkway displayed remarkable consistency when subdivided into 100m section values. On the outside lane test runs, the values ranged from approximately 50-55, while on the inside lane test runs the values ranged from approximately 52-60. This narrow range in friction levels is notable for a single road surface of this length, and indicates a high level of uniformity in the surface texture and pavement composition along the full extent of the road. All areas of the road have friction values *above* the relevant UK Investigatory Level 2 (GN of 48). A close examination of the friction data extracted for the 100m sections indicated that the slightly lower numbers recorded in the outside lane areas of the Lincoln Alexander Parkway (in both the Eastbound and Westbound directions) are likely due to the higher traffic volume and increased wear-related texture loss in these lanes.

The GripTester measurements from the centre-of-lane reference test run (on the outside lane inbetween the wheel paths) on the Lincoln Alexander Parkway also show very consistent values, ranging from approximately 52 to 60, with an overall full length average of 58. The overall pattern of the data from this run is similar to that from the test run in the adjacent right hand wheel path of the outside lane, with individual friction numbers being slightly higher for the centreline measurements. This is consistent with what would be expected from the wear-related texture loss that occurs primarily in the wheel track areas. All of the data from the centre-of-lane friction measurements on the Parkway were well above the relevant UK Investigatory Level.

When compared to the available Risk Rating Table referring to Grip Number Data for UK Roads (Appendix I), the average GripTester Friction Numbers of the tested sections of the Red Hill Valley Parkway were found to be generally *well below* the reference Investigatory Level 2. Most of the length of this road had Grip Numbers in the range of 30-40. Only a short section, approximately 600m in length, of the right hand wheel track of the right hand (outside) lanes near the southwest end of the Parkway had friction values above the UK Investigatory Level 2.

The measured average friction values on the Eastbound outside (right) lane right-hand wheel path and Westbound outside lane right-hand wheel path of the Red Hill Valley Parkway had essentially the same full-length values (GN of 35 & 36). The measured average friction values on the Eastbound inside lane left-hand wheel path and Westbound inside lane left-hand wheel path of the Parkway differed by some 5 points over the seven kilometer length of the facility (GN of 34 & 39, respectively).

The data from all four test runs in the wheel path areas of the Red Hill Valley Parkway was quite consistent when subdivided into 100m section values, but did show localized variations of 10-15 points over relatively short lengths. On the outside lane test runs, the values ranged from approximately 30-40 (except at the westernmost end of the road), while on the inside lane test runs the values ranged from approximately 30-45. This range in friction levels is not unusual for a single road surface of this length, and indicates significant variation in the surface texture and pavement composition along the extent of the facility. Nearly all areas of the road have friction values *below or well below* the relevant UK Investigatory Level 2 (GN of 48). A close examination of the friction data extracted for the 100m sections indicated only minor differences between the numbers recorded in the outside (right) lane areas of the Red Hill Valley Parkway (in both the Eastbound and Westbound directions) and limited evidence of increased wear-related texture loss in these lanes in comparison to the inside (left) lanes.

The GripTester measurements from the centre-of-lane reference test run (on the outside lane inbetween the wheel paths) on the Red Hill Valley Parkway also show somewhat variable values, ranging from approximately 30 to 50 (except at the westernmost end of the road, where the GN values reached 60), with an overall full length average of 43. The overall pattern of the data from this run is similar to that from the test run in the adjacent right hand wheel path of the outside lane, with individual friction numbers being approximately 6-8 points higher for the centreline measurements. This is consistent with what would be expected from wear-related texture loss that occurs primarily in the wheel track areas, and indicates substantial loss of surface texture and friction due to vehicular traffic. Virtually of the data recorded from the centre-of-lane friction measurements on the Parkway was *below* the relevant UK Investigatory Level.

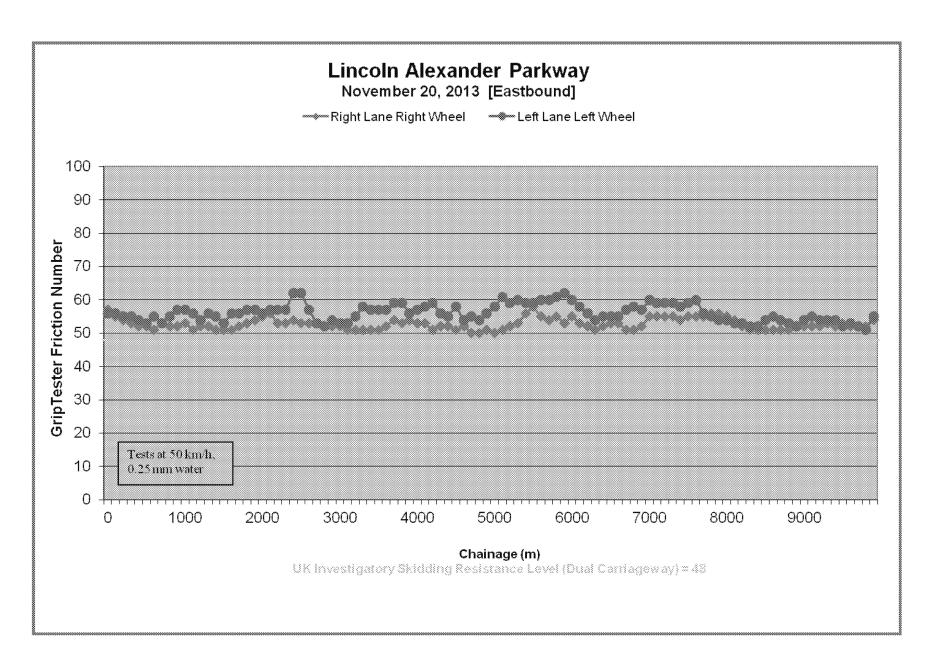
Reference SCRIM-equivalent values can be determined, if useful, by the equation developed by the UK Transportation Research Laboratory [SCRIM value = 0.786 * Grip Number - 0.049]. This formula results in SCRIM values being some 25% lower than the measured Grip Numbers. This formula may also be used to convert short-section results for a more detailed examination of each road surface along its full length.

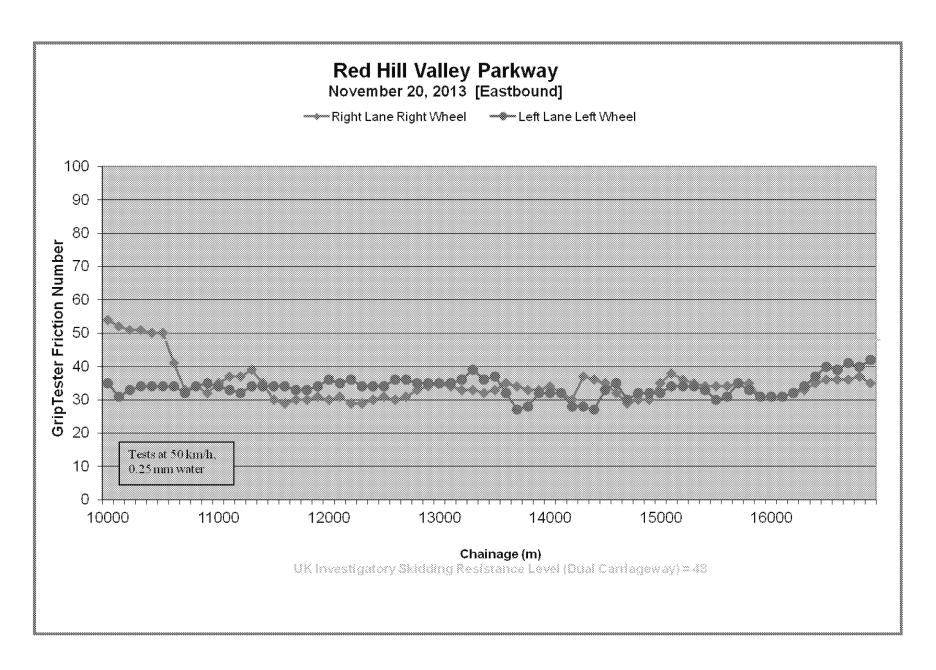
Some additional friction testing was conducted on short sections of certain access ramps (Greenhill and Stonechurch), with the data being summarized in the table following.

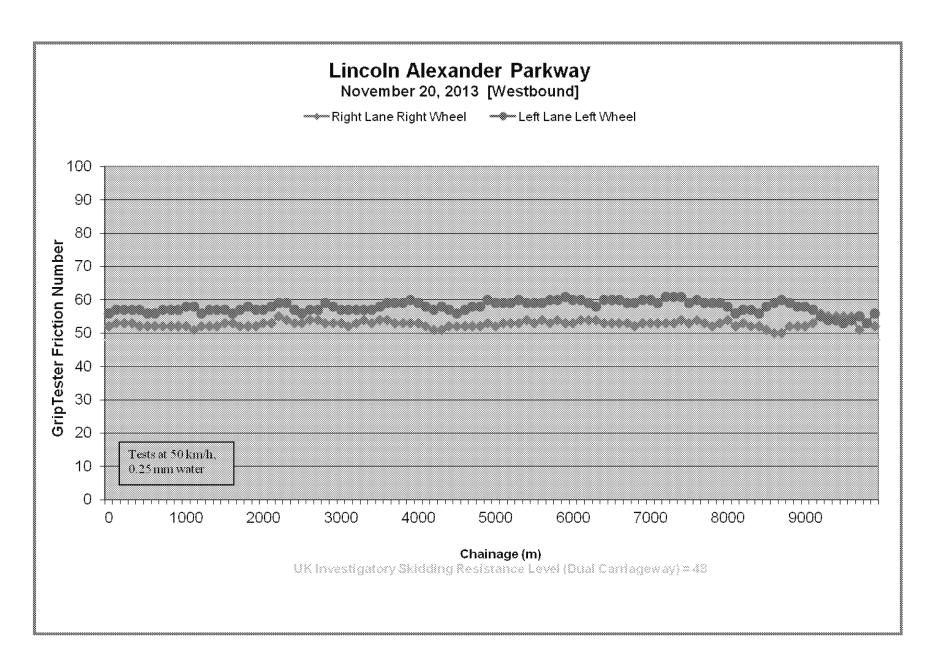
Chainage (m)	Greenhill Off-ramp	Greenhill On-ramp	Stonechurch Off-ramp
0-100	51	60	38
100-200	48	60	40
200-300	68	52	33
300-400	77	42	39
Average:	61	54	38

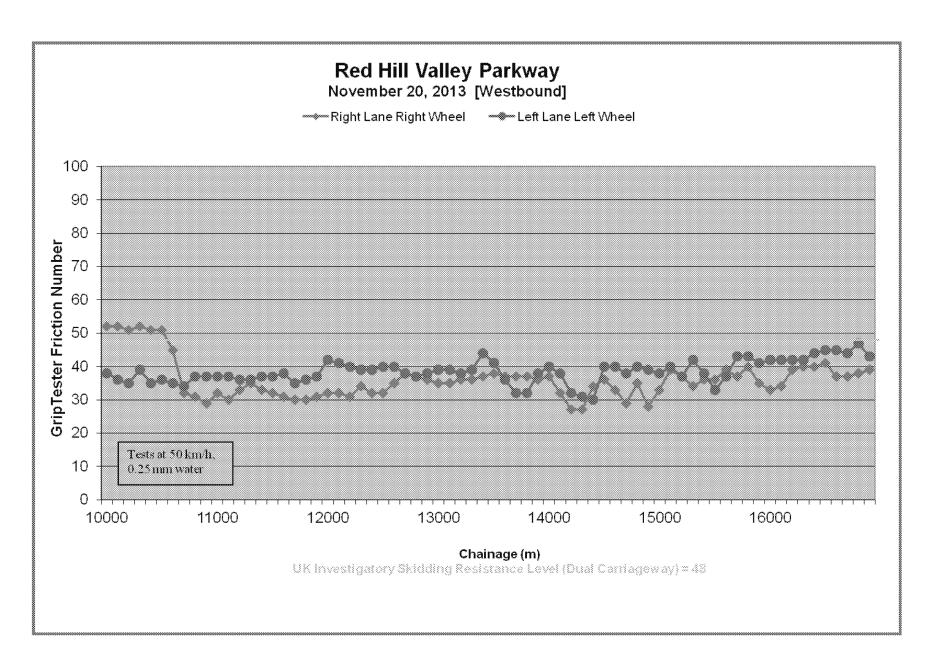
For both the Greenhill On and Off-ramp pavement sections, the 100m section friction values varied significantly from the start to the end of each 400m length. The overall average levels of 61 (On-ramp) and 54 (Off-ramp) are comparable to or slightly higher than the UK Investigatory Level 3 (GN 54), which applies to dual-carriageway roads near minor junctions. The corresponding Investigatory Level 4 for approaches and major junctions is 60. The recorded values from the Stonechurch Off-ramp were more consistent along its length than those of the other two access ramps tested, but considerably lower overall, with a 400m average of 38.

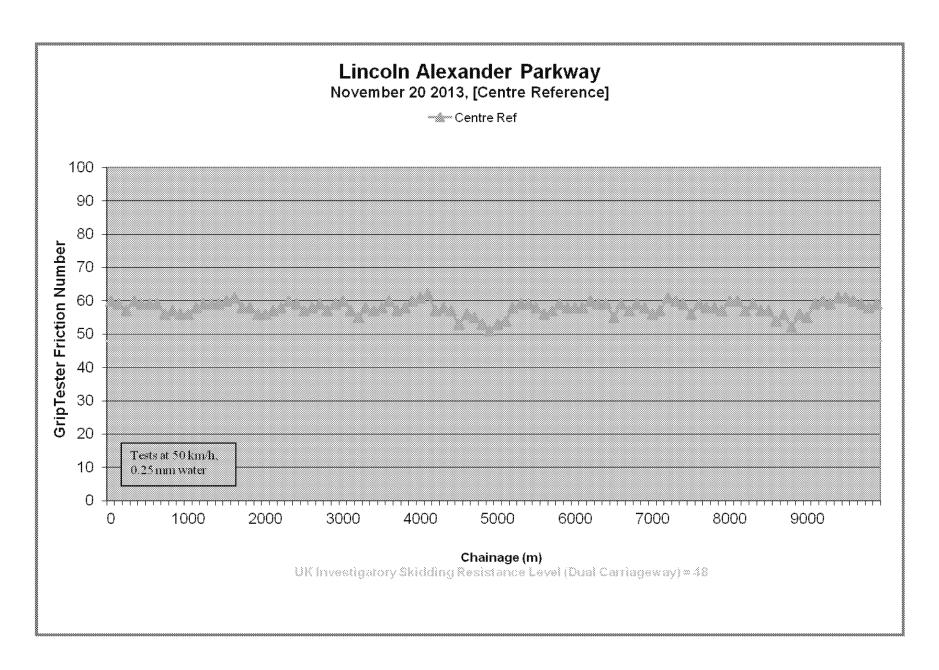
Friction measurements using the GripTester on four crosswalk sections were also conducted. As expected, the data from these very limited dimension pavement sections is inconclusive, due to the standard resolution of the testing technique using equipment being optimized for road and highway measurements with a tow vehicle. These localized areas should be tested with a more appropriate device or methodology, using the micro-GripTester or a normal GripTester configured for push-mode measurements.

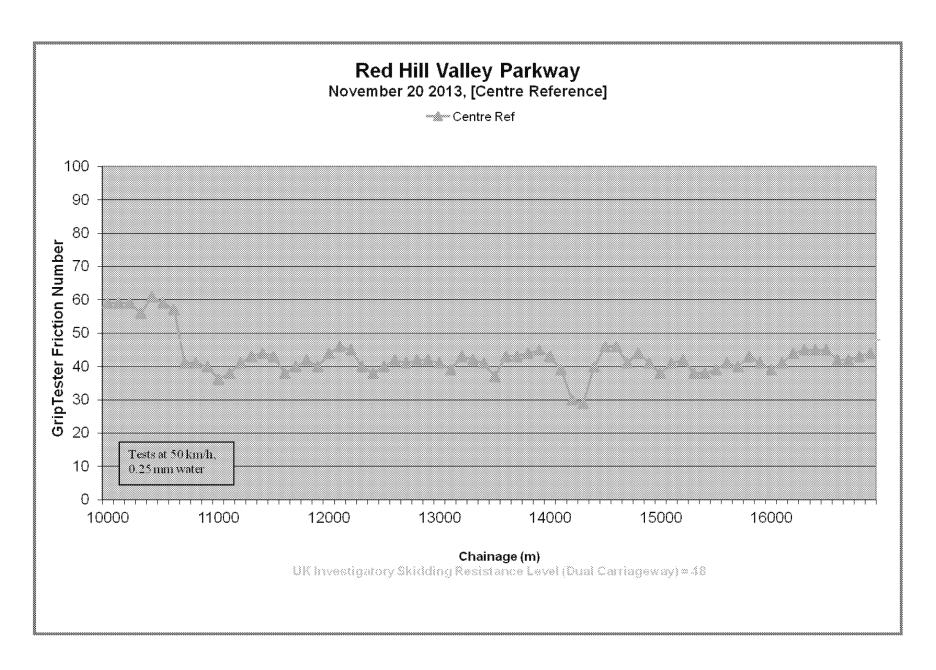












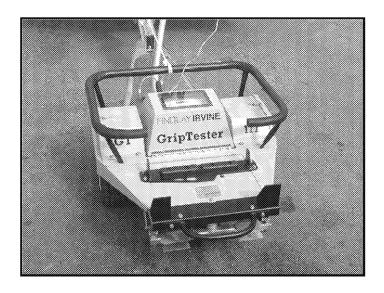


Figure 1: Findlay Irvine Mk 3 GripTester



Figure 2 Approximate map of the tested portion of Lincoln Alexander (A→B) and Red Hill Valley (B→C) Parkways..

Courtesv of Google/DigitalGlobe.

V. Conclusions and Recommendations

In conclusion, the overall friction averages as measured by the GripTester on the designated lanes and sections of the Lincoln Alexander Parkway were *comparable to or above* the relevant UK Investigatory Level. The relatively consistent friction values across the different lane positions and along the full length of this facility indicate a generally uniform pavement surface texture and composition, with limited variation due to vehicular traffic wear.

However, the overall friction averages as measured by the GripTester on the designated lanes and sections of the Red Hill Valley Parkway were *below or well below* the same UK Investigatory Level 2. The overall low levels and the variability of friction values along the length of the Parkway indicate the need for a further examination of the pavement surface, composition and wear performance. It should be noted that, in addition to the overall low average Grip Number levels on this facility, there are some localized sections with quite low friction values, reaching 27-30 in several areas. We recommend that a more detailed investigation be conducted and possible remedial action be considered to enhance the surface texture and friction characteristics of the Red Hill Valley Parkway, based on the friction measurements recorded in the current survey.

We trust that the testing work was completed to your full satisfaction, and that this summary report will serve to assist your investigation. Please do not hesitate to contact us if you require any further information or documentation.

Signed,

C. Leonard Taylor

President

[M.Sc., Hon. B.Sc., B.Ed., C.Chem.]

APPENDIX I

Reference Grip Number Data for Roads: UK Investigatory Skidding Resistance Levels (Risk Rating) for different Categories of Site

0.42	0.40						
	0.48	0.54	0.60	0.66	0.72	0.78	0.84
1	2	3	4	5	6	7	8

Note: The UK Highway Friction Investigatory Levels are based on GripTester Friction Numbers measured with an ASTM 1884 tire (140 kPa) at 50 km/hr with an applied water depth of 0.25. Table Courtesy Findlay Irvine Ltd.

GripTester Friction Number

City: Weather: Test Tire:	Hamilton Clear 90-10-21	Temp.	Lincoln Alexander P 7 C 50 km/h	v	Vind: Ca	ovember 20, 2013 olm 25 mm
Chainage		No. 1	No. 2	No. 3	No. 4	No. 5
Fron	n To	Eastbound-R	Eas thound-L	Westbound-R	Wes thound-L	Centre Ref
(0 100	57	56	52	56	60
100		55	56	53	57	59
200		54	55	53	57	57
300		53	55	53	57	60
400	500	52	54	52	57	59
500	600	52	53	52	56	59
600		51	55	52	56	59
700	0 800	53	53	52	57	56
800		52	55	52	57	57
900		52	57	52	57	56
1000		53	57	52	58	56
1100		51	56	51	58	58
1200		52	54	52	56	59
1300		52	56	52	57	59
1400		51	55	52	57	59
1500		51	53	53	57	60
1600		51	56	53	56	61
1700	1800	52	56	52	57	58
1800		53	57	52	58	58
1900		54	57	52	57	56
2000		55	56	53	57	56
2100		56	57	53	58	57
2200		53	57	55	59	58
2300		53	57	54	59	60
2400	2500	54	62	53	57	59
2500	2600	53	62	53	56	57
2600	2700	53	57	54	57	58
2700	2800	53	53	54	57	59
2800	2900	52	52	53	59	57
2900	3000	52	54	53	58	59
3000	3100	52	53	53	57	60
3100	3200	51	53	52	57	57
3200		51	55	53	57	55
3300	3400	51	58	54	57	58
3400	3500	51	57	53	57	57
3500	3600	51	57	54	58	58
3600	3700	52	57	54	59	60
370	3800	54	59	53	59	57
3800	3900	53	59	53	59	58
3900	4000	54	56	53	60	60
4000	4100	53	57	53	59	61
410	9 4200	53	58	52	58	62
4200	300	51	59	51	57	57
4300		52	56	51	58	58
4400		52	55	52	57	57
4500		51	58	52	56	53
4600		52	54	52	57	56
4700		50	55	52	58	55
4800		50	54	52	58	53
490		51	56	53	60	51

51

Runway Average	e:	53	56	53	58	58
Low 100 m Secti		50	51	50	53	51
,,,,,		· .	30	3 -	33	3,
9900	10000	52 54	55	52	56	59
9800	9800	52 52	52 51	51 53	53	58
9600 9700	9700 9800	52 52	53 52	55 51	54 55	60 59
9500 9600	9600 9700	53 52	52 53	55 55	53 54	61
9400	9500	52 53	54 52	55 55	54 52	61
9300	9400	53	54	55 55	54	59
9200	9300	52	54	56 55	55	60
9100	9200	52	55	53	57	59
9000	9100	52	54	52	58	55
8900	9000	52	52	52	58	56
8800	8900	51	53	52	59	52
8700	8800	51	54	50	60	56
8600	8700	51	55	50	59	54
8500	8600	51	54	51	58	57
8400	8500	51	52	52	56	57
8300	8400	51	52	52	57	59
8200	8300	52	53	53	57	57
8100	8200	54	53	52	56	60
8000	8100	55	54	54	58	60
7900	8000	56	54	53	59	5′
7800	7800 7900	56	55	53 52	59 59	58
7600	7700 7800	55 55	56	54 53	59	55
7500 7600	7700	55 55	60	53 54	60	59
7 4 00 7500	7600	55	58 59	53	59	5
7400	7500	54	58	54	61	5!
7300	7400	55	59	53	61	60
7200	7300	55	59	53	61	61
7100	7200	55	59	53 53	59	57
7000	7100	55	60	53	60	56
6900	7000	52	56 57	53	60	58
6800	6900	51	58	53 52	59 59	59
6700	6800	51	55 57	53 53	59	57
6600	6700	53	55 55	53	60	59
6500	6600	53	55 55	53 53	60	55
6400	6500	52	5 4 55	54 53	58 60	59
6300	6400	52 51	56 54	54 54	59 58	59
6100 6200	6200 6300	53 52	58 56	54 54	60 59	58 60
6000 6100	6100 6200	55 53	60 58	53 54	60 60	58
5900 6000	6000	53 55	62 60	53 53	61 60	58
5800 5900	5900 6000	55	61 62	54 53	60 61	55
5700 5800	5800 5900	54 55	60		60 60	57
5600 5700	5700 5800	55 54	60	54 53	59 60	50 50
5500 5600	5600 5700	58 55	59 60	53 54	59 59	5
5400	5500	56	59	53 54	59	5
5200	5300 5400	52	59 60	53 53	59 60	5
5100 5200	5200 5300	52	61 59	53 53	59 59	5
5100	5200	51	<i>C</i> 1	E2	59	5-

GripTester Friction Number

Hamilton City: Road: Red Hill Valley Pkwy Date: November 20, 2013 Weather: Clear Temp. 7 C Wind: Calm **Test Tire:** 90-10-21 Speed: 50 km/h Water: $0.25~\mathrm{mm}$

rest the:	90-10-21	speeu: 30	J KIIVII	v	ater: 0.2	.5 11111	
Chainage		No. 1	No. 2	No. 3	No. 4	No. 5	
Fron	1 То	Eastbound-R	Eas thound-L	Westbound-R	Wes thound-L	Centre Ref	
10000		54	35	52	38	59	
10100	10200	52	31	52	36	59	
10200	10300	51	33	51	35	59	
10300		51	34	52	39	56	
10400		50	34	51	35	61	
10500		50	34	51	36	59	
10600		41	34	45	35	57	
10700		33	32	32	34	41	
10800		34	34	31	37	41	
10900		32	35	29	37	40	
11000		35	34	32	37	36	
11100		37	33	30	37	38	
11200		37	32	33	36	41	
11300		39	34	35	36	43	
11400		35	34	33	37	44	
11500		30	34	32	37	43	
11600		29	34	31	38	38	
11700		30	33	30	35	40	
11800		30	33	30	36	42	
11900		31	34	31	37	40	
12000		30	36	32	42	44	
12100		31	35	32	41	46	
12200		29	36	31	40	45	
12300		29	34	34	39	40	
12400		30	34	32	39	38	
12500		31	34	32	40	40	
12600		30	36	35	40	42	
12700		31	36	38	38	41	
12800 12900		33 34	35 35	37 36	37 38	42 42	
13000		35	35	35	39		
		34	35	35 35	39	41 39	
13100 13200		33	36	36	38	43	
13300		33	39	36	39	42	
13400		32	36	37	44	41	
13500		33	37	38	41	37	
13600		35	32	37	36	43	
13700		34	27	37	32	43	
13800		33	28	37	32	44	
13900		33	32	36	38	45	
14000		34	32	37	40	43	
14100		32	32	32	38	39	
14200		30	28	27	32	30	
14300		37	28	27	31	29	
14400		36	27	34	30	40	
14500		35	33	36	40	46	
14600		32	35	33	40	46	
14700		29	30	29	38	41	
14800		30	32	35	40	44	
14900		30	32	28	39	41	

		Tradewind Scientifi	LIA CTOS			
Low 100 m Sect Runway Averag		29 35	27 34	27 36	30 39	29 43
Y 100 C	•	20	27	27	20	20
16900	17000	35	42	39	43	44
16800	16900	37	40	38	47	43
16700	16800	36	41	37	44	42
16600	16700	36	39	37	45	42
16500	16600	36	40	41	45	45
16400	16500	35	37	40	44	45
16300	16400	33	34	40	42	45
16200	16300	32	32	39	42	44
16100	16200	31	31	34	42	41
16000	16100	31	31	33	42	39
15900	16000	31	31	35	41	41
15800	15900	35	33	40	43	43
15700	15800	35	35	37	43	40
15600	15700	34	31	39	37	41
15500	15600	34	30	36	33	39
15400	15500	34	33	36	38	38
15300	15400	35	34	34	42	38
15200	15300	36	34	37	37	42
15000 15100	15100 15200	35 38	32 34	33 39	38 40	38 41

Wet" signing and advisory speed tabs to be in place upon opening to traffic. Advisory signing would be removed when FN=30 or greater are safely reached." The direction received from Ray Mantha was to develop an SMA strategy with Industry, which recommended restricting some aggregate sources.

- Please note the friction testing information will be processed shortly
- I am hoping that contractual information including the layout and paving dates will also be provided in the next couple of days.

133. On October 16, 2007, Ms. Lane wrote to Mr. Kazmierowski with respect to the Highway 401 low friction results in MTO contract 2005-3030:¹⁵⁶

Chris Raymond is recommending posting of slippery when wet signs on Hwy 401 Woodstock (see below). I realize that signage has been discussed at length but I am unaware of any decisions that have been made. The pavement in question is still a construction zone, with 80 km/hr posted speed.

134. On October 16, 2007, the MTO conducted friction testing on the RHVP. 157

135. On October 17, 2007, Mr. Marciello circulated (corrected) SMA friction testing results from Highway 401 for SMA placed in 2006, and recently for MTO contract 2005-3030. These test results (FN in the low 20s in some places) were ultimately cited in support of the MTO pause on SMA imposed in November 2007, which is described below.¹⁵⁸

136. Also on October 17, 2007, regarding the RHVP friction testing conducted by the MTO the previous day, Mr. Delos Reyes emailed Mr. Marciello stating: "Just a reminder, please email test result as discussed. Dufferin and Philips Engineering are highly interested." Mr. Marciello replied to Mr. Delos Reyes, copying Mr. Raymond and Ms.

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¹⁵⁶ MTO0002877

¹⁵⁷ GOL0002619 attaching GOL0002620 and GOL0002621

 $[\]frac{\text{158}}{\text{MTO0002218}} \ \text{attaching} \ \underline{\text{MTO0002219}}, \ \underline{\text{MTO0002220}}, \ \underline{\text{MTO0002221}}, \ \underline{\text{MTO0002222}}, \ \underline{\text{MTO00002222}}, \ \underline{\text{MTO0002222}}, \ \underline{\text{MTO0002222}}, \ \underline{\text{MTO0002222}}, \ \underline{\text{MTO00002222}}, \ \underline{\text{MTO000002222}}, \ \underline{\text{MTO000002222}}, \ \underline{\text{MTO000002222}}, \ \underline{\text{MTO000002222}}, \ \underline{\text{MTO0000$

¹⁵⁹ MTO0002226

Lane, stating: "Thanks for the reminder Andro. I will forward results to Chris as they become available and he will in turn forward the appropriate individuals/organization."160

137. Also on October 17, 2007, Mr. Marciello emailed Mr. Raymond and Ms. Lane the RHVP friction test results from October 16.161 He stated

Due to construction activities throughout the contract, a representative portion of Red Hill Valley Parkway was friction surveyed on October 16, 2007. The SMA in both southbound lanes from the CNR Structure to Greenhill Ave in Hamilton was clear enough for a safe and effective data collection process.

Please review the attached Read Only files and let me know if any changes are required. Of not, please forward to the appropriate personnel.

Dufferin and Philips Engineering and Andro Delos Reyes are eager for the results.

Note: Friction Numbers below 30 were collected in areas situated directly under overhead structures (least likely to get weathered)

The detailed friction test results (for the two RHVP southbound lanes)¹⁶² follow the typical MTO format that Mr. Marciello used and are reproduced below:

¹⁶⁰ MTO0002226

¹⁶¹ MTO0002227 attaching MTO0002228 and MTO0002229

¹⁶² MTO0002228 and MTO0002229

МТО			AS	TM E274, E50	01	MER
Red Hill Valle SITE: LHRS:	CNR OH	DIR: STRUCTI O/S:		LANE: 1 TO G	REENHI	DATE: Oct-16 LL AVE (HAMILTON) TEMP: 12 DEG
DIST	SPEED	AVG FN	DIST	- LANDMAR	:KS	COMMENTS
0.000			0.00 >	CNR STRUCT	URE	SMA in Contract PW-06-243 (RHV
0.249	93.9	33.6				Unopened to Traffic
0.438	90.2	28.7	0.49 >	BARTON ST		
0.619	92.4	34.3				
0.791	93.3	35.7				
0.967	93.0	32.5				I iii
1.146	92.2	32.8				
1.307	91.6	33.8				
1.581	91.4	35.1				
1.748	90.9	28.1	1.82 >	QUEENSTON	RD	
1.937	92.8	35.4				
2.120	91.5	35.5				
2.291	92.6	34.9				
2.499	91.1	33.6				
2.740	92.8	32.6	2.65 >	KING ST		
2.930	93.6	36.5				
3.129	93.6	34.9	3.14 >	CPR STRUCT	URE	
3.316	90.4	34.2				
3.487	90.8	36.3				
3.677	90.2	34.2				
3.815	90.6	35.5	3.95 >	GREENHILL A	WE	
AVG. SPD	91.9	33,9	AVG. FN			
3-4-00-0		28.1	Min. FN			
	9	36.5	Max. FN			
	()	2.2	Std.Dev.			
	1	20	Field			

OTN			AS	TM E274, E	501		MER
Red Hill Valle SITE: LHRS:	CNR OH	DIR: STRUCT O/S:		LANE: TO		LL AVE (H.	DATE: Oct-16 AMILTON) TEMP: 12 DEG
DIST	SPEED	AVG FN	DIST	- LANDMA	ARKS		COMMENTS
0.000			0.00 >	CNR STRU	CTURE	SMA in Co	ntract PW-06-243 (RHV
0.263	89.6	34.7				Un	opened to Traffic
0.442	90.9	29.6	0.49 >	BARTON ST			
0.609	91.0	33.9					
0.751	90.2	34.5					
0.908	92.5	35.4					
1,063	91.2	34.6					
1.210	90.6	34.6					
1.343	91.4	34.0					
1.477	90.9	35.9					
1.609	91.1	37.4					
1.743	93.1	28.4					
1.943	91.0	35.2	1.82 >	QUEENSTO	N RD		
2.091	90.5	34.9					
2.248	90.8	36.7					
2.400	90.3	33.5					
2.583	89.1	28.6					
2.759	90.0	29.7	2.85 >	KING ST			
2.905	90.7	36.8	15233				
3.094	90.1	33.9	3.14 >	CPR STRUC	CTURE		
3.286	91.5	35.1					
3.481	90.2	34.2					
3.644	89.6	33.2					
3.793	88.9	33.6	3.95 >	GREENHILL	. AVE		
AVG. SPD	90.7	33.8	AVG. FN				
	N N	28.4	Min. FN				
		37.4	Max. FN				
		2.5	Std.Dev.				
		23	Field				

139. On October 18, 2007, Mr. Raymond emailed Dr. Uzarowski and Mr. Delos Reyes the MTO friction testing results from the testing conducted on the RHVP on October 16, 2007. ¹⁶³ He wrote:

Attached please find the friction testing results for the Red Hill Valley Parkway.

Please pass the results on to those involved with the project.

You may wish to note that some of the friction numbers less than 30 correlate with being located under a structure.

Should you have any questions regarding the results please do not hesitate to contract us.

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¹⁶³ GOL0002619 attaching GOL0002620 and GOL0002621

140. Dr. Uzarowski replied to Mr. Raymond's email about the MTO friction testing, stating: 164

Thank you very much for the results. We really appreciate your help. I will discuss the results with the City.

141. Dr. Uzarowski then forwarded Mr. Raymond's email with the MTO friction test results to Mr. Moore and Marco Oddi (Senior Project Manager, Red Hill Valley Project, Public Works, Hamilton), stating:¹⁶⁵

Please find attached the results of the friction testing on the Red Hill Valley Parkway completed for us by MTO. I will call you to discuss the results.

142. Also on October 18, 2007, Rob Rollings (Head, Quality Assurance, Central Region, Provincial Highways Management Division, MTO) wrote an email with the subject line "2007-2031 – Trial Section Varennes Quarry", to Mr. Theodore, Ken Payette (Quality Assurance Office, Central Region, Provincial Highways Management Division, MTO), and Mr. Rogers. 166 The email stated:

We received the package regarding Dufferin's request for an FC2 trial for this new aggregate and have the following comments:

- ·There are specific requirements for approval to be included on the DSM list for FC2 and a trial section is one of them, however, prior to a trial section being permitted, Head Office Soils and Aggregates have to sample and test the material and evaluate the operation.
- ·The Contractor is required to contact Chris Rogers Manager Head Office Soils and Aggregates to request the evaluation be done.
- ·Once this step has been done and if everything is acceptable then the issue of a trial section can be reviewed. At this time, the request for a trial section is premature.

¹⁶⁴ GOL0003516

 $[\]frac{165}{100003513}$ attaching GOL0003514 and GOL0003515; and HAM0000317 0001 attaching HAM0000318 0001 and HAM0000319 0001

¹⁶⁶ MTO0003260

When evaluating aggregates for inclusion on the ministry's list of approved materials, we typically only monitor a pavement over a period necessary to observe trends. We do not usually monitor over the life of the pavement.

2. Mike in MO wants to know---are these numbers what you would consider normal/average for this type of highway?. If yes, can we say that in our response?

The numbers are typical as they started out higher but started to slowly decline over time.

(Suggest for internal info only: for a high speed provincial freeway, if the numbers were consistently below 30, we would monitor more closely and start to consider remedial measures)

3. And has this stone material been added to our approved list?

In May 2009, MTO approved the stone (aggregate) for DSM listing based on acceptable lab test results and satisfactory frictional properties including the initial data from the Parkway. [The aggregate was listed on the DSM from 2009 to 2016.]²³²

221. On February 12, 2019, at 4:15 p.m., Mr. Van Dongen emailed Ms. Graham and Mr. McKinnon under the subject line "FW: MTO--friction testing results". ²³³ He attached four graphs summarizing the MTO's friction testing results on the RHVP from 2007 to 2014 to this email. ²³⁴ He wrote: "Hi folks, just received these. Did the city already have access to this info, and if so, any concerns?" ²³⁵

222. At 4:30 p.m., Ms. Graham forwarded this email to Mr. McGuire and Mr. Soldo, copying Mr. McKinnon. She wrote:

See below and please let us know if you have seen these before? I'm not in the office so can't check the file, but this format doesn't look familiar to me.

If no – suggesting wording such as "Current leadership has not seen this information in this format."

If yes – can you just clarify when/how we do?²³⁶

2

²³² MTO0038359; see also MTO0038360

²³³ HAM0028680 0001

²³⁴ HAM0028687 0001, HAM0028688 0001, HAM0028686 0001 and HAM0028685 0001

²³⁵ HAM0028680 0001

²³⁶ HAM0028680 0001

- 223. Mr. McKinnon forwarded this email, with the attached graphs, to an email account with the username "joannet.mckinnon" later that day.²³⁷
- 224. On February 12, 2019, at 4:33 p.m., Mr. Soldo replied to Ms. Graham's email, writing:

I literally was talking on the phone to MTO as this email came in and they informed me that they have been doing testing on RHVP from 2007 to 2014. I asked for that info and I have to assume this data from the Spec came from MTO today. ²³⁸

225. On February 12, 2019, at 4:36 p.m., Mr. Bentley replied to Mr. Soldo's February 11, 2019 email, writing:

As discussed, here are the four files for each lane for the 4km section where friction testing was completed to evaluate the stone for inclusion on the DSM list.

I have cc'd Becca Lane if you have any questions about the testing. 239

226. Mr. Soldo replied to Mr. Bentley, writing:

Thank you for providing the graphs. Can you provide the underlying data that developed them. Also, any other documentation related to this project such as scope, specifications etc. Also, any transmittal information or emails related to how this was shared with the Citv.²⁴⁰

227. On February 12, 2019, Mr. Soldo forwarded Mr. Bentley's email to Ms. Auty, copying Mr. Zegarac, Mr. McKinnon, and Mr. Brown. Mr. Soldo forwarded this email to Mr. McGuire later that day.²⁴¹

²³⁸ HAM0028689 0001

²³⁷ HAM0028680 0001

²³⁹ HAM0028695 0001

²⁴⁰ HAM0028695 0001

 $[\]frac{^{241}}{HAM0054544} \frac{HAM0054541}{0001} \text{ attaching } \frac{HAM0054541}{0001}, \frac{HAM0054542}{0001}, \frac{HAM0054543}{0001} \frac{0001}{0001} \text{ and } \frac{HAM0054544}{0001}$

228. On February 12, 2019, at 5:52 p.m., Mr. McGuire replied to Ms. Graham's email, writing:

For the record, I've never seen these test results. Staff have not either or this would have been brought forward in our discussion on the RHVP.

I will review the results later.242

229. On February 12, 2019, at 6:13 p.m., Mr. Soldo forwarded his email exchange with

Mr. Bentley to Mr. McKinnon. He wrote:

Discussion with Kevin Bentley by teleconference.

Friction testing was initiated as the MTO was requested to review the adequacy of a certain aggregate from a supplier pit in Quebec in order to allow them to be on the approved list for MTO contracts. The stone was used by Dufferin as part of the SMA pavement on the RHVP.

The test site was 4 km long, from Greenhill to CNR. Run for 7 year although some years the testing was not undertaken.

The data shows that the SMA did improve in friction after the initial thin layer of asphalt cement wore off.

I asked for the data to be sent over, received shortly after the call by email. Kevin Bentley identified that the same methodology may not have been used in assessing the end friction value in the City testing. For comparison, the specification for Highway 407 includes a value of 30 where more investigation is required. The key to monitoring is to assess the long term trends.

Asked for verbally and by email any other relevant documentation and in particular any correspondence of sharing the data and test results with the City. The MTO was going to review their files. The MTO indicated the Charles Brown has connected with them as well last Friday on this matter as well as several media outlets. The data was going to be released.

Offered assistance of the Manager of Materials and Research area in reviewing and interpreting the analysis.²⁴³

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²⁴² HAM0028694 0001

²⁴³ HAM0028695 0001



MEMO

TO

: Edward Soldo

Director, Transportation Operations and Maintenance

City of Hamilton

FROM

: Brian Malone, CIMA+

DATE

February 26, 2019

SUBJECT

: Red Hill Valley Parkway - Review of MTO Pavement Friction Data 2008-2014

(CIMA+ File: B000920 / 200)

1. INTRODUCTION

This memorandum details our review of the results of pavement friction testing data for the Red Hill Valley Parkway that had been collected by the MTO starting in 2008 and continuing until 2014. The data provided is for friction testing completed on the RHVP and data was collected for 6 years of the 7-year timespan, the exception being 2013.

In your email of February 17, 2019, you requested that we review the data, undertake an analysis of trends that may exist in the data and determine if an extrapolation of pavement friction values to 2019 can be provided from the data. You also asked if CIMA would recommend that the City undertake friction testing prior to the resurfacing to validate the MTO data and if any of our recommendations from recent reports, including the Feb 4th, 2019 memo, would be impacted by this data.

This data is separate from the friction testing data which was collected in 2013 by Tradewind Scientific. That data was reviewed by CIMA in our memo dated February 4, 2019. The Tradewind data has not been included in this analysis of the MTO friction data. Details of the testing protocol used by MTO were not available and could not be compared to the Tradewind protocol. Without confirmation that testing protocols are the same, merging of the data is not appropriate.

As with the 2013 Tradewind data, CIMA has not previously been provided with this MTO data and it did not form a component of our earlier road safety reviews relating to the RHVP and the LINC.



February 26, 2019

2. ANALYSIS

The MTO pavement friction data was completed over a period of 7 years, from 2008 to 2014. Six years of data were provided, 2008, 2009, 2010, 2011, 2012, and 2014. No data was provided for 2013.

CIMA examined the data for each year and reviewed it for trends. We determined that there were sufficient data points to undertake trend analysis, and, with considerations noted below, to extrapolate date to 2019

We have summarized data using a single value for each reference year. It must be noted that the data varied not only by year but also by lane, by direction and by air temperature recorded at the time data was collected. The yearly values we have used in this memo are representative of the averages of the data, by year. Individual test results varied above and below the average yearly values.

The potential for trends in the data was reviewed using various model alternatives. Linear regression (straight-line projection), was assessed as was non-linear regression. A non-linear (logarithmic) function was found to have the best fit, statistically. The non-linear regression was used for extrapolation of the data to future years, up to 2019. The results are shown graphically in Figure 1 and numerically in Figure 2. In these figures both friction measurements (2008-2014) and friction estimates (2008 – 2019, extrapolated by the fitted model) are presented.

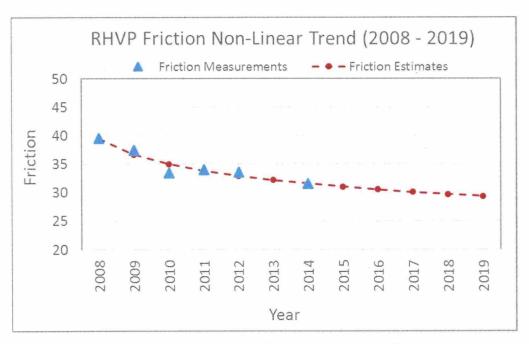


Figure 1 – RHVP Friction Non-Linear Trend – Graph



Year	Friction Measurements	Friction Estimates
2008	39.6	39.5
2009	37.4	36.7
2010	33.4	35.0
2011	34.0	33.8
2012	33.5	32.9
2013		32.2
2014	31.6	31.6
2015		31.0
2016		30.5
2017		30.1
2018		29.7
2019		29.4

Figure 2 - – RHVP Friction Non-Linear Trend – Values

Overall, the results show that average friction levels have dropped over time. We again highlight that individual testing values varied by lane, by direction and by temperature.

We have extrapolated the values to 2019 based on the best fit of the testing data using a non-linear function. Results must be viewed with caution. Mathematically the 2019 values represent the best fit to the extrapolated 2008 to 2014 measured data. Actual 2019 field-measured values may vary, based on a number of factors.

Traffic volume is known to impact friction values. The data provided did not include traffic volumes. Changes in volumes over time, and their impact on friction values, is unknown.

It is also normal for pavement friction values to reduce during the lifecycle of a road and that trend is generally found to be non-linear. While our use of a non-linear function to fit the data may account for this to some degree, the exact profile of degradation is unknown, and we note that our regression analysis does not directly model normal life cycle pavement friction degradation.

Lastly, the results determined for 2019 are estimates based on extrapolation of an identified trend. Longer term extrapolation of data will be less accurate than estimates done over a shorter term. The magnitude of uncertainty in results increases as the projection timespan increases.

Based on the extrapolation of data collected from 2008 to 2014, the average pavement friction values in 2019 are estimated to be dropping, to approximately 29 (f=0.29). That value corresponds to the same stopping distance design value used in a 100 km/h design speed, which is f=0.29. The value is above the lateral friction value used in the road design for 100 km/h horizontal curves of f=0.12.

The extrapolated 2019 average friction value is lower that the results reported in the Golder report of January 2014, which reported the Tradewind testing results. Those results indicated measured average friction levels on the RHVP ranging from FN values of 34 to 39,



February 26, 2019

corresponding to (f) values of 0.34 to 0.39. Again, we note that the testing protocols from Tradewinds and from the MTO testing have not been compared, so the comparison of the friction values should also be viewed with caution.

The MTO data provided was only for the RHVP. Data for the LINC was not provided. The 2013 Tradewind study did provide measurements for the LINC which showed values higher than the RHVP. Given the absence of corresponding data from the LINC in the MTO data, we are unable to comment on any difference in friction values that may exist between the two facilities, either in the measured data from 2008 to 2014, or in the extrapolated 2019 values.

3. DISCUSSION

As noted in our February 4th, 2019 memo, pavement friction measurements can be compared to the assumed design values to ensure that the design parameters are being provided in the field.

The friction values measured by the MTO from 2008 through to 2014 indicate that the average friction values exceeded the stopping distance design value used in a 100 km/h design speed (f=0.29). The values were also above the lateral friction value used in the road design for 100 km/h horizontal curves (f=0.12).

Extrapolated values for average pavement friction were determined for 2019 using a non-linear function. The extrapolated 2019 average friction value is equal to the stopping distance design value used in a 100 km/h design speed (f=0.29). The value is above the lateral friction value used in the road design for 100 km/h horizontal curves (f=0.12).

Based on the variance in the MTO test data by lane and by direction, we anticipate that some areas of the RHVP in 2019 have friction values that are lower than the stopping distance design value used in a 100 km/h design speed (f=0.29).

We recommend that additional testing be undertaken of the current condition of the pavement. In-field friction testing will confirm the current pavement friction values and allow validation of the extrapolated 2019 results.

Undertaking friction testing prior to repaving will also provide a baseline for evaluation of changes to pavement friction levels following the resurfacing. It should be noted that our review of the MTO data showed statistical correlation with air temperature at the times friction testing was undertaken. Therefore, air temperature at the time of testing should be considered when undertaking comparisons of the friction testing results from 2019 completed before and after repaving to ensure accurate interpretation.

Our extrapolated 2019 average friction values show numbers that are estimated to be equal to the design values. Even if field measurements indicate lower levels, they are an indicator that the road is less-safe, but they do not immediately render the road unsafe.

Lower friction levels result in longer stopping distances. Multiple countermeasures were previously recommended by CIMA and have been implemented to mitigate for the less-safe conditions identified on the RHVP. The recent lowering of the speed limit for portions of the RHVP adds to those countermeasures.



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Red Hill Valley Parkway - Pavement Friction Testing Results Review (CIMA+ File: B000920 / 200)

February 26, 2019

We have reviewed the recommendations in our 2015 report in light of the MTO friction testing data from 2008 to 2014. Our report had recommended pavement friction testing. MTO data provides clarity on the issue of friction being a contributing factor in collisions. We had also identified countermeasures that targeted elements that interact with pavement friction, specifically speed.

Given that resurfacing is now planned in 2019 and that action will directly address pavement friction conditions, we have no changes to our 2015 recommendations.

28830503

Brian J. Malone, P.Eng.

Soroush Salek, Ph.D., P.Eng.

thought you guys met with Chad and he was happy????? Did we get CIMA to finalize the report to our liking? Before they ask for a copy?²³⁷

204. On December 5, 2013, Mr. Lupton responded by email to the same group and wrote:

Yes to items 1 thru 5 or all of it. Did you see our info report? We did our best to discourage it at committee, but they wanted us to come back in a year's time to discuss the impacts of the improvements. I have asked to report back on the OBL in April 2015. Do you retire before that?²³⁸

205. Mr. Moore then responded by email to Mr. Lupton only. They exchanged the following messages:

GM: They don't want you to report in a year they want another report just on lighting! Now!

GL: You can lead a horse to water... We tried.

GM: I just shoot the horse!

GL: Good plan.239

206. On December 9, 2013, Dr. Uzarowski followed up regarding the status of the Purchase Order. Hamilton issued Purchase Order 0000073087 to Golder Associates Ltd. dated January 6, 2014, in the amount of \$8,000 for the friction testing. It was faxed to Golder on Jan 10, 2014.²⁴⁰

2. December 9, 2013, CIMA produces last version of report

207. On December 9, 2013, Mr. Cooper responded to Mr. Applebee's message of November 19, 2013, and advised that he had received "the go ahead for the wording changes" and instructed Mr. Applebee to proceed to make the final copies.²⁴¹ Mr.

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²³⁷ HAM0004336 0001

²³⁸ HAM0004337 0001

²³⁹ HAM0004339 0001

²⁴⁰ HAM0000502 0001; HAM0000497 0001; GOL0004369; and GOL0001102

²⁴¹ CIM0008063

Applebee emailed Mr. Cooper and asked "do you want the date changed on the report to

December? It currently says October, but I can't remember if we were going to keep the

original date on the report or not. Doesn't matter to me either way." Mr. Cooper responded

that the "original date is fine". 242

208. Later that day, Mr. Applebee sent Mr. Cooper a .PDF of what he described as the

updated report.²⁴³ The changes were not apparent on the face of the report and it was

still dated October 2013.

209. The revised report included information from Hamilton regarding the proposed

implementation of certain countermeasures. The following was added to the executive

summary:

The City has indicated that with respect to a select number of countermeasures a staged approach to implementation will be undertaken. The details of this approach are highlighted here and are acknowledged in the timing noted in the tables.

+ Signage Recommendations

The City will endeavor to undertake signage recommendations in the short term, with the expected completion of the end of 2013-2014.

+ Pavement Marking and PPRM Recommendations

The City will re-paint the RHVP with the wide pavement markings during the annual marking rehabilitation program beginning in the spring of 2014; and

PRPMs will be installed with the next planned resurfacing of the RHVP, likely in the medium term (5 - 10 years).

+ Illumination Recommendations

Prior to the review of new illumination, the City will undertake the implementation of other countermeasures and monitor their effectiveness for a period of at least one year.²⁴⁴

²⁴² CIM0008063

²⁴³ HAM0041870 0001 attaching HAM0041871 0001

²⁴⁴ HAM0041871 0001 at image 4

Overview Document #6: The 2013 CIMA Report and the 2013 Golder and Tradewind Reports

Doc 4125325 v1

210. The updated version of the report also included "[i]nformation from the City regarding funding and capital programs/planning" to the section describing factors considered by CIMA in providing its recommendations.²⁴⁵

3. Work Continued by Dr. Uzarowski in December 2013

211. Dr. Uzarowski's notebook contains an entry that suggests he met with Mr. Moore on December 10, 2013.²⁴⁶ Another entry, dated December 13, 2013, suggests Dr. Uzarowski and Mr. Moore may have had a call that day.²⁴⁷ On December 20, 2013, Dr. Uzarowski has a note to call Mr. Moore, Lisa Castronovo (Administrative Assistant, Asset Management, Engineering Services, Public Works, Hamilton) and Trevor Moore (Corporate Technical Director, Miller Paving Ltd., Miller Group).²⁴⁸

212. On December 20, 2013, Mr. Trevor Moore emailed Dr. Uzarowski, attaching "as discussed" various brochures and guidelines relating to micro surfacing and slurry seal. Dr. Uzarowski forwarded this email to Dr. Henderson on December 20, 2013.²⁴⁹

213. On December 31, 2013, Dr. Uzarowski emailed the initial draft of the report for Phase III of the Pavement and Materials Technology Review to Gary Moore.²⁵⁰

4. Discussions with Shillingtons LLP Regarding RHVP Collision Claims

214. On December 19, 2013, Colleen Crawford (Senior Law Clerk, Shillingtons LLP) emailed Mr. Kirchknopf, copying Diana Sabados (now Diana Swaby, Supervisor, Claims

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²⁴⁵ HAM0041871 0001 at image 63

²⁴⁶ GOL0007407 at image 19

²⁴⁷ GOL0007407 at image 20

²⁴⁸ GOL0007407 at image 22

²⁴⁹ GOL0006503

²⁵⁰ HAM0023624 0001





MEMO

TO: David Ferguson, City of Hamilton

CC: N/A

FROM: Pedram Izadpanah, CIMA+

DATE: [DATE \@ "MMMM d, yyyy"]

SUBJECT: Lincoln Alexander Parkway / Red Hill Valley Parkway Collision

Rates

(CIMA+ File: B000558A)

The purpose of this memorandum is to respond to the City's inquiry regarding collision rates on the Lincoln Alexander Parkway (LINC) and Red Hill Valley Parkway (RHVP), following the two safety reviews conducted in 2015. The inquiries, as outlined in your email dated January 9, 2018, are as follows:

- 1. How do the LINC and RHVP compare with other similar type roadways (e.g. Highway 406 through St. Catharines and Highway 7/8 in Kitchener);
- 2. What are the collision rates on the LINC and RHVP considering only collisions that completely cross the median;
- 3. What are the collision rates by direction on the LINC and RHVP;
- 4. Is a collision rate of 1.0 a fair threshold to indicate that a high incidence of collisions: and
- 5. Is there a Provincial Highway collision rate that can be used for comparison?

1. COLLISION RATE COMPARISON

A comparison of collision rates on the LINC and RHVP with the following Provincial highways:

- Highway 406 between Highway 58 and Queen Elizabeth Way (QEW), in the City of St. Catharines;
- Highway 7/8 between Conestoga Parkway/Victoria Street N and Trussler Road, in the City of Kitchener; and
- Highway 8 between Sportsworld Drive and Highway 7, in the City of Kitchener.

The comparison was completed for an average of five years between 2009 and 2013. This period was selected based on the availability of collision data for the comparison group.

Phone: 289 288-0287

Fax: 289 288-0285

www.cima.ca

The collision rate of a road section normalizes the frequency of collisions with the exposure, measured by traffic volume and distance travelled. The collision rate per million of kilometres travelled is calculated as follows:

$$\textit{CR} = 1,\!000,\!000 \times \frac{\textit{Number of Observed Collisions}}{\textit{AADT} \times 365 \times \textit{Length of Section}}$$

The five-year average collision rate is calculated as follows:

$$CR_{5\;years} = \frac{1,000,000}{365 \times Length\; of\; Section} \times \frac{\sum_{Year\; 5}^{Year\; 5} Number\; of\; Observed\; Collisions}{\sum_{Year\; 5}^{Year\; 5} AADT}$$

Data for the Provincial highways was obtained from the Ontario Provincial Highways Traffic Volumes On Demand and from the MTO Safety Analyst software. Collision data from the 2015 LINC and RHVP studies were used for these highways, and AADT was obtained from the City's MS2 traffic data management software. It should be noted that AADT information is not available for all segments on the LINC and RHVP. The locations with available AADT information are:

- LINC between Highway 403 and Mohawk Road;
- LINC between Upper James and Upper Wentworth;
- LINC between Upper Gage and Dartnall Road; and
- RHVP between Queenston Road and Barton Street.

For segments with no data available, a distance-weighted average was used. Additionally, AADT for the RHVP location was only available for 2014 and 2015. Based on growth trends at the available data, a negative growth rate of 1.6% per year was applied to the preceding years. Due to the limited data available, the results should be interpreted with caution.

Table 1 summarizes the 5-year combined collisions and the resulting collision rates for each segment of the LINC and RHVP. **Table 2** presents the same information for the comparison sites (i.e. Highways 7/8, 8, and 406). The annual breakdown of collisions and AADTs is provided in **Appendix A**.

The results show that the average weighted collision rates calculated based on 2009-2013 collision and traffic volume data for the LINC is 0.2 collisions per million kilometres travelled. For the RHVP, this value is 0.36.

The comparison sites present higher average weighted collision rates for the same time period. This value is 0.77, 0.59, and 0.79 for HWY 406, HWY 7/8, and HWY 8 respectively.



Table 1: Average Collision Rates for LINC and RHVP (2009 - 2013)

Highway / Section	Length (km)	Collisions (2009 - 2013)	Collision Rate		
LINC					
Highway 403 – Mohwak	1.2	34	0.23		
Mohwawk – Garth	2.6	59	0.17		
Garth – Upper James	1.7	52	0.21		
Upper James – Upper Wentworth	1.7	45	0.17		
Upper Wentworth – Upper Gage	1.6	54	0.24		
Upper Gage – RHVP	1.6	42	0.20		
Average Weighted Collision Rate	0.20				
RHVP					
LINC – Mud	1.6	33	0.17		
Mud – Greenhill	2.6	88	0.30		
Greenhill – King	1.3	90	0.66		
King – Queenston	0.8	26	0.33		
Queenston – Barton	1.3	38	0.31		
Barton – Railway Overpass	0.5	31	0.67		
Average Weighted Collision Rate		0.36			

Table 2: Average Collision Rates for Comparison Sites (2009 - 2013)

	Length	Collisions	Collision	
Highway / Section				
	(km)	(2009 - 2013)	Rate	
Highway 406		*		
Highway 58 – Glendale	2.0	78	0.37	
Glendale – Westchester	3.0	157	0.53	
Westchester – Fourth Avenue	2.3	232	1.59	
Fourth Avenue - QEW	3.9	130	0.67	
Average Weighted Collision Rate		0.77		
Highway 7/8				
Conestoga/Victoria – Ottawa	1.5	171	0.57	
Ottawa – Highway 8/King	1.3	146	0.64	
Highway 8/King – Courtland	1.4	156	0.68	
Courtland – Homer Watson	1.3	122	0.61	
Homer Watson – Fischer-Hallman	2.6	176	0.67	
Fischer-Hallman - Trussler	2.9	77	0.45	
Average Weighted Collision Rate		0.59		
Highway 8				
Sportsworld – Fairway	3.6	491	0.99	
Fairway – Highway 7	2.2	188	0.46	
Average Weighted Collision Rate	0.79			



2. CROSS MEDIAN COLLISION RATES

Based on the information provided in the 2015 LINC and RHVP study reports, only 5.6% and 3.6% of collisions involved vehicles completely crossing the median (i.e. reaching the opposing shoulders and/or travel lanes), respectively. If these percentages are applied to the average collision rates in Table 1, the resulting rate is approximately 0.01 collisions per million kilometres travelled for the LINC, and ranges between 0.01 and 0.04 collisions per million kilometres travelled for the RHVP.

3. COLLISION RATES BY DIRECTION

Table 3 summarizes the range of collision rates for the LINC and RHVP by direction of travel. The results show that the 5-year average collision rates for the LINC vary between 0.16 and 0.24 for the eastbound direction, and between 0.10 and 0.28 for the westbound direction. The highest eastbound rate is observed between Highway 403 and Mohawk Road, and the highest westbound rate is observed between Upper Wentworth Road and Upper Gage Road.

For the RHVP, the 5-year average collision rates for the LINC vary between 0.04 and 0.83 for the northbound direction, and between 0.17 and 0.77 for the southbound direction. The highest northbound rate is observed between Greenhill Avenue and King Street, and the highest southbound rate is observed between Barton Street and the northern end of the study area (railway overpass 500 metres north of Barton Street).

Table 3: Average Collision Rates by Direction (2009 - 2013)

Road	Range of Collision Rates				
EB/NB		WB/SB			
LINC	0.16 - 0.24	0.10 - 0.28			
RHVP	0.04 - 0.83	0.17 - 0.77			

4. COLLISION RATE THRESHOLD

According to AASHTO's Highway Safety Manual, one of the limitations of using collision rate is that it does not identify a threshold to discern whether the safety performance of a site is acceptable or not. In order to accomplish this, the adequate approach is to use Safety Performance Functions (SPF), which considers large samples of similar sites to estimate an average representative of the safety performance of similar sites. If a site observed or expected collision is larger than the value estimated by the SPF, it shows there are safety problems.

5. PROVINCIAL COLLISION RATES

Table 4 summarizes Provincial collision rates between 2009 and 2013, Based on the Ontario Road Safety Annual Reports (ORSAR). The collision rates ranged between 1.39 and 1.72 during this period. However, these rates are calculated for all roads within the province, including 2-lane rural highways, urban arterial and collector roads, etc., including collisions at intersections. Therefore, it is not advised to use these collision rates to



compare with those of a specific facility. The ORSARs do not report on the collision rates for different classifications of the roads in the Province.

Table 4: Provincial Collision Rates by Year

Year	2009	2010	2011	2012	2013
Collision Rate	1.72	1.66	1.39	1.36	1.43



APPENDIX A - COLLISION AND AADT DETAILS

Lincoln Alexander Parkway AADT	2009	2010	2011	2012	2013
Highway 403 – Mohwak	65,107	66,409	67,737	69,092	70,474
Mohwawk – Garth	70,971	71,997	71,447	72,261	77,593
Garth – Upper James	78,995	79,643	76,523	76,597	87,335
Upper James – Upper Wentworth	85,476	85,819	80,623	80,100	95,204
Upper Wentworth – Upper Gage	76,615	77,464	75,557	76,001	84,272
Upper Gage – RHVP	67,754	69,109	70,491	71,901	73,340

Lincoln Alexander Parkway Collisions	2009	2010	2011	2012	2013
Highway 403 – Mohwak	6	3	8	7	10
Mohwawk – Garth	7	10	15	13	14
Garth – Upper James	11	8	11	12	10
Upper James – Upper Wentworth	10	4	11	11	9
Upper Wentworth – Upper Gage	9	8	8	12	17
Upper Gage – RHVP	11	7	7	10	7

Red Hill Valley Parkway AADT	2009	2010	2011	2012	2013
LINC – Mud	64,109	65,352	66,619	67,911	69,229
Mud – Greenhill	60,007	61,125	62,263	63,423	64,605
Greenhill – King	55,451	56,428	57,423	58,436	59,467
King – Queenston	52,717	53,610	54,519	55,443	56,384
Queenston – Barton	49,299	50,088	50,889	51,703	52,530
Barton – Railway Overpass	49,299	50,088	50,889	51,703	52,530

Red Hill Valley Parkway Collisions	2009	2010	2011	2012	2013
LINC – Mud	4	3	9	10	7
Mud – Greenhill	12	19	21	18	18
Greenhill – King	7	19	22	20	22
King – Queenston	3	3	6	6	8
Queenston – Barton	4	4	7	7	16
Barton – Railway Overpass	7	3	6	6	9



Highway 7/8 AADT	2009	2010	2011	2012	2013
Conestoga/Victoria – Ottawa	107,600	109,800	109,800	109,800	110,900
Conestoga/Ottawa – Highway 8/King	93,200	95,000	95,000	98,300	99,300
Highway 8/King – Courtland	86,800	88,800	88,800	90,600	91,500
Courtland – Homer Watson	82,100	84,400	84,400	86,100	87,000
Homer Watson – Fischer-Hallman	53,300	54,700	54,700	55,800	56,400
Fischer-Hallman - Trussler	31,200	32,100	32,100	32,800	33,100

Highway 7/8 Collisions	2009	2010	2011	2012	2013
Conestoga/Victoria – Ottawa	27	26	49	46	44
Conestoga/Ottawa – Highway 8/King	22	43	41	37	40
Highway 8/King – Courtland	55	58	71	32	60
Courtland – Homer Watson	22	20	34	32	37
Homer Watson – Fischer-Hallman	31	24	39	49	50
Fischer-Hallman - Trussler	15	29	26	44	34

Highway 8 AADT	2009	2010	2011	2012	2013
Sportsworld – Fairway	72,900	73,900	75000	77,300	78,100
Fairway – Highway 7	100,500	101,400	101,400	103,400	104,400

Highway 8 Collisions	2009	2010	2011	2012	2013
Sportsworld – Fairway	102	133	142	99	83
Fairway – Highway 7	44	54	51	45	51

Highway 406 AADT	2009	2010	2011	2012	2013
Highway 58 – Glendale	57,000	58,700	60,000	58,600	54,000
Glendale – Westchester	52,100	56,900	48,500	56,900	57,700
Westchester – Fourth Avenue	37,300	34,800	35,200	31,600	35,300
Fourth Avenue - QEW	24,700	25,000	32,200	27,300	28,100



Highway 406 Collisions	2009	2010	2011	2012	2013
Highway 58 – Glendale	24	37	37	28	24
Glendale – Westchester	31	51	47	31	31
Westchester – Fourth Avenue	34	47	34	34	34
Fourth Avenue - QEW	23	40	71	32	23



(a) RHVP Lighting Study Proposal

254. On April 9, 2018, Mr. McGuire left Mr. Malone a voicemail regarding the status of the RHVP Lighting Study proposal, mentioning the recurring RHVP-related meetings called by Mr. McKinnon.²⁶⁶

255. On April 11, 2018, Mr. Malone emailed Mr. Field the proposal for the RHVP Lighting Study. The proposal included reviewing previous environmental assessments ("EA") for the LINC and RHVP, revisiting findings from previous collision analyses using recent data and conducting an illumination review to determine whether or not illumination should be installed within the study area.²⁶⁷

256. On April 13, 2018, Mr. Field approved CIMA's RHVP Lighting Study proposal. The \$121,560 purchase order for the project was sent to CIMA on April 25, 2018.²⁶⁸

257. On April 24, 2018, CIMA met with City staff regarding the RHVP Lighting Study. The work plan for the project was to include a review of original and subsequent EA documents to confirm what conditions regarding lighting were established during the EA and approval process. The study was also to involve a review of collisions and trend analysis.²⁶⁹

258. On April 24 and 25, 2018, Manny Grewal (Project Engineer, Traffic Engineering, CIMA) exchanged emails with Mr. Cooper regarding the Speed Limit Reduction Study:

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²⁶⁶ CIM0017402 attaching CIM0017402.0001

²⁶⁷ HAM0053036 0001 attaching HAM0053037 0001

²⁶⁸ CIM0017386; and CIM0017058 attaching CIM0017058.0001

²⁶⁹ CIM0017047

Tab 10 062

A. Introduction

1. In 2015, Hamilton retained CIMA to prepare a safety review of the RHVP. Overview

Document #7 will address the circumstances surrounding the 2015 CIMA Report, its

preparation, and the events following its completion. Overview Document #7 will largely

be organized in chronological order, but some events will be grouped together, slightly

out of chronological order, where doing so promotes clarity and ease of understanding.

2. Commission Counsel has endeavoured to confirm the names, organization, and

position(s) held by the individuals referenced in this Overview Document. This information

is provided in the body text where each individual is first referenced. A complete list of

the individuals and their respective information can be found at Appendix A of Overview

Document #7.

3. The facts contained in Overview Document #7 have not been tested for their truth.

Commission Counsel and the participants may call evidence from witnesses at the Inquiry

that casts doubt on the truthfulness or accuracy of the content of the documents

underlying this Overview Document. The participants will also be able to make

submissions regarding what, if any, weight should be given to any of these documents.

B. Fatal Collision May 2015

4. On May 5, 2015, a collision on the RHVP resulted in the deaths of Olivia Smosarski

and Jordan Hastings. A Spectator article published on May 7, 2015, described the

collision as follows:

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¹ Where more than one position is held by an individual within the time frame covered in this Overview Document, the information in the body text will reflect the position held at the time of first reference. For a complete list of all positions held by all individuals referenced in Overview Document #7, see Appendix A.

4

Olivia Smosarski and Jordyn Hastings, both believed to be 19, were killed shortly before 11:30 p.m. Tuesday when their car crossed the grassy median, colliding with a minivan.

. . .

Police say a 2007 Mazda was northbound on the Red Hill when it inexplicably crossed the grassy centre median and went into the southbound lanes near Greenhill Avenue, where it was T-boned by a 2011 Honda minivan. ²

- 5. On May 6, 2015, John Durant (District Supervisor Roads, District North, Roads & Maintenance, Operations, Public Works, Hamilton), emailed City staff, copying Terry McCleary (Superintendent Roads, District North, Roads & Maintenance, Operations, Public Works, Hamilton). He wrote: "WE HAD A TWO VEHICLE M.V.A. ON THE R.H.V.P., AS OF 7:AM THE SOUTH BOUND LANES ARE STILL CLOSED, ALL BARRICADES AND ARROW BOARD HAVE BEEN RETURNED TO DIST. NORTH. ACCORDING TO POLICE IT WAS A TWO PERSON FATALITY. (PO15-596-572)".3
- 6. Mr. McCleary forwarded this email to Bob Paul (Manager, Winter Control, Operations, Public Works, Hamilton), Betty Matthews-Malone (Director, Operations, Public Works, Hamilton), and Jennifer Atkinson (Road Operations & Maintenance Coordinator, Roads & Maintenance, Operations, Public Works, Hamilton). Later that day, Ms. Matthews-Malone responded to this email chain, writing: "Terry, do we have good records identified for road condition? I haven't heard the cause of the accident but likely we could find ourselves part of a future legal discussion regardless of cause. We should make sure we have our road patrol/condition assessment paperwork flagged."⁴

³ HAM0033384 0001

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² RHV0000289

⁴ HAM0033384 0001

5

7. After the deaths of Ms. Smosarski and Ms. Hastings, members of the public

contacted various City Councillors expressing concern regarding collisions on the RHVP.

8. On May 6, 2015, a member of the public emailed Councillor Doug Conley (Ward

9, Hamilton) that he had "witnessed many more vehicles sliding into, or through the

medians on my daily trips up and down the Red Hill" over the past year, and that the

problem was "exacerbated every time it rains, snows, or there is frost on the road." 5

9. On the same day, another member of the public emailed Councillor Scott Duvall

(Ward 7, Hamilton):

Hi Scott, so another two people have died on the Red Hill after crossing the grass median.

They would have lived if there had been a concrete barrier down the center instead of a small ditch. I have written to you before about this problem, on any given day you can drive along this stretch of road and count about a dozen skid marks across the grass median going into oncoming lanes. I'm surprised there aren't more fatalities. How many more will it take before someone decides to build this barrier. I'll bet that you don't ever want the police knocking on your door bearing bad news. I hope that this will finally get the wheels

in motion and something is done to prevent further tragedies. 6

10. Councillor Duvall replied to the email, writing that he had "raised this at Council

and several Council further commented on the issues and staff explained barriers are not

required. I will bring this issue up again to Council. I have also included Gary Moore from

Public Works to comment on both issues."7

11. On May 7, 2015, Gary Moore (Director, Engineering Services, Public Works,

Hamilton) replied to Councillor Duvall's email (with others copied but the member of the

public removed) writing:8

⁵ HAM0033385 0001

⁶ HAM0004628 0001

⁷ HAM0004628 0001

8 HAM0004628 0001

It is a very sad and unfortunate accident. I will ask Traffic Engineering to provide comments with regard to the Operation of the Red Hill in this regard, however until the nature of the accident is determined it would be premature to provide any comments.

12. David Ferguson (Superintendent, Traffic Engineering, Traffic Operations &

Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning; Public

Works, Hamilton), who was copied on Mr. Moore's email, replied to Mr. Moore and

Councillor Duvall (with others copied). He wrote that "[s]taff have already begun to gather

this information with respect to the RHVP. We should have the information by the May

21st PWC meeting."9

13. Geoff Lupton (Director, Energy, Fleet & Traffic; Corporate Assets & Strategic

Planning, Public Works, Hamilton) replied in the email thread, adding that an update

regarding the "LINC project" would also be appreciated. 10

14. On May 6, 2015, Mr. McCleary emailed Mr. Durant regarding the collision, asking

him to "put together all the paperwork, reports weather road conditions etc. I have to

supply to Management."11

15. On May 6, 2015, Mr. Ferguson emailed Stephen Cooper (Project Manager, Traffic

Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets

& Strategic Planning, Public Works, Hamilton), and Jason Worron (Senior Project

Manager, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic;

⁹ HAM0004628 0001

¹⁰ HAM0004628 0001

¹¹ HAM0024188 0001

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Corporate Assets & Strategic Planning, Public Works, Hamilton) regarding the upcoming staff report to the Public Works Committee, writing: 12

Our RHVP report goes to PWC shortly, at the Agenda review meeting today, a couple of things came up that I will need to be prepared for in-case the questions arise.

- 1. Can you please follow up with HPS and find some details on the collision that occurred this morning, copy of the collision report
- 2. Can you provide me with an update on the consultant review for the Linc
- 3. Can you please prepare a collision review of the past 10 years focusing on crossover collisions, RHVP.
- 4. Can you also do a 3 year collision review of the RHVP from Greenhill to Dartnall, January to April. All collisions

The Committee meeting date is May 21st, you should both attend the meeting.

16. Hamilton also received interview requests regarding the collision. On May 7, 2015, Kelly Anderson (Communications Officer, Public Works, Hamilton) received a request from Corus Radio Hamilton to speak to someone from Public Works:

Would someone from Public works be available to speak to road safety on the linc today?

Given the recent collision and those in the past some are calling for there to be a barrier between the two lanes. ¹³

17. Ms. Anderson forwarded the email to Mr. Moore the same day, writing: 14

Please see below. I'm not sure if we should even be doing an interview on this topic without knowing more details but I'm sending it to you just to see what you think about this barrier idea. Would that be something your group would decide or would it be Operations or Traffic?

18. Mr. Moore replied: 15

I'm not in today and it would be someone from Traffic but any message should include the safety record for the LINC and Red Hill. I.e. There are almost 100,000 vehicles a day that

¹³ HAM0010716 0001

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¹² HAM0042751 0001

¹⁴ HAM0010716 0001

¹⁵ HAM0010716 0001

travel these roads safely and the overall safety record is very good except for the few very unfortunate incidents.

19. On May 11, 2015, Councillor Conley emailed Mr. Ferguson, requesting a safety study on the RHVP.¹⁶ He wrote:

Dave I would like to get a safety study done on the Red Hill Valley Express way

Specifically having barriers that would stop a vehicle from going across the median and landing in the opposite lane

I want to write a motion to this effect but need your help

20. Mr. Ferguson forwarded the email the same day to Mr. Lupton, John Mater (Director, Corporate Assets & Strategic Planning, Public Works, Hamilton) and Martin White (Manager, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), writing: "Fyi. Was waiting for this." Mr. Lupton replied: "Surprise."

21. Mr. Ferguson replied to Councillor Conley the same day, writing:

I am actually doing a presentation on May 21 and there is also a report on the RHVP update on previous works, so the motion will tie in perfectly.

I will put something together for you. 18

- 22. On May 13, 2015, Mr. Ferguson provided Councillor Conley with draft language for a motion.¹⁹
- 23. On May 11, 2015, Michael Kirkopoulos (Director, Communications, Corporate Communications & Intergovernmental Affairs, Hamilton) emailed Chris Murray (City

¹⁷ HAM0004637 0001

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¹⁶ HAM0004637 0001

¹⁸ HAM0056641 0001

¹⁹ HAM0056642 0001

9

Manager, City Manager's Office, Hamilton), writing: "Sam messaged me, says he wanted

us to have the heads up, that we need to reassess safety concerns of Red Hill and Linc.

He wants some help in preparing wording without creating liability issues."20

24. On May 11, 2015, Mr. Ferguson emailed Brian Malone (Partner, Vice-President,

Transportation, CIMA), asking what the cost would be "to complete a review of the RHVP

for possible barriers?"21

25. Mr. Malone circulated this email internally to Pedram Izadpanah (Senior Project

Manager, Transportation, CIMA), Brian Applebee (Project Manager, Transportation,

CIMA), and Alireza Hadayeghi (Partner, Director, Transportation):²²

I was suspecting this would come after the double fatality on the RHVP last week.

Can we convene and answer ASAP?

26. Mr. Applebee replied to Mr. Malone, advising that he had spoken to Mr. Cooper

regarding the matter earlier that afternoon.²³

27. Mr. Malone replied to Mr. Ferguson that he would call him the following day with

an overview.²⁴

28. In response to a question from Mr. Applebee regarding the type of review

requested by the City, Mr. Malone wrote:²⁵

²⁰ HAM0058625 0001

²¹ CIM0010200

²² CIM0010200

²³ CIM0010200

²⁴ CIM0010197

²⁵ CIM0010195

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I've told Dave that we'll call him tomorrow. As to the level, I think that they are seeking an analysis similar to the LINC, but with the focus clearly on the cross-over crashes. I suspect they have been confronted with the request/demand for installation of barrier after the double fatality of the two young girls, and they must report, so are seeking input to help.

29. On May 12, 2015, Nancy Clark (Administrative Coordinator to the General Manager, Public Works, Hamilton) emailed Mr. Mater, Ms. Matthews-Malone and Mr. Moore. ²⁶ She attached a motion that was to be added to the agenda for the May 21, 2015, Public Works Committee meeting. The motion, dated June 1, 2015, was titled "Additional Safety Measures for the Red Hill Valley Parkway and the Lincoln M. Alexander Parkway". ²⁷ It read:

WHEREAS, the tragic deaths of Olivia Smosarski and Jordyn Hastings on May 6, 2015 occurred on the Red Hill Valley Parkway;

AND WHEREAS, the City of Hamilton parkways have been the scene of other traffic fatalities and accidents;

THEREFORE BE IT RESOLVED:

That staff be directed to investigate additional safety measures for the Red Hill Valley Parkway and the Lincoln M. Alexander Parkway, such as additional guardrails, lighting, lane markings or other means to help prevent further fatalities and serious injuries; and, report to the Public Works Committee with recommendations by December 7, 2015.

30. Five minutes later, Mr. Mater emailed Mr. Ferguson, copying Mr. Lupton and Mr. Moore:²⁸

Fergy, where are we with respect to the review being done on the Linc? Could the works be expanded to include the Red Hill?

Gary, what's your thoughts on this and the motion?

31. Mr. Ferguson replied:²⁹

²⁷ HAM0000601 0001

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²⁶ HAM0000600 0001

²⁸ HAM0004638 0001

²⁹ HAM0000602 0001

Its moving a long, we ran into a delay trying to get CIMA access to GIS but it seems to be dealt with. Should have a draft report for July.

I'm thinking we retain CIMA again and have them continue with the RHVP.

32. Mr. Moore replied later that day:³⁰

The motion is fine. If they (Council) have the money to spend \$150,000 per kilometer to put in guide rail (22kilometers x 2= 44km= \$6.6M) and another \$200,000 per year for maintenance when the only thing it will do is increase the number of reportable accidents and possibly the number of deadly accidents, then it's their decision. The lane orientation, median width, speed limit all allow for recovery of a vehicle that leaves the road without further incident or damage. Put up a guiderail and you have immediate damage to the car as well as the guiderail as well as the possibility of redirecting the car back into the travelled lanes. Not a simple answer especially when you add the speed profile issue.

33. On May 13, 2015, the Hamilton Spectator published an article titled "Red Hill safety concerns revisited after fatal crash: Council still receiving complaints about lack of lighting in the upper part of the parkway". This article referenced past safety reviews and public comments received by Council regarding the RHVP. The article read:

Council will revisit a long-standing debate over lighting and safety on the Red Hill Valley Parkway after a crash that killed two young women last week.

Olivia Smosarski and Jordyn Hastings, both 19, were killed late at night May 6 when their car crossed the grassy median near Greenhill Avenue and collided with a minivan. Hamilton police say they are still investigating the cause of the crash.

But council should at least study if more safety measures are needed given past complaints about parts of the parkway, said Coun. Sam Merulla, who will introduce such a motion at an upcoming public works meeting.

"I'm not saying (the parkway) is unsafe. But there have been complaints and there have been other traffic fatalities," he said. "We can look at things like lighting or guardrails and get a report back from the experts. That's the responsible thing to do."

The last fatal crash on the Red Hill happened in 2012. Police said speed and rainy conditions contributed to the collision, which killed a couple in their 60s. The city completed an audit of the parkway from the Linc to Greenhill Avenue in 2013 based on complaints about safety, in particular lighting. That study spurred the \$250,000 installation of reflective "cat eyes" pavement markers early this year.

Coun. Chad Collins said drivers welcomed the latest innovation but added he still gets complaints about the dark upper sections of the parkway.

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³⁰ HAM0004638 0001

³¹ RHV0000292

The city originally agreed to keep "light pollution" to a minimum along wildlife-heavy sections of the corridor as part of long-running environmental assessment negotiations over the contentious creek valley highway.

"The lack of lighting, particularly in bad weather, seems to be the biggest concern. It has been since it opened," said Collins, who pushed for the original study.

"I think it's entirely reasonable to look at extending the safety audit the rest of the way down the road."

The last audit determined the parkway is safe to drive.

Consultants or traffic engineers can re-examine road projects against the latest safety standards, said engineering director Gary Moore.

But he cautioned changing safety infrastructure is a "complicated risk management equation" that has to look at everything from topography to traffic patterns to speed limits.

"It's never as simple as whether you can afford a guard rail or not."

34. On May 13, 2015, Mr. Malone made the following note in his notebook:

Dave Ferguson

- Detailed Analysis of RHVP as LINC
- Also [text to be confirmed] in Lighting
- May 21st mtg³²
- 35. On May 13, 2015, Mr. Malone emailed Mr. Applebee and Mr. Izadpanah (with other internal CIMA staff copied), summarizing a discussion he had earlier that day with Mr. Ferguson:³³

I spoke with Dave Ferguson on this this matter today. He is going to be directed by his Public Works Committee to do a "detailed analysis of safety on the RHVP" in a manner similar to what we are doing for the LINC. He wants us to quote for the review which would be done under the roster. The review should also include a comprehensive review of the benefits and drawbacks of lighting. He recognizes that we previously did the review from Dartnall to Greenhill and asks that we utilize that information and background. The review would be for the RHVP, and would include the areas towards the escarpment where lighting is absent (essentially a repeat of the previous work) with a recognition that the answer regarding lighting is not simply NO as it was previously.

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³² CIM0022410 at image 6

³³ CIM0010192

13

The focus is clearly on the cross median crashes and the recent fatality. That crash occurred at night, close to King St. and the absence of lighting is being suggested as an

issue.

I told him that we would begin to prepare a "full" response so that he can respond to Council demands following the May 21 meeting

demands following the May 21 meeting.

This should get a new BP # for the proposal.

36. On May 14, 2015, after being advised that he was to be the Acting Director at the

Public Works Committee the following week, Mr. Lupton emailed Mr. Ferguson, asking to

review Councillor Sam Merulla's (Ward 4, Hamilton) motion.34 Mr. Ferguson replied,

writing "[a]lready started on. Chatted with Brian Malone to get a quote to complete the

work."35

37. Mr. Ferguson forwarded the email, attaching Councillor Merulla's notice of motion,

to Mr. Malone the same day.36

38. The PWC met on May 21, 2015. During this meeting, Councillor Conley asked for

a timeline for future repaving of the RHVP. Mr. Moore informed the PWC that staff

expected the first "wholesale resurfacing" of the RHVP would occur in 2021. Mr. Moore

also advised that the wholesale resurfacing of the RHVP was a significant project that

was not included in the capital budget at that time.³⁷

39. At this meeting, the PWC recommended:

That staff be directed to investigate additional safety measures for the Red Hill Valley Parkway and the Lincoln M. Alexander Parkway, such as additional guardrails, lighting,

³⁴ HAM0004644 0001

35 HAM0004644 0001

³⁶ CIM0010187

³⁷https://pub-hamilton.escribemeetings.com/Meeting.aspx?ld=cf3759f1-cf6f-45a1-a19f-

3f74b9176a78&Agenda=Agenda&lang=English# at 3:42 minutes

lane markings or other means to help prevent further fatalities and serious injuries; and, report to the Public Works Committee with recommendations by December 7, 2015. 38

40. The PWC also recommended that staff report PW13081(a), an outstanding business list item relating to CIMA's 2013 safety assessment, regarding improvements to the RHVP be received.³⁹ This report stated:⁴⁰

Council Direction:

On January 16, 2013, Public Works Committee (PWC), passed the following Motion which was subsequently approved by Council on January 23, 2013:

"That staff be directed to investigate upgrading the lighting on the Red Hill Parkway in the vicinity of the Mud/Stone Church Rd interchanges, and that staff be directed to investigate better reflective signage and lane markings or other initiatives to assist motorists in the same area, that a full costing of all options and alternatives be presented to Committee for their consideration."

Information:

As a result of this motion from PWC, staff retained CIMA+ Consulting to complete an Inservice Safety Review on the section of the Red Hill Valley Parkway (RHVP) between Dartnall Road and Greenhill Avenue.

The study objective was to determine if any safety improvements could be made to enhance driver safety/performance and driver sense of security through this section of the Red Hill Valley Parkway (RHVP).

The findings of the study indicated that the Red Hill Valley Parkway (RHVP) is operating safely. However, the report did suggest implementing several minor safety countermeasures that could enhance or improve driver safety and security, most of which was sign and pavement marking changes. Since reporting to the November 18, 2013, PWC meeting staff have completed, or are working on, the following action items.

[Tables omitted]

Many of the recommendations identified involved relatively minor changes to various signs and pavement markings in the study area. Staff completed the implementation of most of the identified signage countermeasures in 2013 and 2014. Pavement markings will be completed in the summer of 2015 as weather permits.

The report also included a review of current lighting along the RHVP, between Dartnall Road and Greenhill Avenue. The original RHVP design and council approval, omitted the use of roadway lighting as a result of the various environment concerns within this area. As a result, the consultant's report recommended the installation of Raised Permanent Pavement Markings (e.g. cat's eyes) to assist with positive guidance for motorists; staff completed the installation in January 2015 and has since received positive feedback from the public.

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³⁸ HAM0042848 0001 at image 4

³⁹ HAM0042848 0001 at image 3

⁴⁰ RHV0000570

41. On May 21, 2015, Mr. Ferguson emailed Mayor Fred Eisenberger (Mayor of Hamilton) and City Councillors about a media requests received following the PWC meeting:⁴¹

After today's PWC meeting, Traffic Engineering was contacted by the Spec inquiring about the collision information on the Linc. I have provided this information to you for your records and in case you receive any inquiries. As mentioned today, the Consultant has been working on a full review of the Linc and will be providing us with recommendations, which we will bring to PWC/Council hopefully by the end of summer.

As per direction today, we will also be retaining the same Consultant to complete the safety review and provide recommendations on the RHVP. We can expect that review will be completed closer to the end of the year.

The following are the statistics for the Linc review that staff completed.

Oct 1997 to Sept 2014

Cross Median Collision (CMC) is defined as where a vehicle hits the center curb, enters the median or a vehicle travels across the median and enters opposing lanes.

624 total collisions of which 131 were CMC's

Of the total, there have been a total of 6 collisions that resulted in fatalities.

Of total CMCs, 3 collisions resulted in fatalities.

CMC's not exclusive to winter months, April has highest percentage of CMCs, Dec has the highest number of CMC at 16, Feb and May at 14.

Higher occurrence of CMCs occur during peak hours, frequency increase as volumes increase.

45 collisions resulted in vehicle crossing over

67 resulted in vehicle in the median

19 hit the curb.

60 percent of all CMCs resulted in injuries, 3 collisions resulted in fatalities.

67 CMCs occurred during daylight hours

24 CMCs occurred in freezing rain/drifting snow or snow conditions

70 percent of CMCs occurred with dry pavement conditions

I have also attached a pic of the segment breakdown for collisions.

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⁴¹ HAM0024236 0001

42. On May 22, 2015, the Spectator published an article titled "Hamilton reviewing safety of its highways: Crashes involving medians a concern." The article addressed safety reviews on the RHVP and LINC, and read as follows:

The city was already studying how to stop a "concerning" number of median-crossing crashes on the Linc when a double fatality on the Red Hill Valley Parkway spurred new calls for safety guardrails.

The public works committee asked Thursday for a review of possible new safety measures - including barrier separation - on the Red Hill after two young women died in a median-crossing car collision on May 5.

Hamilton police are still investigating the cause of the crash, but family members of Jordyn Hastings and Olivia Smosarski argue there is no reason to wait for more studies.

"No other fatalities have to happen this way," said Leony Hastings, Jordyn's stepmother, who watched Thursday's meeting at city hall.

"Just puts lights and a guardrail up."

It's not that simple, said traffic engineering superintendent David Ferguson.

He said adding median barriers can lead to different - or even more - collisions depending on factors like traffic patterns, speed and the design of a particular stretch of highway.

"Whatever we do, we need to properly investigate the consequences first ... We never want to make things worse."

But Ferguson added a city consultant is already reviewing a "concerning" number of median crashes on the Lincoln Alexander Parkway.

He said the study was spurred in part by another serious median-crossing crash last October - which also resulted in the death of two young people.

Aaron Haire, 18, and Kristine Williams, 19, were killed after their eastbound car crossed the median of the Linc near Garth Street and collided with two westbound vehicles.

Ferguson said the public response following that crash triggered an "internal evaluation" of Linc collisions, which showed 131 incidents since 1997 where a vehicle either hit the centre curb, entered or crossed the median. One out of every four of those crashes occurred between Golf Links Road and Garth Street.

Overall, those "cross-median collisions" resulted in three deaths, but only 45 of the 131 actually resulted in cars crossing into opposing traffic.

By comparison, the Red Hill has seen 19 "cross-over" crashes since it opened in 2007.

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⁴² RHV0000297

Ferguson said the number of cars entering or crossing the median on the Linc during dry pavement conditions was "concerning" for city traffic staff but added he doesn't want to presuppose any findings or recommendations that will come from the consultant.

As a result of the new request from councillors, the city will now combine safety studies of both city-owned highways and report back late in the year, said Ferguson.

Councillors could get an interim update on the Linc in July, however, based on consulting work already completed.

Mountain Coun. Scott Duvall said the study will answer important questions about the city-owned highways, but "it's just unfortunate that someone has to die before these things are brought up."

"Is it something that will actually save lives, or could we be making things worse? I don't know," he said. Coun. Sam Merulla, who put forward the latest motion for a Red Hill review, argued the city has been "proactive" with periodic reviews of highway safety. He pointed to the 2013review of lighting on the upper portion of the Red Hill that led to the addition of "cat eyes" reflectors on the roadway.

That review found the Red Hill is generally safe as designed but recommended various improvements to lane marking, rumble strips and signage.

Most of the remaining suggested changes are coming in 2015.

C. Assignment proposal, scope and data requests

43. On May 22, 2015, Mr. Ferguson emailed Mr. Cooper and Mr. Worron, copying Mr. Malone. 43 In this email, Mr. Ferguson outlined items that needed to be reviewed by CIMA:

The following items need to be reviewed and recommendations provided.

- 1. Need for some type of Barrier and recommendation on type and expected cost.
- 2. Is there a need for lighting and expected cost.
- 3. An analyses of the types of collisions that are occurring and what is causing them (i.e. Weather conditions, speeding, distracted driving, etc)
- 4. Report needs to be completed for September.
- 44. On May 22, 2015, Mr. Malone replied to Mr. Ferguson, Mr. Worron, and Mr. Cooper. Mr. Malone attached a preliminary work plan to his email, which identified the background, purpose and scope of the study as follows:⁴⁴

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⁴³ HAM0004659 0001

^{44 &}lt;u>HAM0004659 0001</u> attaching <u>HAM0004660 0001</u>

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1. Mr. Moore provides CIMA with a summary of 2007 and 2013 friction testing data

106. On August 7, 2015, at 2:57 p.m., Mr. Moore forwarded an email with three attachments to Mr. Malone, writing: 113

Here is the Red Hill friction testing summary. Not for republication! thanks

107. The email Mr. Moore forwarded was sent by Dr. Uzarowski to Mr. Moore on January 24, 2014, under the subject line "Friction Numbers on RHVP". That email included three attachments: two spreadsheets with friction data from the MTO testing in 2007, and a paper titled "Addressing the Early Age Low Friction Problem of Stone Mastic Asphalt Pavement in Ontario", authored by a joint MTO/Industry task group. 114 The forwarded message read as follows:

The surface asphalt on the RHVP is Stone Mastic Asphalt (SMA). Immediately following construction of the RHVP in 2007, the Ontario Ministry of Transportation performed friction

Overview Document #7: The 2015 CIMA Report Doc 4124466 v1

¹¹³ CIM0010018 attaching CIM0010018.0001, CIM0010018.0002 and CIM0010018.0003

¹¹⁴ CIM0010018 attaching CIM0010018.0001, CIM0010018.0002 and CIM0010018.0003

testing in both southbound lanes. The following table summarizes the results of this testing. The complete testing results are attached.

Lane	Average Friction Number	Friction Range Number
Southbound Lane 1	33.9	28.1 to 36.5
Southbound Lane 2	33.8	28.4 to 37.4

In 2013, the Friction Numbers were measured on the RHVP in both directions by Tradewind Scientific using a Grip Tester. The average FN numbers were as follows:

SB Right Lane 35

SB Left Lane 34

NB Right Lane 36

NB Left Lane 39

In 2009 the Ontario Ministry of Transportation published a paper at the Canadian Technical Asphalt Association Annual Conference titled "Early Age Low Friction Problem of SMA in Ontario". The paper presented results of SMA that had been placed on Highway 401. The Friction Number results following construction were below anticipated value of 30 and ranged from 24.9 to 28.8. The paper is attached.

108. On August 7, 2015, at 3:26 p.m., Mr. Malone forwarded Mr. Moore's emails, with attachments, to Mr. Applebee and Mr. Bottesini: "FYI and review. My note back to him follows." 115

109. On August 7, 2015, at 3:26 p.m., Mr. Malone responded to Mr. Moore by email: 116

Thanks very much Gary. Don't worry, we will not re-publish this information.

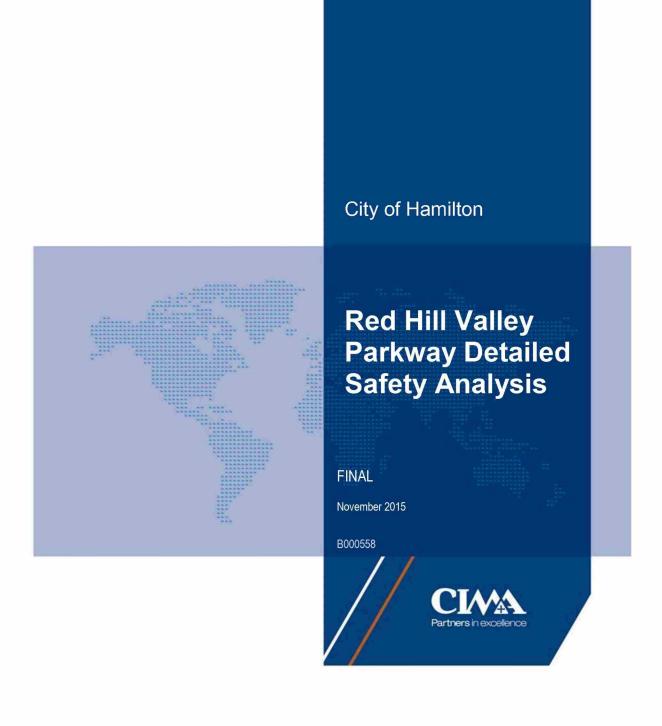
To make sure I'm understanding correctly, this is the data from the MTO testing in 2007, as well as the MTO report on the subject. Am I correct that FN numbers of less than 30 are below a desired level? Figure 1 of the MTO report shows 30 as what appears to be a threshold. I have also read that FN numbers greater 35 (or higher) in a zone that would suggest skid resistance is not an issue on the pavement. Is that correct?

Do you have a performance specification for the FN value you strive for?

The 2013 testing values certainly look higher. Are they done using the same methodology and tool as the MTO work, and thus could be directly compared?

¹¹⁵ CIM0010013

¹¹⁶ CIM0010017



City of Hamilton

Red Hill Valley Parkway Detailed Safety Analysis

FINAL

November 2015

B000558

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- Appendix B: Illumination Warrants
- Appendix C: Evaluation of Providing a Median Barrier
- Appendix D: Benefit-Cost Analysis for Other Countermeasures

1. Introduction and Background

The planning and design of the Red Hill Valley Parkway (RHVP) has a long history in Hamilton. In December of 1982, the original Environmental Assessment (EA) documents were filed by the former Region of Hamilton-Wentworth that outlined the need, scope and timing for the expansion of the Regional road network. The EA identified that a roadway connecting Highway 403 in Ancaster to the QEW in east Hamilton was required. The original design for the roadway was completed in 1985, and the EA was approved by the Province in 1987. A subsequent Preliminary Design Report for the RHVP was completed in January of 1990.

Construction of the Valley portion of the Parkway was begun in the early 1990s. Some aspects of funding, but not approvals, were halted and the project restarted in the mid-2000's. Construction of the Lincoln Alexander Parkway portion of the roadway went ahead and was completed in 1997, extending from Highway 403 to Dartnall Road.

In the early 1990's, the City entered into discussions with the Provincial government on how to further reduce impacts to the environment within the Valley section of the road. As a result of these discussions, in 1996, the City requested from the Province that they be allowed to undertake changes to the original designs and undertake a new EA. The Province approved this request in 1997 and work on the design changes and the new EA were begun and the City undertook an Impact Assessment and Design Process (IADP).

In 1999 the project was subject to panel hearing under the Canadian Environmental Assessment Act (CEAA). Construction in the Valley was placed on hold until 2002 when issues were resolved. In 2003 the design changes and the IADP were completed and construction on the Parkway recommenced. In 2007, the Red Hill Valley Parkway was opened to traffic and has been in operation since, forming part of a continuous connection from Highway 403 and the QEW in conjunction with the Lincoln Alexander Parkway. The road serves both intra-city traffic and inter-city traffic since it forms a connection between Niagara Region and South West Ontario.

Traffic volumes on the road are high, and, although Average Daily Traffic (ADT) has increased from approximately 46,000 vehicles in 2008, it has been oscillating between 55,000 and 59,000 from 2009 to 2014. Traffic conditions on the RHVP can become congested as the road reaches capacity, particularly during peak hours.

There were 474 collisions on the RHVP mainline between January 1, 2008 and July 23, 2015, an average of 62.5 collisions per year. There were 131 median related collisions, involving vehicles hitting guide rails/concrete barriers, resting on the grass median, or crossing over to the opposite direction during this time period, median related collisions were 28% of total collisions and include 1 fatal collision (2 fatalities) and 56 non-fatal injury collisions.

2. Study Purpose

The purpose of this study is to review the safety and operational performance along the entire length of the RHVP (from the QEW interchange to the Dartnall Road interchange), and to identify measures

that could potentially improve performance and reduce the number and/or the severity of collisions. In 2013, CIMA Canada Inc. (CIMA) conducted a safety review of the section of the RHVP between the Dartnall Road and Greenhill Avenue interchanges, providing a series of recommendations to improve safety.

This study has an extended area of review in comparison with the 2013 study, and particular focus has been paid to collisions related to the median and median crossover, as well as the potential need for illumination. The study completed the following tasks:

- + Investigate the role of road-related factors in collisions;
- + Complete a road safety assessment and field investigation;
- + Evaluate of the need for and type of potential countermeasures, including median barrier system(s) and illumination; and
- Complete a benefit / cost analysis for all viable countermeasures.

The scope of the study does not allow for consideration of any major changes in the geometric design of the road including elements related to interchange spacing.

3. Study Area

The study area segment of the RHVP extends for 8.1 km, mostly in the north-south direction from approximately 500 m west of the Dartnall Road interchange in the south to the railway overpass approximately 500 m north of Barton Street in the north. The study area includes six full access interchanges of various design types. **Figure 1** illustrates the study area.



Figure 1: Study area

The RHVP is a 4-lane divided parkway between its north end and Greenhill Avenue, and a 5-lane divided parkway between Greenhill Avenue and its south end. In this section, there is an additional southbound lane due to the existing uphill grade. Controlled access is provided through interchanges with on and off ramps. The posted speed of the road is 90 km/h, and the design speed is assumed to be 110 km/h.

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The divider between directions is a raised grassy median for most of the length of the RHVP. The exception is a section starting close to the Mud Street West interchange and continuing north, 1,100 m, towards Greenhill Avenue where a concrete barrier divides the road. Occasionally, steel beam guide rails are present primarily to protect motorists from fixed object hazards such as overhead signs and bridge structures located within the median. The median is buffered from the travel lanes by a paved shoulder. The median is flush, and there is no curb and gutter.

The roadway is not continually illuminated. Partial illumination is available at exit and entrance ramps.

Based on traffic counts provided by the City for a permanent count station located near Queenston Road, two-way Average Daily Traffic (ADT) for the RHVP ranges approximately between 55,000 and 60,000 (**Table 1**). Due to limited data available to determine Average Annual Daily Traffic (AADT), these volumes are daily averages over 1-week periods in the months of May or October. These months were selected by the City based on consistency of available data over the years.

Year Week ADT 2008 October 20 - 26 45,749 2009 October 19 - 26 55,833 2010 October 18 - 25 59,123 2011 May 1 - 8 55,406 2012 May 20 - 2657,812 2013 Data not available 58,444 2014 May 21 - 27 2015 Data available only for Winter and Summer

Table 1: RHVP average daily traffic

4. Review of Collisions

Collision data was reviewed to gain an in-depth understanding of the safety issues within the study area. CIMA reviewed the results of the collision analysis provided by the City, which was conducted for the period from January 1, 2008 (following opening of the RHVP) to July 23, 2015 (latest data available). CIMA conducted the review of collision characteristics in two parts. The first considered all types of collisions within the study area, which is detailed in Section 4.1. The second part considered only those collisions that are related to medians and is detailed in Section 4.2.

4.1 Review of Collision Characteristics Considering All Collisions

The study area experienced a total of 474 collisions during the period from January 1, 2008 to July 23, 2015. The data, broken down by collision severity, is summarized in **Figure 2**. There were 4 fatal collisions (resulting in 5 fatalities), 205 injury collisions, and 265 Property Damage Only (PDO) collisions.

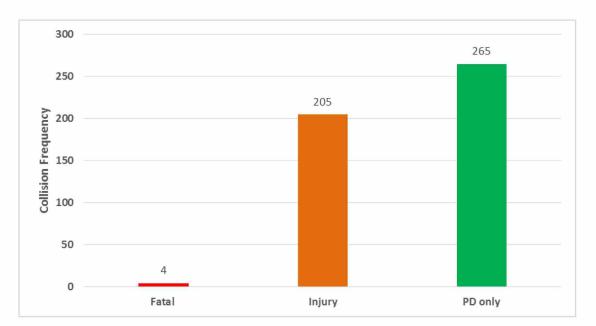


Figure 2: Collision severity

4.1.1 Light, Environment and Road Surface Conditions

Figure 3 through **Figure 5** summarizes the collisions in the study area, broken down by light, environment and road surface condition.

The majority of collisions occurred under daylight/daylight artificial conditions, with a total of 300 out of 474 collisions (63.3%), with the remaining 174 (36.7%) collisions occurring during non-daylight conditions, which include dark/dark artificial, dusk/dusk artificial, and dawn/dawn artificial. When compared to the Provincial average of 30.7%¹ and the City of Hamilton average of 36.3%², and based on a Chi-Square statistical test, the proportion of collisions under non-daylight condition is significantly higher, however the range of this distribution can be considered normal. Details about the statistical test can be found in **Appendix A**, and a discussion regarding the need for illumination in the study area can be found in **Section 6 – Illumination Review**.

¹ Ontario Road Safety Annual Report (ORSAR), Ontario Ministry of Transportation, 2012.

² 2008-2010 Traffic Safety Status Report, City of Hamilton, 2010.

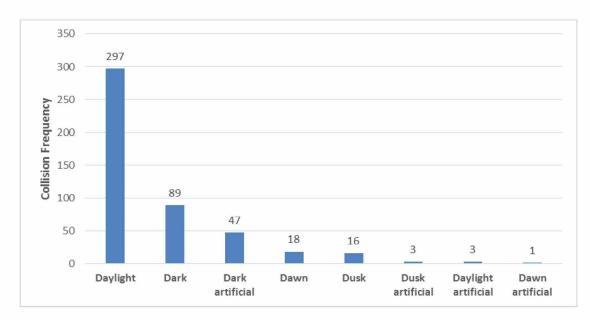


Figure 3: Collisions by light condition

With respect to environment condition, 275 out of 474 collisions (58.0%) occurred with clear weather; 160 (33.7%) with rainy weather, and the remaining collisions with other weather conditions, including snow, drifting snow, freezing rain, strong wind, and fog/mist/smoke/dust. Compared to the Provincial average of 10.9%³ and the overall City of Hamilton average of 13.4%⁴, and based on a Chi-Square statistical test, the proportion of collisions under rainy weather is significantly higher. Details about the statistical test can be found in **Appendix A**.

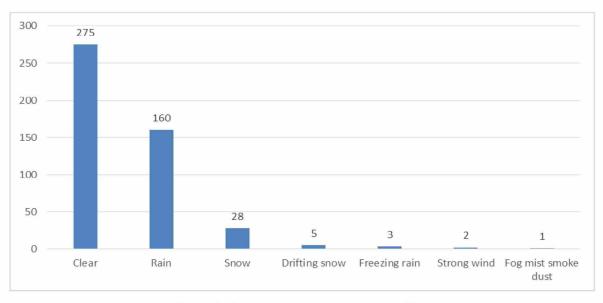


Figure 4: Collisions by environment condition

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³ Ontario Road Safety Annual Report (ORSAR), Ontario Ministry of Transportation, 2012.

⁴ 2008-2010 Traffic Safety Status Report, City of Hamilton, 2010.

Wet surface collisions make up the majority of collisions in the study area, with 50.4% (239 out of 474), followed by dry surface with 43.9% (208 out of 474). When compared to the Provincial average of 17.6% and the City of Hamilton average of 22%, and based on a Chi-Square statistical test, the proportion of collisions under wet road surface is significantly higher. Details about the statistical test can be found in **Appendix A**.

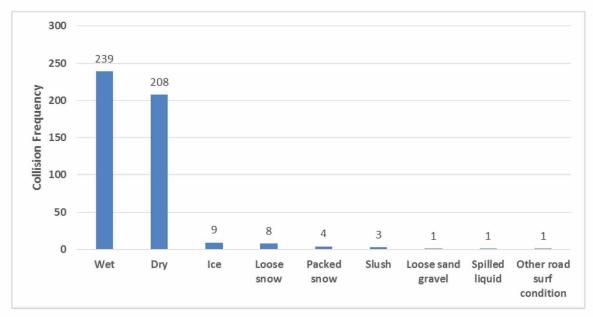


Figure 5: Collisions by road surface condition

4.1.2 Collision Impact Type

Figure 6 summarizes collisions by impact type and by roadway surface condition.⁵ Single motor vehicle collisions (SMV) collisions are the most prevalent collision type with 208 incidents of a total of 474 collisions (44%). Rear end and sideswipe collisions with 116 (24%) and 108 (23%) incidents, respectively, were the next most common collision types.

Out of the 208 SMV collisions, 117 (56.3%) occurred under wet surface conditions, as well as 45 out of 116 rear end collisions (38.8%) and 56 out of 108 sideswipe collisions (51.9%).

⁵ Due to the high proportion of wet surface collisions, as discussed in Section 4.1.1, all remaining sections of the collision review will be combined with wet surface collisions.

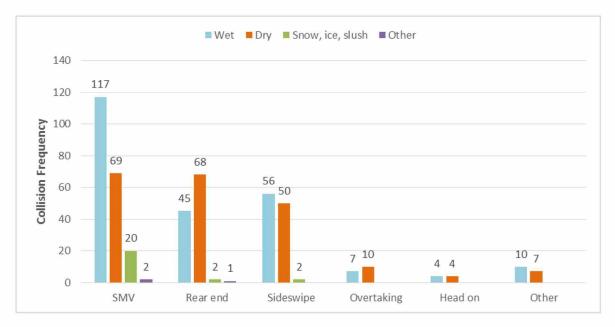


Figure 6: Collisions by impact type and roadway surface condition

4.1.3 Apparent Driver Action

Figure 7 summarizes the collisions in the study area according to the apparent driver action, including total collisions and wet surface collisions. The most frequent apparent driver action reported is "lost control", with 165 out of 474 collisions (34.8%), followed by "driving properly" (23.4%), "speed too fast" (12.4%), "following too close" (10.1%), and "improper lane change" (9.9%).

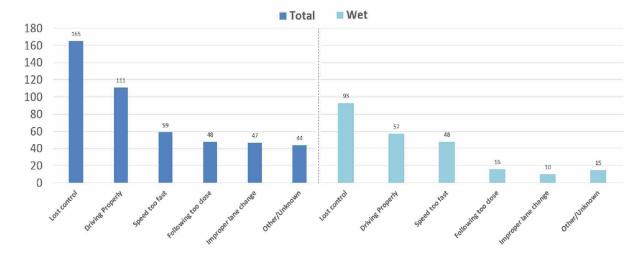


Figure 7: Apparent driver action

Table 2 provides a comparison of the different apparent driver actions reported in the study area with average proportions for the Province of Ontario and for the City of Hamilton. With the exception of "following too close", all improper driver actions are significantly higher (based on a Chi-Square

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statistical test) than the provincial and municipal averages. The most outstanding discrepancy is "lost control", with a proportion over five times higher than the municipal average. In the table, the numbers in red indicate a significant difference between the study area and the comparison jurisdictions.

Table 2: Apparent driver action comparison

Apparent Driver Action	Study Area	Ontario	Hamilton
Driving properly	23.4%	50.6%	48.9
Lost control	34.8%	9.0%	6.6%
Speed too fast ⁶	12.4%	2.7%	5.5%
Following too close	10.1%	7.9%	9.9%
Improper lane change	9.9%	2.3%	3.4%

With respect to wet surface collisions, the proportions of the different apparent driver actions are generally similar to total collisions, as summarized in **Table 3**. "Speed too fast", however, stands out due to 81.4% of collisions involving this apparent driver action (48 out of 59 – refer to **Figure 7**) having occurred on wet surface.

Table 3: Apparent driver action for total and wet surface collisions

Apparent Driver Action	Total Collisions	Wet Surface Collisions
Driving properly	23.4%	23.8%
Lost control	34.8%	38.9%
Speed too fast ⁷	12.4%	20.1%
Following too close	10.1%	6.7%
Improper lane change	9.9%	4.2%

4.1.4 Spatial Distribution

Figure 8 provides the spatial distribution of major collision types⁸ within the study area in each direction. The locations with the highest concentration of collisions are:

- + Northbound direction:
 - Vicinity of the King Street interchange (200 m upstream of off-ramp to on-ramp); and
 - Vicinity of Mud Street on-ramp.
- + Southbound direction:
 - Vicinity of King Street on-ramp;
 - Vicinity of Queenston Road on-ramp; and

⁶ Includes "speed too fast", "speed too fast for condition", and "exceeding speed limit".

⁷ Includes "speed too fast", "speed too fast for condition", and "exceeding speed limit".

⁸ Includes SMV, rear end, sideswipe, overtaking and head on. These collision types make up 96% of all collisions in the study area

- Vicinity of Barton Street on-ramp.

Most of these locations have SMV collisions as the predominant collision type, the exception being Queenston Road southbound, where the predominant collision type is sideswipe (which is the second predominant collision type at the above mentioned locations, followed by rear end).

Out of the 249 northbound collisions shown in **Figure 8**, 78 (31%) are concentrated in a 600-metre section around the King Street interchange (between 250 metres south of the King Street off-ramp and the King Street on-ramp), a relatively short section of the 8.1 km study area. There were also 16 (6.4%) northbound collisions over a short 100-metre section near the Mud Street on-ramp.

Out of the 208 southbound collisions shown in **Figure 8**, 19 (9.1%), 21 (10.1%) and 22 (10.5%) are concentrated in 100-metre sections near the on-ramps of Queenston Road, Barton Street and King Street, respectively.

All locations mentioned above are within, on approach to, or leaving a horizontal curve, although some of these curves have a larger curve radius (e.g. Barton Street) and some have a smaller curve radius (e.g. King Street).

Figure 9 provides the spatial distribution of comparing dry and wet surface collisions. In the northbound direction, the ratio of wet to dry surface condition collisions around the King Street interchange is 4.33 wet surface collisions for each dry surface collision. In the southbound direction, this proportion is 3 to 1 near the Queenston Avenue on-ramp, and 2.5 to 1 near the King Street and the Barton Street on-ramps. These ratios exceed the normal expectation of more dry surface than wet surface collisions.

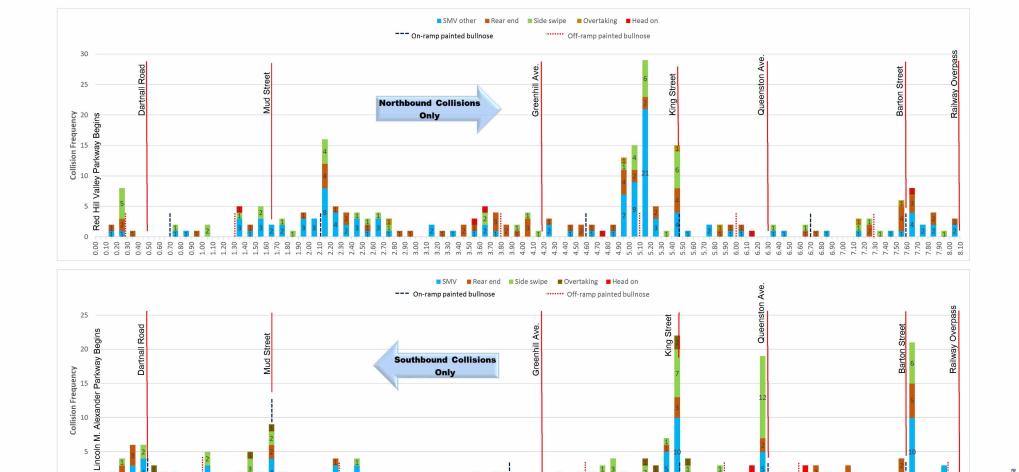


Figure 8: Spatial distribution of collisions considering all collisions

2.50 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.30 3.40 3.40 3.40 3.40 4.40

0.00 0.10 0.20 0.30 0.50 0.50 0.60 0.70 0.90 0.90 0.90 0.90 0.90 0.11 1.12 1.15 0.15

City of Hamilton Red Hill Valley Parkway Detailed Safety Analysis November 2015

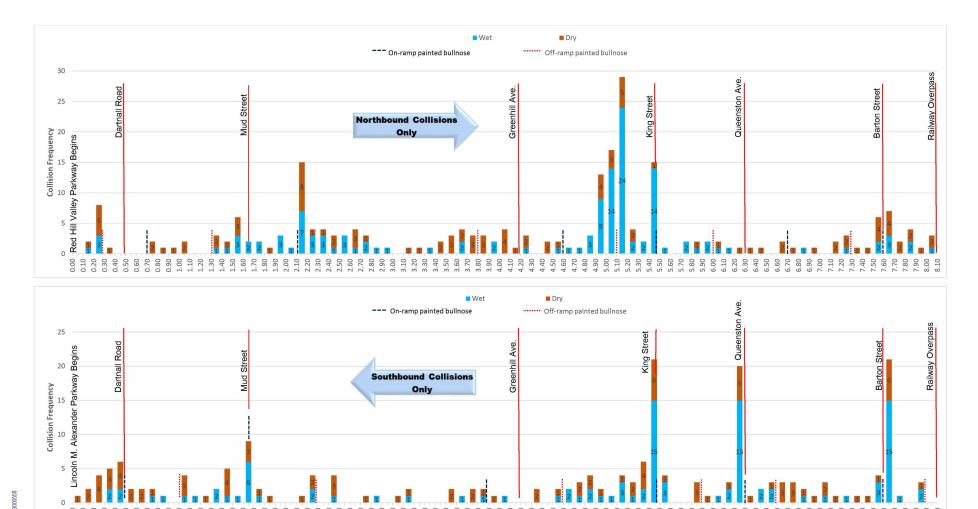


Figure 9: Spatial distribution of wet vs. dry surface collisions

4.2 Median Related Collisions

The Motor Vehicle Collision (MVC) reports were manually screened to identify median related collisions. The collisions related to median can be grouped into three types:

- + Collisions crossing over the median; where vehicles travelled across the centre median and entered the opposing lanes of traffic;
- Collisions mounting the median; where a vehicle ran-off the road and came to rest on the median, not entering opposing lanes of traffic; and,
- Collisions involving a guide rail or concrete barrier installed on the median (left) side of the road; where a vehicle hit the guide rail or concrete barrier and then rested in the same initial direction of travel, not mounting or crossing the median.

4.2.1 **Collision Severity**

There were 131 (28% of all collisions) median related collisions from January 1, 2008 to July 23, 2015 as illustrated in Figure 10. This is a collision frequency of 2.13 collisions / year / km. The number includes:

- + 1 fatal collision (crossing over the median; 2 fatalities);
- + 56 injury collisions (9 crossing over the median, 17 resting on the median, and 30 involving guide rail/concrete barrier); and
- 74 PDO collisions (7 crossing over the median, 26 resting on the median and 41 involving guide rail/concrete barrier).

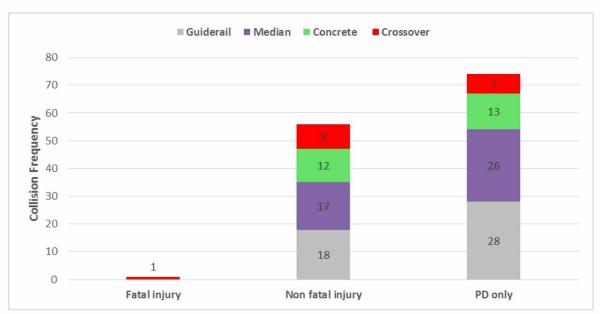


Figure 10: Summary of median related collisions

As can be seen in **Figure 10**, 59% (10 out of 17) of the crossover collisions are severe, a higher proportion than median collisions (17 out of 43 or 40%), concrete barrier collisions (12 out of 25 or 48%), and guide rail collisions (18 out of 46 or 39%). As a result, the need for a median barrier will be investigated in this study.

4.2.2 Light, Environment and Road Surface Conditions

Figure 11 through **Figure 13** summarize the median related collisions in the study area, broken down by light, environment and road surface condition.

The majority of collisions occurred under daylight/daylight artificial conditions, with a total of 81 out of 131 collisions (62%), with the remaining 50 (38%) collisions occurring during non-daylight conditions, which include dark/dark artificial, dusk/dusk artificial, and dawn/dawn artificial. These proportions are very similar to the proportions for all collisions (**Section 4.1.1**).

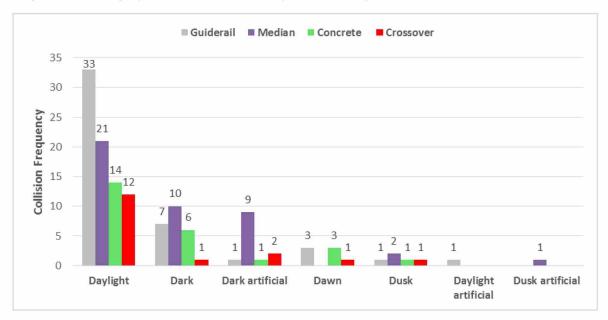


Figure 11: Median related collisions by light condition

With respect to environment condition, 68 out of 131 collisions (52%) occurred with clear weather; 50 (38%) with rainy weather, and the remaining collisions with other weather conditions, including snow, drifting snow, freezing rain, strong wind, and fog/mist/smoke/dust. These proportions are somewhat similar to the proportions for all collisions (**Section 4.1.1**), although non-clear weather conditions are slightly higher for median related collisions than for overall collisions (48% and 42%, respectively).

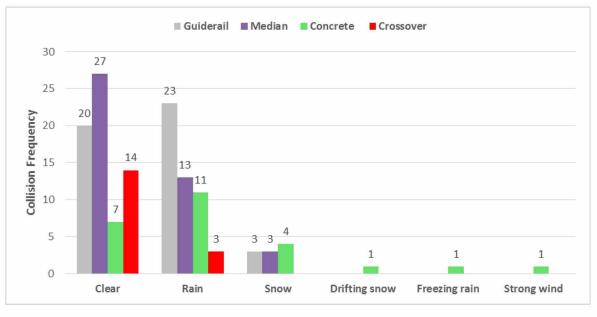


Figure 12: Median related collisions by environment condition

Wet surface collisions make up the majority of median related collisions in the study area, with 53% (70 out of 131), followed by dry surface with 41% (54 out of 131). These proportions are somewhat similar to the proportions for all collisions (**Section 4.1.1**).

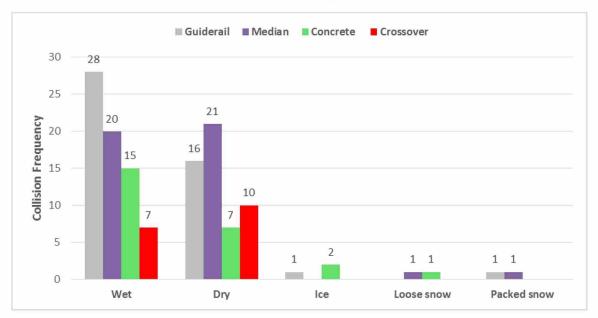


Figure 13: Median related collisions by roadway surface condition

4.2.3 Apparent Driver Action

Figure 14 summarizes the median related collisions in the study area according to the apparent driver action. The most frequent apparent driver action reported is "lost control", with 60 out of 131

collisions (46%), followed by "speed too fast" (18%), "driving properly" (17%), and "improper lane change" (8%). The proportions of "lost control" and "speed too fast" are 11 and 6 percent points higher than for all collisions (as shown in **Section 4.1.3**). Additionally, 43.5% of median related, wet surface collisions involved "lost control" driver action, as well as 29% "speed too fast".



Figure 14: Median related collisions by apparent driver action

4.2.4 Spatial Distribution

Figure 15 provides the spatial distribution of all collisions and median related collisions within the study area in the northbound and the southbound directions.

A considerable proportion of median related collisions are concentrated in the vicinity of the King Street and Queenston Road interchanges. In the northbound direction, 32 out of 81 median related collisions (40%) are concentrated within a 600-metre section of road (between 250 metres south of the King Street off-ramp and the King Street on-ramp), equivalent to approximately 7.5% of the length of the study area. In the southbound direction, 19 out of 50 median related collisions (38%) are concentrated within a 1,100-metre section of road (between the Queenston Road on-ramp and 250 metres south of the King Street on-ramp), equivalent to approximately 13.5% of the length of the study area. Considering both directions combined, 57 out of 131 median related collisions (44%) are concentrated within 1,400 metres or 17% of the study area (between 250 metres south of the King Street NB off-ramp and the Queenston Road SB on-ramp). There were 7 crossover collisions in this section of the RHVP, 41% of a total of 17 in the study area. Out of these, 4 occurred in the northbound direction and 3 in the southbound direction.

The second highest concentration of median related collisions is located in the vicinity of the Mud Street interchange, with 25 collisions (19.5%) having occurred over a 1-km section of road (12.5% of the study area), 19 of which in the northbound direction (or 23.5% over 12.5% of the study area). However, a median concrete barrier is already present along most of this section.

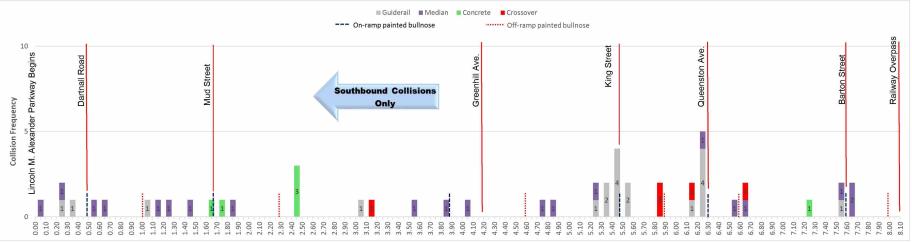


Figure 15: Spatial distribution of median related collisions

Out of the 57 reported collisions in the vicinity of King Street and Queenston Road, 36 had a vehicle striking the guiderail or concrete barrier, 14 had a vehicle ending up resting on the median, and 7 had a vehicle crossing over to the opposing traffic lanes. While 63% of median related collisions in this area are guide rail related, only 36% of this 1,400-metre section of the RHVP has guide rail installations on the median (used to protect fixed object hazards such as overhead sign and bridge structures). This may indicate that locations where median related collisions are more likely to occur are already protected. However, as shown in **Table 4**, crossover collisions, as expected, have a higher proportion of severe collisions than guide rail collisions. Conversely, median collisions have a lower proportion of severe collisions than guide rail collisions. Therefore, the determination of whether a median barrier should be provided throughout this entire section should be made based on a benefit/cost analysis.

Table 4: Median related collisions in the vicinity of King Street and Queenston Road

Median Related Collisions	Total	PDO	Severe
Guide rail/concrete	36	22 (61%)	14 (39%)
Median	14	10 (71%)	4 (29%)
Crossover	7	3 (43%)	4 (57%)

Finally, as discussed in **Section 4.2.2**, wet surface condition is present in 53% of median related collisions in the study area. When reviewing road surface condition for collisions in the vicinity of King Street and Queenston Road, however, it was found that this proportion increases to 74% (42 out of 57 collisions). This may indicate that addressing wet surface collisions could reduce median related collisions and significantly reduce the benefits of providing a median barrier.

4.3 Summary of Collision Review

Overall Findings

- Wet surface collisions were found to represent approximately 50% of all collisions in the study area, which is significantly high compared to typical proportions.
- + Single Motor Vehicle (SMV) collisions amount to 44% of all collisions in the study area, followed by rear ends (24%) and sideswipes (23%).
 - 56% of SMV, 39% of rear end, and 52% of sideswipe collisions occurred under wet surface conditions.
- The most frequent apparent driver action reported was "lost control" (35%"), followed by "driving properly" (23%) and "speed too fast" (12%). Both "lost control" and "speed too fast" are significantly high compared to typical proportions.
 - Approximately four out of every five collisions where "speed too fast" was reported occurred under wet surface condition.

Critical Locations

+ The locations with the highest collision frequencies along the RHVP are:

- In the northbound direction, a 600-metre section around the King Street interchange (31% of
- In the southbound direction, 100-metre sections near the on-ramps of the Queenston Road, Barton Street and King Street (combined, approximately 30% of southbound collisions over 3.7% of the RHVP length).
- All locations with the highest collision frequencies are located within, on approach to, or leaving horizontal curves (Figure 16).



Figure 16: Critical collision locations

Median Related Collisions

+ 28% of all collisions in the study area were median related, including:

northbound collisions over 7.5% of the RHVP length); and

- 1 fatal collision (crossover);
- 56 injury collisions, including 30 guiderail/concrete barrier, 17 median, and 9 crossover; and
- 74 PDO collisions, including 41 guiderail/concrete barrier, 26 median, and 7 crossover.
- Approximately 53% of median related collisions occurred under wet surface condition.
- + The most frequent apparent driver action reported in median related collisions was "lost control" (46%"), followed by "speed too fast" (18%) and "driving properly" (17%). Both "lost control" and "speed too fast" proportions are higher than for all collisions.
 - These proportions are 43% for "lost control" and 29% for "speed too fast" driver actions under wet surface conditions.

Critical Locations for Median Related Collisions

- The locations with the highest collision frequencies along the RHVP are in the vicinity of the King Street and Queenston Road interchanges, including:
 - In the northbound direction, a 600-metre section around the King Street interchange (40% of northbound collisions over 7.5% of the RHVP length); and
 - In the southbound direction, a 1,100-metre section around the King Street and Queenston Road interchanges (38% of southbound collisions over 13.5% of the RHVP length).
 - In both directions combined, a 1,400-metre section around the King Street and Queenston Road interchanges (44% of collisions over 17% of the RHVP length).
 - Most median related collisions at the above locations involved a vehicle striking a guiderail, however crossover collisions were proportionally more severe.

• Wet surface conditions were present in 74% of median related collisions at the above locations.

Potential Contributing Factors to Collisions

The overall findings from the collision review indicate that the proportion of wet surface collisions in the study area is significantly higher than typically observed in the City and in the Province. A high proportion of wet surface condition suggests that one or more than the following conditions may be present:⁹

- + Inadequate skid resistance (surface polishing, bleeding, contamination);
- Hazardous manoeuvres that may be related to avoidance manoeuvres or surface deficiencies (potholes, waves, other deformations, water accumulation); and/or
- Excessive speed.

It was also found that the prevalent apparent driver actions involved in collisions in the study area, both in general and median related, are 'lost control', 'speed too fast', and 'improper lane change'. According to the Ministry of Transportation's definition¹⁰, the "lost control" driver action is related to unexpected circumstances such as mechanical malfunction, object on roadway, slippery road surface or losing consciousness. It would not be unreasonable, however, to suppose that other driver actions such as excessive speed or driver distraction/inattention end up being coded as loss of control, especially for SMV collisions or other collisions where the police officer completing the accident report is not able to collect accurate information from witnesses.

Another indication that high speeds may be involved is the fact that some curves within the study area (in particular the four curves in the vicinity of King Street and Queenston Road) appear to have curve radii of approximately 525 metres¹¹, which is the minimum per Provincial Standards for a design speed of 110 km/h and a maximum superelevation of 6%.¹² Under these circumstances, a vehicle slightly exceeding the design speed could run off the road while negotiating these curves. This section of the RHVP presents the highest concentration of collisions in the study area, with an increased proportion of wet surface collisions.

Finally, the consequences of improper lane changes tend to be aggravated at higher speeds and/or wet surface conditions, since it becomes more difficult for drivers to maintain control of the vehicle.

Further discussion regarding these conditions can be found in **Section 5**.

Conclusions

Based on the collision review, it appears that the combination of high speed and wet surface may be the primary contributing factors to collisions on the RHVP, especially in the vicinity of the interchanges of King Street and Queenston Road, where small-radius horizontal curves are present. This applies both to all collisions in the study area and to median related collisions only. The need for

⁹ Road Safety Manual, World Road Association, 2003.

¹⁰ Accident Information System – MS Access Query User Guide, Version 1.4, Ministry of Transportation Ontario, 2004.

¹¹ Design information was not provided for these curves. Approximate measurements were taken from satellite imagery.

¹² Geometric Design Standards for Ontario Highways, Ministry of Transportation Ontario, 1985. Table C3-2.

a median barrier, either along the entire study area or limited to the vicinity of the interchanges of King Street and Queenston Road, will be determined based on a benefit/cost analysis.

5. Field Investigation

A field investigation was conducted on Thursday, August 30, 2015 under clear weather conditions and during peak and off-peak periods. A night-time review was also conducted to assess visibility under reduced lighting conditions. CIMA staff was accompanied by City's maintenance staff during the daytime review in order to gain a better understanding of site conditions and operations, based on their daily experience on the RHVP.

The field investigation included a review and/or analysis of:

- + Conformance and consistency
 - Related to site geometrics, traffic control devices and safety devices.
- + Traffic control
 - Traffic signage and pavement markings (applicability, condition, function, and conspicuity).
- + Site operations and road user interactions
 - Site operations;
 - Road user operations and interactions, including human factors analysis;
 - Positive guidance; and
 - Traffic patterns and behaviour throughout the study area.
- Safety devices
 - Guiderail systems, approach/end treatments, crash cushions, post-mounted delineators etc.;
 and
 - Potential unprotected roadway and roadside hazards (non-existence of safety devices).
- Site conditions
 - Roadway surface, lighting, roadway safety hardware and the roadside; and
 - Physical evidence of road user collisions.

The findings of the field investigations are discussed in the following sections.

5.1 Roadside Safety Devices

The minimum required clear zone for a design speed of 110 km/h, according to the MTO's Roadside Safety Manual (Table 2.2.1) is 9.0 m for tangent road sections. The Roadside Safety Manual also provides Curve Correlation Factors (Table 2.2.2) that vary with design speed and curve radius. For a design speed of 110 km/h, these factors range between 1.00 (R = 1,000 m) and 1.44 (R = 500 m). The Curve Correlation Factor is a multiplier meaning that the minimum required clear zone at a curve section at this design speed can be as wide as 13 m (1.44 x 9.0) at certain locations.

CIMA conducted a review of the barrier systems within the study area. The barrier systems currently employed on the RHVP include steel beam guiderail and concrete barriers, which are provided in limited areas. All overhead signs and bridge columns located in the median within the study area are protected with steel beam guide rails, and a median concrete barrier is present along a 1,100 m section from Mud Street West towards Greenhill Avenue, where the distance between the traffic lanes in opposite directions is approximately 8.5 m (i.e. less than the clear zone).

The review of collision history revealed a large number of median related collisions including one fatal collision. During the field investigation, evidence of vehicles losing control towards the median was found, including skid marks and damage to guide rails, as illustrated in Figure 17. With the exception of the 1,100 m section between Mud Street West and Greenhill Avenue, the median does not have a continuous barrier to protect against median cross-over collisions. The study area was further evaluated regarding the benefits and drawbacks of providing a median barrier. Findings are provided in Section 7.







Figure 17: Evidence of loss of control towards the median / collisions with guide rails

It was also noted that some "fishtail" leaving end treatments at some guide rails protecting bridge structures are located within the clear zone of the opposite direction of traffic (Figure 18). When this is the case, the guide rails at the opposite direction do not provide the required length of need to protect the end treatment (Figure 19). This type of end treatment can represent a spearing hazard in the event of a frontal collision and should be protected when located within the clear zone.



Figure 18: RHVP typical guide rail leaving end treatment



Figure 19: Potential trajectory of a vehicle towards fishtail end treatment

5.2 Traffic Operations

5.2.1 Operating Speeds

During the field investigation, most drivers, during periods of uncongested traffic conditions, were observed to be driving over the speed limit of 90 km/h. CIMA reviewed the speed studies conducted for the 2013 RHVP study, particularly along the mainline section between Mud Street and Greenhill Avenue. The results of the speed studies are summarized in **Table 5**. The results show that the average speeds in each direction are in excess of the posted speed limit. The 85th percentile speed, which is typically used to represent the operating speed of a road, is the same as the assumed design speed of the RHVP for the northbound direction, and 5 km/h in excess of the assumed design speed for the southbound direction. Approximately one in six drivers exceed the design speed in the northbound direction, and approximately one in five in the southbound direction. The high speeds

observed on the RHVP may be a contributing factor for collisions, especially SMV and/or wet pavement related collisions. An average of more than 500 vehicles per day were recorded exceeding 140 km/h.

Table 5: RHVP operating speeds

Measure	Northbound	Southbound
Average speed	95 km/h	99 km/h
85 th percentile speed	110 km/h	115 km/h
Exceeding speed limit	60%	72%
At or exceeding design speed	15%	22%
Exceeding 140 km/h	> 500	per day

Location: Mainline between Mud St. and Greenhill Ave.

Date: May 2013

Given the high operating speeds, as well as the high concentration of collisions in the vicinity of the King Street and Queenston Road interchanges, where a sequence of curves of relatively small radii is present¹³, a ball bank indicator study was conducted to gain additional understanding of the potential collision contributing factors. Ball bank indicator studies are typically utilized to determine curve advisory speeds. The test provides a combined measure of centrifugal force, vehicle roll and superelevation of the road by measuring the angle of the ball bank indicator while travelling through a curve at a given speed. The study was conducted on Tuesday September 1st, 2015, at travel speeds of 90, 100, and 110 km/h along the left lane (i.e. the lane closest to the median) of the RHVP in each direction. Because the testing required exceeding the speed limit of the road, the study was conducted in a Hamilton Police Service cruiser driven by a police officer to ensure safety of staff and general public. **Table 6** provides a summary of the ball bank indicator study, for each direction and travel speed, compared to thresholds available in the Traffic Engineering Handbook.¹⁴

Table 6: Ball bank indicator thresholds and test results

Travel Speed	Threshold 14	Test Speed (km/h)	Maximum Reading NB	Maximum Reading SB
		110	12.2	10.5
≥ 30 mph (48 km/h)	12	100	10.8	9.0
		90	9.4	7.1
20-25 (32-40 km/h)	14	Netherland		
≤ 20 (32 km/h)	16	Not tested		

The results of the ball bank study indicate that a travel speed of 90 km/h, which is equal to the posted speed limit, is well below the maximum threshold of the ball bank indicator. As the test speed increases, the readings also increase, slightly exceeding the threshold in the northbound direction at 110 km/h. This reading was recorded at the King Street interchange. It should be noted that the

¹⁴ ITE Traffic Engineering Handbook (6th Edition). Table 11-2.



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¹³ Curve radii near the King Street and Queenston Road interchanges are approximately 525 m, which corresponds to the minimum for a design speed of 110 km/h (Geometric Design Standards for Ontario Highways, Table C3-2)

thresholds provided in the Traffic Engineering Handbook are based on driver comfort, not safety. However, the circumstances under which the test was conducted are likely safer than the ones under which collisions are occurring, including:

- The test was conducted under dry surface conditions, while most collisions reported in this area occurred under wet surface conditions;
- The test was conducted with a Police Cruiser (2011 Ford Crown Victoria, Police Package), which
 may have a more stable suspension and may result in readings lower than the average passenger
 car; and
- The test was not conducted at speeds higher than 110 km/h. As shown in Table 6, at least 15% of drivers exceed this speed.

5.2.2 Merging Behaviour

The RHVP is mostly used by commuter traffic, meaning drivers are expected to be familiar with the road. During the field investigation, it was noted that, occasionally, drivers entering the RHVP from an on-ramp tend to do so in a somewhat aggressive fashion, merging onto the mainline as soon as they reach the dashed line at the acceleration lane. This may be due to a potential perception by drivers that some acceleration lanes along the RHVP are too short (especially considering the high operating speeds as shown in **Section 5.2.1**), and may contribute to sideswipe and SMV collisions (as drivers on the mainline swerve to avoid a sideswipe collision with a merging vehicle). Additionally, some on-ramps in the study area present relatively high vegetation that may restrict visibility, to drivers on the mainline, of approaching vehicles from the ramps (**Figure 20**), which has the potential to violate drivers' expectancy related to merging traffic.

Section 5.4.3 discusses the application of MERGE warning signs on the RHVP, used to alert drivers of unfavorable merging conditions.



Figure 20: Vegetation obscuring view of vehicles approaching from on-ramp

5.3 Pavement Surface

The high proportion of wet surface related collisions observed in the study area may indicate a potential issue with pavement skid resistance. According to City staff, Stone Mastic Asphalt (SMA) was utilized in the RHVP. SMA pavements, originally developed in Germany, are designed to provide better resistance to permanent deformation, wearing, cracking due to cold or mechanical stress¹⁵, as well as to provide reduced noise levels due to its negative surface texture reducing vibrations in the tire and connected air paths reducing 'air pumping' noise.¹⁶

One industry identified characteristic of SMA pavements is that skid resistance is lower by approximately 30 to 40% (under dry conditions) in newer surfaces, reaching normal levels after 6 to 18 months, depending on local conditions and traffic levels. However, as shown in **Figure 21**, the proportion of wet surface collisions seems to be increasing over the years. This suggests that, if low skid resistance is a contributing factor, it is not necessarily related to the normal early life properties of SMA pavements.

¹⁵ Stone Mastic Asphalt Guide, German Asphalt Association. Bonn, Germany (2000). English Translation: 2005.

¹⁶ Greer, G. Stone Mastic Asphalt – A review of its noise reducing and early life skid resistance properties. Proceedings of ACOUSTICS 2006. Christchurch, New Zealand (2006).

¹⁷ The significant drop in wet surface collisions in 2015 is not conclusive since the data analysis only included collision records between January and July. Wet surface collisions are expected to be lower in the winter period since snow, ice and slush conditions are more frequent than wet surface.



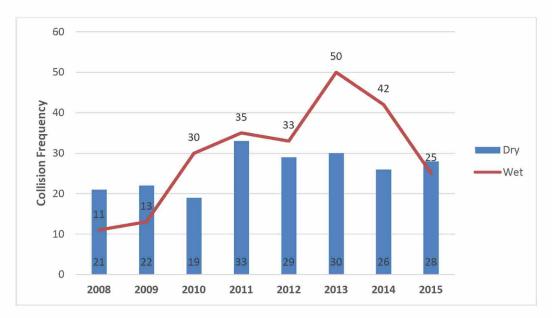


Figure 21: Temporal trend: wet surface collisions

Another potential contributing factor for wet pavement collisions are the high speeds observed on the RHVP. As discussed in **Section 5.2.1**, operating speeds are generally equal to or higher than the design speed of the road. This is reinforced by the high concentration of SMV collisions near horizontal curves.

5.4 Signage

CIMA reviewed signage on approach to and within the study area. Signage was checked for conformity to appropriate OTM Books, for application, size and approximate placement. Our review of the study area revealed the following findings.

5.4.1 'Slippery When Wet' Signs

OTM Book 6 (Warning Signs) states that SLIPPERY WHEN WET signs (Wc-5) should be used:

- + At locations where field investigations determine that a pavement has a significantly reduced wet weather skid resistance;
- + Where for no other identifiable reason more than one third of all collisions on a given section of highway are occurring on wet pavement;
- + At locations which consistently have an abnormally high number of wet weather conflicts or collisions; or
- + For other reasons related to wet pavement hazards, under approval from the local Road Authority.

OTM Book 6 also indicates the options to install SLIPPERY WHEN WET tab signs (Wc-5t), to increase motorist familiarity with the symbol, or ADVISORY SPEED tab signs (Wa-7t), to indicate the safe speed for driving along a section of road in conjunction with the Wc-5 sign.

November 2015

Given the existing proportion of wet pavement collisions (50%), oversize SLIPPERY WHEN WET signs (Wc-105) should be used in the study area. Four of these signs are installed along the RHVP, however they are placed immediately in advance of two bridges (one between Mud Street and Greenhill Avenue, and one between Barton Street and the north end of the study area) and combined with BRIDGE ICES tab signs (Figure 22). This tab sign is not part of the current version of OTM Book 6, although it will be included in the updated version, expected to be published in 2015. However, this tab will be recommended for use with the new BRIDGE/ROAD ICES sign, which will have the same design as the WC-23 "Bridge Ices" sign from the Manual of Uniform Traffic Control Devices for Canada (MUTCDC). Figure 23 illustrates the two different signs.



Figure 22: SLIPPERY WHEN WET sign + BRIDGE ICES tab sign



Figure 23: SLIPPERY WHEN WET sign (left) and BRISGE/ROAD ICES sign (right)

Because these two signs are intended to convey different messages, the use of the SLIPPERY WHEN WET sign to represent both "slippery when wet" and "bridge ices" conditions is not recommended, as this may create confusion for drivers (although the tab helps clarify the different conditions). This is especially important on the RHVP, since both conditions are possible and should be signed accordingly.

5.4.2 Object Marker Signs – Various Locations

Several guide rail approach end treatments were found to have missing, damaged, or obscured OBJECT MARKER signs (Wa-33). **Table 7** provides a list of all identified locations, and **Figure 24** illustrates these three conditions.

Table 7: Missing object marker signs at guide rail approach end treatments

Direction	Location	Side	Issue
EB	Upstream of Dartnall interchange	Left	Obscured by vegetation
EB	Upstream of Stone Church/Mud interchange	Left	Obscured by vegetation
NB	Underneath Mud overpass	Left	Obscured by vegetation
NB	Downstream of Mud interchange	Left	Obscured by vegetation
NB	Downstream of Mud interchange	Right	Missing
NB	Underneath Greenhill overpass	Left	Damaged
NB	Downstream of Greenhill interchange	Left	Missing
NB	Underneath railway overpass btwn Greenhill and King	Left	Damaged
SB	Downstream of Barton interchange	Left	Missing
SB	Underneath Mud overpass	Left	Obscured by vegetation
SB	Underneath Pritchard overpass	Left	Damaged / Obscured by vegetation
SB	Downstream of Pritchard overpass	Left	Missing







Figure 24: Examples of Missing, Damaged and Obscured Object Marker Signs

5.4.3 'Merge' Signs

According to OTM Book 6, MERGE signs (Wa-16) alert drivers that vehicles from the other roadway (acceleration lanes from ramps entering a freeway being an example) may soon be entering the lane in which they are travelling, and that they must exert caution and adjust their positioning to accommodate the ingress of vehicles. They are also used to provide warning to traffic entering the roadway that they do not have the right of way and must prepare to merge with through traffic. Some interchanges in the study area have MERGE signs warning about the acceleration lane, while some do not.

OTM Book 6 indicates that a MERGE sign should be used:

- Where the merging traffic conditions are unexpected, out of the road user's view, or otherwise not obvious to the road user; and
- Where the length of an acceleration lane and/or taper is within the range of values specified in [OTM Book 6 Table 9].¹⁸

The RHVP presents some unexpected merging traffic conditions, including some on-ramps and acceleration lanes within horizontal curves and aggressive merging behaviour, as discussed in **Section 5.2.2**. **Table 8** indicates the locations where MERGE signs are present/not present, as well as requirement for the sign based on length of acceleration lane and/or taper.

Direction Ramp Merging Condition Accel.+Taper Present Required EB Dartnall S-E On-ramp located within horizontal curve 293+58 m Yes No 443+62 m Mud E-N On-ramp located within horizontal curve NB Yes No NB Greenhill E-N Weaving area n/a No No King E/W-N Weaving area; vehicles on ramp may NB n/a No No become obscured by vegetation On-ramp located within horizontal curve NB Queenston E/W-N 150+85 m No Yes Barton E/W-N No concerns NB 145+65 m Yes Yes Barton E/W-S SB Vehicles on ramp partially obscured by 165+77 m No Yes vegetation Queenston E/W-S Weaving area within horizontal curve n/a SB Yes No SB King E/W-S Vehicles on ramp significantly obscured by 173+60 m Yes Yes vegetation SB Greenhill E-N Acceleration lane becomes through lane n/a Νo No Mud E-S On-ramp located within horizontal curve 130+85 m SB Yes Yes Dartnall S-W SB On-ramp located within horizontal curve. 202+72 m Yes No however acceleration lane on tangent

Table 8: MERGE sign presence and requirements on the RHVP

5.5 Pavement Markings and Delineation

Pavement markings within the study area were generally found to be in good condition at the time of the review and no issues were identified during daytime.

During night time, however, the absence of illumination makes it difficult for drivers to see the pavement markings ahead of the vehicle. The lane lines become visible for a longer distance south of Greenhill Avenue, where Permanent Raised Pavement Markers (PRPM) are installed. The PRPMs were recommended by CIMA in the 2013 RHVP Safety Review and seem to have improved visibility of lane lines. However, the edge lines remain difficult to see. **Figure 25** through **Figure 27**

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¹⁸ For a posted speed limit of 90 km/h, minimum and maximum lengths of acceleration lane and/or taper for the use of a MERGE sign are, respectively, 80 and 200 m. Where the length of acceleration lane and/or taper is less than the minimum or greater than the maximum lengths specified, MERGE signs must not be used.

illustrate pavement marking visibility under different conditions, including daytime, nighttime without PRPMs, and nighttime with PRPMs.

It was also observed that, where present, guide rails or concrete barriers on the median are not visible due to the lack of delineation along these devices.



Figure 25: Pavement markings during daytime condition



Figure 26: Pavement markings during nighttime condition (without PRPMs)



Figure 27: Pavement markings during nighttime condition (with PRPMs)

6. Illumination Review

The primary objective of illumination is to increase safety by providing drivers with improved nighttime visibility of roadway conditions and potential hazards. Although nighttime collision proportions were not found to be significantly higher than provincial or municipal averages, the review of the need for illumination was part of the scope of this study, as requested by the City.

It should be noted that design choices that were made during the design phase were intimately linked to approvals. Reference materials note that, "The sole reason for making design changes was to reduce environmental impacts." The Valley section of the Parkway traverses the Niagara Escarpment, a UNESCO World Biosphere Reserve, designated for its unique landform characteristics and the presence of a provincial land use plan to guide development in its area. Because of this unique area, and because of the costs associated with building a roadway on the escarpment, the City identified several design refinements that included restricting illumination to intersections and on/off ramps.²⁰

In order to determine whether additional illumination should be considered for installation within the study area, the Transportation Association of Canada (TAC) Roadway Lighting Guide was used, as well as the Ministry of Transportation Ontario (MTO) Policy for Highway Illumination. These policies are based on an analytical approach where several factors have been incorporated. The determination of the need for illumination is performed through the use of warrants which consider road geometry, operations, environmental, and collision factors. For each factor, a rating between 1 and 5 is assigned depending on the conditions encountered. The higher the rating, the greater the hazard and the more critical is the need for illumination. A weight is also attributed to each factor,

¹⁹ Red Hill Valley Impact and Design Process, City of Hamilton, Page 3

²⁰ Red Hill Valley Project Public Consultation Report, March 2003, Lura Consulting, Page 136

indicating its relative importance. When factors vary within the portion of roadway for which the warrant is being undertaken, the worst case rating is recommended for the entire segment.

The warrant forms used to determine the need for illumination in the sections of the RHVP between the Lincoln Alexander Parkway and Greenhill Avenue, and between Greenhill Avenue and the Queen Elizabeth Way, are provided in **Appendix B**. This segmentation was chosen for the following reasons: it is approximately the midpoint of the study area, as well as the study limit for the study conducted in 2013; and some notable changes in characteristics occur, including the beginning of a third lane in the southbound direction just south of Greenhill, the presence of a grade between Mud Street and Greenhill Avenue, and generally smaller curve radii in the vicinity of King Street and Queenston Road (north of Greenhill Avenue).

The results of the illumination warrant analysis are summarized in Table 9.

Table 9: Illumination Warrant Analysis Results

Section	Warranting Condition	Result	Warranted
		TAC: 57	.,_
incoln Alexander Parkway to Greenhill Avenue	TAC: 60	MTO: 117	Yes
0 1914	MTO: 80	TAC: 61	3 Fores
Greenhill Avenue to Queen Elizabeth Way		MTO: 117	Yes

Legend: (TAC) [MTO]

According to both TAC and MTO policies, illumination is warranted on the RHVP. However, the MTO warrant provides additional criteria based on the Benefit/Cost ratio of providing illumination. Warranting thresholds are summarized in **Table 10**.

Table 10: MTO Benefit/Cost Warranting Thresholds

Perce	entage points from the Forms	50%	100%		
	Equal or less than 1.0	Lighting is not warranted	Lighting is optional		
	Greater than 1.0	Lighting is optional	Lighting is warranted		
	Greater than 2.0	reater than 2.0 Lighting is warranted			
	Benefit/Cost Ratio	Warrant			

The resulting percentage points from the MTO warrant is 146% for both sections north and south of Greenhill Avenue. In this case, illumination will be warranted if the Benefit/Cost ratio of providing it is greater than 1.0, and optional if otherwise. The Benefit/Cost of providing illumination will be discussed in **Section 7.1.3**.

Other factors, however, should be taken into account in the decision to provide illumination along the RHVP mainline, including the context of the surrounding roadway network. For example, while illumination may improve visibility at night, it may also create the situation where drivers' eyes must adjust back to darkness when leaving the illumination portion of the roadway. Currently, the Lincoln Alexander Parkway present only partial interchange illumination, and, considering the approval conditions previously mentioned, installing illumination could create a situation where drivers enter a short illuminated section, followed by a non-illuminated section, and finally back to an illuminated

section. Another consideration is roadside safety. Luminaires must be installed in safe locations that recognize their potential hazard to vehicles. The location and placement of luminaires must also take into account the need for maintenance, meaning they must be accessible to workers.

7. Determination of Potential Countermeasures

This section summarizes potential countermeasures for the study area based on our findings of collision analysis and field investigation. The results of the collision analysis identified:

- A high proportion of wet surface collisions highly concentrated in the vicinity of the King Street and Queenston Road interchanges, where horizontal curves are present; with high speeds suspected to be a major contributing factor; and
- + Median related collisions under the same conditions described above.

Based on these results, the following sections provide potential countermeasures for the study area. Potential countermeasures are provided in two parts. The first part covers potential countermeasures that are generally intended to reduce number of collisions. The second part covers mitigation measures that are expected to reduce severity of collisions.

7.1 Potential Countermeasures for Reduction of Overall Collisions

7.1.1 Speed Management

7.1.1.1 Speed Enforcement and Speed Feedback Signs

The findings from the collision review indicate that excessive speeds are likely a major contributing factor to collisions in the study area. Targeted police enforcement of areas with known high collision frequency can be an effective means to reduce speeds and, by consequence, collisions. There is no CMF for this countermeasure, and costs are expected to be included in regular police activities. However, there is a possibility that this measure is not operationally feasible due to a lack of safe locations to park patrol vehicles near the high-collision areas. This countermeasure should be discussed with Hamilton Police Service.

Changeable speed feedback signs for individual drivers are intended to influence driver behaviour and reduce excessive speeds. The signs consist of boards connected to speed measuring devices that display text such as "Your speed is XX km/h" or "You are driving too fast". This countermeasure should be implemented in conjunction with speed enforcement, for two main reasons; first, it would provide individual feedback to most drivers 24 hours per day, 7 days per week, which police enforcement cannot achieve; and second, compliance with speed limit as a result of speed feedback signs alone may be reduced over time if drivers do not perceive that speeds are being enforced (especially considering the commuter nature of the RHVP).

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The CMF for this countermeasure is 0.54 with an adjusted standard error of 0.17²¹ (meaning it can range from 0.2 to 0.88 with a 95% confidence interval), and the construction cost is \$12,500 per site for a service life of 10 years.

7.1.1.2 Oversized Speed Limit Signs

Oversized speed limit signs (90x120 cm) provide improved visibility and impact on drivers. Larger speed limit signs are reported to be more effective when used with increased police enforcement.²²

There is no CMF available for this countermeasure, and installation costs is \$500 per sign.

7.1.2 Pavement Friction

7.1.2.1 Perform Friction Testing

Pavement friction plays a vital role in keeping vehicles on the road by enabling the drivers to control/manoeuver the vehicle in a safe manner (in both the longitudinal and lateral directions). Several methods and devices are available for measuring pavement frictional characteristics. Pavement surface texture is influenced by many factors, including aggregate type and size, mixture proportions, and texture orientation and details. Texture is defined by two levels: microtexture and macrotexture. Currently, there are no direct means for measuring microtexture in the field. However because microtexture is related to low slip speed friction, it can be estimated using a surrogate device. Macrotexture is characterized by the mean texture depth and the mean profile depth; several types of equipment are available for measuring these indices.

Because of the high proportion of wet surface condition and SMV collisions, the City could consider undertaking pavement friction testing on the asphalt to get a baseline friction coefficient for which to compare to design specifications. It is important to perform the tests under normal conditions as well as under typical wet pavement conditions encountered on the RHVP in order to simulate, as best as possible, the conditions under which collisions occur. For example, if more water accumulates on the pavement under typical conditions than under normal testing conditions, the tests may result satisfactory, when in reality friction may be reduced. Tests should also be performed near locations with the highest frequencies of wet surface collisions, especially curves.

The estimated costs to undertake these are approximately \$40,000. Based on the results, the City may be in a better position to determine if further action is required.

7.1.3 Illumination

The primary objective of illumination is to increase safety by providing drivers with improved nighttime visibility of roadway conditions and potential hazards. As discussed in **Section 6**, continuous illumination along the RHVP is either warranted or optional, although restrictions from the

²¹ http://www.cmfclearinghouse.org/detail.cfm?facid=78

²² Handbook of Speed Management Techniques. Texas Transportation Institute. September, 1998.

approvals phase may result in an undesired condition where illuminated and non-illuminated sections alternate, forcing drivers' eyes to adjust between light and darkness.

The CMF for this countermeasure is 0.97²³, and expected construction costs are \$100,000 / centreline km over a 20-year service life.

7.1.4 Signs and Delineation

7.1.4.1 'Slippery When Wet' and 'Bridge Ices' Signs

The purpose for the 'Slippery When Wet' sign is to advise drivers that the surface of the roadway has a significantly reduced wet weather skid resistance. Competent drivers are aware that the friction of the road surface is reduced in wet weather; therefore this sign is reserved for use where the skid resistance of the road is reduced to an unexpectedly low level. OTM Book 6 guidelines indicate that these signs should be installed at locations where field investigations determine that the pavement has a significantly reduced wet weather skid resistance, or where for no identifiable reason more than one third of all collisions on a given section of road are occurring on wet pavement (among other criteria). As found during the collision review, more than half of all collisions are occurring on wet pavement, and approximately 70 to 80% of all collisions in the vicinity of the King Street and Queenston Road interchanges involve wet surface conditions. The City should consider installing Wc-105 SLIPPERY WHEN WET signs, combined with Wc-5t SLIPPERY WHEN WET tab sign along the study area, in intervals of 1 km or less (in accordance with OTM Book 6 guidelines for urban areas). Additionally, the City should replace the existing Wc-105 signs located at the two bridges (refer to Section 5.4.1) with WC-23 BRIDGE/ROAD ICES signs.

There is no specific CMF for the installation of 'Slippery When Wet' signs. Installation cost is \$500 per sign resulting in a total cost of \$8,000. If the City would like to place additional emphasis on the area near the King Street and Queenston Road interchanges, consideration may be given to installing rain activated flashing beacons on the 'Slippery When Wet' signs within this section. This would raise installation costs to approximately \$128,000 (considering 4 solar powered flashing beacons), however it is expected to draw driver's attention and increase their awareness about the wet surface conditions in the critical area.

Another alternative is to display messages related to road and environment conditions using Dynamic Message Signs (DMS) that can be implemented as part of the City's planned Advanced Traffic Management System (ATMS) project, consisting of an Intelligent Transportation System (ITS) Freeway Traffic Management System (FTMS) inclusive of the entire Linc and RHVP freeway system from Hwy 403 to the QEW. **Figure 28** provides examples of DMSs used on Ontario Highways under MTO's jurisdiction.²⁴

²³ MTO Safety Analyst tool

²⁴ http://www.mto.gov.on.ca/english/traveller/trip/compass-ftms.shtml#vms



Figure 28: Examples of Dynamic Message Signs

7.1.4.2 'Merge' Signs and Vegetation at On-Ramps/Merging Areas

As highlighted in **Section 5.4.3**, two RHVP on-ramps require the use of MERGE warning signs (Wa-16), however they are not present at these locations. The City should consider installing these signs at the Queenston Road E/W-N and Barton Street E/W-S on-ramps to increase driver awareness of the possibility of merging vehicles and potentially reduce evasive manoeuvres that can lead to SMV and sideswipe collisions.

Some locations were identified to have MERGE signs installed, even though not required by OTM Book 6. However, the City may opt not to remove these signs, given the overall geometry of the RHVP and its merging areas, as well as the presence of vegetation between some on-ramps and the adjacent mainline, merging traffic conditions may not be obvious to some drivers.

Finally, as discussed in Section **5.2.2**, some on-ramps present vegetation that may restrict the ability for drivers on the mainline to see vehicles approaching from the ramp. The City should consider trimming the vegetation in these areas low enough so approaching vehicles are visible.

The estimated cost to install the two 'Merge' signs is \$1,000; vegetation trimming is expected to be undertaken as part of regular maintenance activities, therefore no additional cost is associated.

7.1.4.3 Permanent Recessed Pavement Markers (PRPMs)

PRPMs are delineation devices that are often used to improve preview distances and guidance for drivers in inclement weather and low-light conditions. Given the wet surface and rainy weather trend in collisions along the RHVP, combined with the curvilinear geometry of the roadway, PRPMs have the potential to positively affect the collision experience on the roadway as well as increase driver

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security. This countermeasure had been recommended in the previous study, conducted in 2013, and was implemented in the southern section of the study area. Installing PRPMs in the northern section would also provide consistency throughout the entire length of the RHVP and improve night-time visibility for drivers, since no illumination is present.

The CMF for this countermeasure is 0.67 for nighttime collisions²⁵, and the estimated installation cost is \$20,000 per kilometre.²⁶

7.2 Potential Countermeasures for Mitigating Median Related Collisions

7.2.1 Median Barrier

7.2.1.1 Evaluation of the Benefits and Drawbacks of Providing a Median Barrier

Median barriers are very effective in preventing median crossover collisions, which are generally fatal or high severity collisions. Median barriers do not eliminate the collisions. However, they are very effective in mitigating outcomes of collisions by reducing severity of collisions. Median barriers generally result in an increase in overall collisions, which are generally PDO. Therefore, these barriers should be evaluated for the potential benefit as compared to drawbacks.

The collision review revealed that median crossover collisions correspond to 13% of all median related collisions in the study area, including 1 fatal, 9 injury, and 7 PDO collisions within 7.5 years (2008 to July-2015), amounting to a societal cost of approximately \$ 2.17 M based on current MTO's societal costs.²⁷

The benefits and drawbacks of providing a median barrier along the entire section of the RHVP within the study area were evaluated. The prevailing guidance in Ontario with respect to roadside barriers is the MTO Roadside Safety Manual (RSM). The RSM provides a median barrier warrant guide for divided highways, shown in **Figure 29**. The assessment is based on median width, (measured between edges of driving lanes) and predicted 10 years traffic volume (AADT).²⁸

²⁵ NCHRP Report 518 – Safety Evaluation of Permanent Raised Pavement Markers. Transportation Research Board. 2004.

²⁶ MTO SafetyAnalyst tool.

²⁷ Societal cost of a fatal collision is \$1,582,000, an injury collision is \$59,000 and a PDO collision is \$8,000

²⁸ MTO's Roadside Safety Manual, Figure 2.10.1

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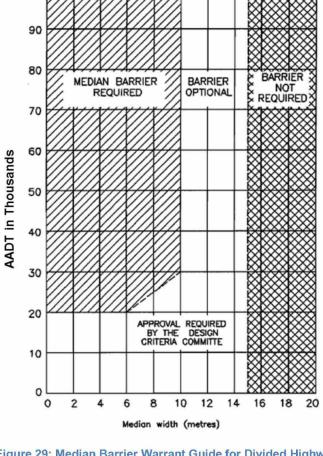


Figure 29: Median Barrier Warrant Guide for Divided Highways

According to the figure, median barriers are only warranted for highways with AADTs of 20,000 and higher and median widths less than 10.0 metres. For median widths between 10.0 metres and 15.0 metres, median barriers are optional and for median widths greater than 15.0 metres, median barriers are deemed "not required".

The guidance indicates that, within the optional range, the barriers should be only installed in special circumstances such as for highways with identified median crossover collision problem, where an identified geometric deficiency cannot be readily corrected, or for continuity with adjacent sections.²⁹

The TAC Geometric Design Guide for Canadian Roadways (TAC) also provides a similar median barrier warrant guide. It also suggests conducting benefit-cost analysis for implementing median barriers.

CIMA conducted warrants for implementing median barriers within the study area by utilizing the MTO's median warrant guide demonstrated in Figure 29 and utilizing the following data:

+ AADT - 59,123 based on year 2011;

²⁹ Roadside Safety Manual, Section 2.10.1

- + Median Width 15.0 m to 22.7 m (measured using aerial photography); and
- + The history of median cross-over collisions.

Based on the AADT and the median width, the RHVP is in the area "not required". However, based on a history of median crossover collisions, the study area should be considered for providing a median barrier. TAC suggests conducting a benefit-cost analysis to the median barrier problem.³⁰

CIMA conducted a detailed analysis to determine various feasible types of median barrier systems for the study area and also performed a cost-benefit analysis to select the best alternative for the study area.

The selection of best type of median barrier system within the study area was undertaken in the following steps:

- + Determination of feasible barrier types for the study area;
- Development of alternatives; and
- + Selection of the best alternative based on cost-effective analysis.

7.2.1.2 Determination of Feasibility of Barrier Types for the Study Area

CIMA conducted an analysis of various types of prevailing median barrier technologies in Canada based on MTO's Roadside Safety Manual and AASHTO Roadside Design Guide to determine feasible barrier types for the RHVP. The results of the analysis along with the characteristics of each barrier type that makes it suitable or unsuitable for the RHVP are included in **Table 11**.

³⁰ TAC Geometric Design Guide for Canadian Roadways, Section 3.1.6.3



Table 11: Analysis for the Feasibility of Various Barrier Systems for the Linc

Type of Median Barrier	Relevant Characteristics	Feasibility for the RHVP
6 Cable (Wood Post)	 Not approved for use on high speed facilities 	Not feasible for the RHVP due to high speed
6 Cable (Steel Post)	 Recommended for AADT < 20,000 Ideal for median width greater than 9 m 	Not feasible for the RHVP due to high AADT
Median Box Beam Barrier	 Restricted to facilities with posted speeds less than 80 km/h Recommended for AADT < 30,000 	Not feasible for the RHVP due to high AADT and speed
Median Steel Beam Guide Rail with Channel	 Recommended for AADT > 20,000 Can be installed in medians greater than 9.0 m 	Feasible for the RHVP
Standard Concrete Barrier and Ontario "Tall Wall"	 No curbs, gutters or ditches allowed between the barrier and the driving lanes Area directly in front of barrier must be paved Should not be located more than 4.0 metres from the edge of the driving lane (maximum width of median to be 9.0 metres) 	Not feasible for the RHVP due to a median width larger than 9.0 metres
High-Tension Cable Barrier*	 2011 AADT range – 25,820 to 46, 200 Posted Speed – 110 km/h 	Feasible for the RHVP

^{*}Based on Successful Alberta experience in addressing cross median collisions by using the High-Tension Cable Barrier system on Highway 2 between Airdrie and Red Deer

As can be seen in **Table 11**, Median Steel Beam Guide Rail, and High-Tension Cable Barriers are feasible options for providing a median barrier for the RHVP. It should be noted that all kinds of barrier systems can be transitioned from one type to another by using standard methods. The guidance is available in MTO's Roadside Manual and AASHTO Roadside Design Guide. The appropriate types of transitions should be determined at the detailed design stage.

Based on the feasible barrier options detailed above, various alternatives available for providing a median barrier on the RHVP are as follows:

Alternative 1: Standard Steel Beam Guide Rail with Channel System on Both Sides of the Median

Provide Standard Steel Beam Guide Rail with Channel systems on both sides of the median. It should be noted that for medians, steel beam guide rails are provided with channel elements to increase the stiffness of the installation³¹. An example Standard Steel Beam Guide Rail with Channel System installed on a median on Highway 403 is demonstrated in Figure 30.

³¹ Section 4.3.5, MTO's Roadside Safety Manual



Figure 30: Example of standard steel beam guide rail with channel

Alternative 2: High Tension Cable Barrier on Both Sides of the Median

Provide High-Tension Cable Barrier on both sides of the median. An example of High Tension Cable Barrier installed on both sides of a median location on Highway 2 in Alberta is demonstrated in Figure 31.



Figure 31: Example of high tension cable barrier

Estimated costs for these alternatives are provided in Appendix C.

7.2.2 Guide Rail Leaving End Treatments

As highlighted in **Section 5.1**, "fishtail" leaving end treatments at some guide rails protecting bridge structures are located within the clear zone of the opposite direction of traffic, and the approaching end treatment in the opposite direction does not provide the required length of need, exposing vehicle occupants to a spearing hazard. The City should consider replacing the existing extruder and "fishtail" end treatments with CAT-350 attenuators at bridge structures, which is the recommended end treatment according to the RSM. The City may also choose similar options such as the SMART crash cushion (OPSD 923.483). The estimated cost is \$7,000 per unit.

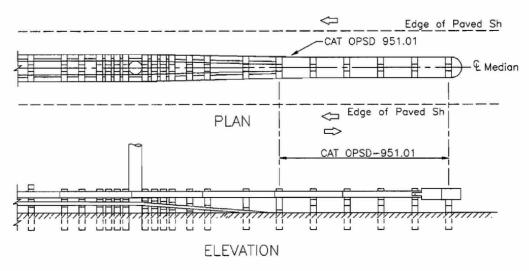


Figure 32: Steel beam protection of structures located on the median³²

Additionally, as identified in **Section 5.4.2**, **Table 7**, several guide rail approach end treatments were found to have missing, damaged, or obscured OBJECT MARKER signs (Wa-33). These signs should be installed, replaced, or made visible by trimming the vegetation, respectively. The estimated cost is approximately \$500 per sign.

8. Benefit-Cost Analysis

In order to assist in determining the effectiveness of a countermeasure, collision modification factors (CMFs) were utilized where available. CMFs were examined from a number of sources including the HSM, the FHWA CMF Clearinghouse³³. The CMF of a countermeasure can assist in determining safety benefits of the countermeasure over the analysis period by calculating the expected number of collisions reduced.

The Benefit-Cost (B/C) ratio is the ratio of the present value of the safety benefit of a given countermeasure calculated for its service life to the present value of the cost of the countermeasure. A B/C ratio of greater than 1.0 represents an economically efficient countermeasure. In this criterion,

³² MTO's Roadside Safety Manual, Figure 2.8.6. OPSD number displayed in the Figure is outdated. Current applicable version is OPSD 922.330.

³³ http://www.cmfclearinghouse.org/

the monetary value of the collisions reduced as a result of implementation of a countermeasure is considered as the benefit of the countermeasure. For the purposes of calculating the societal costs of collisions, MTO costs were utilized. The benefit-cost analysis is detailed in the following sections.

8.1 Median Barrier

The benefit-cost analysis of median barriers was conducted in two steps. In the first step the analysis was conducted to compare different alternatives to select the possible alternative. In the second step, the analysis was conducted to obtain the overall B/C of the preferred alternative.

In order to select the best possible alternative of installing a median barrier from the available alternatives detailed in Section 7.2.1.2, an incremental benefit-cost analysis was conducted. Barrier systems have an assumed service life of 30 years. Median barriers generally eliminate all cross-over outcomes of collisions, including cross-over fatal collisions. However, median barriers tend to increase overall number of collisions, primarily PDO collisions.

The cost-effective analysis to compare both alternatives was conducted using a benefit-cost ratio (B/C) and on incremental basis, to realize the greatest benefit at the least cost. In this methodology, the alternatives are first ordered from lowest to highest cost. The incremental benefits of the second over the first are calculated by dividing the incremental costs of the second over the first. If the ratio is greater than 1, then alternative 2 is preferred. If the ratio is less than 1 then alternative 1 is superior alternative. The better of these is then compared with the next most costly alternative and so on. The following steps were performed for calculating B/C:

- Estimate life cycle cost of each alternative including capital cost and operating and maintenance cost. The capital cost includes the purchase price, installation cost, and the activities that would not take place otherwise, such as paving, modifications to drainage, etc.)Operating and maintenance cost includes recurring cost of operating and maintaining the system during its useful life;
- Estimate the societal cost³⁴ of collision for each year that will be prevented by installing the barrier system as estimated over the service life of the barrier system. This was considered as benefit;
- + Estimate the societal cost of less severe collisions for each year involving the barrier system, after the barrier system has been put into place. This was considered as negative benefit; and
- Calculate B/C by dividing the present value of the societal benefits by the present value of the life cycle cost.

The methodology with detailed assumptions, calculations and results of the analysis are provided in Appendix A. The results of the analysis are presented in Table 12 and Table 13.

The life cycle cost of each alternative, as shown in Table 12, includes capital cost and operating and maintenance cost. Further details are available in Appendix A. It should be noted that alternatives in Table 12 are ordered from lowest to highest life-cycle cost for conducting incremental benefit cost

³⁴ Societal costs of collisions used were based on MTO's current costs of collisions (\$ 1,582,000 for a fatal collision, \$ 59,000 for an injury collision, and \$ 8,000 for a PDO collision)

analysis. The Monetary Benefit of implementing each alternative, as shown in Table 13, includes the estimate of societal cost of collisions that will be reduced by installing the barrier system as estimated over the service life of the barrier system.

Table 12: Costs and benefits of median barrier alternatives

Alternative	Life Cycle Cost	Monetary Benefit
Do-Nothing	\$0	\$ 0
Alternative 2: High Tension Cable Barrier	\$2,528,400	\$ 13,290,077
Alternative 1: Steel Beam Guide Rail	\$3,088,500	\$ 11,259,159

Table 13: Results of cost-effective analysis

Comparison	Incremental Cost	Incremental Benefit	Incremental B/C	Preferred Option
Alternative 1 vs. Do-Nothing	\$2,528,400	\$ 13,290,077	5.26	Alternative 1
Alternative 2 vs. Alternative 1	\$560,100	-\$2,030,917	-3.63	Alternative 1

As demonstrated in **Table 13**, the only positive increase of more than 1 in incremental B/C is for Alternative 2. Therefore, Alternative 2 consisting of High-Tension Cable Barrier on both sides of the median is the preferred alternative.

The overall B/C of Alternative 2 consisting of High-Tension Cable Barrier on both sides of the median is included in **Table 14**.

Table 14: B/C for High-Tension Cable Barrier

Countermeasure	Target Collisions	Severity	Expected Collisions Before	Expected Crash Reduction	Benefit (\$)	Cost (\$)	Overall B/C
Install Median	Median	Fatal	6.22	4.35			
Barrier System ³⁵	Related Injury	Injury	161.69	126.24	13,290,077	2,528,400	5.26
	Collisions	PDO	205.22	-130.59			

As can be seen in **Table 14**, Alternative 2 is expected to provide a B/C of 5.26 and is a cost-effective option.

8.2 Other Countermeasures

The results of the B/C Analysis for other countermeasures are provided in **Table 15**. The detailed calculations are included in Appendix C.

³⁵ Reduction in collisions was estimated based on the proportions of severity of collisions involving High Tension Cable Barriers as identified in the study the results of the study "High Tension Cable Barrier Performance Evaluation Study for Highway 2 in Alberta"

Countermeasure	Target Collisions (Severity)	CMF	Expected Collisions Before	Expected Crash Reduction ³⁶	Benefit (\$)	Cost (Life Cycle)	B/C
Speed Enforcement & Feedback Signs	AII (AII)	0.88	321.73	38.61	1,178 M	\$100,000 (10 years)	11.78
Illumination	Nighttime (All)	0.97	1,728.47	51.85	2,247 M	\$810,000 (20 years)	2.77
Permanent Recessed Pavement Markers	Nighttime (All)	0.67	68.65	22.66	1,236 M	\$98,800 (5 years)	12.51
Oversized Speed Limit Signs				CMF Not Ava	ilable		
Slippery When Wet Signs Only				CMF Not Ava	ilable		
Slippery When Wet Signs with Rain Activated Flashing Beacons				CMF Not Ava	ilable		
'Merge' Signs				CMF Not Ava	ilable		
Trim Vegetation Near On-Ramps				CMF Not Ava	ilable		
Guide Rail End Treatments				CMF Not Ava	ilable		

9. Conclusion

CIMA was retained by the City of Hamilton to evaluate safety and operational performance of the RHVP and to determine any mitigation measures to improve parkway's performance and reduce number and severity of collisions with special emphasis on median related collisions. CIMA conducted a thorough investigation of the RHVP including investigation of road-related factors, roadside safety assessment, and evaluated the necessity of providing a median barrier and other countermeasures to enhance the safety of road users. After completing the above review, a list of potential countermeasures was developed and a benefit-cost analysis was conducted to determine the cost effectiveness of countermeasures. The following sections provide options that should be given consideration for implementation by the City and a summary table with construction cost and suggested timing for installation.

9.1 Options for Consideration

The following improvements should be considered for implementation on the RHVP.

³⁶ Numbers shown are up to two decimals only. Dollar amounts shown may look slightly off due to high societal costs.

9.1.1 Install Speed Feedback Signs with Enforcement

The installation of two sets of two speed feedback signs should be considered for the RHVP (two sets in each direction, one sign on each side of the road). The recommended locations for the installation of these signs are:

- + Northbound direction:
 - Upstream of the curve between Greenhill Avenue and King Street; and
 - Between the King Street on-ramp and the Queenston Road off-ramp.
- + Southbound direction:
 - · Upstream of the curve between Barton Street and Queenston Road; and
 - Between the Queenston Road on-ramp and the King Street off-ramp.

The purpose of these signs is to influence drivers to reduce speeds and, consequently, collision frequency and severity, especially in the vicinity of the King Street and Queenston Road interchanges. The estimated cost of this countermeasure is \$100,000, providing a B/C of 11.78.

It should be noted, however, that the presence of acceleration/deceleration lanes where the signs would be located may reduce their conspicuity for drivers on the mainline right lane. As an alternative, the City may consider to install overhead speed feedback signs.

For increased effectiveness, it is important that the installation of the speed feedback signs be accompanied by regular speed enforcement by Hamilton Police.

The City may also consider investigating the technical feasibility of integrating speed feedback messages (either individual or collective) with the planned ATMS project (refer to **Section 7.1.4.1**).

9.1.2 Install Oversized Speed Limit Signs

The purpose of oversized speed limit signs (90x120 cm) is to influence drivers to reduce speeds and, consequently, collision frequency and severity. A benefit-cost analysis for this countermeasure was not conducted as a CMF for this countermeasure is not available. The estimated cost of this countermeasure is \$7,000 (14 signs at \$500 per sign).

9.1.3 Conduct Pavement Friction Testing

In order to determine whether low pavement friction may be contributing to collisions (especially wet surface), the City should consider conducting pavement friction tests under normal conditions as well as under typical wet pavement conditions encountered on the RHVP. Special focus should be given to the curves near the King Street and Queenston Road interchanges (**Figure 33**). The estimated cost to conduct friction testing is \$40,000. Depending on the test results, the City will be able to determine if further action is required.

Figure 33: Critical RHVP section for friction testing

9.1.4 Install Permanent Recessed Pavement Markers (PRPMs)

As an alternative to illumination, the City may consider installing PRPMs in the northern section of the RHVP (i.e. north of Greenhill Avenue). The installation of PRPMs is expected to reduce collisions under low-visibility conditions (nighttime and inclement weather), as well as provide consistency throughout the entire length of the RHVP (PRPMs are already present in the southern section, as a result of a previous study conducted in 2013). The estimated cost of installing PRPMs in the north section is \$247,000, providing a B/C of 5.

9.1.5 Install Special Oversize Curve Warning Signs

In order to increase drivers' awareness of the curves near the King Street and Queenston Road interchanges, where a high concentration of collisions was found, the City should consider installing special oversize curve warning signs (900x900 mm).³⁷ A benefit-cost analysis for this countermeasure was not conducted as a CMF for this countermeasure is not available. The estimated cost of this countermeasure is \$8,000 (16 signs at \$500 per sign).

9.1.6 Install 'Slippery When Wet' and 'Bridge Ices' Signs

The City should consider installing Wc-105 SLIPPERY WHEN WET signs, combined with Wc-5t SLIPPERY WHEN WET tab sign along the study area, in intervals of 1 km or less, in accordance with OTM Book 6 guidelines and to warn drivers of the increased risk of collisions under wet surface conditions. To further highlight the hazard, the signs in the vicinity of the King Street and Queenston Road interchanges may be supplemented with flashing beacons activated by a rain sensor. A benefit-cost analysis for this countermeasure was not conducted as a CMF for this countermeasure is not available. The estimated cost of this countermeasure is \$8,000 if only signs are installed (16 signs at \$500 per sign), or \$128,000 if rain activated flashing beacons are added to 4 signs in the critical section. An alternative, however, is to display 'slippery when wet' messages via the City's planned ATMS project (refer to **Section 7.1.4.1**), which would absorb at least part of this costs.

Additionally, the existing 'Slippery When Wet' signs installed at the two bridges (between Mud Street and Greenhill Avenue, and between Barton Street and the north end of the study area) should be replaced with WC-23 BRIDGE/ROAD ICES signs (MUTCD for Canada), at an estimated cost of

³⁷ This sign size is not available in the current version of OTM Book 6, however it will be included in the updated version.

\$2,000 (4 signs at \$500 per sign). A benefit-cost analysis for this countermeasure was not conducted as a CMF for this countermeasure is not available.

9.1.7 Install Merge' Signs and Trim Vegetation at On-Ramps/Merging Areas

As discussed in **Section 7.1.4.2**, Wa-16 MERGE warning signs should be considered for installation at the Queenston Road E/W-N and Barton Street E/W-S on-ramps to increase driver awareness of the possibility of merging vehicles and potentially reduce evasive manoeuvres that can lead to SMV and sideswipe collisions. A benefit-cost analysis for this countermeasure was not conducted as a CMF for this countermeasure is not available. The estimated cost of this countermeasure is \$1,000 (2 signs at \$500 per sign).

Additionally, vegetation at the areas between the mainline and some on-ramps should be regularly trimmed and maintained low enough so vehicles approaching from the ramp are visible to drivers on the mainline. This countermeasure is expected to be undertaken as part of regular maintenance activities, therefore no additional cost is associated to it.

9.1.8 Upgrade Guide Rail End Treatments and Improve Object Marker Signs

The City should consider replacing the existing extruder and "fishtail" end treatments of guide rails protecting the bridge structures at Greenhill Avenue, Mount Albion Road, King Street, Queenston Road, and the railway overpass south of King Street, with CAT-350 attenuators, SMART crash cushions or other similar alternatives that comply with the MTO Roadside Safety Manual recommended configuration.

This countermeasure would not apply if and/or where a continuous median barrier is installed. There is no CMF available for upgrading these end treatments, and the estimated cost is \$70,000 (2 units x 5 locations at \$7,000 per unit).

Additionally, the OBJECT MARKER signs (Wa-33) identified in **Section 5.4.2**, **Table 7** as being missing or damaged should be installed or replaced, respectively. The estimated cost is \$3,500 (7 signs at \$500 per sign). The signs identified as being obscured by vegetation should be made visible by trimming the vegetation. The cost is expected to be included in the City's regular maintenance activities.

9.1.9 Install High - Tension Cable Median Barrier System

Two median barrier system alternatives for the RHVP were evaluated. The preferred alternative for the RHVP is High-Tension Cable Median Barrier System with present value cost (including the cost of maintenance for 30 years) of \$ 2.53 M. The alternative is expected to provide a B/C of 5.26.

It should be noted that the purpose of median barriers is to eliminate median cross-over outcomes of collisions. The installation of a barrier does not necessarily result in fewer collisions, but reduces the severity of collisions. 53% of median related collisions occurred under wet surface condition and a median barrier would come into play after the driver has already lost control. Therefore, it is possible that a reduction of median related collisions will be achieved by addressing speed and wet surface

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related collisions. Collisions could be potentially prevented by using other countermeasures as detailed from Section 9.1.1 to 9.1.8. It would be prudent to implement these countermeasures before implementing median barriers and monitoring their safety performance. It is possible that these countermeasures may improve the safety of the RHVP and reduce the potential benefit of providing a median barrier. The B/C calculations for median barrier as detailed above do not consider the effect of those potential countermeasures.

9.1.10 Install Continuous Illumination

The collision review found that the proportion of non-daylight collisions is higher than provincial and municipal averages, and a review of MTO's policy and warrant indicated that continuous illumination is warranted in the study area. The estimated installation cost for providing continuous illumination is \$810,000, providing a B/C of 2.77. However, other factors should be taken into account in the decision to provide illumination along the RHVP mainline, including the context of the surrounding roadway network. For example, while illumination may improve visibility at night, it may also create the situation where drivers' eyes must adjust back to darkness when leaving the illumination portion of the roadway. Currently, the Lincoln Alexander Parkway present only partial interchange illumination, and, considering approval conditions established in the Environmental Assessment, installing illumination could create a situation where, for example, northbound drivers enter a short illuminated section at the south end of the RHVP, followed by a non-illuminated section, and finally back to an illuminated section. For these reasons, illumination is does not appear to be the most adequate solution for the RHVP. All illumination must be assessed in relation to the environmental approval constraints which exist, as well as cost of installation and maintenance implications. Therefore, the decision to provide roadway lighting should be looked at using sound criteria, but illumination decisions must also be done in the context of the surrounding roadway network.

9.2 Summary Table

Table 16 summarizes a prioritized list of countermeasures. The priority has been assigned based on ease of implementation, importance, ability to reduce collisions, and ability to reduce severity. The recommended timing for implementation of each of the countermeasure is also provided in the table.

As indicated in Section 9.1.1, the installation of median barrier should only be considered after evaluating the performance of short –term countermeasures.

Table 16: Countermeasures Summary Table

Table I	o. Countenneasures c	, , , , , , , , , , , , , , , , , , , ,	
Countermeasure	Construction Cost (\$)	Timeline	Comment
Conduct Speed Enforcement	w	Ongoing	
Trim Vegetation at On-Ramps	-	Ongoing	
Install Oversized Speed Limit Signs	\$7,000	Short Term	
Install 'Slippery When Wet Signs'	\$8,000	Short Term	
Install Special Oversize Curve Warning Signs	\$8,000	Short term	16 signs in the vicinity of King and Queenston interchanges
Supplement 'Slippery When Wet Signs' with Rain Activated Flashing Beacons*	\$120,000	Short Term	4 signs in the vicinity of King and Queenston interchanges
Install 'Merge' signs	\$1,000	Short Term	
Install 'Bridge Ices' signs	\$2,000	Short Term	
Upgrade median guide rail end treatments	\$70,000	Short Term	
Install, replace or trim vegetation obscuring Wa-33 signs at guide rail end treatments	\$3,500	Short Term	
Conduct Pavement Friction Testing	\$40,000	Short Term	
Install Speed Feedback Signs*	\$120,000	Short Term	In conjunction with regular speed enforcement; costs may be higher depending on design
Install PRPMs from Greenhill to QEW	\$247,000	Short Term	
Short Term Total	\$430,300		
Install High-Tension Cable Guide Rail	\$2,528,400	Long Term	Consider effect on median related collisions of countermeasures to reduce speed and wet surface collisions
Install Continuous Illumination	\$810,000	Long Term	Requires sound evaluation in the context of the surrounding network and environment. An Environmental Assessment will be required.
Grand Total	\$4,395,200		

^{*} Implementation costs may be different if integrated with the City's planned ATMS project, for which the estimated cost is \$600,000.

Appendix A: Over-Representation Analysis

Over-Representation Analysis

Theoretical Basis

The objective of the over-representation analysis is to help identify which collision factors are over-represented. In other words, this analysis is performed to identify the relationship between collisions and the characteristics of a given location. This process assists in identifying contributing factors at each location. If suitable countermeasures are selected to address the contributing factors, the chance of success significantly increases.

The over-representation analysis is based on the Chi-Square statistical test. To determine if a collision contributing factor is over-represented in collisions at a specific location, both the overall characteristics and the individual category must be found to have a computed value of Chi-Square exceeding the critical theoretical value.

Overall Characteristic

Overall characteristics include the following:

- Collision Classifications;
- Collision Impact Type;
- Day of Week; and
- Season.

The computed value of Chi-Square is calculated using Equation 1, as shown below:

$$\chi^2 = \sum_{i=1}^n \frac{(o_i - E_i)^2}{E_i}$$
 Eq. 1

Where:

O_i is the observed collision frequency;

n is the total number of categories for the characteristic variable; and

 E_i is the expected collision frequency, found by multiplying the total observed collisions at the location with the overall percentage (proportional distribution) of collisions in the category (i.e. A site with 10 observed collisions within a group with 70% as the overall percentage of PDO collisions would have an expected collision frequency of 7).

As shown in Equation 7, the computed Chi-Square value is a measure of discrepancy between the observed and expected collision frequencies. A Chi-Square value of 0 represents no discrepancies between the observed and expected collision frequencies, while a larger value of Chi-Square represents a larger discrepancy.

The computed value of Chi-Square is then compared to the lower and upper theoretical Chi-Square values for the appropriate degrees of freedom and a specified significance level, according to Equation 2.

$$\chi^2_{\text{lower}} \le \chi^2 \le \chi^2_{\text{upper}}$$
 Eq. 2

Over-Representation Analysis

If Equation 2 is false, in other words if the value of the computed Chi-Square is less than the lower theoretical value, or greater than the upper theoretical value, the overall characteristic is found to be over-represented, and the analysis is taken to the individual category level.

The specified significance level for this project was chosen to be 0.05, equivalent to a 95% level of significance. The number of degrees of freedom is calculated using Equation 3 below:

$$df = n - 1$$
 Eq. 3

The following table shows the degrees of freedom for each characteristic, along with the corresponding critical theoretical values of Chi-Square for a level of significance of 0.05.

Collision Characteristics	Number of Variable Categories (n)	Degrees of Freedom (n-1)	Lower Theoretical χ^2 Value	Upper Theoretical χ^2 Value
Collision Classifications	3	2	0.051	7.38
Light Condition	2	1	0.001	5.02
Environment Condition	7	6	1.24	14.45
Surface Condition	6	5	0.83	12.83
Collision Impact Types	7	6	1.24	14.45
Initial Source of Impact	7	6	1.24	14.45
Driver Action	5	4	0.48	11.14

Individual Category

The individual categories for each overall characteristic considered to conduct the over-representation analysis are presented in the table below.

Overall Characteristics	Individual Categories
Collision Classification	Fatal, Injury, PDO
Light Condition	Daylight, Non-Daylight
Collision Impact Type	Angle, Head On, Rear End, Sideswipe, Turning Movement, SMV, Other
Environment Condition	Clear, Rain, Snow, Freezing Rain, Strong Wing, Fog / Mist / Smoke / Dust, Drifting Snow
Surface Condition	Dry, Wet, Loose Snow, Packed Snow, Ice, Slush
Collision Impact Type	SMV, Overtaking, Animal/Peds, Head On, Angle, Rear End, Sideswipe
Driver Action	Lost Control, Driving Properly, Speed Too Fast, Following Too Close, Improper Lane Change

Over-Representation Analysis

Once the overall characteristic has been determined to be over-represented, the individual category is analyzed by calculating the Chi-Square value of each category among the characteristic, using Equation 4.

$$\chi_k^2 = \frac{(O_k - E_k)^2}{E_k} + \frac{(X_k - Y_k)^2}{Y_k}$$
 Eq. 4

Where:

$$X_k = T_k - O_k$$
 and $Y_k = R_k - E_k$

 O_k is the observed collision frequency for individual collision characteristic category k;

 E_k is the expected collision frequency for individual collision characteristic category k;

 T_k is the observed total collision frequency at the location; and

 R_k is the expected total collision frequency at the location.

As shown in Equation 4, the computed Chi-Square value is again a measure of the discrepancy between the observed and expected collision frequencies for the collision characteristic category *k*. A Chi-Square value of 0 represents no discrepancies between the observed and expected collision frequencies, while a larger value of Chi-Square represents a larger discrepancy.

The computed value of Chi-Square is then also compared to the lower and upper theoretical Chi-Square values for the appropriate degrees of freedom and a specified significance level, according to Equation 2. If Equation 2 is false, the individual category k is found to be over-represented.

The specified significance level remains 0.05 and the number of degrees of freedom is 1, which gives a lower theoretical Chi-Square value of approximately 0.00, and an upper theoretical Chi-Square value of 5.02.

Over-Representation Analysis

Results - Light Condition

Light Condition	Ontario			Hamilton		
Light Condition	Total	Daylight	Non-Daylight	Total	Daylight	Non-Daylight
Observed (Oi)	473	300	173	473	300	173
Other Observed (Xk)	-	173	300	-	173	300
Database (Ontario/Hamilton)	172639	119759	52880	2927	2188	739
Expected (Ei)	473	328.12	144.88	473	353.58	119.42
Other Expected (Yk)	-	144.88	328.12	-	119.42	353.58
Chi-Value (Oi-Ei)^2/Ei	-	2.41	5.46	-	8.12	24.04
Other Chi-Value (Xk-Yk)^2/Yi	-	5.46	2.41	-	24.04	8.12
Total Chi-Value	7.87			32.16		
Lower_Chi-Value	0.001				0.001	Ĺ
Upper_Chi-Value	5.02			5.02		
Total Over-rep?	Yes				Yes	
Category Chi-Values	-	7.87	7.87	-	32.16	32.16
Category Over-rep?	-	No	Yes	-	No	Yes

Results - Environment Condition

					Ontario								Hamilton			
Environment Condition					Freezing	Strong	Fog Mist	Drifting					Freezing	Strong	Fog Mist	Drifting
	Total	Clear	Rain	Snow	Rain	Wing	Smoke Dust	Snow	Total	Clear	Rain	Snow	Rain	Wing	Smoke Dust	Snow
Observed (Oi)	330	275	16	28	3	2	1	5	330	275	16	28	3	2	1	5
Other Observed (Xk)	-	55	314	302	327	328	329	325	-	55	314	302	327	328	329	325
Database (Ontario/Hamilton)	172306	136034	18793	13046	1558	398	1492	985	3436	2708	457	190	16	20	32	13
Expected (Ei)	330	260.53	35.99	24.99	2.98	0.76	2.86	1.89	330	260.08	43.89	18.25	1.54	1.92	3.07	1.25
Other Expected (Yk)	-	69.47	294.01	305.01	327.02	329.24	327.14	328.11	-	69.92	286.11	311.75	328.46	328.08	326.93	328.75
Chi-Value (Oi-Ei)^2/Ei	-	0.80	11.10	0.36	0.00	2.01	1.21	5.14	-	0.86	17.72	5.21	1.39	0.00	1.40	11.27
Other Chi-Value (Xk-Yk)^2/Yi	-	3.01	1.36	0.03	0.00	0.00	0.01	0.03	-	3.18	2.72	0.31	0.01	0.00	0.01	0.04
Total Chi-Value					20.63				37.86							
Lower_Chi-Value					1.24				1.24							
Upper_Chi-Value					14.45				14.45							
Total Over-rep?	Yes							Yes								
Category Chi-Values	-	3.82	12.46	0.39	0.00	2.01	1.22	5.17	-	4.04	20.44	5.52	1.40	0.00	1.41	11.31
Category Over-rep?	-	No	No	No	No	No	No	Yes	-	No	No	Yes	No	No	No	Yes

Over-Representation Analysis

Results - Surface Condition

Road Surface Condition	Ontario								Hamilton							
Road Surrace Condition	Total	Dry	Wet	Loose Snow	Packed Snow	Ice	Slush	Total	Dry	Wet	Loose Snow	Packed Snow	Ice	Slush		
Observed (Oi)	471	208	239	8	4	9	3	471	208	239	8	4	9	3		
Other Observed (Xk)	-	263	232	463	467	462	468	í	263	232	463	467	462	468		
Database (Ontario/Hamilton)	171582	121339	30490	6375	3667	6406	3305	3417	2421	752	96	38	75	35		
Expected (Ei)	471	333.08	83.70	17.50	10.07	17.58	9.07	471	333.71	103.66	13.23	5.24	10.34	4.82		
Other Expected (Yk)	-	137.92	387.30	453.50	460.93	453.42	461.93	-	137.29	367.34	457.77	465.76	460.66	466.18		
Chi-Value (Oi-Ei)^2/Ei	-	46.97	288.18	5.16	3.66	4.19	4.06	ī	47.36	176.72	2.07	0.29	0.17	0.69		
Other Chi-Value (Xk-Yk)^2/Yi	-	113.44	62.27	0.20	0.08	0.16	0.08	-	115.11	49.87	0.06	0.00	0.00	0.01		
Total Chi-Value				352.21				227.30								
Lower_Chi-Value				0.83				0.83								
Upper_Chi-Value				12.83				12.83								
Total Over-rep?	Yes							Yes								
Category Chi-Values	-	160.41	350.45	5.36	3.74	4.35	4.14	-	162.47	226.59	2.13	0.30	0.18	0.70		
Category Over-rep?	-	No	Yes	No	No	No	No	-	No	Yes	No	No	No	No		

Results - Apparent Driver Action

				Ontario			Hamilton						
Apparent Driver Action		Lost	Driving	Speed	Following	Improper		Lost	Driving	Speed	Following	Improper	
	Total	Control	Properly	Too Fast	Too Close	Lane Change	Total	Control	Properly	Too Fast	Too Close	Lane Change	
Observed (Oi)	430	165	111	59	48	47	430	165	111	59	48	47	
Other Observed (Xk)	-	265	319	371	382	383	-	265	319	371	382	383	
Database (Ontario/Hamilton)	224518	19923	147890	16535	29974	10196	3870	488	2727	105	427	123	
Expected (Ei)	430	38.16	283.24	31.67	57.41	19.53	430	54.22	303.00	11.67	47.44	13.67	
Other Expected (Yk)	·	391.84	146.76	398.33	372.59	410.47		375.78	127.00	418.33	382.56	416.33	
Chi-Value (Oi-Ei)^2/Ei	-	421.66	104.74	23.59	1.54	38.65	-	226.32	121.66	192.04	0.01	81.30	
Other Chi-Value (Xk-Yk)^2/Yi	-	41.06	202.15	1.88	0.24	1.84		32.66	290.27	5.36	0.00	2.67	
Total Chi-Value				590.18			621.33						
Lower_Chi-Value				0.48			0.48						
Upper_Chi-Value				11.14			11.14						
Total Over-rep?	Yes						Yes						
Category Chi-Values	-	462.72	306.89	25.46	1.78	40.49	-	258.98	411.93	197.39	0.01	83.97	
Category Over-rep?	-	Yes	No	Yes	No	Yes	-	Yes	No	Yes	No	Yes	

Appendix B: Illumination Warrants

FORM 2 FREEWAY - CONTINUOUS ILLUMINATION

Highway:	Red Hill Valley Parkway	WP No.:
	•	

Limits: from: Lincoln M. Alexander Parkway to: Greenhill Name: GB + KH Date: August 31, 2015

2 pages

CLASSIFICATION			UNLIT	LIGHT	DIFF	SCOR							
FACTOR	1	2	RATING (I)	4	5	WEIG HT (A)	ED WEIG HT (B)	(A - B)	E [RATIN G X (A - B)]				
Geometric Factors No. of Lanes (2- way)	4	5	6	7	8	1.0	0.5	0.5	1.00				
Lane Width (m)	> 3.75	3.75	3.66	3.50	< 3.50	3.0	2.5	0.5	1.50				
Median Width (m)	> 15.0 or barrier		10.0 - 15.0		< 10.0	1.0	0.5	0.5	1.50				
Shoulders (m)	3.5	3.25	3.0	2.75	2.5	1.0	0.5	0.5	2.50				
Slopes	7:1	6:1	5:1	4:1	< 4:1	1.0	0.5	0.5	2.00				
Critical Curves m (deg.)	>3,500 (< 1/2°)	3,500- 1,800 (2 - 1°)	1,799-850 (1.1 - 2°)	849-600 (2.1 - 3°)	599-450 (3.1 - 4°)	13.0	4.5	8.5	34.0				
Grades (vertical)	< 3%	3 - 3.9%	4 - 4.9%	5 - 6.9%	7%	3.2	2.8	0.4	0.80				
Interchange Spacing (km)	>3.0	2.1 - 3.0	1.6 - 2.0	1.0 - 1.5	< 1.0	4.0	1.0	3.0	12.0				
							Geometric Total						55.30
Operational Factors Level of Service (ii) (any dark hour)	А	В	С	D	E, F	6.0	1.0	5.0	25.0				
							Operational Total		25.0				
Environmental Factors % Development	0%	25%	50%	75%	100%	3.5	0.5	3.0	3.0				
Illumination adjacent to Freeway	none	0 - 40%	41 - 60%	61 - 80%	essentiall y continuo us	3.0	1.0	2.0	2.0				
							Environmental Total		5.0				

FORM 2 FREEWAY - CONTINUOUS ILLUMINATION

 Highway:
 Red Hill Valley Parkway
 WP No.:

 Limits:
 from:
 Lincoln M. Alexander Parkway
 to:
 Greenhill
 Name:
 GB + KH
 Date:
 August 31, 2015

2 pages

CLASSIFICATION			RATING (I)	UNLIT WEIG	LIGHT	DIFF	SCOR E			
FACTOR	1	2	3	4	5	HT (A)	ED WEIG HT (B)	(A - B)	[RATIN G X (A - B)]	
Accidents % of Night-to-Total Accidents (3 yr. avg.) (iii)	< 20%	20 - 30%	31 - 40%	41 - 50%	> 50%	10.0	2.0	8.0	32.0	
							Accid To		32.0	
Benefit Cost Ratio (B/C)										
		GEOMETRIC OPERATION ENVIRONME ACCIDENTS	IAL TOTAL ENTAL TOTAL	= =	55.3 25.0 5.0 32.0					

SUM

117.3

80 points

POINTS

CONTINUOUS ILLUMINATION

WARRANTING CONDITION

Note: Worst case scenarios should be considered when assigning the ratings. For example, a section of roadway could have rush hour volumes during the hours of darkness in wintertime.

CIMA+ Note Level of Service is expected to reach E during winter season (PM peak hours can occur during dark hours)

i. A rating of between 1 and 5 shall be assigned for each factor in the FORM depending on the conditions that are encountered by motorists on the roadway. The higher the rating, the more critical the need for illumination with regard to that particular factor.

ii. Use LOS methodology approved by the MTO.

iii. For night-to-total accident ratio, accidents during darkness are used (including dusk/dawn).

iv. The number of points for the warranting condition is based on 50% of the total points attainable, if all factors were rated 5.

FORM 2 FREEWAY - CONTINUOUS ILLUMINATION

Highway:	Red Hill Valley	Parkw	ay		_ WP No	o. <i>:</i>	
Limits: from:	Greenhill	to:	QEW	Name:	GB + KH	Date:	August 31, 2015

2 pages Name: GB + KH Date: August 31, 2015									
CLASSIFICATION FACTOR		RATING (I)				UNLIT WEIG	LIGHT	DIFF (A -	SCOR E
PACTOR	1	2	3	4	5	HT (A)	ED WEIG HT (B)	B)	[RATIN G X (A - B)]
Geometric Factors No. of Lanes (2- way)	4	5	6	7	8	1.0	0.5	0.5	0.50
Lane Width (m)	> 3.75	3.75	3.66	3.50	< 3.50	3.0	2.5	0.5	1.50
Median Width (m)	> 15.0 or barrier		10.0 - 15.0		< 10.0	1.0	0.5	0.5	1.50
Shoulders (m)	3.5	3.25	3.0	2.75	2.5	1.0	0.5	0.5	2.50
Slopes	7:1	6:1	5:1	4:1	< 4:1	1.0	0.5	0.5	2.0
Critical Curves m (deg.)	>3,500 (< 1/2°)	3,500- 1,800 (2 - 1°)	1,799-850 (1.1 - 2°)	849-600 (2.1 - 3°)	599-450 (3.1 - 4°)	13.0	4.5	8.5	42.50
Grades (vertical)	< 3%	3 - 3.9%	4 - 4.9%	5 - 6.9%	7%	3.2	2.8	0.4	0.40
Interchange Spacing (km)	>3.0	2.1 - 3.0	1.6 - 2.0	1.0 - 1.5	< 1.0	4.0	1.0	3.0	12.0
				19			Geom Tot		62.90
Operational Factors Level of Service (ii) (any dark hour)	А	В	С	D	E, F	6.0	1.0	5.0	25.0
							Opera To	tional tal	25.0
Environmental Factors Development	0%	25%	50%	75%	100%	3.5	0.5	3.0	3.0
Illumination adjacent to Freeway	none	0 - 40%	41 - 60%	61 - 80%	essentiall y continuo us	3.0	1.0	2.0	2.0
							Environ To		5.0

FORM 2 FREEWAY - CONTINUOUS ILLUMINATION

Highway: Red Hill Valley Parkway WP No.: Limits: from: Greenhill QEWto: Name: GB + KH Date: August 31, 2015 2 pages UNLIT SCOR CLASSIFICATION LIGHT DIFF RATING (I) WEIG Ε **FACTOR** (A -HT ED B) [RATIN 1 2 3 4 5 WEIG (A) G HT X (A -(B) B)] **Accidents** < 20% 20 - 30% 31 - 40% 41 - 50% > 50% 10.0 2.0 8.0 % of Night-to-Total Accidents (3 yr. 24.0 avg.) (iii) Accidents 24.0 Total Benefit Cost Ratio (B/C) GEOMETRIC TOTAL 62.9 **OPERATIONAL TOTAL** = 25.0 **ENVIRONMENTAL TOTAL** = 5.0 ACCIDENTS TOTAL 24.0 SUM **POINTS** 116.9 80 points CONTINUOUS ILLUMINATION WARRANTING CONDITION

Note: Worst case scenarios should be considered when assigning the ratings. For example, a section of roadway could have rush hour volumes during the hours of darkness in wintertime.

CIMA+ Note Level of Service is expected to reach E during winter season (PM peak hours can occur during dark hours)

i. A rating of between 1 and 5 shall be assigned for each factor in the FORM depending on the conditions that are encountered by motorists on the roadway. The higher the rating, the more critical the need for illumination with regard to that particular factor.

ii. Use LOS methodology approved by the MTO.

iii. For night-to-total accident ratio, accidents during darkness are used (including dusk/dawn).

iv. The number of points for the warranting condition is based on 50% of the total points attainable, if all factors were rated 5.

Roadways and Interchanges ▼ Chapter 9

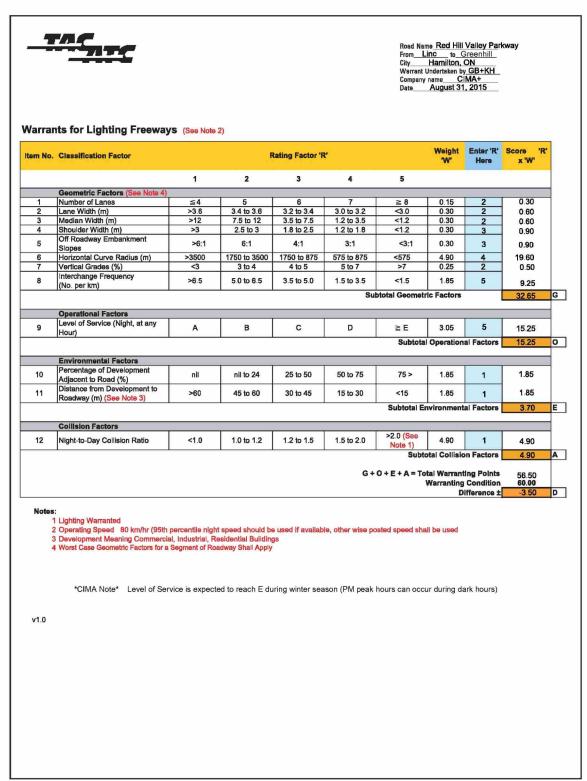


Figure 9-11 - Warrant for Lighting Freeways

January 2006 9-19

Roadways and Interchanges ▼ Chapter 9

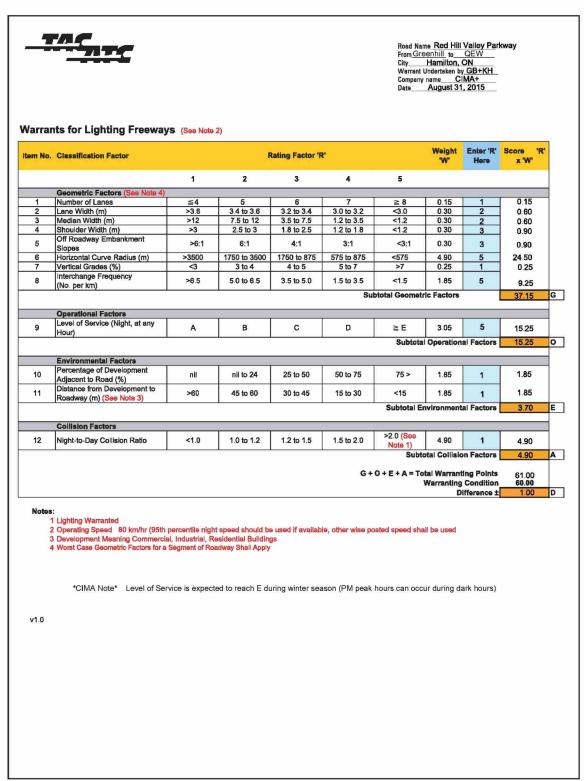


Figure 9-11 - Warrant for Lighting Freeways

January 2006 9-19

The selection of best type of median barrier system within the study area was undertaken in the following steps:

- + Determination of feasibility of barrier types for the study area;
- + Development of alternatives; and
- Selection of the best alternative based on cost-effective analysis.

Determination of Feasibility of Barrier Types for the Study Area

CIMA conducted an analysis of various types of prevailing median barrier technologies in Canada based on MTO's Roadside Safety Manual and AASHTO Roadside Design Guide to determine feasible barrier types for the RHVP. The results of the analysis along with the characteristics of each barrier type that makes it suitable or unsuitable for the RHVP are included in Table 1.

Table 1: Analysis for the Feasibility of Various Barrier Systems for the RHVP

Type of Median Barrier	Relevant Characteristics	Feasibility for the RHVP
6 Cable (Wood Post)	Not approved for use on high speed facilities	Not feasible for the RHVP due to high speed
6 Cable (Steel Post)	 Recommended for AADT < 20,000 Ideal for median width greater than 9 m 	Not feasible for the RHVP due to high AADT
Median Box Beam Barrier	 Restricted to facilities with posted speeds less than 80 km/h Recommended for AADT < 30,000 	Not feasible for the RHVP due to high AADT and speed
Median Steel Beam Guide Rail with Channel	 Recommended for AADT > 20,000 Can be installed in medians greater than 9.0 m 	Feasible for the RHVP
No curbs, gutters or ditches allowed between the barrier and the driving lanes Area directly in front of barrier must be paved Should not be located more than 4.0 metres from the edge of the driving lane (maximum width of median to be 9.0 metres)		Not feasible for the RHVP due to a median width larger than 9.0 metres
High-Tension Cable Barrier*	 2011 AADT range – 25,820 to 46, 200 Posted Speed – 110 km/h 	Feasible for the RHVP

*Based on Successful Alberta experience in addressing cross median collisions by using the High-Tension Cable Barrier system on Highway 2 between Airdrie and Red Deer

As can be seen in Table 1, Median Steel Beam Guide Rail, and High-Tension Cable Barriers are feasible options for providing a median barrier for the RHVP. It should be noted that all kinds of barrier systems can be transitioned from one type to another by using standard methods. The guidance is available in MTO's Roadside Manual and AASHTO Roadside Design Guide. The appropriate types of transitions should be determined at the detailed design stage.

Based on the feasible barrier options detailed above, various alternatives available for providing a median barrier on the RHVP are as follows:

Appendix C Eval

Evaluation of Providing a Median Barrier

Alternative 1: Standard Steel Beam Guide Rail with Channel System on Both Sides of the Median

Provide Standard Steel Beam Guide Rail with Channel systems on both sides of the median. It should be noted that for medians, steel beam guide rails are provided with channel elements to increase the stiffness of the installation¹. An example Standard Steel Beam Guide Rail with Channel System installed on a median on Highway 403 is demonstrated in Figure 1.



Figure 1: An Example Standard Steel Beam Guide Rail with Channel System

Alternative 2: High Tension Cable Barrier on Both Sides of the Median

Provide High-Tension Cable Barrier on both sides of the median. An example of High Tension Cable Barrier installed on both sides of a median location on Highway 2 in Alberta is demonstrated in Figure 2.



Figure 2: An Example High Tension Cable Barrier

¹ Section 4.3.5, MTO's Roadside Safety Manual

Appendix C

Evaluation of Providing a Median Barrier

Cost Estimate

The detailed cost estimates for the two alternatives are provided in Table 2

Table 2: Alternatives Cost Estimate

	Description	Unit	Qty.	Unit Price \$	Total Price \$
	Earth Works	M.R.	6000	100	600,000
f 0	Supply & Install Standard Steel Beam Guide Rail with Channel Systems	M.R.	11200	120	1,344,000
ativ	Supply & Install Extruder and Treatment	No.	10	3250	32,500
Alternative 1	Supply & Install Object Marker Warning Sign	No.	10	500	5,000
4	30 Years Maintenance Cost (\$4500 x 8.2 x 30)				1,107,000
	Total Alternative 1				
	Earth Works	M.R.	6000	100	600,000
2	Supply & Install High-Tension Cable Barrier	M.R.	11200	72	806,400
ative	Supply & Install Anchor End Terminal	No.	20	500	10,000
Alternative	Supply & Install Object Marker Warning Sign	No.	10	500	5,000
₹	30 Years Maintenance Cost (\$4500 x 8.2 x 30)				1,107,000
	Total Alternative 2				\$2,528,400

Cost-effective Analysis

In order to select the best possible alternative of installing a median barrier from the available alternatives detailed in Section 1.2, a cost-benefit analysis was conducted. Barrier systems have an assumed service life of 30 years. Median barriers generally eliminate all cross-over collisions including cross-over fatal collisions. However, median barriers tend to increase overall number of collisions, primarily PDO collisions. The methodology and results of the analysis are provided in the following sections.

Methodology

The cost-effective analysis to determine most cost-effective median barrier type was conducted by utilizing the following steps.

Estimate Number of Collisions Likely to Occur

CIMA attempted to develop Safety Performance Functions (SPFs) for median related collisions of the study area. Statistically significant models could not be developed as a result of limited number of segments that can be utilized for the prediction of long term average of median related collisions for the study area. In the absence of SPFs, we used annual average crash rates (Collisions per 100 million vehicles kilometers) to

estimate the expected number of median related collisions for future 30 years. Collision distribution (proportions of fatal, injury and PDO collisions) was assumed based on the historical collision data.

Estimate the Severity of Collisions

The next step is based on the assumption that each alternative barrier system would prevent the above number of median related high severity collisions over next 30 years. However, there would be an equal number of collisions of less severity involving each type of barrier system with a different potential of posing harm as a result of a collision.

AASHTO provides Severity Indices (SI) for all types of barrier systems to quantify the potential for harm posed as a result of a collision. Each type of barrier system is assigned a Severity Index (SI), which correlates to the likelihood that the collision will result in a PDO, injury, or a fatality collision. By utilizing the SI for a barrier system, and estimated number of collisions from the previous step, it is possible to estimate the proportions of different collision types. Based on this approach, a collision distribution (PDO, injury, and fatal) for each alternative barrier system can be estimated.

The severity indices provided by AASHTO were further revised based on the recent studies involving median barriers. In this analysis, we utilized the severity results from the following two studies:

- + High Tension Cable Barrier Performance Evaluation Study for Highway 2 in Alberta; and
- + Cable Median Barrier Program in Washington State.

Table 3 provides the proportions of collisions with different severity levels based on the above noted studies.

Type of Median Barrier System	Proportions of Median Barrier Collisions					
	Fatal	Injury	PDO			
Steel Beam Guiderail	0.007	0.140	0.853			
High Tension Cable Barrier	0.005	0.095	0.900			

Table 3: Proportions of Median Barrier Collisions by Severity

Cost-effective Analysis

The cost-effective analysis to compare both alternatives was conducted using a benefit-cost ratio (B/C) and on incremental basis, to realize the greatest benefit at the least cost. In this methodology, the alternatives are first ordered from lowest to highest cost. The incremental benefits of the second over the first are calculated by dividing the incremental costs of the second over the first. If the ratio is greater than 1, then alternative 2 is preferred. If the ratio is less than 1 then alternative 1 is superior alternative. The better of these is then compared with the next most costly alternative and so on. The following steps were performed for calculating B/C:

Estimate life cycle cost of each alternative including capital cost and operating and maintenance cost.
 The capital cost includes the purchase price, installation cost, and the activities that would not take

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place otherwise, such as paving, modifications to drainage, etc.)Operating and maintenance cost includes recurring cost of operating and maintaining the system during its useful life;

- + Estimate the societal cost of collision for each year that will be prevented by installing the barrier system as estimated over the service life of the barrier system. This was considered as benefit;
- Estimate the societal cost of less severe collisions for each year involving the barrier system, after the barrier system has been put into place. This was considered as negative benefit; and
- Calculate B/C by dividing the present value of the societal benefits by the present value of the life cycle cost.

Calculations

The following assumptions were utilized for performing cost-effective analysis calculations according to the methodology detailed above.

- An annual average collision rate of 6.88 collisions per 100 million vehicles kilometres was used for calculating expected number of collisions under existing conditions (without implementing a median barrier system). This collision rate calculated was based on 8 years historical collision data from 2008 to 2015².
- Collision distribution used was based on the actual proportions of historical collision data from 2008 to 2015 (1.67% for fatal, 43.33% for injury, and 55.00% for PDO);
- Expected collisions after implementing different types of median barriers were calculated based proportions of fatal, injury, and PDO median related collisions associated with different types of median barrier systems obtained from recent before and after studies^{3,4}. Table 4 shows the proportions collisions used for different alternatives.

Table 4: Proportions of Median Related Collisions for Various Alternatives

Alternative	Proportions of Median Related Collisions					
	Fatal	Injury	PDO			
Alternative 1 (Steel Beam)	0.007	0.140	0.853			
Alternative 2 (High Tension Cable)	0.005	0.095	0.900			

- * Societal costs of collisions used were based on MTO's current costs of collisions (\$ 1,582,000 for a fatal collision, \$ 59,000 for an injury collision, and \$ 8,000 for a PDO collision).
- + An annual average growth factor of 2% was used to project AADT.
- + The expected implementation year was considered as 2015.
- + The analysis was conducted based on a service life of 30 years for each type of barrier system.

² 2015 Collision data is only for the first 7 months (1/1/2015 – 23/07/2015)

³ High Tension Cable Barrier Performance Evaluation Study for Highway 2 in Alberta

⁴ Cable Median Barrier Program in Washington

Collision rate in collisions per 100 million vehicles kilometres based on historical collision data (2008 – 2015) are shown in Table 5

Table 5: Collision Rate Based on Historical Data

Year	AADT	Number of Collisions	Collision Rate
2008	45,748	6	6.53
2009	55,261	5	4.51
2010	59,123	8	6.74
2011	60,305	5	4.13
2012	61,511	5	4.05
2013	62,741	9	7.15
2014	63,996	13	10.12
2015	65,276	9	11.82
		Average of Collision Rate	6.88

Estimate of numbers of collisions likely to occur based on the historical collision rate (6.88 Collisions per 100 Million Vehicles Kilometres) and societal cost of collisions without implementing a median barrier are shown in Table 6

Table 6: Expected Collisions and Societal Cost before Implementing Median Barrier

Year	AADT	Expected Collisions Before	Fatal (1.67%)	Injury (43.33%)	PDO (55.00%)	Expected Societal Cost
2016	66,582	9.20	0.15	3.99	5.06	\$518,127.88
2017	67,914	9.38	0.16	4.07	5.16	\$528,493.24
2018	69,272	9.57	0.16	4.15	5.26	\$539,060.92
2019	70,657	9.76	0.16	4.23	5.37	\$549,838.72
2020	72,070	9.96	0.17	4.31	5.48	\$560,834.40
2021	73,511	10.15	0.17	4.40	5.59	\$572,047.98
2022	74,981	10.36	0.17	4.49	5.70	\$583,487.23
2023	76,481	10.56	0.18	4.58	5.81	\$595,159.93
2024	78,011	10.78	0.18	4.67	5.93	\$607,066.08
2025	79,571	10.99	0.18	4.76	6.05	\$619,205.69
2026	81,162	11.21	0.19	4.86	6.17	\$631,586.54
2027	82,785	11.44	0.19	4.96	6.29	\$644,216.40
2028	84,441	11.66	0.19	5.05	6.42	\$657,103.07
2029	86,130	11.90	0.20	5.16	6.54	\$670,246.53
2030	87,853	12.14	0.20	5.26	6.67	\$683,654.57

Year	AADT	Expected Collisions Before	Fatal (1.67%)	Injury (43.33%)	PDO (55.00%)	Expected Societal Cost
2031	89,610	12.38	0.21	5.36	6.81	\$697,327.19
2032	91,402	12.63	0.21	5.47	6.94	\$711,272.18
2033	93,230	12.88	0.21	5.58	7.08	\$725,497.31
2034	95,095	13.14	0.22	5.69	7.22	\$740,010.37
2035	96,997	13.40	0.22	5.81	7.37	\$754,811.36
2036	98,937	13.67	0.23	5.92	7.52	\$769,908.05
2037	100,916	13.94	0.23	6.04	7.67	\$785,308.24
2038	102,934	14.22	0.24	6.16	7.82	\$801,011.91
2039	104,993	14.50	0.24	6.28	7.98	\$817,034.64
2040	107,093	14.79	0.25	6.41	8.14	\$833,376.42
2041	109,235	15.09	0.25	6.54	8.30	\$850,045.04
2042	111,420	15.39	0.26	6.67	8.47	\$867,048.28
2043	113,648	15.70	0.26	6.80	8.63	\$884,386.13
2044	115,921	16.01	0.27	6.94	8.81	\$902,074.16
2045	118,239	16.33	0.27	7.08	8.98	\$920,112.38
2016	66,582	9.20	0.15	3.99	5.06	\$518,127.88
				Total Expecte	d Societal Cost	\$21,019,352.86

Estimate of numbers of collisions likely to occur after implementation of a median barrier and societal cost of collisions for each alternative are shown in Table 7 to **Error! Reference source not found.** and using proportions from Table 4.

Table 7: Expected Number of Collisions after Implementing Alternative 1 (Steel Beam Guiderail)

Year	Evented Callinians (Defera)	Expected Collisions After				
real	Excepted Collisions (Before)	Fatal	Injury	PDO	Societal Cost	
2016	9.20	0.06	1.29	7.85	\$240,589.16	
2017	9.38	0.07	1.31	8.00	\$245,402.24	
2018	9.57	0.07	1.34	8.16	\$250,309.27	
2019	9.76	0.07	1.37	8.33	\$255,313.87	
2020	9.96	0.07	1.39	8.49	\$260,419.64	
2021	10.15	0.07	1.42	8.66	\$265,626.59	
2022	10.36	0.07	1.45	8.84	\$270,938.32	

Vision	Formula (O. William (D. Com)	Expected Collisions /					
Year	Excepted Collisions (Before)	Fatal	Injury	PDO	Societal Cost		
2023	10.56	0.07	1.48	9.01	\$276,358.46		
2024	10.78	0.08	1.51	9.19	\$281,887.01		
2025	10.99	0.08	1.54	9.38	\$287,523.95		
2026	11.21	0.08	1.57	9.56	\$293,272.91		
2027	11.44	0.08	1.60	9.75	\$299,137.50		
2028	11.66	0.08	1.63	9.95	\$305,121.34		
2029	11.90	0.08	1.67	10.15	\$311,224.41		
2030	12.14	0.08	1.70	10.35	\$317,450.35		
2031	12.38	0.09	1.73	10.56	\$323,799.14		
2032	12.63	0.09	1.77	10.77	\$330,274.40		
2033	12.88	0.09	1.80	10.99	\$336,879.74		
2034	13.14	0.09	1.84	11.21	\$343,618.78		
2035	13.40	0.09	1.88	11.43	\$350,491.52		
2036	13.67	0.10	1.91	11.66	\$357,501.57		
2037	13.94	0.10	1.95	11.89	\$364,652.54		
2038	14.22	0.10	1.99	12.13	\$371,944.43		
2039	14.50	0.10	2.03	12.37	\$379,384.48		
2040	14.79	0.10	2.07	12.62	\$386,972.67		
2041	15.09	0.11	2.11	12.87	\$394,712.63		
2042	15.39	0.11	2.15	13.13	\$402,607.97		
2043	15.70	0.11	2.20	13.39	\$410,658.68		
2044	16.01	0.11	2.24	13.66	\$418,872.00		
2045	16.33	0.11	2.29	13.93	\$427,247.92		
	Total Expected Soci	etal Cost Aft	er Barrier Im	plementation	\$9,760,193.47		

Table 8: Expected Number of Collisions after Implementing Alternative 2 (High Tension Cable)

Year	Expected Collinions Defore		Ехр	ected Collisions	After .
real	Expected Collisions Before	Fatal	Injury	PDO	Societal Cost
2016	9.20	0.05	0.87	8.28	\$190,526.96
2017	9.38	0.05	0.89	8.44	\$194,338.53

Appendix C

Evaluation of Providing a Median Barrier

Vari	Francisco Calliniana Bafana	Expected Collisions After			
Year	Expected Collisions Before	Fatal	Injury	PDO	Societal Cost
2018	9.57	0.05	0.91	8.61	\$198,224.50
2019	9.76	0.05	0.93	8.78	\$202,187.73
2020	9.96	0.05	0.95	8.96	\$206,231.09
2021	10.15	0.05	0.96	9.14	\$210,354.57
2022	10.36	0.05	0.98	9.32	\$214,561.03
2023	10.56	0.05	1.00	9.51	\$218,853.34
2024	10.78	0.05	1.02	9.70	\$223,231.49
2025	10.99	0.05	1.04	9.89	\$227,695.49
2026	11.21	0.06	1.07	10.09	\$232,248.20
2027	11.44	0.06	1.09	10.29	\$236,892.48
2028	11.66	0.06	1.11	10.50	\$241,631.18
2029	11.90	0.06	1.13	10.71	\$246,464.32
2030	12.14	0.06	1.15	10.92	\$251,394.75
2031	12.38	0.06	1.18	11.14	\$256,422.48
2032	12.63	0.06	1.20	11.36	\$261,550.35
2033	12.88	0.06	1.22	11.59	\$266,781.25
2034	13.14	0.07	1.25	11.82	\$272,118.02
2035	13.40	0.07	1.27	12.06	\$277,560.66
2036	13.67	0.07	1.30	12.30	\$283,112.05
2037	13.94	0.07	1.32	12.55	\$288,775.03
2038	14.22	0.07	1.35	12.80	\$294,549.62
2039	14.50	0.07	1.38	13.05	\$300,441.53
2040	14.79	0.07	1.41	13.31	\$306,450.76
2041	15.09	0.08	1.43	13.58	\$312,580.17
2042	15.39	0.08	1.46	13.85	\$318,832.63
2043	15.70	0.08	1.49	14.13	\$325,208.14
2044	16.01	0.08	1.52	14.41	\$331,712.42
2045	16.33	0.08	1.55	14.70	\$338,345.47

Appendix D: Benefit-Cost Analysis for Other Countermeasures

Benefit-Cost Analysis

The Benefit-Cost (B/C) ratio is the ratio of the present value of the safety benefit of a given countermeasure calculated for its service life to the present value of the cost of the countermeasure. A B/C ratio of greater than 1.0 represents an economically efficient countermeasure. In this criterion, the monetary value of the collisions reduced as a result of implementation of a countermeasure is considered as the benefit of the countermeasure. For the purposes of calculating the societal costs of collisions, MTO costs were utilized. Details of the B/C analysis for countermeasures other than median barrier are included in the following tables.

Provide Speed Feedback Signs

The CMF for this countermeasure is 0.88, and the construction cost is \$10,000 per site for a service life of 10 years.

Collision rate of total collisions in collisions per 100 million vehicles kilometres based on historical collision data (2008 – 2015¹):

Year	AADT	Number of Total Collisions	Collision Rate
2008	45,748	10	26.04
2009	55,261	11	23.71
2010	59,123	22	44.32
2011	60,305	29	57.28
2012	61,511	24	46.48
2013	62,741	38	72.15
2014	63,996	37	68.87
2015	65,276	26	81.69
		Average of Collision Rate	52.57

Estimate of number of total collisions likely to occur based on the historical collision rate (36.14 collisions per 100 million vehicles kilometres) and societal cost of collisions without implementing speed feedback signs during next 10 years (service life of signs). 2015 is the assumed implementation year. The proportions of different severity collisions of total collisions shown in the header of the following table are based on the actual experienced during the history period.

¹ 2015 Collision data is only for the first 7 months (1/1/2015 – 23/07/2015)

Benefit-Cost Analysis

Year	AADT	Total Collisions	Fatal (0.00%)	Injury (44.16%)	PDO (55.84%)	Expected Societal Cost
2016	66,582	29.38	0.00	12.98	16.41	\$896,843.06
2017	67,914	29.97	0.00	13.24	16.73	\$914,784.77
2018	69,272	30.57	0.00	13.50	17.07	\$933,076.70
2019	70,657	31.18	0.00	13.77	17.41	\$951,732.31
2020	72,070	31.80	0.00	14.05	17.76	\$970,765.07
2021	73,511	32.44	0.00	14.33	18.11	\$990,174.98
2022	74,981	33.09	0.00	14.61	18.48	\$1,009,975.51
2023	76,481	33.75	0.00	14.91	18.85	\$1,030,180.14
2024	78,011	34.43	0.00	15.20	19.22	\$1,050,788.87
2025	79,571	35.11	0.00	15.51	19.61	\$1,071,801.68
	Total	321.73	0.00	142.08	179.65	\$9,820,123.09

Societal Cost of Expected Collisions = 0.00 x 1,582,000 + 142.08 x 59,000 + 179.65 x 8,000

= \$9,820,123.09

Average Cost of Total Expected Collisions = \$9,820,123.09/ 321.73 = \$30,522.84

Reduction in Collisions after Implementing Speed Feedback Signs (CMF = 0.88)

Expected Reduction in collisions = 321.73 x (1 – CMF)

= 38.61

Monetary Benefits = 38.61 x \$30,522.84 = \$1,178,486.85

Construction Cost = $$12,500 \times 8$

= \$100,000

B/C = 11.78

Illumination

The CMF for this countermeasure is 0.97, and the construction cost is \$100,000 per site for a service life of 20 years.

Collision rate of total collisions in collisions per 100 million vehicles kilometres based on historical collision data (2008 – 2015):

Benefit-Cost Analysis

Year	AADT	Number of Total Collisions	Collision Rate
2008	45,748	43	31.79
2009	55,261	37	22.65
2010	59,123	51	29.18
2011	60,305	71	39.82
2012	61,511	67	36.84
2013	62,741	80	43.13
2014	63,996	71	37.53
2015 ²	65,276	54	48.17
	•	Average of Collision Rate	36.14

Estimate of number of total collisions likely to occur based on the historical collision rate (36.14 collisions per 100 million vehicles kilometres) and societal cost of collisions without implementing illumination during next 20 years (service life of illumination). 2015 is the assumed implementation year. The proportions of different severity collisions of total collisions shown in the header of the following table are based on the actual experienced during the history period.

Year	AADT	Total Collisions	Fatal (0.84%)	Injury (43.25%)	PDO (55.91%)	Expected Societal Cost
2016	66,582	71.14	0.60	30.77	39.77	\$3,083,123.33
2017	67,914	72.56	0.61	31.38	40.57	\$3,144,802.46
2018	69,272	74.01	0.62	32.01	41.38	\$3,207,685.55
2019	70,657	75.49	0.64	32.65	42.21	\$3,271,818.88
2020	72,070	77.00	0.65	33.30	43.05	\$3,337,248.78
2021	73,511	78.54	0.66	33.97	43.91	\$3,403,975.23
2022	74,981	80.11	0.68	34.65	44.79	\$3,472,044.55
2023	76,481	81.72	0.69	35.34	45.68	\$3,541,503.04
2024	78,011	83.35	0.70	36.05	46.60	\$3,612,350.69
2025	79,571	85.02	0.72	36.77	47.53	\$3,684,587.52
2026	81,162	86.72	0.73	37.50	48.48	\$3,758,259.82
2027	82,785	88.45	0.75	38.25	49.45	\$3,833,413.91
2028	84,441	90.22	0.76	39.02	50.44	\$3,910,096.08
2029	86,130	92.02	0.78	39.80	51.45	\$3,988,306.33
2030	87,853	93.87	0.79	40.60	52.48	\$4,068,090.98

² 2015 Collision data is only from the first 7 months (1/1/2015 – 23/07/2015)

Benefit-Cost Analysis

Year	AADT	Total Collisions	Fatal (0.84%)	Injury (43.25%)	PDO (55.91%)	Expected Societal Cost
2031	89,610	95.74	0.81	41.41	53.53	\$4,149,450.02
2032	91,402	97.66	0.82	42.24	54.60	\$4,232,429.76
2033	93,230	99.61	0.84	43.08	55.69	\$4,317,076.50
2034	95,095	101.60	0.86	43.94	56.80	\$4,403,436.56
2035	96,997	103.64	0.87	44.82	57.94	\$4,491,509.92
	Total	1728.47	14.59	747.54	966.34	\$74,911,209.91

Societal Cost of Expected Collisions = 14.59 x 1,582,000 + 747.54x 59,000 + 966.34x 8,000

= \$74,911,209.91

Average Cost of Total Expected Collisions = \$74,911,209.91/ 11728.47= \$43,339.66

Reduction in Collisions after Implementing Rumble Strips (CMF = 0.97)

Expected Reduction in collisions = 1728.47 x (1 – CMF)

= 51.85

Monetary Benefits = 51.85 x \$43,339.66 = \$2,247,336.30

Construction Cost = $$100,000 \times 8.1$

= \$810,000

B/C = 2.77

Provide Permanent Recessed Pavement Markings

The CMF for this countermeasure is 0.67, and the construction cost is \$19,000 per km of length for a service life of 5 years.

Collision rate of total night collisions in collisions per 100 million vehicles kilometres based on historical collision data (2008 – 2015):

Benefit-Cost Analysis

Year	AADT	Number of Total Collisions	Collision Rate
2008	45,748	7	10.22
2009	55,261	9	10.88
2010	59,123	9	10.17
2011	60,305	11	12.19
2012	61,511	12	13.04
2013	62,741	22	23.43
2014	63,996	19	19.84
2015³	65,276	6	6.14
		Average of Collision Rate	13.24

Estimate of number of total collisions likely to occur based on the historical collision rate (13.24 collisions per 100 million vehicles kilometres) and societal cost of collisions without implementing permanent raised pavement markings during next 5 years (service life of PRPM). 2015 is the assumed implementation year. The proportions of different severity collisions of total collisions shown in the header of the following table are based on the actual experienced during the history period.

Year	AADT	Total Collisions	Fatal (2.11%)	Injury (26.32%)	PDO (71.58%)	Expected Societal Cost
2016	66,582	13.19	0.28	3.47	9.44	\$719,727.60
2017	67,914	13.46	0.28	3.54	9.63	\$734,126.04
2018	69,272	13.72	0.29	3.61	9.82	\$748,805.54
2019	70,657	14.00	0.29	3.68	10.02	\$763,776.89
2020	72,070	14.28	0.30	3.76	10.22	\$779,050.92
	Total	68.65	1.45	18.07	49.14	\$3,745,486.99

Societal Cost of Expected Collisions = $1.45 \times 1,582,000 + 18.07 \times 59,000 + 49.14 \times 8,000$

= \$3,745,486.99

Average Cost of Total Expected Collisions = \$3,745,486.99/49.14 = \$54,557.89

Reduction in Collisions after Implementing Speed Feedback Signs (CMF = 0.67)

Expected Reduction in collisions = $68.65 \times (1 - CMF)$

= 22.66

³ 2015 Collision data is only from the first 7 months (1/1/2015 – 23/07/2015)

Benefit-Cost Analysis

Monetary Benefits = 22.66 x \$54,557.89 = \$1,236,010.71

Construction Cost = \$247,000.00

B/C = 5.00



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Tab 12

From: Brian Malone [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=67C055668F2542418A0037674B420253-BRIAN MALON]

Sent: 9/4/2018 12:20:12 PM

To: McGuire, Gord [Gord.McGuire@hamilton.ca]

CC: Reza Omrani [/O=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=e24bbd9c2fba443db853f6620dab3e3f-Reza Omrani]

Subject: RE: Friction numbers on RHVP

Gord,

These appear to be the test results from 2007 that were done by MTO at the time the RHVP was being finished, preopening. Gary Moore had provided these to me in August of 2015, before we completed the 2 safety reports in 2015. Unfortunately, they failed to offer an ability to quantify any friction problem that may be a source of the collision performance.

The ASTM E274 testing provides a friction performance number value, but the number is a relative one. The ASTM testing protocol states:

"These values are intended for use in evaluating the skid resistance of a pavement relative to that of other pavements or for evaluating changes in the skid resistance of a pavement with the passage of time. ... They are also insufficient for determining the speed at which control of a vehicle would be lost, because peak and side force friction are also required for these determinations. https://www.astm.org/Standards/E274.htm

Additionally, FHWA guidance states:

Results obtained with any friction test equipment represent the frictional properties obtained when using the specific equipment and procedures and do not necessarily agree or correlate with other friction measurement methods. The values obtained are intended for use in evaluating friction characteristics of a pavement relative to other pavements or to evaluate changes of one pavement over time.

https://www.fhwa.dot.gov/pavement/t504038.cfm#p12

What was missing when we viewed these figures back in 2015 was an identification of a threshold or relative comparison. The paper does make brief mention (top of Page 146) of 'expected' FN values of 30. Gary may have had the view that because the RHVP values were higher than that they were acceptable. However, when I asked what values MTO used as the 'acceptable' friction levels he said he did not know. He also he stated that the City did not have a number. It was also not clear if the 'expected' value was for SMA pavements in their early, slippery, stages. As can be seen in the graph in the paper, friction values are much higher later in the SMA life. We don't know if this typical improvement with time occurred on the RHVP.

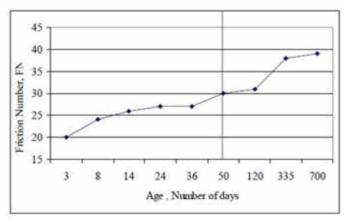


Figure 1. Highway 401 Westbound - Surface Friction of Stone Mastic Asphalt Mix vs. Age

Perhaps I misunderstood you last Thursday when we talked, but I thought you said that additional testing had been done, either in 2014, or subsequent to the Nov 2015 CIMA report which recommended friction testing. If those exist, then a comparison of the two can be done. Additionally, if LINC testing data is available, from 2007 or more recently, then there is also a possible means for comparison.

Brian Malone CIMA+

Burlington, Ontario

Tel: 289-288-0287 x 6802

Cell: 905-466-0421

From: McGuire, Gord <Gord.McGuire@hamilton.ca>

Sent: August-30-18 19:11

To: Brian Malone <Brian.Malone@cima.ca>
Subject: FW: Friction numbers on RHVP

H Brian:

This is a study of the RHVP prior to opening.

FN of around mid 30s.

Regards Gord McGuire O.L.S., B.Sc. Director of Engineering Services Public Works 905-546-2424 x2439

From: Uzarowski, Ludomir [mailto:Ludomir Uzarowski@golder.com]

Sent: January 24, 2014 11:45 AM

To: Moore, Gary < Gary. Moore@hamilton.ca>

Cc: Henderson, Vimy < Vimy_Henderson@golder.com>

Subject: Friction numbers on RHVP

Hi Gary,

The surface asphalt on the RHVP is Stone Mastic Asphalt (SMA). Immediately following construction of the RHVP in 2007, the Ontario Ministry of Transportation performed friction testing in both southbound lanes. The following table summarizes the results of this testing. The complete testing results are attached.

Lane	Average Friction Number	Friction Number Range
Southbound Lane 1	33.9	28.1 to 36.5
Southbound Lane 2	33.8	28.4 to 37.4

In 2013, the Friction Numbers were measured on the RHVP in both directions by Tradewind Scientific using a Grip Tester. The average FN numbers were as follows:

SB Right Lane 35 SB Left Lane 34 NB Right Lane 36 NB Left Lane 39

In 2009 the Ontario Ministry of Transportation published a paper at the Canadian Technical Asphalt Association Annual Conference titled "Early Age Low Friction Problem of SMA in Ontario". The paper presented results of SMA that had been placed on Highway 401. The Friction Number results following construction were below anticipated value of 30 and ranged from 24.9 to 28.8. The paper is attached.

Regards, Ludomir

Ludomir Uzarowski (Ph.D., P.Eng.) | Principal - Pavement and Materials Engineering | Golder Associates Ltd. 6925 Century Avenue, Suite #100, Mississauga, Ontario, Canada L5N 7K2
T: +1 (905) 567 4444 | D: +1 905 567 6100 Ext. 1528 | F: +1 (905) 567 6561 | C: +1 905 441 6044 | E: Ludomir Uzarowski@golder.com | www.golder.com

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Please consider the environment before printing this email.



MEMO

TO: David Ferguson, City of Hamilton

COPY TO: n/a

FROM: Brian Malone, CIMA+

DATE : January 15, 2019

SUBJECT : Lincoln Alexander Parkway / Red Hill Valley Parkway Collision Rates

(CIMA+ File: B000558B)

The purpose of this memorandum is to provide an update to CIMA's previous response to the City's inquiry regarding collision rates on the Lincoln Alexander Parkway (LINC) and Red Hill Valley Parkway (RHVP). An original memo was completed January 12, 2018 responding to inquiries outlined in your email dated January 9, 2018.

This memo updates the January 12, 2018 memo, as follows:

- 1. How do the LINC and RHVP compare with other similar type roadways (e.g., Highway 406 through St. Catharines and Highway 7/8 in Kitchener), updated to current data
 - a. All MTO comparison data is updated to Dec 31, 2016;
 - b. All LINC and RHVP collision data is updated to Dec 31, 2017;
- 2. Add a comparison with a section of Highway 403, from the LINC to Hwy # 6 North.

1. COLLISION RATE COMPARISON

A comparison of collision rates on the LINC and RHVP with the following Provincial highways:

- Highway 403 between the LINC and Highway 6 North (towards Guelph), in the City of Hamilton;
- Highway 406 between Highway 58 and Queen Elizabeth Way (QEW), in the City of St. Catharines;
- Highway 7/8 between Conestoga Parkway/Victoria Street N and Trussler Road, in the City
 of Kitchener; and
- Highway 8 between Sportsworld Drive and Highway 7, in the City of Kitchener.

The comparison was completed for an average of five years between 2013 and 2017 for the LINC and the RHVP, and between 2012 and 2016 for the Provincial highways. 2016 is the latest year for which MTO collision data is available.

Although the two five-year periods do not exactly coincide, they differ by only one year. Data is being averaged for a 5-year period, allowing for a reasonable comparison.



The collision rate of a road section normalizes the frequency of collisions with the exposure, measured by traffic volume and distance travelled. The collision rate per million of kilometres travelled is calculated as follows:

$$CR = 1,000,000 \times \frac{Number\ of\ Observed\ Collisions}{AADT \times 365 \times Length\ of\ Section}$$

For this review data was averaged over a 5-year period. The five-year average collision rate is calculated as follows:

$$CR_{5\;years} = \frac{1,000,000}{365 \times Length\;of\;Section} \times \frac{\sum_{Year\;5}^{Year\;5} Number\;of\;Observed\;Collisions}{\sum_{Year\;5}^{Year\;5} AADT}$$

Data for the Provincial highways was obtained from the Ontario Provincial Highways Traffic Volumes On Demand and from the MTO Safety Analyst software.

Collision data for the LINC and RHVP from 2013 to 2016 had been previously received. Additional data for the period ending Dec 31 2017 was received for this update.

AADT traffic volumes were obtained from the City's MS2 traffic data management software. AADT information was not available for every separate segment on the LINC and RHVP. The locations with available AADT information are:

- LINC between Highway 403 and Mohawk Road;
- LINC between Upper James and Upper Wentworth;
- LINC between Upper Gage and Dartnall Road; and
- RHVP between Queenston Road and Barton Street.

A distance-weighted average process was used to determine AADT's for individual segments which did not have volume data.

AADT for the RHVP location was provided for 2014 and 2015 years and was adjusted to coordinate with collision data by year, based on known growth trends at the available data. A growth rate of 2.0% per year was applied to the remaining years. The approach used for infilling volume data follows industry standard approaches and should be considered when reviewing results .

Table 1 summarizes the 5-year combined collisions and the resulting collision rates for each segment of the LINC and RHVP.

Table 2 presents the same information for the comparison sites (i.e. Highways 7/8, 8, 403 and 406).

Appendix A provides an annual breakdown of collisions and AADTs.



Table 1: Average Collision Rates for LINC and RHVP (2013 – 2017)

Highway/Section	Length (km)	Collisions (2013 – 2017)	Collision Rate
LINC			
Highway 403 – Mohawk	1.2	79	0.49
Mohawk – Garth	2.6	136	0.36
Garth – Upper James	1.7	117	0.44
Upper James – Upper Wentworth	1.7	142	0.50
Upper Wentworth – Upper Gage	1.6	148	0.60
Upper Gage – RHVP	1.6	60	0.27
Average Weighted Collision Rate	0.44		
RHVP			
LINC – Mud	1.6	124	0.59
Mud – Greenhill	2.6	232	0.72
Greenhill – King	1.3	277	1.87
King – Queenston	0.8	144	1.66
Queenston – Barton	1.3	123	0.94
Barton – Railway Overpass	0.5	39	0.77
Average Weighted Collision Rate		1.01	



Table 2: Average Collision Rates for Comparison Sites (2012 – 2016)

Highway/Section	Length (km)	Collisions (2012 – 2016)	Collision Rate
Highway 403			
Highway 6 – York Boulevard	1.4	319	0.99
York Boulevard – Main Street	2.2	306	0.73
Main Street – Aberdeen	1.3	285	1.20
Aberdeen – LINC	4.7	505	0.68
Average Weighted Collision Rate		0.81	
Highway 406			
Highway 58 – Glendale	2.0	70	0.32
Glendale – Westchester	3.0	181	0.60
Westchester – Fourth Avenue	2.3	258	1.76
Fourth Avenue - QEW	3.9	115	0.57
Average Weighted Collision Rate	0.78		
Highway 7/8			
Conestoga/Victoria – Ottawa	1.5	224	0.74
Ottawa – Highway 8/King	1.3	159	0.68
Highway 8/King – Courtland	1.4	167	0.71
Courtland – Homer Watson	1.3	151	0.72
Homer Watson – Fischer-Hallman	2.6	203	0.75
Fischer-Hallman - Trussler	2.9	82	0.46
Average Weighted Collision Rate		0.66	
Highway 8			
Sportsworld – Fairway	3.6	369	0.71
Fairway – Highway 7	2.2	284	0.67
Average Weighted Collision Rate		0.70	

For the LINC and RHVP, results show that the average weighted collision rates, calculated based on 2013-2017 collision and traffic volume data, are:

- LINC 0.44 collisions per million vehicle-kilometres travelled.
- RHVP 1.01 collisions per million vehicle-kilometres travelled.

We note that the collision rates reported in the 2018 memo were considerably lower (0.20 for the LINC and 0.36 for the RHVP). Our understanding is that the data provided for the previous analysis did not include self-reported collisions, while the data provided for the current analysis include these collisions. When self-reported collisions are excluded, the resulting collision rates are 0.20 for the LINC and 0.69 for the RHVP, which are consistent with the rates in the previous



memo. The MTO collision data includes all types of collisions, including "non-reportable" and "other".

For the MTO comparison highway segments, results show that the average weighted collision rates, calculated based on 2012-2016 collision and traffic volume data, are:

- Hwy 403 0.81 collisions per million vehicle-kilometres travelled
- Hwy 406 0.78 collisions per million vehicle-kilometres travelled
- Hwy 7/8 0.66 collisions per million vehicle-kilometres travelled
- Hwy 8 0.70 collisions per million vehicle-kilometres travelled

Rates for the LINC are lower that the MTO weighted rates. The range of rates for segments of the LINC are, generally, below the range of rates for segments of the comparison MTO sites.

Rates for the RHVP are higher that the MTO weighted rates. The range of rates for segments of the RHVP are, generally, higher than the range of rates for segments of the comparison MTO sites.

2. CROSS MEDIAN COLLISION RATES

As reported in the January 12, 2018 memo, based on the information provided in the 2015 LINC and RHVP study reports, only 5.6% and 3.6% of collisions involved vehicles completely crossing the median (i.e. reaching the opposing shoulders and/or travel lanes), respectively. If these percentages are applied to the average weighted collision rates in Table 1, the resulting rate is approximately 0.02 collisions per million kilometres travelled for the LINC, 0.04 collisions per million kilometres travelled for the RHVP.

Cross median collision information was not available in the updated records to update this information.

3. COLLISION RATES BY DIRECTION

Table 3 summarizes the range of collision rates for the LINC and RHVP by direction of travel.

Table 3: Average Collision Rates by Direction (2013 – 2017)

Road	Range of Collision Rates			
Roau	EB/NB	WB/SB		
LINC	0.19 - 0.62	0.27 – 0.75		
RHVP	0.77 – 2.65	0.34 – 1.29		

The results show that the 5-year average collision rates for the LINC vary between 0.18 and 0.62 for the eastbound direction, and between 0.27 and 0.75 for the westbound direction. The highest eastbound rate is observed between Garth Street and Upper James Road, and the highest westbound rate is observed between Upper Wentworth Road and Upper Gage Road.



January 15, 2019

For the RHVP, the 5-year average collision rates for the LINC vary between 0.77 and 2.65 for the northbound direction, and between 0.34 and 1.29 for the southbound direction. The highest northbound and southbound rates are observed between Greenhill Avenue and King Street.

4. COLLISION RATE THRESHOLD

According to AASHTO's Highway Safety Manual, one of the limitations of using collision rate is that it does not identify a threshold to discern whether the safety performance of a site is acceptable or not. In order to accomplish this, the adequate approach is to use Safety Performance Functions (SPF), which considers large samples of similar sites to estimate an average representative of the safety performance of similar sites. If a site observed or expected collision is larger than the value estimated by the SPF, it shows there are safety problems.

5. PROVINCIAL COLLISION RATES

Table 4 summarizes Provincial collision rates between 2010 and 2014 (the most recent five-year period available), based on the <u>Ontario Road Safety Annual Reports (ORSAR)</u>. The collision rates ranged between 1.36 and 1.66 during this period.

It is important to note that the ORSAR rates are calculated for all roads within the province, including 2-lane, undivided, rural highways, urban arterial and collector roads, etc., and include collisions at intersections. The ORSAR does not report on the collision rates for specific types of roads (divided or undivided) in the Province.

Direct comparison to divided road facilities such as the LINC, RHVP and the comparison MTO segments used in this report should be made with caution.

Table 4: Provincial Collision Rates by Year

Year	2010	2011	2012	2013	2014
Collision Rate	1.66	1.39	1.36	1.43	1.62



APPENDIX A - COLLISION AND AADT DETAILS

Lincoln Alexander Parkway AADT	2013	2014	2015	2016	2017
Highway 403 – Mohwak	70,474	71,884	73,321	74,787	76,282
Mohwawk – Garth	77,593	79,209	77,076	78,663	80,625
Garth – Upper James	87,335	89,233	82,215	83,966	86,568
Upper James – Upper Wentworth	95,204	97,329	86,365	88,250	91,368
Upper Wentworth – Upper Gage	84,272	86,068	81,334	83,040	85,377
Upper Gage – RHVP	73,340	74,807	76,303	77,829	79,386

Lincoln Alexander Parkway Collisions	2013	2014	2015	2016	2017
Highway 403 – Mohwak	17	12	15	18	17
Mohwawk – Garth	31	17	33	28	27
Garth – Upper James	19	30	21	21	26
Upper James – Upper Wentworth	24	34	24	33	27
Upper Wentworth – Upper Gage	29	30	24	32	33
Upper Gage – RHVP	10	12	11	8	19

Red Hill Valley Parkway AADT	2013	2014	2015	2016	2017
LINC – Mud	69,188	70,573	72,285	73,731	75,206
Mud – Greenhill	64,518	65,809	67,766	69,121	70,504
Greenhill – King	59,329	60,516	62,744	63,999	65,279
King – Queenston	56,215	57,340	59,730	60,926	62,144
Queenston – Barton	52,323	53,370	55,964	57,084	58,225
Barton – Railway Overpass	52,323	53,370	55,964	57,084	58,225

Red Hill Valley Parkway Collisions	2013	2014	2015	2016	2017
LINC – Mud	17	15	32	26	34
Mud – Greenhill	34	34	63	50	51
Greenhill – King	30	37	82	66	62
King – Queenston	27	21	31	28	37
Queenston – Barton	25	13	36	30	19
Barton – Railway Overpass	10	8	10	3	8



Highway 403 AADT	2012	2013	2014	2015	2016
Highway 6 – York Boulevard	118,000	127,900	118,400	132,000	134,200
York Boulevard – Main Street	99,700	105,500	99,900	109,100	109,400
Main Street – Aberdeen	98,600	98,700	99,000	102,800	103,000
Aberdeen – LINC	92,000	83,300	83,400	88,700	83,800

Highway 403 Collisions	2012	2013	2014	2015	2016
Highway 6 – York Boulevard	65	63	70	47	74
York Boulevard – Main Street	78	55	45	62	66
Main Street – Aberdeen	52	63	57	63	50
Aberdeen – LINC	75	93	117	104	116

Highway 406 AADT	2012	2013	2014	2015	2016
Highway 58 – Glendale	58,600	54,000	62,300	63,600	65,000
Glendale – Westchester	56,900	57,700	58,100	51,100	52,000
Westchester – Fourth Avenue	31,600	35,300	35,700	36,000	36,400
Fourth Avenue - QEW	27,300	28,100	28,300	28,800	29,300

Highway 406 Collisions	2012	2013	2014	2015	2016
Highway 58 – Glendale	13	10	17	9	21
Glendale – Westchester	28	33	49	21	50
Westchester – Fourth Avenue	65	79	41	41	32
Fourth Avenue - QEW	26	24	17	28	20



Page 9 of 9 Lincoln Alexander Parkway / Red Hill Valley Parkway Collision Rates (CIMA+ File: B000558B)

January	15,	2019	
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Highway 7/8 AADT	2012	2013	2014	2015	2016
Conestoga/Victoria – Ottawa	109,800	110,900	111,000	111,100	111,200
Conestoga/Ottawa – Highway 8/King	98,300	99,300	99,400	99,500	99,600
Highway 8/King – Courtland	90,600	91,500	91,600	91,700	91,700
Courtland – Homer Watson	86,100	87,000	87,900	88,800	89,700
Homer Watson – Fischer-Hallman	55,800	56,400	57,000	57,600	58,200
Fischer-Hallman - Trussler	32,800	33,100	33,400	33,700	34,000

Highway 7/8 Collisions	2012	2013	2014	2015	2016
Conestoga/Victoria – Ottawa	41	38	45	50	50
Conestoga/Ottawa – Highway 8/King	26	33	39	32	29
Highway 8/King – Courtland	20	31	37	41	38
Courtland – Homer Watson	29	34	32	30	26
Homer Watson – Fischer-Hallman	45	43	69	34	12
Fischer-Hallman - Trussler	29	17	11	11	14

Highway 8 AADT	2012	2013	2014	2015	2016
Sportsworld – Fairway	77,300	78,100	78,900	79,700	80,500
Fairway – Highway 7	103,400	104,400	105,400	106,500	107,600

Highway 8 Collisions	2012	2013	2014	2015	2016
Sportsworld – Fairway	80	72	83	64	70
Fairway – Highway 7	32	40	41	73	98





From:

McGuire, Gord

Sent:

November-28-18 2:55 PM

To:

Cameron, Diana; Sharma, Dipankar

Subject:

Fwd: RHVP pavement testing results

Attachments:

image002.jpg; ATT00001.htm; RHVP MTD Results.pdf; ATT00002.htm; GA ST 80727

10mm Aggs PSV.pdf; ATT00003.htm

Hi.

Diana can you print this please and load it into our FOI folder as well. Thanks.



Gord McGuire, O.L.S., B.Sc. **Director, Engineering Services**

Public Works Department | Engineering Services Division |

City of Hamilton

77 James Street North, Suite 320

Hamilton, ON L8R 2K3

T: 905.546.2424, Extension 2439 gord.mcguire@hamilton.ca

Begin forwarded message:

From: "Uzarowski, Ludomir" < Ludomir Uzarowski@golder.com>

Date: November 28, 2018 at 1:52:39 PM EST

To: "Gord.McGuire@hamilton.ca" < Gord.McGuire@hamilton.ca>

Subject: RHVP pavement testing results

HI Gord,

As discussed yesterday, please find attached the results of the pavement testing on the Red Hill Valley Parkway carried out in January 2018. A hard copy of the results was presented at the meeting with the City representatives in March 2018.

We have the following comments:

- 1. The coring and testing operation on the RHVP was carried out at night of December 6/7 2017. Please note that there was light snow and negative temperatures during the testing.
- 2. The results of the PSV testing the obtained core samples were delivered to the Golder's laboratory in Whitby where the aggregates were extracted. The samples of the aggregates were then sent to James Fisher Testing Services in Ireland for Polished Stone Value (PSV) testing. The reported corrected PSV value is 45. This value is considered to be an average or medium for traprock aggregates.
- 3. The measured texture depth (MTD) was determined on the site using the Sand Patch Method. The average MTD is 1.25 mm. A pavement with good macrotexture should have the MTD of about 1.0 mm.



James Fisher Testing Services (Ireland) Ltd

Unit D, Zone 5 Clonminam Business Park Portlaoise, Co. Laois Tel.: (057) 86 64885



LABORATORY TEST REPORT

DETERMINATION OF POLISHED STONE VALUE (PSV) In accordance with BS EN 1097-8: 2009

Project: Project 1791274, Canada Job No.: PL ST 80727 Client: **Golder Associates** Lab Ref No.: 6925 Century Avenue **Date Received:** 24/01/2018 15/02/2018 Suite 100 **Date Reported:** 10mm Aggs Mississauga Material: Specification: Client Order No: N/A Originator: Amelia Jewison

Sample Details

Site Ref:	10mm Aggs		Sample Type:		Bulk
Lab Reference No.	ST 80727		Date of Sampling:		Client Info.
Supplier:	Client Info.		Sampled By:		Client
Source:	Client Info.		In accordance with EN 933 Location:		Yes Asphalt Cores
Results					
Recorded Polished Stone V	Control Stone Batch		N/A		
Test Specimen:	Test Run 1	a	48.3	Mean	
	Test Run 2	b c	46.0 45.7	recorded value (S) =	46.3
		d	45.3		
Control Stone:	Test Run 1	a b	52.0 49.0	Mean recorded	
	Test Run 2	c d	49.3 51.3	value (C) =	50.4
				_	

Corrected Polished Stone Value: S + 49.0 -C =

45

Tested in accordance with the above specifications
Subcontracted to a laboratory UKAS accredited in this testing

Approved Signature

JAMES FISHER TESTING SERVICES (IRELAND) LTD.

☑ James Ward, Operations Manager



Table 1
Measured Texture Depth (MTD) on RHVP

y	~		,	
Core Location				
(Field)	Lane		Wheel Path	MTD
1	Northbound	3	Right Wheel Path	1.19
2	Northbound	3	Left Wheel Path	1.17
3	Southbound	1	Left Wheel Path	1.11
4	Northbound	2	Right Wheel Path	1.37
5	Northbound	2	Left Wheel Path	1.15
6	Northbound	2	Right Wheel Path	1.27
7	Southbound	1	Right Wheel Path	1.34
8	Northbound	2	Left Wheel Path	1.13
9	Southbound	1	Left Wheel Path	1.31
10	Northbound	1	Left Wheel Path	1.04
11	Southbound	1	Right Wheel Path	1.43
12	Northbound	1	Right Wheel Path	1.14
13	Southbound	2	Left Wheel Path	1.22
14	Southbound	2	Right Wheel Path	1.33
15	Northbound	1	Left Wheel Path	1.08
16	Southbound	2	Right Wheel Path	1.29
17	Southbound	2	Right Wheel Path	1.21
18	Northbound	1	Right Wheel Path	1.13
19	Northbound	1	Left Wheel Path	1.97
20	Northbound	1	Right Wheel Path	1.12
21	Southbound	1	Left Wheel Path	1.57
22	Southbound	1	Right Wheel Path	1.32
23	Southbound	1	Left Wheel Path	1.29
24	Southbound	1	Right Wheel Path	1.20
25	Southbound	1	Left Wheel Path	1.98
26	Southbound	1	Right Wheel Path	1.47
27	Southbound	1	Left Wheel Path	1.26
28	Northbound	2	Right Wheel Path	0.57
29	Northbound	2	Left Wheel Path	0.91
30	Northbound	2	Right Wheel Path	1.04
	Average	9		1.25



December 17, 2018

Project No. 1791724

Mr. Gord McGuire, O.L.S., B.Sc.

Director, Engineering Services
Public Works Department, Engineering Services Division
City of Hamilton
77 James Street North, Suite 320
Hamilton, Ontario
L8R 2K3

EVALUATION OF PAVEMENT SURFACE AND AGGREGATES RED HILL VALLEY PARKWAY, CITY OF HAMILTON

Dear Sir,

Golder Associates Ltd. (Golder) is pleased to present this letter report to the City of Hamilton (City) with the results of the investigation of the condition of the existing pavement surface on the Red Hill Valley Parkway (RHVP), located in the City of Hamilton. Our work for this assignment was completed in accordance with Golder's Proposal No. P1791724 to the City, dated November 23, 2017.

Field Investigation

Golder's work for this assignment commenced with carrying out a limited field investigation program which comprised the following:

- Testing of the surface frictional properties using the British Pendulum Tester in accordance with Test Method ASTM E303;
- Pavement texture measurements at the surface friction test locations, using a volumetric technique (Sand Patch) in accordance with Test Method ASTM E965; and
- Coring of the surface course asphalt layers.

All the field investigations for this assignment were carried out at night on December 6/7, 2017. Golder retained a qualified subcontractor to provide the required traffic control for the field investigations program. The friction and texture measurements were made at 15 locations in each direction of the RHVP, with both tests (i.e. friction and surface texture) being carried out at each location. A total of 30 of each test were performed. The testing was performed by a member of Golder's engineering staff.

At each location that was tested for surface friction and texture, Golder also obtained a core of the surface course asphalt layer. A 150 mm diameter core barrel was used to obtain the asphalt core by a Golder representative. After the core was extracted at each location, the core hole was patched with Hot Mix Asphalt (HMA).

Golder Associates Ltd. 6925 Century Avenue, Suite #100 Mississauga, Ontario, L5N 7K2 Canada

T: +1 905 567 4444 +1 905 567 6561

golder.com

Mr. Gord McGuire, O.L.S., B.Sc.

Director, Engineering Services

Project No. 1791724 December 17, 2018

Laboratory Testing

The asphalt cores were brought to Golder's CCIL certified laboratory to Whitby, Ontario. The cores were broken down and the aggregates from the surface course asphalt layers were extracted from each core. The extracted aggregates were sent to James Fisher Testing Services in Ireland for testing of Polished Stone Value (PSV) in accordance with European Test Method EN 1097-8: 2009. The laboratory performing the test was accredited for this test by the United Kingdom Accreditation Service (UKAS). The PSV is not a standard test in Canada and thus the sample was sent to Europe for testing. The Polished Stone Value of aggregate is intended to give a measure of resistance to the polishing action of vehicle tires under conditions similar to those occurring on the surface of a road.

Analysis and Interpretation

The detailed results of the field investigations and laboratory testing are attached to this letter report. A summary of the test results was presented to the City in a meeting on March 9, 2018.

The corrected PSV of the tested aggregates was 45. This value is considered to be average/medium. As discussed during the meeting, there is a concern that an aggregate with a PSV of 45 will not provide sufficient long-term frictional characteristics if the surface course asphalt mix is subjected to hot-in place (HIR) recycling. At the time HIR was one of the rehabilitation strategies being considered by the City for the RHVP. One of the solutions to this particular concern with HIR could be the addition of a high percentage of a beneficiating mix during the HIR process. The beneficiating mix in this case would have to incorporate aggregate(s) with high PSV values to improve the average characteristics of the blend. Golder is currently evaluating the feasibility of carrying out HIR of the SMA surface course HMA mix on the RHVP.

The average texture depth was 1.25 mm and it ranged from 0.57 mm to 1.98 mm. Overall, the texture of the surface is generally considered to be good. A pavement with good macro-texture should have a texture depth of about 1.0 mm. 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. The values measured, BPN = British pendulum (tester) number for flat surfaces, represents the frictional properties obtained with the apparatus at the time of the test. The higher the BPN, the better the frictional properties of the test surface.

The average BPN value was 39 and the results ranged from 21 to 62. While the average can be considered as good, the test results were very variable. The values below 30 would be considered as low. Six of the readings were below 30, i.e. 20% of the locations tested. However, as stated during the meeting with the City, the BPN testing was carried out while the temperature was below 0°C and there was a light snow fall; therefore, the BPN numbers would not be considered to be reliable.

It was also brought to the City's attention that:

- The traffic on the RHVP significantly exceeds the level it was designed for in terms of axial load and number of vehicles. This accelerates pavement deterioration.
- 2) The monitoring station showed that the speed on the RHVP is being significantly exceeded and only relatively low percentage of drivers follows the speed limit of 90 km/h. This increases the risk of skid exponentially.

As discussed with the City, if there is a concern with frictional characteristics of the SMA surface course on the RHVP, an immediate, effective solution would be to carry out shot blasting/skid abrading of areas of concern on

Mr. Gord McGuire, O.L.S., B.Sc.

Director, Engineering Services

Project No. 1791724

December 17, 2018

the existing pavement surface. This treatment is quick and relatively low cost. It restores the skid resistance and improves frictional characteristics immediately. However, it does not address pavement cracking or bumps and dips in the pavement. Other solutions could be the application of microsurfacing; however, although this improves frictional characteristics, seals the cracks and can correct minor dips in a pavement, it is significantly more expensive than shot blasting. It also requires good weather conditions for successful application.

Closure

We trust that this report meets your present requirements. If you have any questions about this report or require further clarification, please do not hesitate to contact the undersigned.

Yours truly,

Golder Associates Ltd.

DRAFT

Ludomir Uzarowski, Ph.D., P.Eng.

Principal, Senior Pavement and Materials Engineer

LU/MLJM/TL/rr

Attachments: Table 1 - Measured Texture Depth on RVHP

Table 2 - Average BPN Values

Laboratory Test Report for Determination of Polished Stone Value

https://golderassociates.sharepoint.com/sites/22068g/deliverables/1791724 draft rpt evaluation of pvmt surface and aggregates on rhvp december/2018 docx



Table 1
Measured Texture Depth (MTD) on RHVP

Core Location				
(Field)	Lane		Wheel Path	MTD
1	Northbound	3	Right Wheel Path	1.19
2	Northbound		Left Wheel Path	1.17
3	Southbound	1	Left Wheel Path	1.11
4	Northbound	2	Right Wheel Path	1.37
5	Northbound	2	Left Wheel Path	1.15
6	Northbound	2	Right Wheel Path	1.27
7	Southbound	1	Right Wheel Path	1.34
8	Northbound	2	Left Wheel Path	1.13
9	Southbound	1	Left Wheel Path	1.31
10	Northbound	1	Left Wheel Path	1.04
11	Southbound	1	Right Wheel Path	1.43
12	Northbound	1	Right Wheel Path	1.14
13	Southbound	2	Left Wheel Path	1.22
14	Southbound	2	Right Wheel Path	1.33
15	Northbound	1	Left Wheel Path	1.08
16	Southbound	2	Right Wheel Path	1.29
17	Southbound	2	Right Wheel Path	1.21
18	Northbound	1	Right Wheel Path	1.13
19	Northbound	1	Left Wheel Path	1.97
20	Northbound	1	Right Wheel Path	1.12
21	Southbound	1	Left Wheel Path	1.57
22	Southbound	1	Right Wheel Path	1.32
23	Southbound	1	Left Wheel Path	1.29
24	Southbound	1	Right Wheel Path	1.20
25	Southbound	1	Left Wheel Path	1.98
26	Southbound	1	Right Wheel Path	1.47
27	Southbound	1	Left Wheel Path	1.26
28	Northbound	2	Right Wheel Path	0.57
29	Northbound	2	Left Wheel Path	0.91
30	Northbound	2	Right Wheel Path	1.04
	Average	9		1.25

Table 2
Average BPN Values*

Core Location				
(Field)	Lane		Wheel Path	Average BPN*
1	Northbound	3	Right Wheel Path	43
2	Northbound	3	Left Wheel Path	47
3	Southbound	1	Left Wheel Path	62
4	Northbound	2	Right Wheel Path	26
5	Northbound	2	Left Wheel Path	21
6	Northbound	2	Right Wheel Path	23
7	Southbound	1	Right Wheel Path	38
8	Northbound	2	Left Wheel Path	22
9	Southbound	1	Left Wheel Path	43
10	Northbound	1	Left Wheel Path	45
11	Southbound	1	Right Wheel Path	29
12	Northbound	1	Right Wheel Path	49
13	Southbound	2	Left Wheel Path	36
14	Southbound	2	Right Wheel Path	30
15	Northbound	1	Left Wheel Path	46
16	Southbound	2	Right Wheel Path	35
17	Southbound	2	Right Wheel Path	47
18	Northbound	1	Right Wheel Path	37
19	Northbound	1	Left Wheel Path	33
20	Northbound	1	Right Wheel Path	44
21	Southbound	1	Left Wheel Path	26
22	Southbound	1	Right Wheel Path	41
23	Southbound	1	Left Wheel Path	54
24	Southbound	1	Right Wheel Path	51
25	Southbound	1	Left Wheel Path	50
26	Southbound	1	Right Wheel Path	41
27	Southbound	1	Left Wheel Path	46
28	Northbound	2	Right Wheel Path	35
29	Northbound	2	Left Wheel Path	49
30	Northbound	2	Right Wheel Path	33
	Ave	rage		39.4

^{*} BPN testing was carried out at night on December 6/7 when the temperature was below 0°C and there was light snow fall; therefore, the results are not reliable.



James Fisher Testing Services (Ireland) Ltd

Unit D, Zone 5 Clonminam Business Park Portlaoise, Co. Laois Tel.: (057) 86 64885



LABORATORY TEST REPORT

DETERMINATION OF POLISHED STONE VALUE (PSV) In accordance with BS EN 1097-8: 2009

PL Project: Project 1791274, Canada Job No.: Client: Lab Ref No.: ST 80727 **Golder Associates** 6925 Century Avenue **Date Received:** 24/01/2018 15/02/2018 Suite 100 **Date Reported:** Mississauga Material: 10mm Aggs Specification: Client Order No: N/A Originator: Amelia Jewison

Sample Details

Site Ref:	10mm Aggs		Sample Typ	e:	Bulk
Lab Reference No.	ST 80727		Date of San	npling:	Client Info.
Supplier:	Client Info.		Sampled By	r: ace with EN 933	Client Yes
Source:	Client Info.		Location:	ice with EN 933	Asphalt Cores
Results			Control Sto	u - Datah	N1/A
Recorded Polished Stone Va	alue		Control Sto	ne Batcn	N/A
Test Specimen:	Test Run 1 a		48.3 46.0	Mean recorded	
	Test Run 2 c	:	45.7 45.3	value (S) =	46.3
Control Stone:	Test Run 1 a		52.0 49.0	Mean recorded	
	Test Run 2 d		49.3 51.3	value (C) =	50.4
Competed Deliched Stans V	-l C + 40 0 C -	1		7	

Corrected Polished Stone Value: S + 49.0 -C =

45

Tested in accordance with the above specifications Subcontracted to a laboratory UKAS accredited in this testing

Approved Signature

JAMES FISHER TESTING SERVICES (IRELAND) LTD.

☑ James Ward, Operations Manager



Tab 16

Edwards, Debbie

From:

Edwards, Debbie

Sent:

April 12, 2019 6:27 PM

To:

Auty, Nicole

Subject:

Confidential: Red Hill Valley Parkway Surface Quality Issues

Sensitivity:

Confidential

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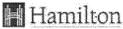
Nicole, I found my miscellaneous physical file for this matter. There isn't a lot but I was first contacted by Gord McGuire on October 4th, 2018. Ron and I first spoke with Gord together by phone on October 5th. I do have a handwritten note of a call with Gord McGuire on November 12th in which he told me what Gary Moore had said to him about the report (i.e. that the report had been sent to Diana in Risk about 2 years previously; the report looked at a UK standard; there is no standard in Ontario; report is a bit misleading since not binding. Gary doesn't recall receiving any response. John McLennan is aware.)

I will have Anita flag in my file system that this miscellaneous file is going to you for future reference.

My electronic file can be found at:

N:\Staff\Edwards\Client Department Files\PW - Engineering Services\Red Hill Valley Parkway Issues\Road Surface Quality

Please let me know if you need anything further. Debbie



City of Hamilton Legal Services and Risk Management Division City Hall 71 Main Street West Hamilton, ON Canada L8P 4Y5 www.hamilton.ca

Debbie Edwards

Deputy City Solicitor, Commercial, Development and Policy (CDP) Legal Services and Risk Management Division, Corporate Services City of Hamilton Phone: 905.546.2424 ext. 2628

Priorie: 905.546.2424 ext. 262

Fax: 905.546.4370

Physical Office: 50 Main St. East, 5th Floor, Hamilton, ON

Please note that I will be retiring from the City of Hamilton at the end of April 2019. My successor is Michael Kyne who will commence as the new Deputy City Solicitor for the Commercial Development Policy (CDP) Section of Legal and Risk Management Services as of Monday April 15, 2019. Michael may be reached at michael.kyne@hamilton.ca or at 905-546-2424 ext. 4716.

Mc G M'Gure, Ron Suba, DEdward,

- Gold to speak with Gary moon here finalizing note to Non Millionenheld more context ego serve Golder Rept is draft (exportifical).
- > we stild see reised draft briefing note + proposed comm'el Repts
- of road woring up representation
- -> Good will gather more info + get bach to us.
- -i good news is repaired are planned for 2019.

Tab 17

From: Ferguson, David [David.Ferguson@hamilton.ca]

Sent: 10/2/2018 4:35:21 PM

To: Brian Malone [/O=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=67c055668f2542418a0037674b420253-Brian Malon]; Alireza Hadayeghi

[/O=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=bb26c740617843db9e2ccb5218728308-Alireza Had]

CC: Olszewski, Chris [Chris.Olszewski@hamilton.ca]

Subject: FW: Red Hill Safety Assessment

Hi Gents, hope your both doing well.

Can you please provide me with a quote to undertake the work outlined below, please note the timelines for completion. The RHVP is being paved next year, so Edward would like to include any works that might come from this review into the Budget.

David

----Original Message----

From: White, Martin

Sent: October 2, 2018 4:03 PM

To: Soldo, Edward <Edward.Soldo@hamilton.ca>; Ferguson, David <David.Ferguson@hamilton.ca>

Cc: Boylan, Shelley <Shelley.Boylan@hamilton.ca>

Subject: RE: Red Hill Safety Assessment

Thanks Edward, Dave please execute asap. Thanks. Charge the RLC reserve for the Roster assignment

----Original Message----

From: Soldo, Edward

Sent: October 2, 2018 3:15 PM

To: Ferguson, David <David.Ferguson@hamilton.ca>; White, Martin <Martin.White@hamilton.ca>

Subject: RE: Red Hill Safety Assessment

Sounds good.

Edward Soldo, P.Eng.

Director of Roads & Traffic Public Works Department

City of Hamilton

77 James St North., Suite 400., Hamilton, ON L8R 2K3

Phone: 905-546-2424 ext. 4622

Fax: 905-546-4473

Email: Edward.Soldo@hamilton.ca

----Original Message-----From: Ferguson, David

Sent: October 2, 2018 12:55 PM

To: Soldo, Edward <Edward.Soldo@hamilton.ca>; White, Martin <Martin.White@hamilton.ca>

Subject: RE: Red Hill Safety Assessment

Gentlemen,

Please review and provide any comments or suggestions,

Purpose: To investigate the current roadside design on the mainline of the Lincoln Alexander and Red Hill Valley Parkways as well as the on and off ramps for both facilities. The consultant shall identify collision patterns and current roadside hazards on the mainline and geometric design issues, signing review and roadside hazard review on all ramps. The assignment includes the development of solutions to hazards identified in the report. The purpose of the assignment is to identify hazards and provide corrective measures to reduce collisions, injuries and fatalities.

Scope: To evaluate the current roadside design and conditions to ensure it provides a clear, recoverable area where feasible, and where roadsides are not designed free of fixed objects, crashworthy roadside safety hardware is used to reduce risk. This study shall also review the current geometrics of the on and off ramps for both facilities and provide recommendations for improvements.

The report shall consist of the following items:

* An installation and maintenance checklist- create an installation and maintenance spreadsheet related to construction, new installations, and the facility based on identified issues.

maintenance of

* Inventory- existing hardware on the roadside of both facilities, identifying condition of existing safety devices, signs, etc. including areas with foliage.

Crash monitoring-examine the reported collisions involving roadside facilities.
 In-depth investigation-investigate high collision trend locations that resulted in

serious injury or a fatality and provide recommendations for collision counter measures.

This study is to follow the industry standards for roadside safety as identified by AASHTO Roadside Design Guide, TAC Geometric Design Guide and the MTO Roadside Safety Manual.

Timelines: This assignment is to be completed in 2 Phases

- * Red Hill Valley Parkway review to be completed by December 15, 2018
- * Lincoln Alexander Parkway review to be completed by August 15, 2019

David

----Original Message----

From: Soldo, Edward

Sent: September 28, 2018 1:51 PM

To: White, Martin <Martin.White@hamilton.ca>; Ferguson, David <David.Ferguson@hamilton.ca>

Subject: Red Hill Safety Assessment

I would like to see the scope of work before we engage CIMA related to the roadside safety assessment as per the manual and existing safety device review. This is time sensitive.

Thanks

Edward Soldo, P.Eng. Director of Roads and Traffic City of Hamilton

Sent from my iPhone

From: Soroush Salek [Soroush.salek@cima.ca]

Sent: 11/23/2018 5:30:47 PM

To: Ferguson, David [/O=GOVT/OU=EMAIL/cn=Recipients/cn=dferguso]

CC: White, Martin [/O=GOVT/OU=EMAIL/cn=Recipients/cn=mwhite]; Jacob, Susan

[/O=GOVT/OU=EMAIL/cn=Recipients/cn=SJacob]; Vala, Sarath [/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Vala, Sarathf65]; Alireza Hadayeghi [ali.hadayeghi@cima.ca]; Brian Malone

[Brian.Malone@cima.ca]; Giovani Bottesini [Giovani.Bottesini@cima.ca]

Subject: Hamilton RHVP & LINC Roadside Safety Reviews - Draft Report

Attachments: B001014_Hamilton_RHVP Roadside Safety Assessment_e01.pdf; B001014_RHVP_Guide_Rails_e01.gdb.zip

Hello David,

Please find attached the draft report as well as the GIS file with the detailed recommendations for Hamilton RHVP Roadside Safety Review.

The GIS file with the recommendations includes the following information:

- Existing_Guide_Rails (line features): contains locations of existing guide rails
- Guide Rail Recommendations (line features): contains locations of recommended guide rails
- **B1014_GR_Rec** (data table): contains details from guide rail inventory and recommendations. This should be already joined with Existing_Guide_Rails layer so that when the attribute table is opened all details are associated with the guide rail location. However, if this is not the case, both can be joined through the "ID" field (NOT OBJECT_ID).
- Additional_Recommendations_Pts: contains locations of additional recommendations (e.g. fill ground around IP concrete base, etc.)
- Additional_Recommendations_Lines: contains locations of additional recommendations (e.g. clear vegetation on slope)

As discussed during the kick-off meeting, we tentatively scheduled the progress meeting for November 30 to review the study findings and discuss the City's comments on the draft report. Please let me know if you are still available on that date or alternatively recommend new dates and times.

During the progress meeting, we would like to have your feedback on the following discussion items:

- Section 1.1: confirmation of which recommendations from the 2013 and 2015 studies were implemented (Section 1.1).
- Section 3.1.1: CIMA+ could not determine the reason for the abrupt increase in collisions from 2013-2014 to 2015-2017. Both self-reported and other collisions have similar increase in 2015. Would the City have an explanation?
- Section 4.2: CIMA[†] assumed sign installation unit cost as \$250. If the City has a different cost, please provide (note that it is expected to be lower than a stand-alone sign installation since it would be in conjunction with guide rail installation).
- Section 4.2: Cost summary provided is for "ultimate" recommendations. City may want to confirm allocated budget to select locations; or CIMA+ can rank all locations based on EPDO collisions.
- Section 5.1: In 2009 the ball bank thresholds increased to reflect improvements in vehicle technology. Using those thresholds would result in higher advisory speeds for various ramps. While there is value in increasing the advisory speeds to improve credibility from drivers perspective, many ramps have existing advisory speeds equal to the compatible design speed. Considering this, it is advisable to maintain the current speeds (also for consistency throughout the City and with the MTO connecting highways, if the new thresholds have not yet been adopted)
- Section 9: Summary of Findings and Recommendations will be completed for the final version of the report.

Have a great weekend. Best Regards, Soroush.

SOROUSH SALEK, Ph.D., P.Eng.

Associate partner / Project Manager / Traffic Engineering, Transportation

T 289-288-0287 ext. 6849 C 289 684-2594 F 289-288-0285 3027 Harvester Road, Suite 400 Burlington Ontario L7N 3G7 CANADA





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City of Hamilton

Roadside Safety Assessment

Red Hill Valley Parkway

Draft Report November 2018

B001014

SUBMITTED BY CIMA CANADA INC.

400–3027 Harvester Road Burlington, ON L7N 3G7 T: 289-288-0287 F: 289-288-0285

cima.ca

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Ali Hadayeghi Ali.Hadayeghi@cima.ca T: 289-288-0287, 6803





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	Soroush Salek, P.Eng., Ph.D.
VERIFIED BY:	Ali Hadayeghi, P.Eng., Ph.D.
	Brian Malone P Eng. PTOF

CIMA+

400 – 3027 Harvester Road Burlington, ON. L7N 3G7



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1. Introduction

1.1. Background

The City of Hamilton (The City) has resurfacing works scheduled for the Red Hill Valley Parkway (RHVP) in 2019 and has identified the need to complete a roadside safety assessment of the facility, including 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 correcting deficiencies and/or 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). The main focus of the study is on short-term improvements, although some medium-or long-term recommendations are also discussed when relevant

CIMA⁺ has completed two previous studies on the RHVP. In 2013¹, a review of the portion of the RHVP between Dartnall Road and Greenhill Avenue was undertaken to determine the safety performance of the roadway since its opening in 2007 and to recommend measures to increase safety performance. The Mud Street interchange ramps were also included in the scope of the 2013 review. In 2015², a review of the entire length of the RHVP mainline was undertaken, with a focus on cross median collisions and a review of the need to provide median barrier along the facility.

The main findings from both studies that are applicable to roadside safety include:

- Atypically high proportions of Single Motor Vehicle (SMV) collisions, as well as wet surface and non-daylight conditions;
- High proportion of "lost control" apparent driver action;
- All locations with the highest collision frequencies located within, on approach to, or leaving horizontal curves;
- Particularly high concentration of collisions around the King Street interchange (31% of RHVP northbound collisions occurred over only 7.5% of its length; this number increases to 40% for median related collisions);
- High concentration of median related collisions, in the northbound direction, along a 600-m section around the King Street interchange (40% of collisions 7.5% of the RHVP length);
- High concentration of median related collisions, in the southbound direction, along a 1.1-km section around the King Street and Queenston Road interchanges (38% of collisions over 13.5% of the RHVP length);
- High operating speeds, with 85th percentile of 110 km/h and 115 km/h in the northbound and southbound directions, respectively; and with 15% and 22% of drivers at or exceeding the design speed of the road (110 km/h) in the northbound and southbound direction, respectively; and

¹ Red Hill Valley Parkway Safety Review, CIMA⁺. October 2013.

² Red Hill Valley Parkway Detailed Safety Analysis, CIMA⁺. November 2015.



 High collision frequency at the Mud Street E-W On Ramp (40 collisions between October 2009 and October 2013, four times greater than the ramp with the second highest collision frequency).

Some of the main recommendations provided in the previous studies, applicable to roadside safety, included:

- Install oversized speed limit signs/speed feedback signs + regular speed enforcement;
- Install Slippery When Wet signs (potentially supplemented by rain activated flashing beacons);
- Install permanent recessed pavement markers;
- Conduct pavement friction testing;
- Install high-tension cable guide rail along median (long-term measure, with consideration for effectiveness of other measures);
- Install high-friction pavement on approach and through the curve on the Mud Street E-W On Ramp; and
- Install progressively larger chevron alignment signs, pavement marking text, and dynamic/variable speed warning sign/flashing beacons on the Mud Street E-W On Ramp.

The present study takes into account the findings and recommendations of the previous studies, in order to confirm or expand the recommendations to reduce roadside related collision frequency and severity.

1.2. Scope of Work

The study area of this assignment includes the entire length of the RHVP and all its ramps, as illustrated in **Figure 1**.



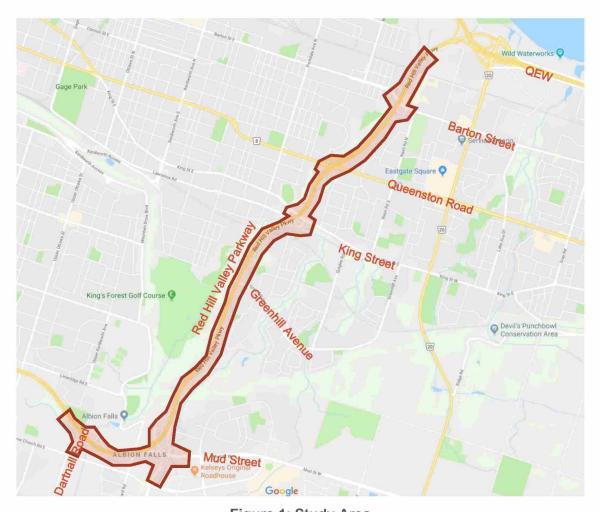


Figure 1: Study Area

The following tasks were undertaken for this assignment:

- Geometric design review to confirm curve radii and compatible design speeds of mainline and ramps, as well as requirement for median barrier;
- Collision history review to identify collision patterns associated with roadside hazards and roadway departures;
- Recommendation of safety countermeasures to reduce serious injuries and fatalities;
- Roadside safety devices field inventory and assessment based on current guidelines, and recommendations for maintenance, upgrades or new installations;
- Assessment of ramp/curve advisory speeds through ball bank tests;
- Review of shoulder condition through field inspection;
- Review of potential locations to build up emergency crossover locations; and
- Review of the feasibility to build up access to two wastewater facilities near Barton Street and Queenston Road.

The scope of this study is limited to short-term recommendations that can be implemented in conjunction with the planned resurfacing, although some long-term considerations may be provided where relevant.



2. Geometric Design Review

2.1. Design Speed and Curve Radii

CIMA⁺ completed a high-level review of the geometry of the RHVP mainline and ramps. The City provided design drawings for the RHVP mainline and ramps between the north end of the facility and the Greenhill Avenue interchange. The remaining locations were reviewed using satellite imagery (Google Earth) and approximate curve radii were measured. The review included curve radii and the compatible design speed (based on the 2017 TAC's Geometric Design Guide for Canadian Roads, which is the most conservative standard compared to the 1985 MTO Geometric Design Standards for Ontario Highways and to the 2017 MTO Supplement to the TAC Guide), and a subsequent comparison to operational speeds and posted ramp advisory speeds. The information reviewed was also used in the assessment of roadside safety devices (Section 4), to determine clear zone widths and guide rail length of need.

The RHVP has a posted speed limit of 90 km/h. According to the findings of a previous speed study (May 2013 Speed Study between Mud Street and Greenhill Avenue), operating speeds (85th percentile) on the facility were 110 km/h for the northbound direction and 115 km/h in the southbound direction. Based on this, curve radii were reviewed for compatibility with a design speed of 110 km/h.

The RHVP was designed with maximum superelevations of 6%. **Table 1** summarizes minimum curve radii for various design speeds, based on TAC (2017).

Design Speed (km/h)	Minimum Radius (m)
120	750
110	600
100	440
90	340
80	250
70	190
60	130
50	90
40	55

Table 1: Minimum Curve Radii for 6% Maximum Superelevation (TAC, 2017)

The curves on the RHVP mainline present radii ranging between 420 m (between Greenhill Avenue and King Street) and 5,000 m (across the Greenhill Avenue interchange). Based on the values in Table 1, the following mainline locations have a compatible design speed lower than 110 km/h:

- RHVP Mainline north of Barton Street: R = 475 m; DS = 100 km/h;
- RHVP Mainline north of King Street: R = 450 m; DS = 100 km/h; and



RHVP Mainline south of King Street: R = 420 m; DS = 90 km/h.³

Curve radii compatible with a design speed lower than the operational speed, particularly around the King Street interchange, can be a contributing factor to collisions (refer to Section 3.1.5), especially when wet surface conditions are present. As previously noted, some sections of the RHVP present 85th percentile speeds up to 115 km/h, even though the posted speed limit (90 km/h) is lower than the compatible design speeds.

None of the ramps in the study area were found to have design speeds lower than the existing advisory speeds. The ramps listed in **Table 2** have compatible design speeds equal to the existing advisory speed.

rubio 2. Kirri Kampo Wan Booigh opour Equal to Existing Advicory opour				
Ramp	Curve Radius (m)	Compatible Design Speed (km/h)	Advisory Speed (km/h)	
Barton Street N-E/W Off	65	40	40	
Barton Street S-E/W Off	65	40	40	
Barton Street E/W-N On	50	30	30	
Barton Street E/W-S On	50	30	30	
Queenston Road N-E/W Off	71	40	40	
Queenston Road S-E/W Off	67	40	40	
Queenston Road E/W-S On	43	30	30	
King Street S-E/W Off	65	40	40	
King Street E/W-N On	50	30	30	
King Street E/W-S On	45	30	30	
Mud Street E-W On	50	30	30	
Upper RHVP S-W On	50	30	30	
Dartnall Road S-W On	55	40	40	

Table 2: RHVP Ramps with Design Speed Equal to Existing Advisory Speed

The advisory speeds equal to the design speeds could be a contributing factor to collisions on the ramps, since drivers may exceed the posted advisory speed of the road (refer to Section 5.1).

2.2. Median Barrier Warrant

The prevailing guidance in Ontario with respect to roadside barriers is the MTO's 2017 Roadside Design Guide (RDG). Based on the RDG, a median barrier is:

- Recommended where the median width is less than 10 metres;
- Optional where the median width is between 10 and 15 metres; and
- Not normally considered where the median width is more than 15 metres.

The RHVP median width varies between 15.0 and 22.7 metres. Under these conditions, a median barrier is not normally considered. However, the RDG also states that, for locations with median widths greater than 15 metres and with a history of cross-median collisions, a benefit-

³ Based on the 1985 Geometric Design Standards for Ontario Highways (MTO), at the time the RHVP was designed / constructed, a curve radius of 420 metres was compatible with a design speed of 100 km/h. This is also the case for the 2017 MTO Supplement to the TAC Guide (Exhibit 3-F – maximum speed at given superelevation for resurfacing projects).



cost evaluation and an engineering study should be conducted to determine if barrier should be installed.⁴ In the 2015 study, CIMA⁺ identified concerns with cross-median collisions and completed a benefit-cost evaluation, which concluded that providing a median barrier would be cost-effective.

A median barrier, however, would consist of a long-term countermeasure and would not be implemented in conjunction with the upcoming resurfacing of the RHVP. With the resurfacing and the implementation of other short-term countermeasures (refer to Section 3.4), it is possible that a reduction of median related collisions will be achieved by addressing speed and wet surface related collisions, which may change the benefit-cost relationship. The City should, therefore, monitor cross median collisions after the resurfacing is completed and other countermeasures are implemented, and re-evaluate the benefits of providing median barrier along the RHVP.

3. Collision History Review

3.1. Overview of Collisions

3.1.1. Collisions by Year

Collision records were provided by the City in digital format for the five-year period between 2013 and 2017. After removing collisions out of scope (e.g. occurring at intersections/ramp terminals) and duplicate records from the data set provided, a total of 939 collisions were reported to occur along the RHVP mainline, and a total of 231 collisions were reported to occur on ramps.

Figure 2 and **Figure 3** summarize collisions by year on the RHVP mainline and ramps, respectively, during the study period.







Figure 3: RHVP Collisions by Year (Ramps)

⁴ Figure 2-13 of the RDG indicates that where the number of through lanes exceeds 3 lanes in both directions with centre median width less than 23 m, TL-3 barrier is recommended in the median. Although this would apply to the RHVP, the policy statement in the RDG makes reference to the figure in the context of freeway major capital expansion and reconstruction projects. The RHVP is not considered a freeway and the scope of the present study does not involve major capital expansion of reconstruction, therefore the recommendation does apply at this time.



The mainline presented a considerable increase in annual collisions between 2013 and 2017, from an approximate range of 130 to 140 collisions per year (2013 to 2014) to an approximate range of 200 to 250 (2015 to 2017). The ramps present a relatively constant number of collisions, with 42 or 43 collisions per year, except for 2013, when a relatively high number of collisions (62) were reported.

3.1.2. Collisions by Severity

Figure 4 and **Figure 5** summarize collisions by severity on the RHVP mainline and ramps, respectively, during the study period (2013 to 2017).





Figure 4: RHVP Collisions by Severity (Mainline)

Figure 5: RHVP Collisions by Severity (Ramps)

The mainline presented 704 (75%) property damage only (PDO) collisions, which include self-reported (SR) collisions; 231 (24.6%) non-fatal injury collisions; and 4 fatal injury collisions (0.4%). The ramps presented 169 (73%) PDO/SR collisions and 62 (27%) non-fatal injury collisions. No fatal injuries were reported on the RHVP ramps during the study period.

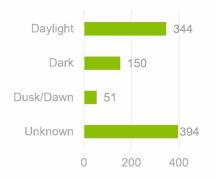
The details of the fatal collisions on the RHVP are as follows:

- A head on collision occurred on May 5, 2015 at 11:27 p.m., in the northbound direction between Greenhill Avenue and King Street. The collision occurred with clear weather, wet surface and with dark conditions. A northbound vehicle lost control (skidding/sliding), ran off the road, and struck another vehicle in the southbound direction, resulting in two fatalities;
- A rear end collision occurred on July 23, 2015 at 10:10 p.m., in the northbound direction between Mud Street and Greenhill Avenue. The collision occurred with clear weather, dry surface and with dark conditions. A northbound vehicle changed lanes, struck another northbound vehicle and then struck a steel guide rail;
- A head on collision occurred on January 25, 2017 at 4:52 p.m., in the eastbound direction between Dartnall Road and Mud Street. An eastbound vehicle lost control, ran off the road and struck another vehicle in the westbound direction; and
- A sideswipe (same direction) collision occurred on February 21, 2017 at 11:00 p.m., in the northbound direction between Greenhill Avenue and King Street.

3.1.3. Collisions by Light, Environment and Road Surface Conditions

Figure 6 through **Figure 11** summarize the collisions in the study area, for mainline and ramps, broken down by light, environment and road surface conditions. For all of these factors, 42% of mainline collisions and 32% of ramp collisions have "unknown" values. These correspond to self-reported collisions, which do not contain this information.





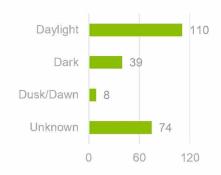


Figure 6: RHVP Collisions by Light Condition (Mainline)

Figure 7: RHVP Collisions by Light Condition (Ramps)

Out of the 545 mainline collisions that include light condition information, 344 (63%) occurred during daylight periods, 150 (28%) during dark periods, and 51 (9%) during dusk/dawn periods; out of the 157 ramp collisions that include this information, 110 (70%) occurred during daylight periods, 39 (25%) during dark periods, and 8 (5%) during dusk/dawn periods. The 37% non-daylight collisions on the mainline is consistent with the review completed in the 2015 review.

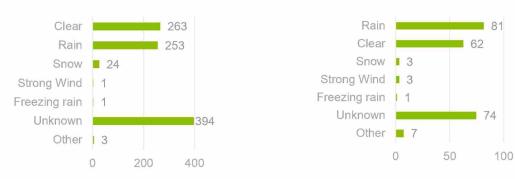


Figure 8: RHVP Collisions by Environment Figure 9: RHVP Collisions by Environment Condition (Mainline) Condition (Ramps)

Out of the 545 mainline collisions that include environment condition information, 263 (48%) occurred with clear weather, 253 (46%) during rain, and 24 (4%) during snow conditions; out of the 157 ramp collisions that include this information, 81 (52%) occurred during rain, and 62 (27%) with clear weather. The proportion of rain environment condition is noticeably higher than what was found in the 2015 review (34%).







Figure 10: RHVP Collisions by Road Surface Condition (Mainline)

Figure 11: RHVP Collisions by Road Surface Condition (Ramps)

Out of the 545 mainline collisions that include road surface condition information, 347 (64%) occurred on wet surface and 180 (33%) on dry surface; out of the 157 ramp collisions that include this information, 114 (73%) occurred on wet surface and 38 (24%) on dry surface. The proportion of wet surface condition is noticeably higher than what was found in the 2015 review (50%), which, on that study, had already been found to be significantly higher than the Provincial and City averages of 17.6% and 22%, respectively.

3.1.4. Apparent Driver Action

Figure 12 and **Figure 13** summarize the number of drivers involved in collisions⁵ by apparent driver action on the RHVP, for mainline and ramps, respectively.

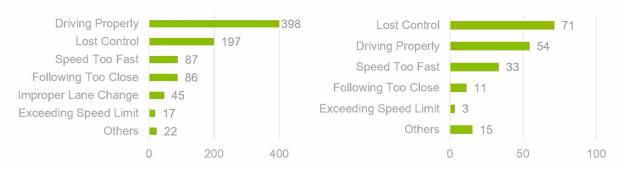


Figure 12: Apparent Driver Action (RHVP Mainline)

Figure 13: Apparent Driver Action (RHVP Ramps)

Out of 852 drivers with known apparent driver action for mainline collisions, 398 (47%) were reported to be driving properly; 197 (23%) were reported to have lost control; 87 (10%) were reported to be driving at a speed too fast for conditions; and 86 (10%) were reported to be following too close; only 17 drivers (2%) were reported to be exceeding the speed limit. For ramps, 71 out of 187 drivers (38%) were reported to have lost control; 54 (29%) were reported

⁵ Self-reportable collisions excluded, since they do not include this information.



to be driving properly; 33 (18%) were reported to be driving at a speed too fast for conditions; but only 3 drivers (2%) were reported to be exceeding the speed limit.

When combined, lost control and speed too fast for conditions apparent driver actions represent 33% of drivers involved in a collision along the RHVP mainline, and 56% on ramps. These proportions increase to 44% on the mainline and to 68% on ramps for collisions involving wet surface conditions.

3.1.5. Collisions by Location

Figure 14 and **Figure 15** summarize total and fatal + injury (FI) collisions, respectively, by mainline location along the RHVP.



Figure 14: Total Collisions by Location (Mainline)



Figure 15: Fatal + Injury Collisions by Location (Mainline)



Both total and FI collisions follow a similar pattern with respect to the location of collisions, with the sections between Mud Street and Greenhill Avenue, and between Greenhill Avenue and King Street presenting the highest collision frequencies. This distribution is consistent with the findings from the 2015 review. When accounting for the length of each segment, the northbound segment between Greenhill Avenue and King Street presents the highest concentration of collisions, with 138 total and 35 FI collisions per kilometer. This is followed by the northbound section between King Street and Kingston Road (88 total and 20 FI collisions per km), the southbound section between Greenhill Avenue and King Street (75 total and 19 FI collisions per km), the southbound section between King Street and Queenston Road (72 total and 14 FI collisions per km), and the northbound section between Mud Street and Greenhill Avenue (69 total and 16 FI collisions per kim).

When wet surface conditions are reviewed by location (**Table 3**), the sections between Greenhill Avenue and Queenston Road stand out, with the proportion of wet surface collisions (self-reported records excluded) ranging between 69% and 88% for total collisions, and between 69% and 83% for FI collisions.

Mainline Section	Total	FI
Mainine Section	Total	I SU
LINC to Dartnall NB	25%	29%
LINC to Dartnall SB	40%	43%
Dartnall to Mud NB	26%	22%
Dartnall to Mud SB	33%	57%
Mud to Greenhill NB	58%	57%
Mud to Greenhill SB	36%	55%
Greenhill to King NB	88%	80%
Greenhill to King SB	69%	76%
King to Queenston NB	84%	83%
King to Queenston SB	71%	69%
Queenston to Barton NB	45%	46%
Queenston to Barton SB	48%	39%
Barton to QEW NB	38%	33%
Barton to QEW SB	60%	n/a

Table 3: Proportion of Wet Surface Collisions by Location

Although other sections also present atypically high proportions of wet surface collisions, it is possible that the sequence of curves with relatively small radii (as identified in the 2015 review) in the sections between Greenhill Avenue and Queenston Road contributes to these percentages.

Figure 16 summarizes collisions by ramp location, for the RHVP ramps with the highest collision frequencies (other ramps presented less than 10 total collisions).



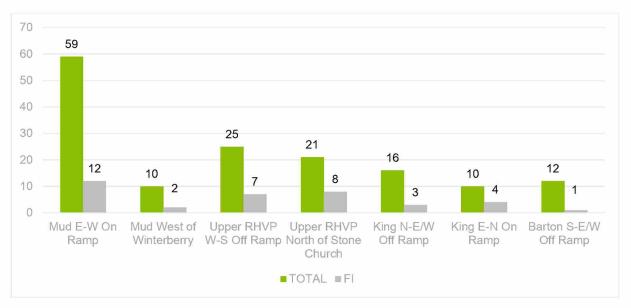


Figure 16: Collisions by Location (Ramps with 10 or More Collisions)

The Mud Street E-W On Ramp experienced the highest collision frequency of total and FI collisions, with 59 and 12, respectively, during the study period. Out of the 59 collisions, 52 (88%) were Single Motor Vehicle collisions. As noted in Section 2.1, this ramp has an advisory speed equal to the compatible design speed based on the curve radius. This could be a contributing factor to the high frequency of collisions compared to other ramps (although other factors may also be relevant, since, the same is the case for another 12 ramps in the study area).

The second and third highest collision frequency were observed on the Upper Red Hill Valley Parkway W-S Off Ramp (25 total and 7 FI collisions) and on the section of Upper red Hill Valley Parkway north of Stone Church Road (21 total and 8 FI collisions). **Figure 17** illustrates the location of these three ramps. The considerably higher collision frequency on the Mud Street E-W On Ramp, compared to other ramps in the study area, is consistent with the findings from the 2013 study, as mentioned in Section 1.1).





Figure 17: Mud Street and Upper Red Hill Valley Parkway Ramps

The proportions of wet surface collisions and combined lost control/speed too fast for conditions on these ramps are summarized in **Table 4**. These proportions only include collisions where the information was available (i.e. excludes self-reported collisions).

Table 4: Wet Surface and Lost Control/Speed Too Fast Collisions on Ramps

Ramp	Ramp Wet Surface (Total FI)	
Mud E-W On Ramp	78% 75%	67% 86%
Upper RHVP W-S Off Ramp	100% 100%	80% 86%
Upper RHVP North of Stone Church	50% 50%	43% 33%

All collisions on the Upper Red Hill Valley Parkway W-S Off Ramp occurred on wet surface, and 80% of drivers were reported to having lost control or being too fast for conditions (86% for FI collisions). Mud Street E-W On Ramp presented 78% of all collisions on wet surface, with 67% of drivers having lost control or being too fast for conditions (86% for FI collisions). On the Upper Red Hill Valley Parkway section north of Stone Church Road, 50% of collisions occurred on wet surface, and 43% of drivers lost control or were too fast for conditions (33% for FI collisions).

3.2. Collisions with Roadside Elements

Table 5 summarizes collisions with different roadside elements, as well as run off road collisions. In total, there were a total of 312 mainline collisions (121 FI) and 119 ramp collisions (44 FI) involving these elements.



Table 5: Summary of Collisions with Roadside Elements

Roadside Element	Mainline		Ramps	
Roausiue Element	Total	FI	Total	FI
Concrete or Steel Barrier	197	68	49	16
Other Fixed Objects	22	7	17	3
Curb	13	6	9	6
Ditch	41	26	33	12
Run Off Road	106	44	46	15

Table 6 summarizes the relevant patterns found for collisions with roadside elements. Wet surface conditions were found to present high proportions, ranging from 54% for curbs to 86% for other fixed objects (including poles, fences, rock faces, trees, bridge supports, etc.) along mainline sections. For ramps, the proportion of wet surface collisions ranges from 65% for other fixed objects to 89% for curbs. Additionally, the northbound direction on the mainline presents the majority of collisions for all roadside elements reviewed, ranging from 54% for curbs to 69% for concrete or steel barriers.

Table 6: Relevant Patterns for Collisions with Roadside Elements

Roadside Element	Mainline		Ramps	
Rodusiue Element	Wet Surface	NB Direction	Wet Surface	
Concrete or Steel Barrier	76%	69%	84%	
Other Fixed Objects	86%	68%	65%	
Curb	54%	54%	89%	
Ditch	76%	56%	88%	
Run Off Road	70%	62%	83%	
Any	76%	64%	82%	

Figure 18 and **Figure 19** summarize total and fatal + injury (FI) collisions with roadside elements, respectively, by mainline location along the RHVP.



Figure 18: Total Collisions with Roadside Elements by Location (Mainline)





Figure 19: Fatal + Injury Collisions with Roadside Elements by Location (Mainline)

The section of the RHVP between Greenhill Avenue and King Street presents the highest frequency of collisions with roadside elements. In particular, the northbound direction along this segment experienced 111 collisions during the study period, almost five times the frequency of the southbound direction along the same section, and more than twice the frequency of the section between Mud Street and Greenhill Avenue northbound (the second highest frequency).

When accounting for the length of the segments, the northbound section between Greenhill Avenue and King Street presents 85 collisions per kilometre, three times higher than the second and third highest segments (northbound and southbound sections between King Street and Queenston Road, with 27 collisions per km each).

For fatal + injury collisions, the same sections of the RHVP stand out, however the difference between the sections with highest and second highest collision frequencies is not as high.

When wet surface conditions are reviewed by location (**Table 7**), the sections between Greenhill Avenue and Queenston Road stand out, with the proportion of wet surface collisions ranging between 75% and 96% for total collisions, and between 84% and 100% for FI collisions.



Table 7: Proportion of Wet Surface Collisions with Roadside Elemen	ts by Locatio	n
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Mainline Section	Total	FI
LINC to Dartnall NB	50%	50%
LINC to Dartnall SB	14%	25%
Dartnall to Mud NB	38%	33%
Dartnall to Mud SB	44%	67%
Mud to Greenhill NB	67%	63%
Mud to Greenhill SB	60%	45%
Greenhill to King NB	90%	84%
Greenhill to King SB	96%	100%
King to Queenston NB	96%	100%
King to Queenston SB	75%	75%
Queenston to Barton NB	50%	75%
Queenston to Barton SB	58%	55%
Barton to QEW NB	25%	0%
Barton to QEW SB	75%	n/a

Figure 20 summarizes collisions with roadside elements by ramp location, for the RHVP ramps with the highest collision frequencies (other ramps presented 6 or less total collisions).



Figure 20: Collisions with Roadside Elements by Location (Ramps)

The Mud Street E-W On Ramp experienced the highest frequency of collisions with roadside elements for total and FI collisions, with 37 and 9, respectively, during the study period. The second and third highest collision frequency were observed on the Upper Red Hill Valley Parkway W-S Off Ramp (18 total and 6 FI collisions) and on the King Street N-E/W Off Ramp (11 total and 3 FI collisions).

The proportions of wet surface collisions and combined lost control/speed too fast for conditions on these ramps are summarized in **Table 4**. These proportions only include collisions where the information was available (i.e. excludes self-reported collisions).



Table 8: Wet Surface and L	ost Control/Speed	Too Fast Collisions on Ramps	

Ramp	Wet Surface (Total FI)	Lost Control + Speed Too Fast (Total FI)
Mud E-W On Ramp	84% 89%	67% 86%
Upper RHVP W-S Off Ramp	100% 100%	80% 86%
King N-E/W Off Ramp	81% 67%	43% 33%

All collisions on the Upper Red Hill Valley Parkway W-S Off Ramp occurred on wet surface, and 80% of drivers were reported to having lost control or being too fast for conditions (86% for FI collisions). Mud Street E-W On Ramp presented 78% of all collisions on wet surface, with 67% of drivers having lost control or being too fast for conditions (86% for FI collisions). On the Upper Red Hill Valley Parkway section north of Stone Church Road, 50% of collisions occurred on wet surface, and 43% of drivers lost control or were too fast for conditions (33% for FI collisions).

3.3. Summary of Collision History Review

The findings from the collision history review for the period between 2013 and 2017 were consistent with the two previous studies completed by CIMA⁺ for the Red Hill Valley Parkway, as summarized below.

Overall Findings

- Wet surface collisions were found to represent 64% of mainline collisions and 73% of ramp collisions. The proportion of wet surface collisions on the mainline presented an increase compared with the 2015 study (50%);
- "Lost control" and "speed too fast for conditions" apparent driver actions were reported in 33% of mainline collisions (44% for wet surface collisions) and 56% of ramp collisions 68% for wet surface collisions); and
- These findings suggest that inadequate skid resistance (surface polishing, bleeding, contamination) and excessive speeds may be contributing factors to collisions;

Critical Locations

- The mainline sections with the highest collision frequencies in the study area are Mud Street to Greenhill Avenue, and Greenhill Avenue to King Street, particularly in the northbound direction;
 - Mainline collisions involving wet surface condition present extremely high proportions between Greenhill Avenue and King Street, and between King Street and Queenston Road (up to 88%). In combination with potential skid resistance and excessive speed issues, curve radii compatible with a design speed of 100 km/h around the King Street interchange may explain this concentration of collisions (operational speed may exceed the design speed); and
- The Mud Street E-W On Ramp experienced the highest collision frequency among RHVP ramps, followed by the Upper RHVP W-S Off Ramp; the proportion of wet surface collisions on these two ramps are 78% and 100%, respectively, while the combined proportions of "lost control" and "speed too fast for conditions" apparent driver actions are 67% and 80%, respectively. The Mud Street E-W On Ramp presents a curve radius compatible with a design speed of 30 km/h, the same as the existing posted advisory speed; the Upper RHVP W-S Off Ramp has a curve radius compatible with a design speed of 50 km/h and posted



advisory speed of 40 km/h. It is possible that drivers are exceeding the design speed of these ramps.

3.4. Recommendations to Reduce Collision Frequency / Severity

Based on the findings presented in the previous sections, the following recommendations to reduce collision frequency and severity on the RHVP are provided:

- Ensure the pavement design for the upcoming resurfacing considers the history of wet surface collisions and investigates the need for higher friction surface;
- Consider installing oversized speed limit signs/speed feedback signs and conducting regular speed enforcement, particularly in the vicinity of the King Street and Queenston Road interchanges;
- Consider installing and/or intensifying Slippery When Wet signage in the study area, potentially supplemented by rain activated flashing beacons (however, the effectiveness of improved skid resistance can be assessed prior to implementing this measure);
- Consider installing high-friction pavement on approach and through the curve on the Mud Street E-W On Ramp;
- Consider installing pavement marking text and/or peripheral transverse bars on the Mud Street E-W On Ramp and Upper RHVP W-S Off Ramp. If not found to be effective, consider installing speed feedback signs or flashing beacons on the advisory speed signs; and
- Monitor the effect of the other countermeasures on median-related collision frequency and severity (particularly wet surface collisions, which may be reduced by improved pavement friction), and consider further investigating the need for installing median barrier in the longterm.

4. Roadside Safety Devices Inventory and Condition Assessment

4.1. Inspection Procedure

CIMA⁺ completed site visits between October 29, 2018 and November 8, 2018, and an completed an inventory and condition assessment of roadside safety devices along the RHVP mainline and ramps, including steel beam guide rails, crash cushions, and unprotected hazards. Concrete barriers were not fully inventoried, however any significant evidence of barrier impacts were noted.

The condition assessment was based on the MTO's 2017 Roadside Design Guide (RDG) as the primary reference. For items not addressed by the RDG, TAC's 2017 Geometric Design for Canadian Roads (GDGCR) was used.

The following elements were reviewed as part of the inventory/condition assessment:



- **Hazard type and offset:** including type of hazard (embankment,⁶ fixed object, water bodies, etc.), offset from travel lane, and offset of back of hazard;
- Barrier type: whether steel beam guide rail (SBGR), SBGR with channel, Type M SBGR, or other barrier type;
- Barrier offset: relative to the edge of the travel lanes;
- **Barrier height**: checked against the tolerances in Table 3-4 of the RDG (Acceptable Height at Completion of the Work Top of Rail);
- Post and blockout material and condition: whether steel, wood or plastic, and number of damaged elements;
- Approach and leaving end treatments: type and condition of end treatments, including crash cushions. Extruder end treatments were also reviewed to identify whether they are regular 5-inch or substandard 4-inch extruders;
- Approach and leaving end signage: including object marker signs (presence, correct application and condition) and snow plow markers (presence and condition); and
- Soil: whether erosion or buildup was present.

In addition to the above, other items were also inspected as applicable, including the use of guide rails with barrier curb, presence of hazards behind the guide rail within the deflection distance, post spacing at structure connections, etc.

4.2. Roadside Safety Devices Recommendations

This section details the rationale used by CIMA⁺ in the development of recommendations associated with roadside safety devices. **Table 9** summarizes the types of deficiencies or concerns and the typical recommendation applied to each of them, including the rationale for the recommendations.

Table 9: Roadside Safety Devices Recommendations Rationale

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Deficiency	Standard Recommendation	Rationale	
4-inch Extruder Approach End Treatment (Figure 21)	Replace with MASH Sequential Kinking Terminal (MSKT).	4-inch extruder is a substandard energy attenuator end treatment (as opposed to 5-inch).	
Eccentric Loader Approach End Treatment (Figure 22)	Replace with MASH Sequential Kinking Terminal (MSKT).	Eccentric Loader end treatment is an older technology.	
SBGR height outside RDG tolerances	Replace section outside tolerances with Type M SBGR.	Proper mounting height is required for proper performance on impact.	
Short length of need (LON) on approach end	Extend system with Type M SBGR to provide required LON (based on RDG).	Clear zone widths and encroachment lengths have been updated from previous standards, which may change LON requirements.	

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⁶ Embankment hazards were evaluated using a simplified version of the method outlined in the RDG. Instead of a full benefit/cost analysis, the Severity Index (SI) of the embankment (considering slope, height, and surface condition) was compared to the SI of semi-rigid steel beam guide rails (3.6 for an assumed design speed of 110 km/h). If the SI for the embankment exceeded 3.6, the embankment was considered a hazard or area of concern.



Deficiency	Standard Recommendation	Rationale
SBGR adjacent to barrier curb (Figure 23)	If no channel or improper height, replace with Type M30 SBGR Adjacent to Concrete Curb; if SBGR with channel and proper height, system can remain, however in the long term, when major reconstruction occurs, removing the barrier curb is recommended.	Per 1993 MTO Roadside Safety Manual, only SBGR with channel was an appropriate use of guide rail with barrier curb.
Median concrete barrier approach ends (currently shielded by CAT-350 crash cushions) (Figure 24)	No immediate action required, however consider replacing with newer technology (e.g. QuadGuard, SMART, etc.) when necessary (e.g. after impact).	Upgrade to newer technology.
Sand Barrel Crash Cushions (Figure 25)	No action required in the short term beyond regular maintenance activities (i.e. replacing any damaged barrels, ensure proper alignment, etc.). In the long term, consider replacing with a different crash cushion based on practical maintenance considerations (e.g. City's parts inventory).	OPSD for this type of cushion no longer available; consideration for City's replacement parts inventory in the future.
Rock cuts (Figure 26)	Reviewed case by case, considering collision history.	RDG indicates severity index (SI) of semi-rigid barrier is 3.6 for DS = 110 km/h; SI for relatively smooth rock cut face is 3.2; and SI for jagged rock cut face is 6.3. The difference between smooth and jagged is not clearly defined. Because a guide rail would be closer to the road and likely to have higher frequency of impact than the rock cut face, installing a guide rail may be detrimental to safety if collisions with the rock cut face are not frequent.
Fixed objects protruding more than 100 mm above ground (Figure 27)	Fill ground around objects (illumination pole concrete base, culverts, etc).	Per RDG, objects protruding more than 100 mm are considered potential obstacles.

With respect to the use of guide rails with curbs, the GDGCR indicates that the installation of barrier curb in conjunction with barrier system is only permitted where operating speeds (85th percentile) are 60 km/h or less. For speeds over 60 km/h and up to 100 km/h, the use of semi-mountable and mountable curb is only permitted for certain offsets, and for speeds over 100 km/h, installation of curb in conjunction with barrier system is not recommended. Removal of the barrier curbs is not feasible in the context of the upcoming resurfacing, since drainage implications need to be considered, while removal of the guide rails is not recommended since this would leave road users exposed to potentially more severe hazards. However, in the long



term, when major reconstruction occurs, the City should consider removing curbs at high-speed locations (e.g. mainline or off-ramps).





Figure 21: Substandard 4-inch Extruder



Figure 23: SBGR with Barrier Curb

Figure 22: Eccentric Loader



Figure 24: CAT-350 Crash Cushion





Figure 25: Sand Barrel Crash Cushion



Figure 26: Rock Cut





Figure 27: Fixed Objects Protruding More than 100 mm Above Ground

The detailed recommendations relating to roadside safety devices maintenance and upgrades are provided in a separate GIS Shapefile, which includes the location of all roadside safety devices, a summary of the different elements assessed, and a recommendation for replacements, extensions, maintenance, etc. **Table 10** summarizes the Ontario Provincial Standard Drawings associated with each type of guide rail recommended.

Wa-33 + plow marker installation at

approach ends



Table 10: Ontario Provincial Standard Drawings (OPSD)			
Type of Guide Rail	OPSD	Application	
SBGR / SBGR with Channel	912.130	Partial replacements at mid-section of guide rails (particularly replacement of damaged sections)	
Type M20 SBGR	<u>912.185</u>	Normal guide rail applications (extensions, full replacements, and partial replacements at ends of guide rails)	
Type M20 SBGR Adjacent to 2H:1V Slope	912.186	Narrow shoulder applications (too close to slope)	
Type M30 SBGR Adjacent to Concrete Curb	912.188	Guide rail + barrier curb applications	
Type M Transition Rail	912.124	Transitions between standard and Type M guide rails	
Steel Beam Leaving End Treatment (SBLET)	912.235	Leaving end treatments for standard guide rails	
Type M Steel Beam Leaving End Treatment (Type M SBLET)	912.255	Leaving end treatments for Type M guide rails	
Structure Connection with Channel Termination	912.430	Connections with bridge structures	
Concrete Barrier Connection	912.480	Connections with Jersey barriers	
MASH Sequential Kinking Terminal (MSKT)	922.186	Approach end treatments	

Table 10: Ontario Provincial Standard Drawings (OPSD)

Table 11 provides a summary of recommendations and associated costs, for mainline and ramps, including guide rails and MSKT end treatments. The estimated cost presented were based on the following unit costs provided by the City:

984.201

- \$90 per metre for new guide rail installation or replacement;
- \$4,500 for MASH Sequential Kinking Terminal (MSKT) end treatment; and
- \$15,000 for crash cushion or barrel system.

Approach End Delineation

The cost for sign (i.e. Wa-33 Object Marker + plow marker) installation was assumed as \$250.

Table 11: Summary of Roadside Safety Recommendations and Costs

Type of Recommendation	Mainline	Ramps	Cost
SBGR (m)	4,479	5,516	\$ 899,550
MSKT (units)	50	24	\$ 333,000
SMART Crash Cushion (units)	0	2	\$ 30,000
Wa-33 / plow marker signs (sets)	61	45	\$ 26,500
	TOTAL	COST	\$ 1,289,050

We note that the recommendations provided correspond to "ultimate" improvements (i.e. recommendations were provided for all deficiencies identified), however the City may consider prioritizing these improvements based on available funds, focusing on locations with the highest collision frequencies (as identified in Section 3) for implementation with the upcoming resurfacing works. The remaining recommendations may be deferred, for example, until other maintenance is required for specific systems (for example, after an impact).

In addition to roadside safety devices, recommendations are also provided to mitigate potential hazards identified. This includes clearing denser vegetation on slopes or filling the ground around fixed objects protruding more than 100 mm. These recommendations are provided in the



GIS Shapefile, and it is assumed that they will be undertaken through regular operations and maintenance activities.

5. Curve Advisory Speeds

5.1. Curve Advisory Speed Assessment

According to Ontario Traffic Manual (OTM) Book 6 – Warning Signs, ball-bank indicator tests are the most common, available and practical way of determining advisory speeds. The ball-bank indicator test provides a combined measure of centrifugal force, vehicle roll and superelevation.

Table 12 provides the angle thresholds defined in the 5th Edition of the Institute of Transportation Engineers (ITE) Traffic Engineering Handbook (TEH), published in 1999. These thresholds consisted of the current guidance at the time the RHVP was designed and built.

Speed (km/h)	TEH 5 th Edition Threshold (Degrees)
20	14
30	12
40	12
50	12
60	10
70	10
80	10
90	10

Table 12: Summary of Roadside Safety Devices Maintenance and Upgrades

CIMA⁺ completed a review of curve advisory speed signs on all RHVP ramps using a digital inclinometer, which provides maximum ball bank angle readings. Most of the existing curve advisory speed on the Red Hill Valley Parkway vary between 30 km/h for the 'loop' on-ramps (e.g. King Street, Queenston Road, Barton Street) and 50 km/h for off-ramps (e.g. Mud Street). The highest existing advisory speed in the study area is 60 km/h, for the Upper Red Hill Valley Parkway S-N On Ramp. The Greenhill Avenue ramps and the Queenston Road E/W-N Ramp were not reviewed in detailed since they do not present curved geometry. Multiple runs (minimum of 3 per ramp) were completed on each ramp, at the existing advisory speeds, and the average readings were compared with the ITE thresholds.

Only the Queenston Road S-E/W Off Ramp and the Dartnall Road S-E On Ramp failed the test (12.1 and 12.6, respectively). However, the maximum readings on the Queenston Road S-E-W Off Ramp typically occurred 30 to 40 m in advance of the stop bar at the signalized ramp terminal, where speeds are likely to be lower as drivers prepare to complete a right- or left-turn; the maximum readings along the Dartnall Road S-E On Ramp typically occurred where the pavement presented some unevenness, which may be addressed with the upcoming resurfacing. Furthermore, no collisions were reported to occur on this ramp between 2013 and 2017.



5.2. Curve Advisory Speed Recommendations

Considering the findings described above, none of the ramps require modifications from the existing curve advisory speeds. The two Greenhill Avenue Off Ramps have posted advisory speeds of 40 km/h, however they do not present curved geometry. The ramps end at stop-controlled intersections, and right-side Stop Ahead (Wb-1) warning signs are provided. The advisory speed signs should be removed from the Greenhill Avenue Off Ramps, and the City may consider installing additional, left-side Stop Ahead warning signs to reinforce the need to reduce speed.

6. Shoulder Condition

CIMA⁺ completed a brief review of shoulder conditions along the RHVP mainline and ramps. The review consisted of a drive-by/windshield review and focused on noticeable failures or areas where the shoulder condition was considerably more deteriorated in comparison with the travel lanes.

Overall, the review of shoulder condition did not indicate major concerns. Some isolated failures were identified that should be addressed in the short term, as listed in **Table 13** and illustrated in **Figure 28** through **Figure 30**. Occasional areas also present some alligator cracking, however the shoulders appeared to be stable. These should be monitored as part of regular patrolling and maintenance activities, as they can lead to the formation of potholes.

Location	Issue	Approximate Length
RHVP SB, approximately 460 m north of Barton Street (right shoulder)	Small depression on pavement	6 m
RHVP SB, approximately 540 m north of Queenston Road (right shoulder)	Pavement drop-off	10 m
RHVP SB, approximately 660 m south of Greenhill Avenue (right shoulder)	Gravel Shoulder Erosion	10 m
RHVP NB, approximately 560 m north of Mud Street (right shoulder)	Gravel Shoulder Erosion	10 m
Mud Street W-E Off Ramp, approximately 330 m east of Pritchard Road (right shoulder)	Pavement drop-off	10 m

Table 13: Shoulder Issues







Figure 28: Shoulder Depression

Figure 29: Pavement Edge Drop-off



Figure 30: Shoulder Erosion

CIMA⁺ also reviewed the presence of shoulder rumble strips, which may help prevent run-of-road collisions, along the RHVP mainline. The entire length of the RHVP presents rumble strips on both right- and left-side shoulders, with the following exceptions:

- Along the bridge between Mud Street and Greenhill Avenue: no rumble strips on either rightor left-side shoulders; and
- Along acceleration and deceleration lanes and along weaving sections near interchanges.

This type of application is consistent with the MTO "Highway Shoulder Rumble Strip Application and Installation Policy".

7. Emergency Crossover Locations

Section 2.3.7 of the MTO Roadside Design Guide (RDG) provides guidance with respect to the implementation of crossovers for emergency vehicles. These crossovers are normally provided where interchange spacing exceeds 8 km, and should only be provided where desirable stopping sight distances are provided. The guide states that these crossovers are unacceptable on freeways with medians less than 15 m wide, and that they should not be located closer than



450 m to the end of a speed change lane of a ramp or to any structure. Additionally, they should not be located on superelevated curves.

CIMA⁺ reviewed the Red Hill Valley Parkway Median on site to identify candidate crossover locations for emergency vehicles. The criteria used to select the candidate locations included the absence of drainage elements (such as catch basins) and maximum possible visibility to traffic approaching from both directions. Our review consisted of a simple visual inspection, from inside a passenger car, and no detailed measurements (e.g. sight distances) were undertaken.

Table 14 lists the candidate locations determined in our field review. The table also identifies potential concerns with these locations, in accordance with the RDG.

Approximate Location	Potential Concerns
230 m north of Barton Street	 50 m from end of speed change lane 220 m from structure Median < 15 m (unless shoulder is included)
540 m south of Barton Street	 160 m from end of speed change lane Median < 15 m (unless shoulder is included)
430 m south of Queenston Road	380 m from structureMedian < 15 m (unless shoulder is included)
480 m north of Greenhill Avenue	 330 m from structure Median < 15 m (unless shoulder is included)
660 m south of Greenhill Avenue	 Median < 15 m (unless shoulder is included)
220 m east of Pritchard Road	 110 m from structure At end of speed change lane Visibility may be restricted by horizontal curves + tall vegetation on median
420 m west of Dartnall Road	420 m from structure180 m from end of speed change lane

Table 14: Candidate Crossover Locations

As indicated in the table above, all locations present potential concerns when evaluated against the RDG requirements. However, these requirements are based on Provincial highway projects (freeways). Given that that the RHVP is not a Provincial highway or a freeway, the City may, at their discretion, consider adopting different criteria, provided that the crossover manoeuvres can be performed safely.

We also note that, although the candidate locations listed in **Table 14** are the ones which appeared to have the longest visibility distance towards both directions of traffic (based on our field review), this does not guarantee that sight distance requirements from current geometric design standards are present. A more detailed review of these locations, including detailed sight distance measurements, should be undertaken.

Finally, although it is expected that these crossover points, if built, should only be used by trained emergency vehicle drivers, who are expected to appropriately judge the frequency of gaps and visibility to oncoming traffic, the City should be aware of the potential for violations (i.e. non-emergency vehicles/untrained drivers performing U-turns) that could result in serious collisions.



8. Access to Wastewater Facilities

The City requested a review of the potential to improve access to two wastewater facilities located off the Red Hill Valley Parkway: HCS07B, located on the east side of the Red Hill Valley Parkway, approximately 200 m north of Queenston Road (**Figure 31**); and HCS07C, also located on the east side east of the Red Hill Valley Parkway, approximately 400 m north of Barton Street (**Figure 32**).





Figure 31: HCS07B near Queenston Road

Figure 32: HCS07C near Barton Street

City staff visit these sites monthly, when the operator drives past the station and pulls off to the gravel shoulder of the road. They then reverse against the flow of traffic and park behind guardrail/barriers for protection. The City is considering widening and extending the gravel portion of the shoulder to allow the service vehicle to better manoeuvre and park safely behind the guide rail, preferably from the south side to avoid reversing.

CIMA⁺ visited the two locations to assess whether the suggested improvements can be accommodated. Our review consisted of a preliminary, visual assessment to determine if there are any major physical impediments. If the City decides to carry out the suggested improvements, a more detailed topographic survey and design should be undertaken.

The site near Barton Street is shielded, from its south side, by a guide rail that extends continually towards the Barton Street overpass structure. Its function is to shield an embankment hazard along this section of road. Providing an opening on the south side of the facility would require the installation of an energy attenuator end treatment, which introduces a potential for frontal collisions, which are typically more severe than lateral collisions with a continuous guide rail. As such, providing an access to this facility from the south side is not recommended. The north side of the facility appears to be clear of any obstacles such as culverts and utility boxes, therefore can potentially be improved to accommodate the desired access. However, the north side of the facility presents a slope approximately 1.5-metre deep (Figure 33), which would require a considerable fill section.





Figure 33: Slope Height North of HCS07C

The site near Queenston Road presents a shorter guide rail on the south side, which shields the facility itself. However, a catch basin located on the south side (**Figure 34**) would prevent building up the access. On the north side, a culvert and some utility inspection boxes (**Figure 35**) are present, however the ditch is not as deep as the one at the Barton Street location (approximately 0.5 m). The culvert can potentially be extended further north to accommodate the require improvements, however the utility inspection boxes may be damaged if vehicles drive over them due to insufficient width.





Figure 34: Catch Basin South of HCS07B

Figure 35: Culvert/Utilities North of HCS07B

In conclusion, our preliminary assessment indicates that the suggested improvements to the two wastewater facilities can be accommodated on the north side, pending a topographic survey and detail design. The location near Queenston Road may require extending a culvert and the location of utility inspection boxes will need to be carefully assessed during detail design.



9. Summary of Findings and Recommendations

TO BE COMPLETED FOR FINAL VERSION

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City of Hamilton

Roadside Safety Assessment

Red Hill Valley Parkway

Final Report January 2019

B001014

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1. Introduction

1.1. Background

The City of Hamilton (The City) has resurfacing works scheduled for the Red Hill Valley Parkway (RHVP) in 2019 and has identified the need to complete a roadside safety assessment of the facility, including 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 correcting deficiencies and/or 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). The main focus of the study is on short-term improvements, although some medium-or long-term recommendations are also discussed when relevant.

CIMA⁺ has completed two previous studies on the RHVP. In 2013¹, a review of the portion of the RHVP between Dartnall Road and Greenhill Avenue was undertaken to determine the safety performance of the roadway since its opening in 2007 and to recommend measures to increase safety performance. The Mud Street interchange ramps were also included in the scope of the 2013 review. In 2015², a review of the entire length of the RHVP mainline was undertaken, with a focus on cross median collisions and a review of the need to provide median barrier along the facility.

The main findings from both studies that are applicable to roadside safety include:

- Atypically high proportions of Single Motor Vehicle (SMV) collisions, as well as wet surface and non-daylight conditions;
- High proportion of "lost control" apparent driver action;
- All locations with the highest collision frequencies located within, on approach to, or leaving horizontal curves;
- Particularly high concentration of collisions around the King Street interchange (31% of RHVP northbound collisions occurred over only 7.5% of its length; this number increases to 40% for median related collisions);
- High concentration of median related collisions, in the northbound direction, along a 600-m section around the King Street interchange (40% of collisions 7.5% of the RHVP length);
- High concentration of median related collisions, in the southbound direction, along a 1.1-km section around the King Street and Queenston Road interchanges (38% of collisions over 13.5% of the RHVP length);
- High operating speeds, with 85th percentile of 110 km/h and 115 km/h in the northbound and southbound directions, respectively; and with 34% and 48% of drivers at or exceeding the design speed of the road (100 km/h) in the northbound and southbound direction, respectively;³ and

¹ Red Hill Valley Parkway Safety Review, CIMA⁺. October 2013.

² Red Hill Valley Parkway Detailed Safety Analysis, CIMA⁺. November 2015.

³ The 2015 study report indicates 15% and 22% of drivers at or exceeding the design speed of the road (110 km/h) in the northbound and southbound direction, respectively. At the time, the design speed information had not been provided to CIMA⁺ and was assumed as 110 km/h based on operating speeds.



 High collision frequency at the Mud Street E-W On Ramp (40 collisions between October 2009 and October 2013, four times greater than the ramp with the second highest collision frequency).

Some of the main recommendations provided in the previous studies, applicable to roadside safety, included:

- Install oversized speed limit signs/speed feedback signs + regular speed enforcement;
- Install Slippery When Wet signs (potentially supplemented by rain activated flashing beacons);
- Install permanent recessed pavement markers;
- Conduct pavement friction testing;
- Install high-tension cable guide rail along median (long-term measure, with consideration for effectiveness of other measures);
- Install high-friction pavement on approach and through the curve on the Mud Street E-W On Ramp; and
- Install progressively larger chevron alignment signs, pavement marking text, and dynamic/variable speed warning sign/flashing beacons on the Mud Street E-W On Ramp.

The present study takes into account the findings and recommendations of the previous studies, in order to confirm or expand the recommendations to reduce roadside related collision frequency and severity.

1.2. Scope of Work

The study area of this assignment includes the entire length of the RHVP and all its ramps, as illustrated in **Figure 1**.



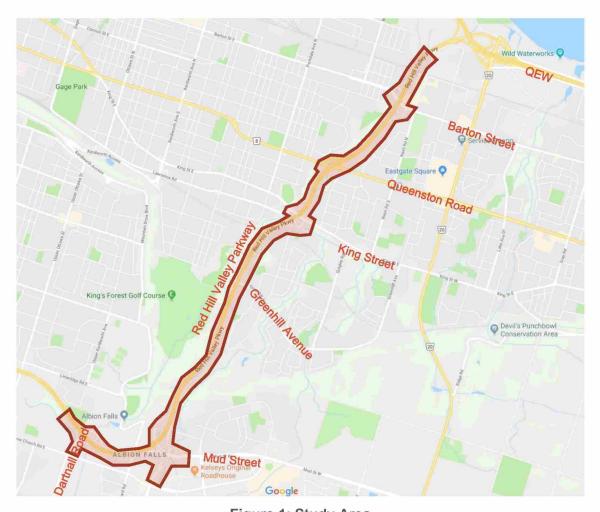


Figure 1: Study Area

The following tasks were undertaken for this assignment:

- Geometric design review to confirm curve radii and compatible design speeds of mainline and ramps, as well as requirement for median barrier;
- Collision history review to identify collision patterns associated with roadside hazards and roadway departures;
- Recommendation of safety countermeasures to reduce serious injuries and fatalities;
- Roadside safety devices field inventory and assessment based on current guidelines, and recommendations for maintenance, upgrades or new installations;
- Assessment of ramp/curve advisory speeds through ball bank tests;
- Review of shoulder condition through field inspection;
- Review of potential locations to build up emergency crossover locations; and
- Review of the feasibility to build up access to two wastewater facilities near Barton Street and Queenston Road.

The scope of this study is limited to short-term recommendations that can be implemented in conjunction with the planned resurfacing, although some long-term considerations may be provided where relevant.



2. Geometric Design Review

2.1. Design Speed and Curve Radii

CIMA⁺ completed a high-level review of the geometry of the RHVP mainline and ramps. The City provided design drawings for the RHVP mainline and ramps between the north end of the facility and the Greenhill Avenue interchange. The remaining locations were reviewed using satellite imagery (Google Earth) and approximate curve radii were measured. The review included curve radii and the compatible design speed (based on the 2017 TAC's Geometric Design Guide for Canadian Roads, which is the most conservative standard compared to the 1985 MTO Geometric Design Standards for Ontario Highways and to the 2017 MTO Supplement to the TAC Guide), and a subsequent comparison to operational speeds and posted ramp advisory speeds. The information reviewed was also used in the assessment of roadside safety devices (Section 4), to determine clear zone widths and guide rail length of need.

The RHVP has a posted speed limit of 90 km/h. According to the findings of a previous speed study (May 2013 Speed Study between Mud Street and Greenhill Avenue), operating speeds (85th percentile) on the facility were 110 km/h for the northbound direction and 115 km/h in the southbound direction. Based on this, curve radii were reviewed for compatibility with a design speed of 110 km/h.

The RHVP was designed with maximum superelevations of 6%. **Table 1** summarizes minimum curve radii for various design speeds, based on TAC (2017).

Design Speed (km/h)	Minimum Radius (m)
120	750
110	600
100	440
90	340
80	250
70	190
60	130
50	90
40	55

Table 1: Minimum Curve Radii for 6% Maximum Superelevation (TAC, 2017)

The curves on the RHVP mainline present radii ranging between 420 m (between Greenhill Avenue and King Street) and 5,000 m (across the Greenhill Avenue interchange). Based on the values in Table 1, the following mainline locations have a compatible design speed lower than 110 km/h:

- RHVP Mainline north of Barton Street: R = 475 m; DS = 100 km/h;
- RHVP Mainline north of King Street: R = 450 m; DS = 100 km/h; and
- RHVP Mainline south of King Street: R = 420 m; DS = 90 km/h.

However, based on the 1985 Geometric Design Standards for Ontario Highways (MTO), the design standard at the time the RHVP was designed / constructed, a curve radius of 420 meters was compatible with a design speed of 100 km/h. This is also the case for the 2017 MTO Supplement to the TAC Guide (Exhibit 3-F – maximum speed at given superelevation for



resurfacing projects). The City confirmed that the design speed of the Red Hill Valley Parkway is 100 km/h, therefore all curves were design with proper radii based on the then current design standards.

Curve radii compatible with a design speed lower than the operational speed, particularly around the King Street interchange, can be a contributing factor to collisions (refer to Section 3.1.5), especially when wet surface conditions are present. As previously noted, some sections of the RHVP present 85th percentile speeds up to 115 km/h, even though the posted speed limit (90 km/h) is lower than the compatible design speeds.

None of the ramps in the study area were found to have design speeds lower than the existing advisory speeds. The ramps listed in **Table 2** have compatible design speeds equal to the existing advisory speed.

Curve Radius Compatible Design Speed Advisory Speed Ramp (m) (km/h) (km/h) Barton Street N-E/W Off 40 40 65 Barton Street S-E/W Off 65 40 40 Barton Street E/W-N On 50 30 30 Barton Street E/W-S On 50 30 30 Queenston Road N-E/W Off 71 40 40 Queenston Road S-E/W Off 67 40 40 Queenston Road E/W-S On 43 30 30 King Street S-E/W Off 65 40 40 King Street E/W-N On 50 30 30 45 King Street E/W-S On 30 30 Mud Street E-W On 50 30 30 Upper RHVP S-W On 50 30 30 Dartnall Road S-W On 55 40 40

Table 2: RHVP Ramps with Design Speed Equal to Existing Advisory Speed

The advisory speeds equal to the design speeds could be a contributing factor to collisions on the ramps, since drivers may exceed the posted advisory speed of the road (refer to Section 5.1).

2.2. Median Barrier Warrant

The prevailing guidance in Ontario with respect to roadside barriers is the MTO's 2017 Roadside Design Guide (RDG). Based on the RDG, a median barrier is:

- Recommended where the median width is less than 10 metres;
- Optional where the median width is between 10 and 15 metres; and
- Not normally considered where the median width is more than 15 metres.

The RHVP median width varies between 15.0 and 22.7 metres. Under these conditions, a median barrier is not normally considered. However, the RDG also states that, for locations with median widths greater than 15 metres and with a history of cross-median collisions, a benefit-cost evaluation and an engineering study should be conducted to determine if barrier should be



installed.⁴ In the 2015 study, CIMA⁺ identified concerns with cross-median collisions and completed a benefit-cost evaluation, which concluded that providing a median barrier would be cost-effective.

A median barrier, however, would consist of a long-term countermeasure and would not be implemented in conjunction with the upcoming resurfacing of the RHVP. With the resurfacing and the implementation of other short-term countermeasures (refer to Section 3.4), it is possible that a reduction of median related collisions will be achieved by addressing speed and wet surface related collisions, which may change the benefit-cost relationship. The City should, therefore, monitor cross median collisions after the resurfacing is completed and other countermeasures are implemented, and re-evaluate the benefits of providing median barrier along the RHVP.

3. Collision History Review

3.1. Overview of Collisions

3.1.1. Collisions by Year

Collision records were provided by the City in digital format for the five-year period between 2013 and 2017. After removing collisions out of scope (e.g. occurring at intersections/ramp terminals) and duplicate records from the data set provided, a total of 939 collisions were reported to occur along the RHVP mainline, and a total of 231 collisions were reported to occur on ramps.

Figure 2 and **Figure 3** summarize collisions by year on the RHVP mainline and ramps, respectively, during the study period.







Figure 3: RHVP Collisions by Year (Ramps)

⁴ Figure 2-13 of the RDG indicates that where the number of through lanes exceeds 3 lanes in both directions with centre median width less than 23 m, TL-3 barrier is recommended in the median. Although this would apply to the RHVP, the policy statement in the RDG makes reference to the figure in the context of freeway major capital expansion and reconstruction projects. The RHVP is not considered a freeway and the scope of the present study does not involve major capital expansion of reconstruction, therefore the recommendation does apply at this time.



The mainline presented a considerable increase in annual collisions between 2013 and 2017, from an approximate range of 130 to 140 collisions per year (2013 to 2014) to an approximate range of 200 to 250 (2015 to 2017). The ramps present a relatively constant number of collisions, with 42 or 43 collisions per year, except for 2013, when a relatively high number of collisions (62) were reported.

3.1.2. Collisions by Severity

Figure 4 and **Figure 5** summarize collisions by severity on the RHVP mainline and ramps, respectively, during the study period (2013 to 2017).





Figure 4: RHVP Collisions by Severity (Mainline)

Figure 5: RHVP Collisions by Severity (Ramps)

The mainline presented 704 (75%) property damage only (PDO) collisions, which include self-reported (SR) collisions; 231 (24.6%) non-fatal injury collisions; and 4 fatal injury collisions (0.4%). The ramps presented 169 (73%) PDO/SR collisions and 62 (27%) non-fatal injury collisions. No fatal injuries were reported on the RHVP ramps during the study period.

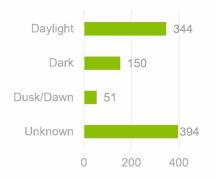
The details of the fatal collisions on the RHVP are as follows:

- A head on collision occurred on May 5, 2015 at 11:27 p.m., in the northbound direction between Greenhill Avenue and King Street. The collision occurred with clear weather, wet surface and with dark conditions. A northbound vehicle lost control (skidding/sliding), ran off the road, and struck another vehicle in the southbound direction, resulting in two fatalities;
- A rear end collision occurred on July 23, 2015 at 10:10 p.m., in the northbound direction between Mud Street and Greenhill Avenue. The collision occurred with clear weather, dry surface and with dark conditions. A northbound vehicle changed lanes, struck another northbound vehicle and then struck a steel guide rail;
- A head on collision occurred on January 25, 2017 at 4:52 p.m., in the eastbound direction between Dartnall Road and Mud Street. An eastbound vehicle lost control, ran off the road and struck another vehicle in the westbound direction; and
- A sideswipe (same direction) collision occurred on February 21, 2017 at 11:00 p.m., in the northbound direction between Greenhill Avenue and King Street.

3.1.3. Collisions by Light, Environment and Road Surface Conditions

Figure 6 through **Figure 11** summarize the collisions in the study area, for mainline and ramps, broken down by light, environment and road surface conditions. For all of these factors, 42% of mainline collisions and 32% of ramp collisions have "unknown" values. These correspond to self-reported collisions, which do not contain this information.





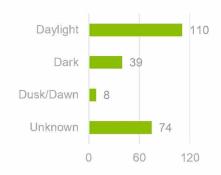


Figure 6: RHVP Collisions by Light Condition (Mainline)

Figure 7: RHVP Collisions by Light Condition (Ramps)

Out of the 545 mainline collisions that include light condition information, 344 (63%) occurred during daylight periods, 150 (28%) during dark periods, and 51 (9%) during dusk/dawn periods; out of the 157 ramp collisions that include this information, 110 (70%) occurred during daylight periods, 39 (25%) during dark periods, and 8 (5%) during dusk/dawn periods. The 37% non-daylight collisions on the mainline is consistent with the review completed in the 2015 review.

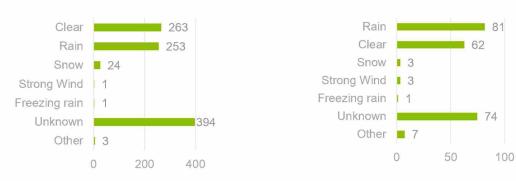


Figure 8: RHVP Collisions by Environment Figure 9: RHVP Collisions by Environment Condition (Mainline) Condition (Ramps)

Out of the 545 mainline collisions that include environment condition information, 263 (48%) occurred with clear weather, 253 (46%) during rain, and 24 (4%) during snow conditions; out of the 157 ramp collisions that include this information, 81 (52%) occurred during rain, and 62 (27%) with clear weather. The proportion of rain environment condition is noticeably higher than what was found in the 2015 review (34%).







Figure 10: RHVP Collisions by Road Surface Condition (Mainline)

Figure 11: RHVP Collisions by Road Surface Condition (Ramps)

Out of the 545 mainline collisions that include road surface condition information, 347 (64%) occurred on wet surface and 180 (33%) on dry surface; out of the 157 ramp collisions that include this information, 114 (73%) occurred on wet surface and 38 (24%) on dry surface. The proportion of wet surface condition is noticeably higher than what was found in the 2015 review (50%), which, on that study, had already been found to be significantly higher than the Provincial and City averages of 17.6% and 22%, respectively.

3.1.4. Apparent Driver Action

Figure 12 and **Figure 13** summarize the number of drivers involved in collisions⁵ by apparent driver action on the RHVP, for mainline and ramps, respectively.



Figure 12: Apparent Driver Action (RHVP Mainline)

Figure 13: Apparent Driver Action (RHVP Ramps)

Out of 852 drivers with known apparent driver action for mainline collisions, 398 (47%) were reported to be driving properly; 197 (23%) were reported to have lost control; 87 (10%) were reported to be driving at a speed too fast for conditions; and 86 (10%) were reported to be following too close; only 17 drivers (2%) were reported to be exceeding the speed limit. For ramps, 71 out of 187 drivers (38%) were reported to have lost control; 54 (29%) were reported

⁵ Self-reportable collisions excluded, since they do not include this information.



to be driving properly; 33 (18%) were reported to be driving at a speed too fast for conditions; but only 3 drivers (2%) were reported to be exceeding the speed limit.

When combined, lost control and speed too fast for conditions apparent driver actions represent 33% of drivers involved in a collision along the RHVP mainline, and 56% on ramps. These proportions increase to 44% on the mainline and to 68% on ramps for collisions involving wet surface conditions.

3.1.5. Collisions by Location

Figure 14 and **Figure 15** summarize total and fatal + injury (FI) collisions, respectively, by mainline location along the RHVP.



Figure 14: Total Collisions by Location (Mainline)



Figure 15: Fatal + Injury Collisions by Location (Mainline)



Both total and FI collisions follow a similar pattern with respect to the location of collisions, with the sections between Mud Street and Greenhill Avenue, and between Greenhill Avenue and King Street presenting the highest collision frequencies. This distribution is consistent with the findings from the 2015 review. When accounting for the length of each segment, the northbound segment between Greenhill Avenue and King Street presents the highest concentration of collisions, with 138 total and 35 FI collisions per kilometer. This is followed by the northbound section between King Street and Kingston Road (88 total and 20 FI collisions per km), the southbound section between Greenhill Avenue and King Street (75 total and 19 FI collisions per km), the southbound section between King Street and Queenston Road (72 total and 14 FI collisions per km), and the northbound section between Mud Street and Greenhill Avenue (69 total and 16 FI collisions per kim).

When wet surface conditions are reviewed by location (**Table 3**), the sections between Greenhill Avenue and Queenston Road stand out, with the proportion of wet surface collisions (self-reported records excluded) ranging between 69% and 88% for total collisions, and between 69% and 83% for FI collisions.

he 3. Proportion of wet Surface comisions by Loca			
	Mainline Section	Total	FI
	LINC to Dartnall NB	25%	29%
	LINC to Dartnall SB	40%	43%
	Dartnall to Mud NB	26%	22%
	Dartnall to Mud SB	33%	57%
	Mud to Greenhill NB	58%	57%
	Mud to Greenhill SB	36%	55%
	Greenhill to King NB	88%	80%
	Greenhill to King SB	69%	76%
	King to Queenston NB	84%	83%
	King to Queenston SB	71%	69%
	Queenston to Barton NB	45%	46%
	Queenston to Barton SB	48%	39%
	Barton to QEW NB	38%	33%
	Barton to QEW SB	60%	n/a

Table 3: Proportion of Wet Surface Collisions by Location

Although other sections also present atypically high proportions of wet surface collisions, it is possible that the sequence of curves with relatively small radii (as identified in the 2015 review) in the sections between Greenhill Avenue and Queenston Road contributes to these percentages.

Figure 16 summarizes collisions by ramp location, for the RHVP ramps with the highest collision frequencies (other ramps presented less than 10 total collisions).



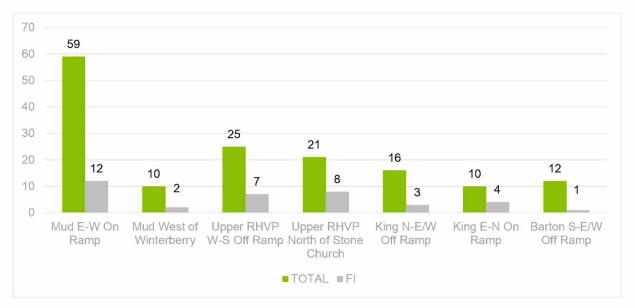


Figure 16: Collisions by Location (Ramps with 10 or More Collisions)

The Mud Street E-W On Ramp experienced the highest collision frequency of total and FI collisions, with 59 and 12, respectively, during the study period. Out of the 59 collisions, 52 (88%) were Single Motor Vehicle collisions. As noted in Section 2.1, this ramp has an advisory speed equal to the compatible design speed based on the curve radius. This could be a contributing factor to the high frequency of collisions compared to other ramps (although other factors may also be relevant, since, the same is the case for another 12 ramps in the study area).

The second and third highest collision frequency were observed on the Upper Red Hill Valley Parkway W-S Off Ramp (25 total and 7 FI collisions) and on the section of Upper red Hill Valley Parkway north of Stone Church Road (21 total and 8 FI collisions). **Figure 17** illustrates the location of these three ramps. The considerably higher collision frequency on the Mud Street E-W On Ramp, compared to other ramps in the study area, is consistent with the findings from the 2013 study, as mentioned in Section 1.1).





Figure 17: Mud Street and Upper Red Hill Valley Parkway Ramps

The proportions of wet surface collisions and combined lost control/speed too fast for conditions on these ramps are summarized in **Table 4**. These proportions only include collisions where the information was available (i.e. excludes self-reported collisions).

Table 4: Wet Surface and Lost Control/Speed Too Fast Collisions on Ramps

Ramp	Wet Surface (Total FI)	Lost Control + Speed Too Fas (Total FI)	
Mud E-W On Ramp	78% 75%	67% 86%	
Upper RHVP W-S Off Ramp	100% 100%	80% 86%	
Upper RHVP North of Stone Church	50% 50%	43% 33%	

All collisions on the Upper Red Hill Valley Parkway W-S Off Ramp occurred on wet surface, and 80% of drivers were reported to having lost control or being too fast for conditions (86% for FI collisions). Mud Street E-W On Ramp presented 78% of all collisions on wet surface, with 67% of drivers having lost control or being too fast for conditions (86% for FI collisions). On the Upper Red Hill Valley Parkway section north of Stone Church Road, 50% of collisions occurred on wet surface, and 43% of drivers lost control or were too fast for conditions (33% for FI collisions).

3.2. Collisions with Roadside Elements

Table 5 summarizes collisions with different roadside elements, as well as run off road collisions. In total, there were a total of 312 mainline collisions (121 FI) and 119 ramp collisions (44 FI) involving these elements.



Table 5: Summary of Collisions with Roadside Elements

Roadside Element	Mainline		Ramps	
	Total	FI	Total	FI
Concrete or Steel Barrier	197	68	49	16
Other Fixed Objects	22	7	17	3
Curb	13	6	9	6
Ditch	41	26	33	12
Run Off Road	106	44	46	15

Table 6 summarizes the relevant patterns found for collisions with roadside elements. Wet surface conditions were found to present high proportions, ranging from 54% for curbs to 86% for other fixed objects (including poles, fences, rock faces, trees, bridge supports, etc.) along mainline sections. For ramps, the proportion of wet surface collisions ranges from 65% for other fixed objects to 89% for curbs. Additionally, the northbound direction on the mainline presents the majority of collisions for all roadside elements reviewed, ranging from 54% for curbs to 69% for concrete or steel barriers.

Table 6: Relevant Patterns for Collisions with Roadside Elements

Roadside Element	Mai	Ramps	
Roausiue Element	Wet Surface	NB Direction	Wet Surface
Concrete or Steel Barrier	76%	69%	84%
Other Fixed Objects	86%	68%	65%
Curb	54%	54%	89%
Ditch	76%	56%	88%
Run Off Road	70%	62%	83%
Any	76%	64%	82%

Figure 18 and Figure 19 summarize total and fatal + injury (FI) collisions with roadside elements, respectively, by mainline location along the RHVP.

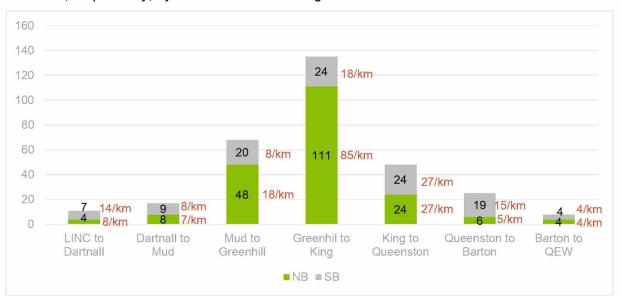


Figure 18: Total Collisions with Roadside Elements by Location (Mainline)





Figure 19: Fatal + Injury Collisions with Roadside Elements by Location (Mainline)

The section of the RHVP between Greenhill Avenue and King Street presents the highest frequency of collisions with roadside elements. In particular, the northbound direction along this segment experienced 111 collisions during the study period, almost five times the frequency of the southbound direction along the same section, and more than twice the frequency of the section between Mud Street and Greenhill Avenue northbound (the second highest frequency).

When accounting for the length of the segments, the northbound section between Greenhill Avenue and King Street presents 85 collisions per kilometre, three times higher than the second and third highest segments (northbound and southbound sections between King Street and Queenston Road, with 27 collisions per km each).

For fatal + injury collisions, the same sections of the RHVP stand out, however the difference between the sections with highest and second highest collision frequencies is not as high.

When wet surface conditions are reviewed by location (**Table 7**), the sections between Greenhill Avenue and Queenston Road stand out, with the proportion of wet surface collisions ranging between 75% and 96% for total collisions, and between 84% and 100% for FI collisions.



Table 7: Proportion of Wet Surface Collisions with Roadside Elemen	ts by Locatio	n
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Mainline Section	Total	FI
LINC to Dartnall NB	50%	50%
LINC to Dartnall SB	14%	25%
Dartnall to Mud NB	38%	33%
Dartnall to Mud SB	44%	67%
Mud to Greenhill NB	67%	63%
Mud to Greenhill SB	60%	45%
Greenhill to King NB	90%	84%
Greenhill to King SB	96%	100%
King to Queenston NB	96%	100%
King to Queenston SB	75%	75%
Queenston to Barton NB	50%	75%
Queenston to Barton SB	58%	55%
Barton to QEW NB	25%	0%
Barton to QEW SB	75%	n/a

Figure 20 summarizes collisions with roadside elements by ramp location, for the RHVP ramps with the highest collision frequencies (other ramps presented 6 or less total collisions).



Figure 20: Collisions with Roadside Elements by Location (Ramps)

The Mud Street E-W On Ramp experienced the highest frequency of collisions with roadside elements for total and FI collisions, with 37 and 9, respectively, during the study period. The second and third highest collision frequency were observed on the Upper Red Hill Valley Parkway W-S Off Ramp (18 total and 6 FI collisions) and on the King Street N-E/W Off Ramp (11 total and 3 FI collisions).

The proportions of wet surface collisions and combined lost control/speed too fast for conditions on these ramps are summarized in **Table 4**. These proportions only include collisions where the information was available (i.e. excludes self-reported collisions).



Ramp	Wet Surface Lost Control + Speed Too Fas (Total FI) (Total FI)	
Mud E-W On Ramp	84% 89%	67% 86%
Upper RHVP W-S Off Ramp	100% 100%	80% 86%
King N-E/W Off Ramp	81% 67%	43% 33%

All collisions on the Upper Red Hill Valley Parkway W-S Off Ramp occurred on wet surface, and 80% of drivers were reported to having lost control or being too fast for conditions (86% for FI collisions). Mud Street E-W On Ramp presented 78% of all collisions on wet surface, with 67% of drivers having lost control or being too fast for conditions (86% for FI collisions). On the Upper Red Hill Valley Parkway section north of Stone Church Road, 50% of collisions occurred on wet surface, and 43% of drivers lost control or were too fast for conditions (33% for FI collisions).

3.3. Summary of Collision History Review

The findings from the collision history review for the period between 2013 and 2017 were consistent with the two previous studies completed by CIMA⁺ for the Red Hill Valley Parkway, as summarized below.

Overall Findings

- Wet surface collisions were found to represent 64% of mainline collisions and 73% of ramp collisions. The proportion of wet surface collisions on the mainline presented an increase compared with the 2015 study (50%);
- "Lost control" and "speed too fast for conditions" apparent driver actions were reported in 33% of mainline collisions (44% for wet surface collisions) and 56% of ramp collisions 68% for wet surface collisions); and
- These findings suggest that inadequate skid resistance (surface polishing, bleeding, contamination) and excessive speeds may be contributing factors to collisions;

Critical Locations

- The mainline sections with the highest collision frequencies in the study area are Mud Street to Greenhill Avenue, and Greenhill Avenue to King Street, particularly in the northbound direction;
- Mainline collisions involving wet surface condition present extremely high proportions between Greenhill Avenue and King Street, and between King Street and Queenston Road (up to 88%). In combination with potential skid resistance and excessive speed issues, curve radii compatible with a design speed of 100 km/h around the King Street interchange may explain this concentration of collisions (operational speed may exceed the design speed); and
- The Mud Street E-W On Ramp experienced the highest collision frequency among RHVP ramps, followed by the Upper RHVP W-S Off Ramp; the proportion of wet surface collisions on these two ramps are 78% and 100%, respectively, while the combined proportions of "lost control" and "speed too fast for conditions" apparent driver actions are 67% and 80%, respectively. The Mud Street E-W On Ramp presents a curve radius compatible with a design speed of 30 km/h, the same as the existing posted advisory speed; the Upper RHVP W-S Off Ramp has a curve radius compatible with a design speed of 50 km/h and posted



advisory speed of 40 km/h. It is possible that drivers are exceeding the design speed of these ramps.

3.4. Recommendations to Reduce Collision Frequency / Severity

Based on the findings presented in the previous sections, the following recommendations to reduce collision frequency and severity on the RHVP are provided:

- Ensure the pavement design for the upcoming resurfacing considers the history of wet surface collisions and investigates the need for higher friction surface;
- Consider installing oversized speed limit signs/speed feedback signs and conducting regular speed enforcement, particularly in the vicinity of the King Street and Queenston Road interchanges. The recommended locations and additional details for installing speed feedback signs are:
 - Eastbound, approximately 200 m west of Pritchard Road;
 - Northbound, approximately 550 m north of Greenhill Avenue;
 - Southbound, approximately 700 m north of Queenston Road;
 - Southbound, approximately 300 m north of King Street;

It is recommended that the speed feedback signs be installed on their own post, on both right and left sides of the road at each location (i.e. a total of 8 signs), and in conjunction with oversize speed limit signs. Ideally, the size of the speed feedback sign should be consistent with the speed limit sign (this may depend on product availability); and It is suggested that speed feedback signs display the measured speeds up to 90 km/h, and a flashing "Slow Down" message when over 90 km/h, to prevent drivers attempting to "race" the sign.

- Immediately after the resurfacing is complete, and provided that adequate wet weather skid resistance is achieved, remove all Slippery When Wet signs along the RHVP (per guidance from Ontario Traffic Manual Book 6 Warning Signs) and monitor collisions. If it is observed that more than one third of all collisions on a given section of the RHVP or its ramps occur on wet pavement, install Wc-105 (at intervals of 1 km or less if not a localized issue). If the proportion of collisions involving wet surface remains high, consideration may be given to supplementing the Slippery When Wet signs with rain activated flashing beacons;
- Consider installing high-friction pavement on approach and through the curve on the Mud Street E-W On Ramp (i.e. from approximately 65 m in advance of the existing overhead sign structure to the end of the curve – a total of approximately 330 m);
- Consider installing pavement marking text and/or peripheral transverse bars on the Mud Street E-W On Ramp and Upper RHVP W-S Off Ramp. The peripheral transverse bars should start approximately 10 metres in advance of the existing overhead sign structure and consist of 7 sets of bars spaced by 3 metres followed by 3 sets of bars spaced by 2 metres. "SLOW" text pavement marking can be installed 10 metres in advance of the start of the peripheral transverse bars. If not found to be effective, consider installing speed feedback signs or flashing beacons on the advisory speed signs; and
- Monitor the effect of the other countermeasures on median-related collision frequency and severity (particularly wet surface collisions, which may be reduced by improved pavement friction), and consider further investigating the need for installing median barrier in the longterm.



3.4.1. Discussion on Guide Rail Reflectors

After discussing the above recommendations with the City, the City requested CIMA⁺ to advise on the effectiveness of guide rail reflectors to improve delineation. According to the NCHRP Report 500, Volume 7 – A Guide for Reducing Collisions on Horizontal Curves (2004), the safety effect of enhanced delineation at a horizontal curve is difficult to assess because many of the research results are conflicting. The studies reviewed do not specifically refer to guide rail delineation, but to chevron alignment signs, post-mounted delineators and raised pavement markers. However, all these devices can be considered enhanced delineation and can be reasonably assumed to have a similar effect on drivers' understanding of the road geometry.

The Report only concludes that post-mounted delineators may improve safety at sharp curves and that chevrons are more effective than standard post-mounted delineators, however no quantitative estimates can be made. Some studies found increases in speeds when enhanced delineation is provided. The FHWA Low-Cost Treatments for Horizontal Curve Safety (2016) also indicates that there is no published research documenting the safety effects of installing delineators specifically on horizontal curves as of yet.

The use of guide rail reflectors is not uncommon and their application is seen in numerous Ontario municipalities, as well as on Provincial highways, including the 400-series. In CIMA*'s opinion, the ideal approach would be to delay installation of the guide rail reflectors until sufficient collision data is available after resurfacing (e.g. 3 years), and then install the reflectors in order to evaluate their effectiveness. Although we do not have objections to installing the guide rail reflectors immediately, this would prevent an accurate evaluation of their effect on collision frequency and/or severity, since it would not be possible to differentiate their contribution from the contribution of the resurfacing.

However, compared to raised or recessed pavement markers (which had been recommended in the 2013 and 2015 studies), the guide rail reflectors or other types of roadside mounted delineators have the benefit of preserving the integrity of the pavement.

4. Roadside Safety Devices Inventory and Condition Assessment

4.1. Inspection Procedure

CIMA⁺ completed site visits between October 29, 2018 and November 8, 2018, and an completed an inventory and condition assessment of roadside safety devices along the RHVP mainline and ramps, including steel beam guide rails, crash cushions, and unprotected hazards. Concrete barriers were not fully inventoried, however any significant evidence of barrier impacts were noted.

The condition assessment was based on the MTO's 2017 Roadside Design Guide (RDG) as the primary reference. For items not addressed by the RDG, TAC's 2017 Geometric Design for Canadian Roads (GDGCR) was used.

The following elements were reviewed as part of the inventory/condition assessment:



- **Hazard type and offset:** including type of hazard (embankment,⁶ fixed object, water bodies, etc.), offset from travel lane, and offset of back of hazard;
- Barrier type: whether steel beam guide rail (SBGR), SBGR with channel, Type M SBGR, or other barrier type;
- Barrier offset: relative to the edge of the travel lanes;
- Barrier height: checked against the tolerances in Table 3-4 of the RDG (Acceptable Height at Completion of the Work – Top of Rail);
- Post and blockout material and condition: whether steel, wood or plastic, and number of damaged elements;
- Approach and leaving end treatments: type and condition of end treatments, including crash cushions. Extruder end treatments were also reviewed to identify whether they are regular 5-inch or substandard 4-inch extruders;
- Approach and leaving end signage: including object marker signs (presence, correct application and condition) and snow plow markers (presence and condition); and
- Soil: whether erosion or buildup was present.

In addition to the above, other items were also inspected as applicable, including the use of guide rails with barrier curb, presence of hazards behind the guide rail within the deflection distance, post spacing at structure connections, etc.

4.2. Roadside Safety Devices Recommendations

This section details the rationale used by CIMA⁺ in the development of recommendations associated with roadside safety devices. **Table 9** summarizes the types of deficiencies or concerns and the typical recommendation applied to each of them, including the rationale for the recommendations.

Table 9: Roadside Safety Devices Recommendations Rationale

Table 6. Reading Surety Devices Recommendations Rationale			
Deficiency	Standard Recommendation	Rationale	
4-inch Extruder Approach End Treatment (Figure 21)	Replace with MASH Sequential Kinking Terminal (MSKT).	4-inch extruder is a substandard energy attenuator end treatment (as opposed to 5-inch).	
Eccentric Loader Approach End Treatment (Figure 22)	Replace with MASH Sequential Kinking Terminal (MSKT).	Eccentric Loader end treatment is an older technology.	
SBGR height outside RDG tolerances	Replace section outside tolerances with Type M SBGR.	Proper mounting height is required for proper performance on impact.	
Short length of need (LON) on approach end	Extend system with Type M SBGR to provide required LON (based on RDG).	Clear zone widths and encroachment lengths have been updated from previous standards, which may change LON requirements.	

⁶ Embankment hazards were evaluated using a simplified version of the method outlined in the RDG. Instead of a full benefit/cost analysis, the Severity Index (SI) of the embankment (considering slope, height, and surface condition) was compared to the SI of semi-rigid steel beam guide rails (3.6 for an assumed design speed of 110 km/h). If the SI for the embankment exceeded 3.6, the embankment was considered a hazard or area of concern.



Deficiency	Standard Recommendation	Rationale
SBGR adjacent to barrier curb (Figure 23)	If no channel or improper height, replace with Type M30 SBGR Adjacent to Concrete Curb; if SBGR with channel and proper height, system can remain, however in the long term, when major reconstruction occurs, removing the barrier curb is recommended.	Per 1993 MTO Roadside Safety Manual, only SBGR with channel was an appropriate use of guide rail with barrier curb.
Median concrete barrier approach ends (currently shielded by CAT-350 crash cushions) (Figure 24)	No immediate action required, however consider replacing with newer technology (e.g. QuadGuard, SMART, etc.) when necessary (e.g. after impact).	Upgrade to newer technology.
Sand Barrel Crash Cushions (Figure 25)	No action required in the short term beyond regular maintenance activities (i.e. replacing any damaged barrels, ensure proper alignment, etc.). In the long term, consider replacing with a different crash cushion based on practical maintenance considerations (e.g. City's parts inventory).	OPSD for this type of cushion no longer available; consideration for City's replacement parts inventory in the future.
Rock cuts (Figure 26)	Reviewed case by case, considering collision history.	RDG indicates severity index (SI) of semi-rigid barrier is 3.6 for DS = 110 km/h; SI for relatively smooth rock cut face is 3.2; and SI for jagged rock cut face is 6.3. The difference between smooth and jagged is not clearly defined. Because a guide rail would be closer to the road and likely to have higher frequency of impact than the rock cut face, installing a guide rail may be detrimental to safety if collisions with the rock cut face are not frequent.
Fixed objects protruding more than 100 mm above ground (Figure 27)	Fill ground around objects (illumination pole concrete base, culverts, etc).	Per RDG, objects protruding more than 100 mm are considered potential obstacles.

With respect to the use of guide rails with curbs, the GDGCR indicates that the installation of barrier curb in conjunction with barrier system is only permitted where operating speeds (85th percentile) are 60 km/h or less. For speeds over 60 km/h and up to 100 km/h, the use of semi-mountable and mountable curb is only permitted for certain offsets, and for speeds over 100 km/h, installation of curb in conjunction with barrier system is not recommended. Removal of the barrier curbs is not feasible in the context of the upcoming resurfacing, since drainage implications need to be considered, while removal of the guide rails is not recommended since this would leave road users exposed to potentially more severe hazards. However, in the long



term, when major reconstruction occurs, the City should consider removing curbs at high-speed locations (e.g. mainline or off-ramps).

The 1993 MTO Roadside Design Guide, which was the current standard at the time of design and construction of the RHVP, states that curbs are undesirable on high speed roadways, although they may not be completely avoided. The Guide states that every effort should be made to design high speed roadways without curbs, and, if they cannot be avoided, only steel beam guide rail with channel is appropriate (when installed 250 mm behind the face of the curb). We note that it is not within the scope of this review to assess the need for curbs on the RHVP; only the appropriateness of the barrier type for the existing curb is reviewed, but it was found that some locations presented appropriate barriers (SBGR with channel) for the standards of the time, while others did not (SBGR without channel).



Figure 21: Substandard 4-inch Extruder

Figure 23: SBGR with Barrier Curb

Figure 22: Eccentric Loader



Figure 24: CAT-350 Crash Cushion





Figure 25: Sand Barrel Crash Cushion



Figure 26: Rock Cut





Figure 27: Fixed Objects Protruding More than 100 mm Above Ground

The detailed recommendations relating to roadside safety devices maintenance and upgrades are provided in a separate GIS file (Geodatabase), which includes the location of all roadside safety devices, a summary of the different elements assessed, and a recommendation for replacements, extensions, maintenance, etc. **Table 10** summarizes the Ontario Provincial Standard Drawings associated with each type of guide rail recommended.



Table 10: Ontario Provincial Standard Drawings (OPSD)

Type of Guide Rail	OPSD	Application
SBGR / SBGR with Channel	912.130	Partial replacements at mid-section of guide rails (particularly replacement of damaged sections)
Type M20 SBGR	<u>912.185</u>	Normal guide rail applications (extensions, full replacements, and partial replacements at ends of guide rails)
Type M20 SBGR Adjacent to 2H:1V Slope	<u>912.186</u>	Narrow shoulder applications (too close to slope)
Type M30 SBGR Adjacent to Concrete Curb	912.188	Guide rail + barrier curb applications
Type M Transition Rail	912.124	Transitions between standard and Type M guide rails
Steel Beam Leaving End Treatment (SBLET)	912.235	Leaving end treatments for standard guide rails
Type M Steel Beam Leaving End Treatment (Type M SBLET)	<u>912.255</u>	Leaving end treatments for Type M guide rails
Structure Connection with Channel Termination	912.430	Connections with bridge structures
Concrete Barrier Connection	912.480	Connections with Jersey barriers
MASH Sequential Kinking Terminal (MSKT)	<u>922.186</u>	Approach end treatments
Approach End Delineation	<u>984.201</u>	Wa-33 + plow marker installation at approach ends

Table 11 provides a summary of recommendations and associated costs, for mainline and ramps, including guide rails and MSKT end treatments. The estimated cost presented were based on the following unit costs provided by the City:

- \$90 per metre for new guide rail installation or replacement;
- \$4,500 for MASH Sequential Kinking Terminal (MSKT) end treatment; and
- \$15,000 for crash cushion or barrel system.

The cost for sign (i.e. Wa-33 Object Marker + plow marker) installation was assumed as \$250.

Table 11: Summary of Roadside Safety Recommendations and Costs

Type of Recommendation	Mainline	Ramps	Cost
SBGR (m)	4,479	5,516	\$ 899,550
MSKT (units)	50	24	\$ 333,000
SMART Crash Cushion (units)	0	2	\$ 30,000
Wa-33 / plow marker signs (sets)	61	45	\$ 26,500
	TOTAL COST		\$ 1,289,050

We note that the recommendations provided correspond to "ultimate" improvements (i.e. recommendations were provided for all deficiencies identified), however the City may consider prioritizing these improvements based on available funds, focusing on locations with the highest collision frequencies (as identified in Section 3) for implementation with the upcoming resurfacing works. The remaining recommendations may be deferred, for example, until other maintenance is required for specific systems (for example, after an impact).

In addition to roadside safety devices, recommendations are also provided to mitigate potential hazards identified. This includes clearing denser vegetation on slopes or filling the ground around fixed objects protruding more than 100 mm. These recommendations are provided in the



GIS Shapefile, and it is assumed that they will be undertaken through regular operations and maintenance activities.

5. Curve Advisory Speeds

5.1. Curve Advisory Speed Assessment

According to Ontario Traffic Manual (OTM) Book 6 – Warning Signs, ball-bank indicator tests are the most common, available and practical way of determining advisory speeds. The ball-bank indicator test provides a combined measure of centrifugal force, vehicle roll and superelevation.

Table 12 provides the angle thresholds defined in the 5th Edition of the Institute of Transportation Engineers (ITE) Traffic Engineering Handbook (TEH), published in 1999. These thresholds consisted of the current guidance at the time the RHVP was designed and built.

Speed (km/h)	TEH 5 th Edition Threshold (Degrees)		
20	14		
30	12		
40	12		
50	12		
60	10		
70	10		
80	10		
90	10		

Table 12: Summary of Roadside Safety Devices Maintenance and Upgrades

CIMA⁺ completed a review of curve advisory speed signs on all RHVP ramps using a digital inclinometer, which provides maximum ball bank angle readings. Most of the existing curve advisory speed on the Red Hill Valley Parkway vary between 30 km/h for the 'loop' on-ramps (e.g. King Street, Queenston Road, Barton Street) and 50 km/h for off-ramps (e.g. Mud Street). The highest existing advisory speed in the study area is 60 km/h, for the Upper Red Hill Valley Parkway S-N On Ramp. The Greenhill Avenue ramps and the Queenston Road E/W-N Ramp were not reviewed in detailed since they do not present curved geometry. Multiple runs (minimum of 3 per ramp) were completed on each ramp, at the existing advisory speeds, and the average readings were compared with the ITE thresholds.

Only the Queenston Road S-E/W Off Ramp and the Dartnall Road S-E On Ramp failed the test (12.1 and 12.6, respectively). However, the maximum readings on the Queenston Road S-E-W Off Ramp typically occurred 30 to 40 m in advance of the stop bar at the signalized ramp terminal, where speeds are likely to be lower as drivers prepare to complete a right- or left-turn; the maximum readings along the Dartnall Road S-E On Ramp typically occurred where the pavement presented some unevenness, which may be addressed with the upcoming resurfacing. Furthermore, no collisions were reported to occur on this ramp between 2013 and 2017.



5.2. Curve Advisory Speed Recommendations

Considering the findings described above, none of the ramps require modifications from the existing curve advisory speeds. The two Greenhill Avenue Off Ramps have posted advisory speeds of 40 km/h, however they do not present curved geometry. The ramps end at stop-controlled intersections, and right-side Stop Ahead (Wb-1) warning signs are provided. The advisory speed signs should be removed from the Greenhill Avenue Off Ramps, and the City may consider installing additional, left-side Stop Ahead warning signs to reinforce the need to reduce speed.

6. Shoulder Condition

CIMA⁺ completed a brief review of shoulder conditions along the RHVP mainline and ramps. The review consisted of a drive-by/windshield review and focused on noticeable failures or areas where the shoulder condition was considerably more deteriorated in comparison with the travel lanes.

Overall, the review of shoulder condition did not indicate major concerns. Some isolated failures were identified that should be addressed in the short term, as listed in **Table 13** and illustrated in **Figure 28** through **Figure 30**. Occasional areas also present some alligator cracking, however the shoulders appeared to be stable. These should be monitored as part of regular patrolling and maintenance activities, as they can lead to the formation of potholes.

Table 13: Shoulder Issues

Location	Issue	Approximate Length
RHVP SB, approximately 460 m north of	Small depression on	6 m
Barton Street (right shoulder)	pavement	
RHVP SB, approximately 540 m north of	Pavement drop-off	10 m
Queenston Road (right shoulder)		10111
RHVP SB, approximately 660 m south of	Gravel Shoulder Erosion	10 m
Greenhill Avenue (right shoulder)		10 111
RHVP NB, approximately 560 m north of Mud	Gravel Shoulder Erosion	10 m
Street (right shoulder)		10 111
Mud Street W-E Off Ramp, approximately	Pavement drop-off	10 m
330 m east of Pritchard Road (right shoulder)	·	10 m







Figure 28: Shoulder Depression

Figure 29: Pavement Edge Drop-off



Figure 30: Shoulder Erosion

CIMA⁺ also reviewed the presence of shoulder rumble strips, which may help prevent run-of-road collisions, along the RHVP mainline. The entire length of the RHVP presents rumble strips on both right- and left-side shoulders, with the following exceptions:

- Along the bridge between Mud Street and Greenhill Avenue: no rumble strips on either rightor left-side shoulders; and
- Along acceleration and deceleration lanes and along weaving sections near interchanges.

This type of application is consistent with the MTO "Highway Shoulder Rumble Strip Application and Installation Policy".

7. Emergency Crossover Locations

Section 2.3.7 of the MTO Roadside Design Guide (RDG) provides guidance with respect to the implementation of crossovers for emergency vehicles. These crossovers are normally provided where interchange spacing exceeds 8 km, and should only be provided where desirable stopping sight distances are provided. The guide states that these crossovers are unacceptable on freeways with medians less than 15 m wide, and that they should not be located closer than



450 m to the end of a speed change lane of a ramp or to any structure. Additionally, they should not be located on superelevated curves.

CIMA⁺ reviewed the Red Hill Valley Parkway Median on site to identify candidate crossover locations for emergency vehicles. The criteria used to select the candidate locations included the absence of drainage elements (such as catch basins) and maximum possible visibility to traffic approaching from both directions. Our review consisted of a simple visual inspection, from inside a passenger car, and no detailed measurements (e.g. sight distances) were undertaken.

Table 14 lists the candidate locations determined in our field review. The table also identifies potential concerns with these locations, in accordance with the RDG.

Potential Concerns Approximate Location 50 m from end of speed change lane 230 m north of Barton Street 220 m from structure Median < 15 m (unless shoulder is included) • 160 m from end of speed change lane 540 m south of Barton Street Median < 15 m (unless shoulder is included) 380 m from structure 430 m south of Queenston Road Median < 15 m (unless shoulder is included) 330 m from structure 480 m north of Greenhill Avenue Median < 15 m (unless shoulder is included) 660 m south of Greenhill Avenue Median < 15 m (unless shoulder is included) 110 m from structure At end of speed change lane 220 m east of Pritchard Road Visibility may be restricted by horizontal curves + tall vegetation on median

Table 14: Candidate Crossover Locations

As indicated in the table above, all locations present potential concerns when evaluated against the RDG requirements. Based on these findings, the construction of emergency crossover locations is not recommended along the Red Hill Valley Parkway.

420 m west of Dartnall Road

420 m from structure

180 m from end of speed change lane

In addition to the potential crossover locations, Hamilton Police Service requested to build up an existing unpaved service access located on the right side of the northbound lanes approximately 600 metres north of Greenhill Avenue. Hamilton Police Service reports that there's a drop-off between the shoulder and the unpaved access due to erosion. Since this is an existing access, there are no safety concerns and the access can be paved and leveled with the existing paved shoulder.





Figure 31: Unpaved Access North of Greenhill Avenue

8. Access to Wastewater Facilities

The City requested a review of the potential to improve access to two wastewater facilities located off the Red Hill Valley Parkway: HCS07B, located on the east side of the Red Hill Valley Parkway, approximately 200 m north of Queenston Road (**Figure 32**); and HCS07C, also located on the east side east of the Red Hill Valley Parkway, approximately 400 m north of Barton Street (**Figure 33**).





Figure 32: HCS07B near Queenston Road

Figure 33: HCS07C near Barton Street

City staff visit these sites monthly, when the operator drives past the station and pulls off to the gravel shoulder of the road. They then reverse against the flow of traffic and park behind guardrail/barriers for protection. The City is considering widening and extending the gravel portion of the shoulder to allow the service vehicle to better manoeuvre and park safely behind the guide rail, preferably from the south side to avoid reversing.



CIMA⁺ visited the two locations to assess whether the suggested improvements can be accommodated. Our review consisted of a preliminary, visual assessment to determine if there are any major physical impediments. If the City decides to carry out the suggested improvements, a more detailed topographic survey and design should be undertaken.

The site near Barton Street is shielded, from its south side, by a guide rail that extends continually towards the Barton Street overpass structure. Its function is to shield an embankment hazard along this section of road. Providing an opening on the south side of the facility would require the installation of an energy attenuator end treatment, which introduces a potential for frontal collisions, which are typically more severe than lateral collisions with a continuous guide rail. As such, providing an access to this facility from the south side is not recommended. The north side of the facility appears to be clear of any obstacles such as culverts and utility boxes, therefore can potentially be improved to accommodate the desired access. However, the north side of the facility presents a slope approximately 1.5-metre deep (**Figure 34**), which would require a considerable fill section.



Figure 34: Slope Height North of HCS07C

The site near Queenston Road presents a shorter guide rail on the south side, which shields the facility itself. However, a catch basin located on the south side (**Figure 35**) would prevent building up the access. On the north side, a culvert and some utility inspection boxes (**Figure 36**) are present, however the ditch is not as deep as the one at the Barton Street location (approximately 0.5 m). The culvert can potentially be extended further north to accommodate the require improvements, however the utility inspection boxes may be damaged if vehicles drive over them due to insufficient width.







Figure 35: Catch Basin South of HCS07B

Figure 36: Culvert/Utilities North of HCS07B

In conclusion, our preliminary assessment indicates that the suggested improvements to the two wastewater facilities can be accommodated on the north side, pending a topographic survey and detail design. The location near Queenston Road may require extending a culvert and the location of utility inspection boxes will need to be carefully assessed during detail design.



9. Summary of Findings and Recommendations

The City of Hamilton (The City) has resurfacing works scheduled for the Red Hill Valley Parkway (RHVP) in 2019 and has identified the need to complete a roadside safety assessment of the facility, including 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 correcting deficiencies and/or upgrading roadside safety devices to current standards. The following sections summarize the findings and recommendations resulting from this study.

9.1. Geometric Design Review

9.1.1. Design Speed and Curve Radii

CIMA⁺ completed a high-level review of the geometry of the RHVP mainline and ramps, including curve radii and the compatible design speed based on the 2017 TAC's Geometric Design Guide for Canadian Roads, and a subsequent comparison to operational speeds and posted ramp advisory speeds.

The following mainline locations have a compatible design speed lower than the operating speeds of the road (85th percentiles of 110 to 115 km/h):

- RHVP Mainline north of Barton Street: R = 475 m; DS = 100 km/h;
- RHVP Mainline north of King Street: R = 450 m; DS = 100 km/h; and
- RHVP Mainline south of King Street: R = 420 m; DS = 90 km/h.

Curve radii compatible with a design speed lower than the operational speed, particularly around the King Street interchange, can be a contributing factor to collisions, especially when wet surface conditions are present.

However, based on the 1985 Geometric Design Standards for Ontario Highways (MTO), the design standard at the time the RHVP was designed / constructed, a curve radius of 420 meters was compatible with a design speed of 100 km/h, which was confirmed by the City to be the design speed of the facility, therefore all curves were design with proper radii based on the then current design standards.

None of the ramps in the study area were found to have design speeds lower than the existing advisory speeds, however, 13 ramps (detailed in Section 2.1) have compatible design speeds equal to the existing advisory speed, which could be a contributing factor to collisions on the ramps, since drivers may exceed the posted advisory speed of the road.

9.1.2. Median Barrier Warrant

The RHVP median width varies between 15.0 and 22.7 metres. Under these conditions, a median barrier is not normally considered based on the MTO's 2017 Roadside Design Guide (RDG). However, the RDG also states that, for locations with median widths greater than 15 metres and with a history of cross-median collisions, a benefit-cost evaluation and an engineering study should be conducted to determine if barrier should be installed. In a previous study (2015), CIMA+ identified concerns with cross-median collisions and completed a benefit-cost evaluation, which concluded that providing a median barrier would be cost-effective.



However, with the resurfacing and the implementation of other short-term countermeasures (Section 3.4), it is possible that a reduction of median related collisions will be achieved by addressing speed and wet surface related collisions, which may change the benefit-cost relationship. The City should monitor cross median collisions after the resurfacing is completed and other countermeasures are implemented, and re-evaluate the benefits of providing median barrier along the RHVP.

9.2. Collision History Review

9.2.1. Findings

Collision records were provided by the City in digital format for the five-year period between 2013 and 2017. A total of 939 collisions were reported to occur along the RHVP mainline, and a total of 231 collisions were reported to occur on ramps. The findings from the collision history review for the period between 2013 and 2017 are summarized below.

Overall Findings

- Wet surface collisions were found to represent 64% of mainline collisions and 73% of ramp collisions. The proportion of wet surface collisions on the mainline presented an increase compared with the 2015 study (50%);
- "Lost control" and "speed too fast for conditions" apparent driver actions were reported in 33% of mainline collisions (44% for wet surface collisions) and 56% of ramp collisions 68% for wet surface collisions); and
- These findings suggest that inadequate skid resistance (surface polishing, bleeding, contamination) and excessive speeds may be contributing factors to collisions;

Critical Locations

- The mainline sections with the highest collision frequencies in the study area are Mud Street to Greenhill Avenue, and Greenhill Avenue to King Street, particularly in the northbound direction;
- Mainline collisions involving wet surface condition present extremely high proportions between Greenhill Avenue and King Street, and between King Street and Queenston Road (up to 88%). In combination with potential skid resistance and excessive speed issues, curve radii compatible with a design speed of 100 km/h around the King Street interchange may explain this concentration of collisions (operational speed may exceed the design speed); and
- The Mud Street E-W On Ramp experienced the highest collision frequency among RHVP ramps, followed by the Upper RHVP W-S Off Ramp; the proportion of wet surface collisions on these two ramps are 78% and 100%, respectively, while the combined proportions of "lost control" and "speed too fast for conditions" apparent driver actions are 67% and 80%, respectively. The Mud Street E-W On Ramp presents a curve radius compatible with a design speed of 30 km/h, the same as the existing posted advisory speed; the Upper RHVP W-S Off Ramp has a curve radius compatible with a design speed of 50 km/h and posted advisory speed of 40 km/h. It is possible that drivers are exceeding the design speed of these ramps.



9.2.2. Recommendations

Based on the findings from the collision history review, the following recommendations to reduce collision frequency and severity on the RHVP are provided:

- Ensure the pavement design for the upcoming resurfacing considers the history of wet surface collisions and investigates the need for higher friction surface;
 Consider installing oversized speed limit signs/speed feedback signs and conducting regular speed enforcement, particularly in the vicinity of the King Street and Queenston Road interchanges.
- Immediately after the resurfacing is complete, and provided that adequate wet weather skid
 resistance is achieved, remove all Slippery When Wet signs along the RHVP and monitor
 collisions. If it is observed that more than one third of all collisions on a given section of the
 RHVP or its ramps occur on wet pavement, install Wc-105 signs per OTM Book 6 guidance
 (if still not effective, consideration may be given to supplementing the Slippery When Wet
 signs with rain activated flashing beacons);
- Consider installing high-friction pavement on approach and through the curve on the Mud Street E-W On Ramp;
- Consider installing pavement marking text and/or peripheral transverse bars on the Mud Street E-W On Ramp and Upper RHVP W-S Off Ramp; and
- Monitor the effect of the other countermeasures on median-related collision frequency and severity (particularly wet surface collisions, which may be reduced by improved pavement friction), and consider further investigating the need for installing median barrier in the longterm.

Additional details are provided in Section 3.4.

9.3. Roadside Safety Devices

CIMA+ completed an inventory and condition assessment of roadside safety devices along the RHVP mainline and ramps, including steel beam guide rails, crash cushions, and unprotected hazards. The condition assessment was based on the MTO's 2017 Roadside Design Guide (RDG) as the primary reference. For items not addressed by the RDG, TAC's 2017 Geometric Design for Canadian Roads (GDGCR) was used.

A series of recommendations were provided to upgrade or replace guide rails and end treatments where necessary due to substandard conditions or the need to extend existing systems or install new systems. In addition to roadside safety devices, recommendations are also provided to mitigate potential hazards identified (e.g. clearing denser vegetation on slopes or filling the ground around fixed objects protruding more than 100 mm). The estimated cost to implement all recommended roadside improvements is \$1.3M. These improvements, which are detailed in Section 4.2 and in a separate GIS file (Geodatabase) are expected to be implemented during the upcoming resurfacing project.

In the long-term, when major reconstruction occurs on the Red Hill Valley Parkway, the City should consider removing curbs at high-speed locations (e.g. mainline or off-ramps), since, based on guidance from the TAC Geometric Design Guide for Canadian Roads, the installation of barrier curb in conjunction with barrier system is only permitted where operating speeds (85th percentile) are 60 km/h or less.



9.4. Curve Advisory Speeds

CIMA+ completed a review of curve advisory speed signs on all RHVP ramps using a digital inclinometer, which provides maximum ball bank angle readings. The ball bank results were compared to the thresholds outlined in the 5th Edition of the Institute of Transportation Engineers (ITE) Traffic Engineering Handbook (TEH), published in 1999, which was the current guidance at the time the RHVP was designed and built.

The results of our review indicated that none of the ramps require modifications from the existing curve advisory speeds. The two Greenhill Avenue Off Ramps have posted advisory speeds of 40 km/h, however they do not present curved geometry. The ramps end at stop-controlled intersections, and right-side Stop Ahead (Wb-1) warning signs are provided. The advisory speed signs should be removed from the Greenhill Avenue Off Ramps, and the City may consider installing additional, left-side Stop Ahead warning signs to reinforce the need to reduce speed.

9.5. Shoulder Condition

CIMA+ completed a brief review of shoulder conditions along the RHVP mainline and ramps. The review consisted of a drive-by/windshield review and focused on noticeable failures or areas where the shoulder condition was considerably more deteriorated in comparison with the travel lanes. The review of shoulder condition did not indicate major concerns. Some isolated failures were identified that should be addressed in the short term, as detailed in Section 6.

9.6. Emergency Crossover Locations

CIMA+ reviewed the Red Hill Valley Parkway Median on site to identify candidate crossover locations for emergency vehicles based on Section 2.3.7 of the MTO Roadside Design Guide (RDG), which provides guidance with respect to the implementation of crossovers for emergency vehicles.

All locations reviewed present potential concerns when evaluated against the RDG requirements, including proximity to structures and to speed change lanes. Therefore, the construction of emergency crossover locations is not recommended along the Red Hill Valley Parkway.

9.7. Access to Wastewater Facilities

A review of the potential to improve access to two wastewater facilities located off the Red Hill Valley Parkway was completed. The two locations are HCS07B, located on the east side of the Red Hill Valley Parkway, approximately 200 m north of Queenston Road, and HCS07C, also located on the east side east of the Red Hill Valley Parkway, approximately 400 m north of Barton Street.

Our review assessment indicates that the suggested improvements to the two wastewater facilities can be accommodated on the north side, pending a topographic survey and detail design. The location near Queenston Road may require extending a culvert and the location of utility inspection boxes will need to be carefully assessed during detail design.

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SUBMITTED BY CIMA CANADA INC.

400–3027 Harvester Road Burlington, ON L7N 3G7

T: 289 288-0287 F: 289 288-0285

cima.ca





From: Swaby, Diana [/O=GOVT/OU=EMAIL/CN=RECIPIENTS/CN=DSABADOS]

Sent: 11/23/2018 12:03:30 PM

To: McLennan, John [/O=GOVT/OU=EMAIL/cn=Recipients/cn=jmclenna]

CC: Auty, Nicole [/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Auty,

Nicolec95]; Sabo, Ron [/O=GOVT/OU=EMAIL/cn=Recipients/cn=rsabo]

Subject: FW: RHVE Expressway Claims

This report concerns the RHVE and the LINC. As far as I can tell, it is a red herring. Most accidents happened due to driver error, speed, tire blowing or dangerous driving.

All of our serious files on the RHVE and the LINC are for the most part, being defended by Shillingtons, save and except Sherk/O'Hare (Dana Lezau's) and one being handled right now by Dan Bartley (Kanagaratnarajan).

Shillingtons recently asked about the report, citing that it will have to be produced in the City's affidavit of documents in at least one of the claims. An inquiry did come in from Shillington's office concerning this report. The inquiry was referred to Gary Moore who indicated the report was not presented to Council.

If there is a specific question I need to ask Shillingtons, please advise. Perhaps Dana Lezau can also assist.

Diana Swaby, CRM

Supervisor, Claims Administration Corporate Services Department Risk Management Services

City of Hamilton

Office location: 50 Main St. East, 4th Floor, Hamilton, ON L8N 1E9 Mailing address: 71 Main Street West, Hamilton, ON L8P 4Y5

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From: McLennan, John

Sent: November 20, 2018 5:10 PM

To: Auty, Nicole <Nicole.Auty@hamilton.ca>; Sabo, Ron <Ron.Sabo@hamilton.ca>

Cc: MacNeil, Byrdena <Byrdena.MacNeil@hamilton.ca>; Swaby, Diana <Diana.Swaby@hamilton.ca>

Subject: RHVE Expressway Claims

Good Afternoon Nicole / Ron,

My review indicates we have four significant claims which could theoretically be impacted by the FOI request. None of them specifically cite a "friction factor" as far as I can tell but it stands to reason that plaintiff counsel would attempt to use any associated media story to support their allegations of negligence.

Solicitor-Client Privileged

Solicitor-Client Privileged

As stated, this is just my quick search in advance of Diana returning. She is back Thursday and will be able comment on these files and any others that I may have missed. I have cc'd her for this purpose.

Regards,

John McLennan
Manager
Risk Management Services
City of Hamilton
905-546-2424 (Ext. 5736)
john.mclennan@hamilton.ca

MOVE NOTIFICATION: Legal Services and Risk Management Services are located at 50 Main St. East, Hamilton, ON L8N 1E9.

Our new mailing address will be City Hall, 71 Main St W, Hamilton L8P 4Y5

Tab 21

From: Moore, Gary </o=GOVT/ou=EMAIL/cn=Recipients/cn=gmoore> Date: 8/15/2017, 7:26:00 AM

To: Colleen Crawford < CCrawford@shillingtons.ca>

Subject: Red Hill Friction report

Attachments: Hamilton LA-RHV Rev2.doc

image001.jpg

As requested, the testing was done in late 2013 and I received it in early 2014.

Gary Moore

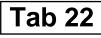
Director of Engineering Services

Engineering Services, City of Hamilton

(905) 546-2424 Ext.2382



www.hamilton.ca/canada150



Message

From: Colleen Crawford [/O=FIRST ORGANIZATION/OU=FIRST ADMINISTRATIVE GROUP/CN=RECIPIENTS/CN=COLLEEN]

Sent: 1/9/2018 1:46:19 PM

To: Keri Wilson [/O=FIRST ORGANIZATION/OU=First administrative group/cn=Recipients/cn=keri]

Subject: FW: Red Hill Friction report

Attachments: Tradewind Scientific Friction Testing Survery Summary Report, Lincoln Al...pdf; Tradewind Scientific Friction Testing

Survery Summary Report, Lincoln Al....lsd

TRS and I had a conference call with Gary Moore to review the circumstances surrounding the friction testing. Below is a summary of the brief discussion.

Moore confirmed that there was no friction testing performed on any of the on/off ramps. **Note: the report indicates there was some testing done on ramps.

They had friction testing completed of both the Linc and the RHVP. The pavement was slippery when wet.

The City's pavement was equal to the MTO's.

The MTO was having initial problems with the SMAs. Hamilton's were superior to the MTO's.

Golder was the consultant. Tradewind Scientific was the company that performed the testing. They used a grip tester British method.

Testing confirmed that the Linc was superior to the RHVP.

The Linc numbers were up in the high 50's - low 60's.

The RHVP numbers were down in the 40's.

Testing was done at 50 km/hr.

The MTO does their testing at operating speed.

Perpetual pavement – bottom up – deals with the whole road. Top down, shave and pave.

Resurfacing is a type of pavement.

The City was looking at repaving options.

The report had not gone to council.

From: Terry Shillington

Sent: August 15, 2017 8:35 AM

To: Colleen Crawford

Subject: RE: Red Hill Friction report

Nice to see cooperation

From: Colleen Crawford

Sent: Tuesday, August 15, 2017 8:32 AM

To: Terry Shillington < <u>TShillington@shillingtons.ca</u>>

Subject: FW: Red Hill Friction report

That was fast!

From: Moore, Gary [mailto:Gary.Moore@hamilton.ca]

Sent: August 15, 2017 8:26 AM

To: Colleen Crawford

Subject: Red Hill Friction report

As requested, the testing was done in late 2013 and I received it in early 2014.

Gary Moore

Director of Engineering Services Engineering Services, City of Hamilton (905) 546-2424 Ext.2382



www.hamilton.ca/canada150



Message

From: Swaby, Diana [/O=GOVT/OU=EMAIL/CN=RECIPIENTS/CN=DSABADOS]

Sent: 11/26/2018 4:55:26 PM

To: Terry Shillington [TShillington@shillingtons.ca]

Subject: RE: Red Hill Friction report

Sounds good thanks!

Diana Swaby, CRM

Supervisor, Claims Administration Corporate Services Department Risk Management Services City of Hamilton

Office location: 50 Main St. East, 4th Floor, Hamilton, ON L8N 1E9 Mailing address: 71 Main Street West, Hamilton, ON L8P 4Y5

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From: Terry Shillington <TShillington@shillingtons.ca>

Sent: November 26, 2018 11:55 AM

To: Swaby, Diana < Diana. Swaby@hamilton.ca>

Subject: RE: Red Hill Friction report

Hi Diana, could call you in 10 minutes if that works.

T. R. Shillington



Certified Specialist in Civil Litigation

SHILLINGTONS LAWYERS

1500-148 Fullarton Street London, ON N6A 5P3 Tel: 519.645.7330 ext 221

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Email: TShillington@shillingtons.ca

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From: Swaby, Diana < Diana. Swaby@hamilton.ca>

Sent: November 26, 2018 11:31 AM

To: Terry Shillington < TShillington@shillingtons.ca>; Colleen Crawford < CCrawford@shillingtons.ca>

Subject: FW: Red Hill Friction report

Importance: High

Hi Terry, this afternoon, I am meeting with the GM of Public Works as well as the Director of Legal Services and John McLennan of our office concerning an FOI request to release this report. I take it that they do not want to release this

report. Do you have a moment to discuss the implications of its release and how this report affects the litigation we have ongoing on the LINC and the RHVP?

Regards,

Diana Swaby, CRM

Supervisor, Claims Administration Corporate Services Department Risk Management Services City of Hamilton

Office location: 50 Main St. East, 4th Floor, Hamilton, ON L8N 1E9 Mailing address: 71 Main Street West, Hamilton, ON L8P 4Y5

Phone: 905-546-2424 ext. 5734

Fax: 905-540-5744

Diana.swaby@hamilton.ca

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From: Moore, Gary

Sent: May 4, 2018 12:39 PM

To: 'Colleen Crawford' < CC: Swaby, Diana < Diana. Swaby@hamilton.ca

Subject: RE: Red Hill Friction report

Hi Colleen

No this report was never reported to Council.

Gary Moore

Director, Engineering Services
Engineering Services Division
Public Works Department, City of Hamilton
T: 905.546.2424 ext. 2382

From: Colleen Crawford [mailto:CCrawford@shillingtons.ca]

Sent: May-04-18 12:24 PM

To: Moore, Gary Cc: Swaby, Diana

Subject: FW: Red Hill Friction report

Good afternoon Gary,

You may recall speaking with Mr. Terry Shillington and myself last August regarding the friction testing that was done on the LINC and RHVP.

We are in the process of preparing the City's affidavit of documents with respect to a litigation matter involving a median crossover on the LINC. Plaintiffs' counsel has specifically asked us about friction testing. We will likely need to

produce a copy of this report in the City's affidavit of documents. We wanted to confirm, if any time, has this report been presented to council. If so, would you provide us with a copy of any reports prepared for City Council and a copy of the meeting minutes.

Should you have any questions in this regard, please do not hesitate to contact me.

Thank you,

Colleen Crawford

Senior Law Clerk

SHILLINGTONS LAWYERS

1500-148 Fullarton Street London, ON N6A 5P3 Tel: 519.645.7330 ext 227

Fax: 519.645.6955 Web: www.shillingtons.ca

Email: ccrawford@shillingtons.ca

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From: Moore, Gary [mailto:Gary.Moore@hamilton.ca]

Sent: August 15, 2017 8:26 AM

To: Colleen Crawford < CCrawford@shillingtons.ca>

Subject: Red Hill Friction report

As requested, the testing was done in late 2013 and I received it in early 2014.

Gary Moore
Director of Engineering Services
Engineering Services, City of Hamilton
(905) 546-2424 Ext.2382



www.hamilton.ca/canada150



Message

From: Colleen Crawford [/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=81395a933b014910a04ffa596c1f1749-Colleen Cra]

on behalf of Colleen Crawford

Sent: 11/26/2018 11:35:48 AM

To: David Thompson [/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=48048c055bef4b61b9d984c687d74c92-David Thomp]

CC: Terry Shillington [/o=ExchangeLabs/ou=Exchange Administrative Group

(FYDIBOHF23SPDLT)/cn=Recipients/cn=fbfebfaebf8e4da181a619057f9e5360-Terry Shill]

Subject: FW: Red Hill Friction report

Attachments: Tab 212 - Tradewind Scientific Friction Testing Survey Summary Report, Lincoln Alexander Red Hill Valley Parkways

(Hamilton.lsd

Importance: High

This report is listed in our Schedule A productions on the Lee / Melo and Barlow actions – we have not yet served our AOD (as we were waiting for the motion re common discoveries, etc. to be finalized).

From: Swaby, Diana < Diana. Swaby@hamilton.ca>

Sent: November 26, 2018 11:31 AM

To: Terry Shillington <TShillington@shillingtons.ca>; Colleen Crawford <CCrawford@shillingtons.ca>

Subject: FW: Red Hill Friction report

Importance: High

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Regards,

Diana Swaby, CRM

Supervisor, Claims Administration Corporate Services Department Risk Management Services

City of Hamilton

Office location: 50 Main St. East, 4th Floor, Hamilton, ON L8N 1E9 Mailing address: 71 Main Street West, Hamilton, ON L8P 4Y5

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Fax: 905-540-5744

Diana.swaby@hamilton.ca

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From: Moore, Gary

Sent: May 4, 2018 12:39 PM

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Cc: Swaby, Diana < Diana. Swaby@hamilton.ca>

Subject: RE: Red Hill Friction report

Hi Colleen

No this report was never reported to Council.

Gary Moore

Director, Engineering Services Engineering Services Division Public Works Department, City of Hamilton

T: 905.546.2424 ext. 2382

From: Colleen Crawford [mailto:CCrawford@shillingtons.ca]

Sent: May-04-18 12:24 PM

To: Moore, Gary **Cc:** Swaby, Diana

Subject: FW: Red Hill Friction report

Good afternoon Gary,

You may recall speaking with Mr. Terry Shillington and myself last August regarding the friction testing that was done on the LINC and RHVP.

We are in the process of preparing the City's affidavit of documents with respect to a litigation matter involving a median crossover on the LINC. Plaintiffs' counsel has specifically asked us about friction testing. We will likely need to produce a copy of this report in the City's affidavit of documents. We wanted to confirm, if any time, has this report been presented to council. If so, would you provide us with a copy of any reports prepared for City Council and a copy of the meeting minutes.

Should you have any questions in this regard, please do not hesitate to contact me.

Thank you,

Colleen Crawford

Senior Law Clerk

SHILLINGTONS LAWYERS

1500-148 Fullarton Street London, ON N6A 5P3 Tel: 519.645.7330 ext 227

Fax: 519.645.6955 Web: www.shillingtons.ca

Email: ccrawford@shillingtons.ca

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From: Moore, Gary [mailto:Gary.Moore@hamilton.ca]

Sent: August 15, 2017 8:26 AM

To: Colleen Crawford < CCrawford@shillingtons.ca>

Subject: Red Hill Friction report

As requested, the testing was done in late 2013 and I received it in early 2014.

Gary Moore
Director of Engineering Services
Engineering Services, City of Hamilton
(905) 546-2424 Ext.2382



www.hamilton.ca/canada150

Mon 11/26/2018 12:31:39 PM (UTC-05:00) Sent:

Subject: RE: Red Hill Friction report

Thanks – she is good with our review and will let the others know – any questions she will call you or myself

CC thanks for the quick up date

T. R. Shillington



SHILLINGTONS LAWYERS

1500-148 Fullarton Street London, ON N6A 5P3 Tel: 519.645.7330 ext 221 Fax: 519.645.6955

Web: www.shillingtons.ca

Email: TShillington@shillingtons.ca

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From: David Thompson < DThompson@shillingtons.ca>

Sent: November 26, 2018 12:02 PM

To: Colleen Crawford < CCrawford@shillingtons.ca> Cc: Terry Shillington <TShillington@shillingtons.ca>

Subject: RE: Red Hill Friction report

I can't think of any concern in our litigation, except that it is not relevant. The last I heard the report had never been produced to Council. If they decide not to provide it under the FOI request they should let us know so that we don't include it in our productions.

From: Colleen Crawford < CCrawford@shillingtons.ca>

Sent: November 26, 2018 11:36 AM

To: David Thompson < DThompson@shillingtons.ca> Cc: Terry Shillington < TShillington@shillingtons.ca >

Subject: FW: Red Hill Friction report

Importance: High

This report is listed in our Schedule A productions on the Lee / Melo and Barlow actions – we have not yet served our AOD (as we were waiting for the motion re common discoveries, etc. to be finalized).

From: Swaby, Diana < Diana. Swaby@hamilton.ca>

Sent: November 26, 2018 11:31 AM

To: Terry Shillington <TShillington@shillingtons.ca>; Colleen Crawford <CCrawford@shillingtons.ca>

Subject: FW: Red Hill Friction report

Importance: High

Hi Terry, this afternoon, I am meeting with the GM of Public Works as well as the Director of Legal Services and John McLennan of our office concerning an FOI request to release this report. I take it that they do not want to release this report. Do you have a moment to discuss the implications of its release and how this report affects the litigation we have ongoing on the LINC and the RHVP?

Regards,

287

Diana Swaby, CRM

Supervisor, Claims Administration Corporate Services Department Risk Management Services

City of Hamilton

Office location: 50 Main St. East, 4th Floor, Hamilton, ON L8N 1E9 Mailing address: 71 Main Street West, Hamilton, ON L8P 4Y5

Phone: 905-546-2424 ext. 5734

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Diana.swaby@hamilton.ca

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From: Moore, Gary

Sent: May 4, 2018 12:39 PM

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Subject: RE: Red Hill Friction report

Hi Colleen

No this report was never reported to Council.

Gary Moore

Director, Engineering Services
Engineering Services Division
Public Works Department, City of Hamilton

T: 905.546.2424 ext. 2382

From: Colleen Crawford [mailto:CCrawford@shillingtons.ca]

Sent: May-04-18 12:24 PM

To: Moore, Gary **Cc:** Swaby, Diana

Subject: FW: Red Hill Friction report

Good afternoon Gary,

You may recall speaking with Mr. Terry Shillington and myself last August regarding the friction testing that was done on the LINC and RHVP.

We are in the process of preparing the City's affidavit of documents with respect to a litigation matter involving a median crossover on the LINC. Plaintiffs' counsel has specifically asked us about friction testing. We will likely need to produce a copy of this report in the City's affidavit of documents. We wanted to confirm, if any time, has this report been presented to council. If so, would you provide us with a copy of any reports prepared for City Council and a copy of the meeting minutes.

Should you have any questions in this regard, please do not hesitate to contact me.

Thank you,

Colleen Crawford

Senior Law Clerk



1500-148 Fullarton Street London, ON N6A 5P3 Tel: 519.645.7330 ext 227

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Sent: August 15, 2017 8:26 AM

To: Colleen Crawford < CCrawford@shillingtons.ca>

Subject: Red Hill Friction report

As requested, the testing was done in late 2013 and I received it in early 2014.

Gary Moore
Director of Engineering Services
Engineering Services, City of Hamilton
(905) 546-2424 Ext.2382



www.hamilton.ca/canada150



CC:

From: Sabo, Ron [/O=GOVT/OU=EMAIL/CN=RECIPIENTS/CN=RSABO]

Sent: 11/21/2018 10:27:40 AM

To: McLennan, John [/O=GOVT/OU=EMAIL/cn=Recipients/cn=jmclenna]; Auty, Nicole [/O=GOVT/OU=EXCHANGE

ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Auty, Nicolec95] MacNeil, Byrdena [/O=GOVT/OU=EMAIL/cn=Recipients/cn=bmacneil]; Swaby, Diana

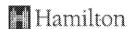
[/O=GOVT/OU=EMAIL/cn=Recipients/cn=dsabados]

Subject: RE: RHVE Expressway Claims

Dan advised

Solicitor-Client Privileged

Solicitor-Client Privileged



City of Hamilton Legal and Risk Management Services City Hall 71 Main Street West Hamilton, ON Canada L8P 4Y5 www.hamilton.ca

R. A. Sabo

Deputy City Solicitor, Dispute Resolution Legal and Risk Management Services, Corporate Services City of Hamilton

Phone: 905.546.2424 ext. 3143

Fax: 905.546.4370

Physical Office: 50 Main St. East, 4th Floor, Hamilton, ON

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From: McLennan, John Sent: 21-Nov-18 09:59

To: Sabo, Ron <Ron.Sabo@hamilton.ca>; Auty, Nicole <Nicole.Auty@hamilton.ca>

Cc: MacNeil, Byrdena <Byrdena.MacNeil@hamilton.ca>; Swaby, Diana <Diana.Swaby@hamilton.ca>

Subject: RE: RHVE Expressway Claims

I think we should let the insurer chime in on this too. If they disagree with a City decision to release the report it might adversely impact coverage.

Ron – I just spoke with Dan briefly on his two claims and let him know you will be speaking with him.

Diana – can you please put a call into Terry Shillington as soon as possible tomorrow. Thanks.

JM

From: Sabo, Ron

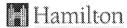
Sent: November 21, 2018 9:10 AM

To: McLennan, John < John.McLennan@hamilton.ca; Auty, Nicole < Nicole <a href=

Subject: RE: RHVE Expressway Claims

I'll check with Dan on the issues raised in his matters.

The fact that Baghosian is not involved in these claims means if we rally wanted to involve him we could.



City of Hamilton Legal and Risk Management Services City Hall 71 Main Street West Hamilton, ON Canada L8P 4Y5 www.hamilton.ca

R. A. Sabo

Deputy City Solicitor, Dispute Resolution Legal and Risk Management Services, Corporate Services City of Hamilton Phone: 905.546.2424 ext. 3143

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From: McLennan, John Sent: 20-Nov-18 17:10

To: Auty, Nicole < Nicole. Auty@hamilton.ca >; Sabo, Ron < Ron. Sabo@hamilton.ca >

Cc: MacNeil, Byrdena <Byrdena.MacNeil@hamilton.ca>; Swaby, Diana <Diana.Swaby@hamilton.ca>

Subject: RHVE Expressway Claims

Good Afternoon Nicole / Ron,

My review indicates we have four significant claims which could theoretically be impacted by the FOI request. None of them specifically cite a "friction factor" as far as I can tell but it stands to reason that plaintiff counsel would attempt to use any associated media story to support their allegations of negligence.

Solicitor-Client Privileged

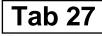
As stated, this is just my quick search in advance of Diana returning. She is back Thursday and will be able comment on these files and any others that I may have missed. I have cc'd her for this purpose.

Regards,

John McLennan Manager Risk Management Services City of Hamilton 905-546-2424 (Ext. 5736) john.mclennan@hamilton.ca

MOVE NOTIFICATION: Legal Services and Risk Management Services are located at 50 Main St. East, Hamilton, ON L8N 1E9.

Our new mailing address will be City Hall, 71 Main St W, Hamilton L8P 4Y5



From: McGuire, Gord [/O=GOVT/OU=EMAIL/CN=RECIPIENTS/CN=GMCGUIRE]

Sent: 12/7/2018 7:21:33 PM

To: MacNeil, Byrdena [/O=GOVT/OU=EMAIL/cn=Recipients/cn=bmacneil]
CC: Cameron, Diana [/O=GOVT/OU=EMAIL/cn=Recipients/cn=dcameron]

Subject: Re: Current CIMA Work Scope

Sensitivity: Company Confidential

I'm reaching out to Edward Soldo if Roads and Traffic as they have retained CIMA.

Hopefully back to you ASAP.



Gord McGuire, O.L.S., B.Sc.

Director, Engineering Services

Public Works Department | Engineering Services Division |

City of Hamilton
77 James Street North, Suite 320
Hamilton, ON L8R 2K3
T: 905.546.2424, Extension 2439
gord.mcguire@hamilton.ca

On Dec 7, 2018, at 2:02 PM, MacNeil, Byrdena < Byrdena.MacNeil@hamilton.ca wrote:

SOLICITOR-CLIENT PRIVILEGED

Hi Gord,

I just tried calling you but no answer.

Can you please send to me something that explains the current scope of work that CIMA is undertaking for which we are going to be adding/updating them on the Tradewind Friction Testing Results? I will need to reference it in the retainer letter that I am drafting.

Thanks, Byrdena

Byrdena M. MacNeil, Solicitor

City of Hamilton - Legal Services Division

t: 905.546.2424, ext. 4637

f: 905.546.4370

e: byrdena.macneil@hamilton.ca

Courier Address: 50 Main Street East, 5th Floor, Hamilton, Ontario L8N 1E9 Mailing Address: City Hall, 71 Main Street West, Hamilton, Ontario L8P 4Y5

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Tab 28 Nicole'[Nicole.Auty@hamilton.ca]
Boghosian[dgb@boglaw.ca]
Sent: Thur 12/13/2018 10:09:40 AM (UTC-05:00)
Subject: RE: Safety Analysis of the Red Hill Valley Parkway

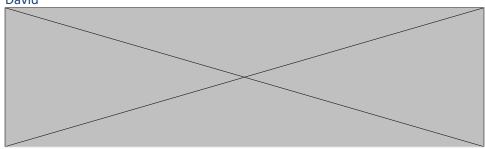
Hi Nicole:

I take it that the Appendix represents the work the City has done in response to the recommendations in the CIMA report dated November 2015?? Do you happen to know the date of the report that the Appendix formed part of?

Also, I still haven't received the draft report that CIMA has just completed on median barrier systems no the RHVP. I have followed up but if I don't receive it in time to incorporate into my opinion, I will send my opinion along without that discussion.

Best regards,

David



From: Auty, Nicole [mailto:Nicole.Auty@hamilton.ca] **Sent:** Wednesday, December 12, 2018 4:05 PM

To: David Boghosian <dgb@boglaw.ca>

Subject: FW: Safety Analysis of the Red Hill Valley Parkway David, let me know if this is what you were looking for.

📕 Hamilton

City of Hamilton Legal and Risk Management Services **Mailing address:** City Hall 71 Main Street West Hamilton, ON Canada L8P 4Y5

www.hamilton.ca

Nicole Auty

City Solicitor

Legal and Risk Management Services Phone: 905.546.2424 ext. 4636

Fax: 905.546.4370

Physical Office: 50 Main St. East, 5th Floor, Hamilton, ON

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From: Soldo, Edward

Sent: December-12-18 3:38 PM

To: Auty, Nicole

Subject: Fwd: Safety Analysis of the Red Hill Valley Parkway

Please see attached. Let me know if this is what you were looking for.

Thanks

Edward Soldo, P.Eng.
Director of Roads and Traffic
City of Hamilton
Sent from my iPhone
Begin forwarded message:

From: "Ferguson, David" < David. Ferguson@hamilton.ca>

To: "Pellegrini, Domenic" < Domenic. Pellegrini@hamilton.ca>

Cc: "White, Martin" < Martin.White@hamilton.ca, "Soldo, Edward" < Edward.Soldo@hamilton.ca, "McGuire, Gord"

<Gord.McGuire@hamilton.ca>, "Cameron, Diana" <Diana.Cameron@hamilton.ca>, "Sharma, Dipankar"

<<u>Dipankar.Sharma@hamilton.ca</u>>, "Olszewski, Chris" <<u>Chris.Olszewski@hamilton.ca</u>>

Subject: RE: Safety Analysis of the Red Hill Valley Parkway

Hi Domenic,

In Martin's absence, please find attached the requested documents.

Sincerely,

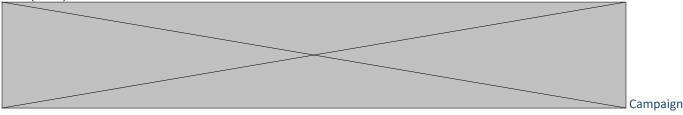
Public Works, Roads & Traffic

City of Hamilton

330 Wentworth St. N., Hamilton ON, L8L 5W2

e-mail: david.ferguson@hamilton.ca

Tel: (905)546-2424 ext 2433



Urges Drivers To Slow Down and Take the Road Safety Pledge.

"Hamilton roads are shared by motorists, cyclists and pedestrians alike; everyone has a shared responsibility to follow the rules of the road. This campaign, however, is asking drivers in particular to be aware that speed kills. Slow down, be respectful and take the pledge to keep our roads safe." Take the Pledge by following the link https://www.hamilton.ca/streets-transportation/driving-traffic/road-safety-pledge.

From: "Pellegrini, Domenic" < Domenic.Pellegrini@hamilton.ca

Date: December 6, 2018 at 9:16:27 AM EST

To: "White, Martin" < Martin. White@hamilton.ca>, "Ferguson, David" < David. Ferguson@hamilton.ca>

Subject: Safety Analysis of the Red Hill Valley Parkway

Good morning Martin and David,

Audit Services has come across a report that appears to have been approved by Traffic Operations regarding the safety of the Red Hill Valley Parkway. The Report is entitled "Red Hill Valley Parkway Detailed Safety Analysis", completed in November 2015. Can we have a copy of this report? Have the recommendations made by this report been implemented? Also, could you please provide information on any other reports that were completed regarding the safety of the Red Hill Valley Parkway especially if they relate to the slipperiness of the

pavement?

Thanks in advance for your assistance.

Domenic Pellegrini CPA, CMA, CIA Senior Internal Auditor Audit Services Division City Manager's Office, City of Hamilton T: (905) 546-2424 Ext. 2207

Domenic.Pellegrini@hamilton.ca

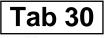
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Red Hill Valley Parkway and Lincoln Alexander Parkway Transportation and Safety Update Collision Counter Measures

	ollision Counter Meast	
Action Item	Term	Status
Trim Vegetation at various		
locations	Short	Completed
Install Oversized Speed Limit		
Signs	Short	Completed
Install "Slippery When Wet" Signs		
	Short	Completed
Install "Merge" and Bridge Ices"		
Signs	Short	Completed
Upgrade Guiderail end		
treatments	Short	Completed
Install Digital Feedback Signs		
	Short	Currently bein completed
Install Recessed Pavement		
Markers (cats-eyes)		Works to b completed ring
	Short	resurfacing
Guiderail Treatments		
	Short	Completed
Q-End Warning System		Currently being reviewed by
	Short	consultant
Install Advance Diagrammatic		Angender Chi
Sign on Rousseaux on-ramp		Alexander and
west of Mohawk Road		MAG
	Short	To be completed in 2018
Conduct Speed Study and		
Consideration of Variable Speed		
Limit system	Short	To be completed in 2018
Install MTO style "Speed Fine"		
signs		
	Short	Completed
Install Advance sign with		
Advance Right Lane Exits, Next		
Lane Exit or Through sign		
between Hwy 403 and Mohawk		
Rd	Short	To be completed in 2018
Conduct Pavement Friction		·
Testing	Medium	Completed
Shield Rock Cuts between Upper		·
James and Upper Wellington		To be reviewed by Engineering
, ,	Medium	Services
Provide Shoulder Rumble Strips		
along entire length of the LINC		To be completed during
	Long	re-surfacing
Median Barrier System		To be considered with any future
		widening of Parkways
	Long	
Install End to End Illumination		Reviewed and reported by
		Engineering Services, not
	Long	recommended.





From: Brian Malone [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=67C055668F2542418A0037674B420253-BRIAN MALON]

Sent: 12/13/2018 11:26:32 AM

To: David Boghosian [dgb@boglaw.ca]
Subject: RE: Hamilton re: RHVP Opinion

Attachments: B001014_Hamilton_RHVP Roadside Safety Assessment_e01.pdf; B001014_RHVP_Guide_Rails_e01.gdb.zip

This is the draft report for the RHVP that was delivered to the City on November 23, 2018. We met with them to receive comments and confirm a few issues on Dec 07. We are currently working on completing the final report and should have that done by Dec 21.

There is a CAD file that goes with the report which I have also attached. It shows the details of the locations for recommended improvements to roadside safety devices. It requires GIS software to be viewed, so you probably won't be able to open it, but it provides the compete package.

A similar, separate report is to be prepared for the LINC, and a draft is scheduled to be delivered in February 2019.

BRIAN MALONE, P.Eng., PTOE

Partner / Vice President, Transportation / Traffic Engineering

T 289-288-0287 ext. 6802 **M** 905-466-0421 **F** 289-288-0285 400–3027 Harvester Road, Burlington, ON L7N 3G7 CANADA





Do you really need to print this email? Let's protect the environment!

CONFIDENTIALITY WARNING This e-mail is confidential. If you are not the intended recipient, please notify the sender immediately and delete it in its entirety.

From: David Boghosian <dgb@boglaw.ca>

Sent: 13 December, 2018 10:01

To: Brian Malone < Brian. Malone@cima.ca>

Subject: Hamilton re: RHVP Opinion

Hi Brian:

Further to our telephone conversation on Tuesday, I would be grateful if you could send me the draft update report on the median barrier issue that contains the updated collisions statistics up to the end of 2017.

Best regards,

David

2	^	0
_	y	y



From: MacNeil, Byrdena [/O=GOVT/OU=EMAIL/CN=RECIPIENTS/CN=BMACNEIL]

Sent: 12/10/2018 10:33:37 AM

To: McGuire, Gord [/O=GOVT/OU=EMAIL/cn=Recipients/cn=gmcguire]

Subject: RE: RHVP

SOLICITOR-CLIENT PRIVILEGED

Hi Gord.

Thanks for your email. No, we have not contacted CIMA yet because we are still working on how we are going to put the request to them in order to best move forward from a legal perspective.

I would strongly advise that you <u>not</u> speak with CIMA about this matter until you have heard back from us/Nicole. We should be able to update you this week (I hope by mid-week).

Byrdena M. MacNeil, Solicitor

City of Hamilton - Legal Services Division

t: 905.546.2424, ext. 4637

f: 905,546,4370

e: byrdena.macneil@hamilton.ca

Courier Address: 50 Main Street East, 5th Floor, Hamilton, Ontario L8N 1E9 Mailing Address: City Hall, 71 Main Street West, Hamilton, Ontario L8P 4Y5

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From: McGuire, Gord

Sent: December-08-18 4:53 PM

To: MacNeil, Byrdena Subject: FW: RHVP

Hi Byrdena:

Did you get a hold of the CIMA contact via Edward?

I was wondering and if so could I talk to CIMA confidentially.



Gord McGuire, O.L.S., B.Sc.
Director, Engineering Services
Public Works Department | Engineering Services Division |

City of Hamilton 77 James Street North, Suite 320 Hamilton, ON L8R 2K3 T: 905.546.2424, Extension 2439 gord.mcguire@hamilton.ca

From: Brian Malone <Brian.Malone@cima.ca>

Sent: December 8, 2018 4:37 PM

To: McGuire, Gord <Gord.McGuire@hamilton.ca>

Subject: Re: RHVP

No they have not contacted me. Have they called the office.

BRIAN MALONE, P.Eng., PTOE Partner / Vice President, Transportation / T	raffic Engineering
T <u>289-288-0287 ext. 6802</u> M <u>905-466-042</u> 3027 Harvester Road, Suite 400, Burlingtor	
Do you really need to print this email? Let's protect the CONFIDENTIALITY WARNING This e-mail is confident pritirety.	e environment! ntial. If you are not the intended recipient, please notify the sender immediately and delete it in its
On Dec 8, 2018, at 13:55, McGuire, Gord <	Gord.McGuire@hamilton.ca> wrote:
Hi Brian. Did our legal group get in	touch with you on the safety report?
Thanks	
Manks	
* International Property of the Control of the Cont	Gord McGuire, O.L.S., B.Sc.
	Director, Engineering Services Public Works Department Engineering Services Division
	City of Hamilton
	77 James Street North, Suite 320
	Hamilton, ON L8R 2K3

T: 905.546.2424, Extension 2439 gord.mcguire@hamilton.ca

Tab 32

Edward[Edward.Soldo@hamilton.ca]

Nicole[/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AUTY,

NICOLEC95]

Sent: Wed 12/12/2018 9:58:27 AM (UTC-05:00)

Subject: RE: RHVE

Ok, thanks. I will send you an email about what I'm looking for.



City of Hamilton Legal and Risk Management Services Mailing address: City Hall 71 Main Street West Hamilton, ON Canada L8P 4Y5 www.hamilton.ca

Nicole Auty

City Solicitor

Legal and Risk Management Services Phone: 905.546.2424 ext. 4636

Fax: 905.546.4370

Physical Office: 50 Main St. East, 5th Floor, Hamilton, ON

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From: Soldo, Edward

Sent: December-12-18 9:58 AM

To: Auty, Nicole Subject: Re: RHVE

I am in meetings most of the day, if GIC ends early I will call you.

Thanks

Edward Soldo, P.Eng.
Director of Roads and Traffic
City of Hamilton

Sent from my iPhone

On Dec 12, 2018, at 9:45 AM, Auty, Nicole < Nicole. Auty@hamilton.ca > wrote:

Edward,

Do you have time later today to speak on this?

<image001.jpg>
City of Hamilton
Legal and Risk Management Services
Mailing address: City Hall
71 Main Street West
Hamilton, ON Canada L8P 4Y5
www.hamilton.ca

Nicole Auty

City Solicitor Legal and Risk Management Services Phone: 905.546.2424 ext. 4636

Fax: 905.546.4370

Physical Office: 50 Main St. East, 5th Floor, Hamilton, ON

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From: Soldo, Edward

Sent: December-12-18 8:06 AM

To: Auty, Nicole Subject: RE: RHVE

Yes,

He is expecting your call.

303

Thanks

Edward Soldo, P.Eng. Director of Roads & Traffic Public Works Department City of Hamilton

77 James St North., Suite 400., Hamilton, ON L8R 2K3

Phone: 905-546-2424 ext. 4622

Fax: 905-546-4473

Email: Edward.Soldo@hamilton.ca

From: Auty, Nicole

Sent: December 11, 2018 2:55 PM

To: Soldo, Edward < Edward.Soldo@hamilton.ca>

Subject: RHVE

Hi Edward,

Tried calling you back, sorry today got away from me. Was the contact Brian Malone?

Let me know when you have a moment to discuss.

Thanks, Nicole

<image001.jpg>
City of Hamilton
Legal and Risk Management Services
Mailing address: City Hall
71 Main Street West
Hamilton, ON Canada L8P 4Y5
www.hamilton.ca

Nicole Auty

City Solicitor
Legal and Risk Management Services
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From: MacNeil, Byrdena [/O=GOVT/OU=EMAIL/CN=RECIPIENTS/CN=BMACNEIL]

Sent: 12/12/2018 10:53:38 AM

To: McGuire, Gord [/O=GOVT/OU=EMAIL/cn=Recipients/cn=gmcguire]

CC: Auty, Nicole [/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Auty,

Nicolec95]

Subject: RE: CIMA is in the office now

SOLICITOR-CLIENT PRIVILEGED

Hi Gord,

I haven't received any direction on this yet. So we won't be in a position to speak with Brian today. Thanks for the head's up though.

Byrdena M. MacNeil, Solicitor

City of Hamilton - Legal Services Division t: 905.546.2424, ext. 4637

f: 905.546.4370

e: byrdena.macneil@hamilton.ca

Courier Address: 50 Main Street East, 5th Floor, Hamilton, Ontario L8N 1E9 Mailing Address: City Hall, 71 Main Street West, Hamilton, Ontario L8P 4Y5

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From: McGuire, Gord

Sent: December-12-18 9:18 AM **To:** Auty, Nicole; MacNeil, Byrdena **Subject:** CIMA is in the office now

Should we get a call going with Brian? He's in office.



Gord McGuire, O.L.S., B.Sc.

Director, Engineering Services

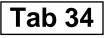
Public Works Department | Engineering Services Division |

City of Hamilton

77 James Street North, Suite 320

Hamilton, ON L8R 2K3

T: 905.546.2424, Extension 2439 gord.mcguire@hamilton.ca



From: Cameron, Diana [/O=GOVT/OU=EMAIL/CN=RECIPIENTS/CN=DCAMERON]

Sent: 5/22/2019 10:02:42 AM

To: Recine, Jen [/O=GOVT/OU=EMAIL/cn=Recipients/cn=jrecine]

CC: Graham, Jasmine [/o=GOVT/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=Graham,

Jasmine24d]

Subject: DIANA DRAFT TIMELINE - May 9 Update - for May 22nd meeting.xlsx **Attachments**: DIANA DRAFT TIMELINE - May 9 Update - for May 22nd meeting.xlsx

Importance: High
Sensitivity: Private

As requested, here is the draft timeline for your 11am meeting.



Diana Cameron

Administrative Assistant II
Public Works Department | Engineering Services Division |

City of Hamilton
77 James Street North, Suite 320
Hamilton, ON L8R 2K3
T: 905.546.2424, Extension 4867
diana.cameron@hamilton.ca

A	В	C	D	E	F	G	Н	
CONFIDENTIAL DRAFT ONLY			DIANA C ENTRIES		*Estimated date			
Preliminary Reconstructed Timeline	Est.	ACTIVITY	Commentary / Potential Explanation	BACK UP / EVIDENCE	THEME	DIVISION RESPONSIBL	E RELATED REPORTS / LINKS	NOTES
1-Jul-06		Paving contract for RHVP awarded to Dufferin	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5,10,10,1,1,10,1,10	Asphalt Testing	Engineering		
2 3 41 0 5	*	Construction			, topridic resting	Services		
1-Oct-07	_	MTO conducts original friction test on RHVP. Later			MTO & SMA	Engineering	Email January 2014 to	
1-001-07	*	_			IVITO & SIVIA	1 0	G. Moore from Golders	
	1	releases results for testing between 2007-2014.				Services	G. Moore from Golders	
	_							
1-Nov-07	*	RHVP opens. Uses Perpetual Pavement design and Stone			Asphalt Testing	Engineering		
		Mastic Asphalt (SMA) as top coat.				Services		
1-Nov-07		MTO "paused the use of SMA due to address concerns			MTO & SMA	Engineering	Pamela Marks MTO	
		with low early age friction".				Services	presentation (2016) and	
							Report "Addressing	
	*						Early Age Low Friction	
							Problem of SMA in	
							Ontario" research	
							Olitario research	
16-Dec-10	_	Information Update shared with Council re: Information		COUNCIL - TAB 98	Council Reports &	Traffic	ESI.10.26	
10 500 10		signing on the RHVP		1715 30	Directions	Traine	25.120.20	
16-Jan-13	_	Council directed staff to investigate lighting and		COUNCIL - TAB 82	Council Reports &	Engineering	N/A	
10-1411-13		0 0 0		COUNCIL - TAB 82		0	IN/A	
		improved signs/lane markings for the RHVP near			Directions	Services		
		Mud/Stone Church, and costing/alternatives for				Traffic		
		consideration						
1-Apr-13		Golders & Associates hired by Engineering Services to			Asphalt Testing	Engineering	Golders Report	
		complete "six year" condition evaluation of RHVP				Services	"Performance Review	
	*	pavements (assignment does not include friction					after Six years in	
		testing).					Service" January 2014	
		J					(DRAFT)	
1-Sep-13		CIMA hired by Traffic to conduct safety audit on RHVP		SAFETY - TAB 1	Safety Upgrades	Traffic	Red Hill Valley Parkway	
		between Dartnall and Greenhill. Identifies higher than					Safety Review,	
	*	expected accident rates and recommends friction					September 2013	
		testing.					September 2013	
1-Nov-13	_	Golders & Associates is hired by Engineering Services to			Asphalt Testing	Engineering	Tradewind Scientific,	
11407 13		conduct friction testing on the Linc and RHVP. Golders			Aspirate resting	Services	November 2013	
	*	_				Services	November 2013	
		subcontracts friction testing to Tradewind Scientific.						
0 N	_			COUNCIL TAB 03	C	T	D D.A.(4.2004	
8-Nov-13		Council received information from staff regarding the		COUNCIL - TAB 83	Council Reports &	Traffic	Report PW13081	
		2013 safety audit from CIMA which made			Directions			
		recommendations on changes to signage, pavement						
		markings, installation of cat eyes and friction testing						
1-Jan-14		Golders & Associates submits their first report to			Asphalt Testing	Engineering	Golders Report	
		Engineering Services summarizing their April and				Services	"Performance Review	
	*	November 2013 assignments. The report includes an					after Six years in	
		Appendix of the Tradewind Scientific friction testing					Service" January 2014	
		results. The report remains in draft.					(DRAFT)	
1-Oct-14	_	MTO reintroduces use of SMA if a "hot grit coated with			MTO & SMA	Engineering	IDIAFU	
2 000 17	*	1% asphalt cement" is applied during mix placement to			ITTO & SIVIA	Services		
						Services		
		increase early age friction.						

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21-May-15		Council received information from staff regarding the 2013 safety audit from CIMA and progress made on safety improvements, and directed staff to investigate additional safety measures for the RHVP and Linc, such		COUNCIL - TAB 84	Council Reports & Directions	Traffic	Report PW13081a	
		means to help prevent further fatalities and serious						
25-May-15		Spectator article (A. Dreschel) with a focus on widening the RHVP. Gary Moore is quoted "Red Hill will probably need resurfacing by 2022 or 2025, which would be a good opportunity for widening."		MEDIA - TAB 27	Media Coverage	Engineering Services	https://www.thespec.co m/opinion- story/5642219-city-of- hamilton-studies- widening-red-hill/	
1-Jun-15	*	MTO issues a technical bulletin that says "hot in place recycling shall not be used to recycle SMA or composite pavements."			MTO & SMA	Engineering Services		
1-Nov-15	*	CIMA is hired by Traffic to complete a safety analysis RHVP and Linc. Report identifies higher than anticipated collision rates and wet weather performance issues on the RHVP.		SAFETY - TAB 2	Safety Upgrades	Traffic	Red Hill Valley Detailed Safety Analysis, October 2015	
2-Nov-15		Council directed staff to report on total costs and feasibility of expanding the Linc and RHVP to six lanes		COUNCIL - TAB 85	Council Reports & Directions	Engineering Services	N/A	
1-Dec-15	*	Golders & Associates re-submits the appendix only from their 2013 report, specifically the Tradewind Scientific to Engineering Services. The report remains in draft.			Asphalt Testing	Engineering Services		
7-Dec-15		Council received information from staff regarding the 2015 safety audit from CIMA which made recommendations on short, medium and long-term safety improvements for the Linc and RHVP, and Council directed staff to seek out provincial approval from the Ministry of Transportation to allow the City of Hamilton to implement photo radar on the Linc and RHVP, and to report back on the costs and processes of investigating an improved lighting system on the RHVP and Linc		COUNCIL - TAB 86	Council Reports & Directions	Traffic	Report PW15091	
20-May-16		Information Update shared with Council. Provides update on implementation schedule for improvements on the Linc and RHVP.		COUNCIL - TAB 87	Council Reports & Directions	Traffic	CASP1615	
1-Aug-16	*	Dan McKinnon begins as General Manager, Public Works			Staff Arrivals / Departures	General Manager's Office		
19-Sep-16		Council received information related to lighting which recommended further investigation, and directed staff to undertake a lighting study on the RHVP		COUNCIL - TAB 88	Council Reports & Directions	Engineering Services	Report PW16077	
3-Oct-16		Council received information regarding the need to study options before expanding the RHVP and Linc, and the need for an environmental assessment and connection issues with the 403 and QEW		COUNCIL - TAB 89	Council Reports & Directions	Traffic	Report PW16084	
16-Jan-17		Information Update shared with Council. Outlines traffic count feasability study on Linc and RHVP.		COUNCIL - TAB 90	Council Reports & Directions	Engineering Services	PW16084A	

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27-Feb-17		Council directed staff to consult with Hamilton Police Services to bring forward an annual collision report summarizing collisions on Linc and RHVP, and requested	-	COUNCIL - TAB 91	Council Reports & Directions	Traffic	N/A	·
		an update on costs and implications of installing barriers						
20-Mar-17		Information Update shared with Council. Outlines safety improvements made to RHVP, including: oversize speed limit signage, slippery when wet signs, merge and bridge ices signs, vegetation trimmed, guiderail end treatments		COUNCIL - TAB 92	Council Reports & Directions	Engineering Services	PW15091A	
		upgraded, object marker signs on end treatments, MTO fine signs. etc.						
1-Jun-17	*	Budget sheets for resurfacing for the RHVP are submitted for programming into the 2018-2019 capital budget (\$13.5 million).			Safety Upgrades	Engineering Services		
17-Jul-17		Spectator article (N. O'Reilly) with a focus on RHVP fatalities, safety and friction. Gary Moore quoted saying there is no official report from the friction tests. "only an informal chart sent in an email in December 2015. The friction testing was not fulsome and the results were inconclusiveThe city refused to share that chart with The SpectatorNo one ever releases (that type of) information because it's the first thing anybody (would use in a) lawquid use in a		MEDIA - TAB 28	Media Coverage	Engineering Services and Traffic	https://www.thespec.co m/news-story/7424349- highway-traffic- tragedies-why-are-there- so-many-crashes-on-the- red-hill-/	
17-Aug-17		Council directed staff to undertake speed limit reduction feasibility study for both Linc and RHVP		COUNCIL - TAB 93	Council Reports & Directions	Traffic	N/A	
1-Dec-17	*	Golders & Associates hired by Engineering Services to evaluate for surface skid resistance. Two tests considered acceptable, one tests was not conclusive due to weather constraints. The report remains in draft.			Asphalt Testing	Engineering Services		
1-Jan-18	*	CIMA is hired by Traffic to complete a review of RHVP collisions with comparable highways in Ontario.		CIMA Annual Collision Review	Safety Upgrades	Traffic		
15-Jan-18		Council received an update on the 2015 safety audit from CIMA and directed staff to implement short and medium term collision counter measures, undertake a detailed annual collision analysis on both the Linc and RHVP, to request Hamilton Police Services to undertake regular speed and aggressive driving enforcement on the Linc and RHVP, to undertake an annual traffic count, to install median barriers as part of any future widening, and to report back with an update on overall operating conditions on the Linc and RHVP with a focus on MTO activities for widening, truck activity, safety and information needed for widening		COUNCIL - TAB 94	Council Reports & Directions	Traffic	PW18008	
3-Mar-18		Mike Becke asking Gary about Golder review of hot in place - Mike says we can't use SMA with HIP technology	This doesn't make any sense here					

A	B C	D	E	F	G	Н	1
15-Jan-18	Spectator article (N. O'Reilly) with a focus on testing to		MEDIA - TAB 26	Media Coverage	Engineering	https://www.thespec.co	
	address slipperiness. Gary Moore is quoted as saying the				Services and	m/news-story/8072227-	
	City doesn't know why [the public] feels the RHVP is				Traffic	scratching-the-surface-	
					ITAIIIC		
	slippery and that's why the City is doing the testing. The					for-answers-on-red-hill-	
	article also talks about testing the pavement to use hot					paving/	
	in place technology and the call to install barriers						
28-Mar-18	CIMA hired by Traffic to complete a speed limit		SAFETY - TAB 6	Safety Upgrades	Traffic	Hamilton Linc and RHVP	
	reduction feasability study - report presented to Council					Speed Study, CIMA	
	in February 2019.					2018 October	
1-Apr-18	CIMA is hired by Engineering Services to study whether			Safety Upgrades	Engineering	CIMA Illumination	
17 Np. 10	lighting is warranted on the RHVP and Linc. CIMA notes			Salety Spg. aucs	Services	Review	
					Services	Review	
	high number of wet weather collisions but no major						
	issues with lighting. Results presented to GIC in report						
	PW18008A in February 2019.						
1-May-18	* Gary Moore retires from position of Director,			Staff Arrivals / Departures	Engineering		
	Engineering Services				Services		
15-May-18	File containing the Tradewind Scientific report is			Asphalt Testing	Engineering		
	uploaded to the Public Works document management				Services		
	system by Gary Moore						
1-Jun-18	Gord McGuire begins new position of Director,			Staff Arrivals / Departures	Engineering		
1-3411-18				Stall Allivais / Departures	Services		
1 1 1 1 0	Engineering Services			A colored Transfer	-		
1-Jul-18	Golders & Associates is hired by Engineering Services to			Asphalt Testing	Engineering		
	* complete an assessment of whether hot in place				Services		
	recycling can be used on the RHVP.						
19-Jul-18	Gord McGuire questioning whether we are still		Email - McGuire				
	considering HIP technology - also budget, method,						
	sampling						
19-Jul-18	Spectator article (N. O'Reilly) with a focus on testing for		MEDIA - TAB 29	Media Coverage	Engineering	https://www.thespec.co	
13 341 15	hot in place recycling. Notes that the two other times the		17.625	integral coverage	Services	m/news-story/8751852-	
					Services		
	City has tried to test the asphalt the results have been					city-testing-asphalt-on-	
	inconclusive.					red-hill-valley-parkway/	
20-Jul-19	Public Service Announcement sent to notify public about						
	RHVP lane closures for sampling of the asphalt for						
	potential HIP technology use on RHVP						
31-Jul-18	Edward Soldo begins new position of Director, Roads &			Staff Arrivals / Departures	Traffic		
	Traffic (Transportation, Operations & Maintenance)			Johann Millians , Dopartarios			
	Traine (Transportation, Operations & Maintenance)						
21-Aug-18	Draft memo for August 30 key players meeting is						
-	distributed by David Ferguson - Edward does not like						
	some of the language and asks that it be revised						
	Some of the language and asks that it be revised	Researching HIP - no sense of	Tab 46 - FOI 189				
		urgency (don't have info on					
		Tradewind yet)	T-1- 47 FOL 400				
		Researching HIP - no sense of	Tab 47 - FOI 189				
		urgency (don't have info on					
		Tradewind yet)					
		Researching HIP - no sense of	Tab 48 - FOI 189				
		urgency (don't have info on					
	I I	5 / (1	1	1	1	

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		-	Researching HIP - no sense of	Tab 49 - FOI 189				
			urgency (don't have info on					
			Tradewind yet)					
27-Aug-18		Mike Becke gets email from Golder (Vimy) with	MIKE COMMENTS (SPEC)	Tab 50 - FOI 189				Did this get filed
2, 746 10		tradewind report attached	WINE CONTINENTS (SI EC)	140 50 101105				anywhere?
30-Aug-18		Gord suggests conventional paving - wants to get the	Still exploring HIP	Tab 52- FOI 189				anywhere:
30 Aug 10		tender out	Still exploring Till	140 32 101103				
30-Aug-18		Key players meeting with Dave Ferguson, Edward Soldo,		Email - McGuire				Does DF have any
30 / lug 10		Gord McGuire, Dan McKinnon - discussing wet weather		Linuii Wicourie				notes from this
		issues on the RHVP						meeting?
		issues on the MIVF						ineeting:
15-Aug-18		Martin White emails Edward Soldo the draft of the 2017		Email - McGuire				
13 / (46 10		Annual Collision Report - shows wet weather issues on		Linuii Wicourie				
		the RHVP - Soldo requests meeting with key players (held						
		on August 30)						
1-Aug-18		Betty Matthews Malone retires from position of Director,			Staff Arrivals / Departures	Traffic		
I Aug 10		Roads & Traffic (Operations)			Stair Arrivais / Departures	Traine		
26-Sep-18		File containing the Tradewind Scientific report is opened		ACTIONS - TAB 35	Recent Timeline - Staff	Engineering		
20 300 10		by Gord McGuire from the Public Works document		ACTIONS TAB 33	Actions & Other	Services		
		•			Actions & Other	Services		
28-Sep-18		management system Edward Soldo, Gord McGuire, Susan Jacob, Martin White	Don't think we know about					**Ask Susan if she
28-3ep-18		- reviewing the scope of the RHVP resurfacing - decide to						has any notes from
		hire CIMA for road side safety audit	was a trigger for searching					this meeting
			through Gary's old stuff					
26-Sep-18		Last Council meeting before election rit period		N/A	Recent Timeline - Staff	Council		
20-3ep-18		Last Council meeting before election in period		IN/A	Actions & Other	Council		
					Actions & Other			
1-Oct-18		Gord notifies Dan about the 2013/2014 friction testing,			Recent Timeline - Staff	Engineering		Estimated date - no
1 361 13		including consultant's concerns and recommendations			Actions & Other	Services		evidence currently in
	*	for action.			Actions & Other	General		binder
		ioi action.				Manager's		billidel
						Office		
October 1 -5		Gord tells Dan				Опісе		
October 1 -3	DC	Gord tells ball						
9-Oct-18	DC	taking samples for HIP						
9-Oct-18		RHVP Mtg (Dave F / Martin W / Dan McK, Edward S, G						
3 361 15	DC	McG - no minutes						
10-Oct-18		McGuire tells Soldo (McGuire - who need to be in inner						
10 000 10		circle) Sticky Note: Does Dave Ferguson have notes						
.	l DC	Circle, Sticky Note. Does Dave Ferguson have notes						
15-Oct-18		Gord McGuire and Dan McKinnon make the decision to			Recent Timeline - Staff	Engineering		Estimated date - no
13 300-10		stop pursing hot in place recycling technology to			Actions & Other	Services		evidence currently in
		resurface the RHVP. Adjust capital budget request to			Actions & Other	General		binder
						1		binder
J		ensure new high quality asphalt can be used for 2019				Manager's		
15-Oct-18		resurfacing project. Gord McGuire shares the 2013/2014 friction testing,			Recent Timeline - Staff	Office		Estimated date - no
12-00-10	*				Actions & Other	Engineering Services and		
		including consultant's concerns and recommendations			Actions & Other	1		evidence currently in
15 Oct 19		for action with Edward Soldo.		CAFETY TAB 2	Decemb Timedine St-ff	Traffic		binder
15-Oct-18	*	CIMA is hired by Roads & Traffic to complete a full		SAFETY - TAB 3	Recent Timeline - Staff	Traffic		
15.0 . 10		roadside safety audit of RHVP.			Actions & Other			
15-Oct-18	DC	Engineering Week Luncheon - Moore wins award						

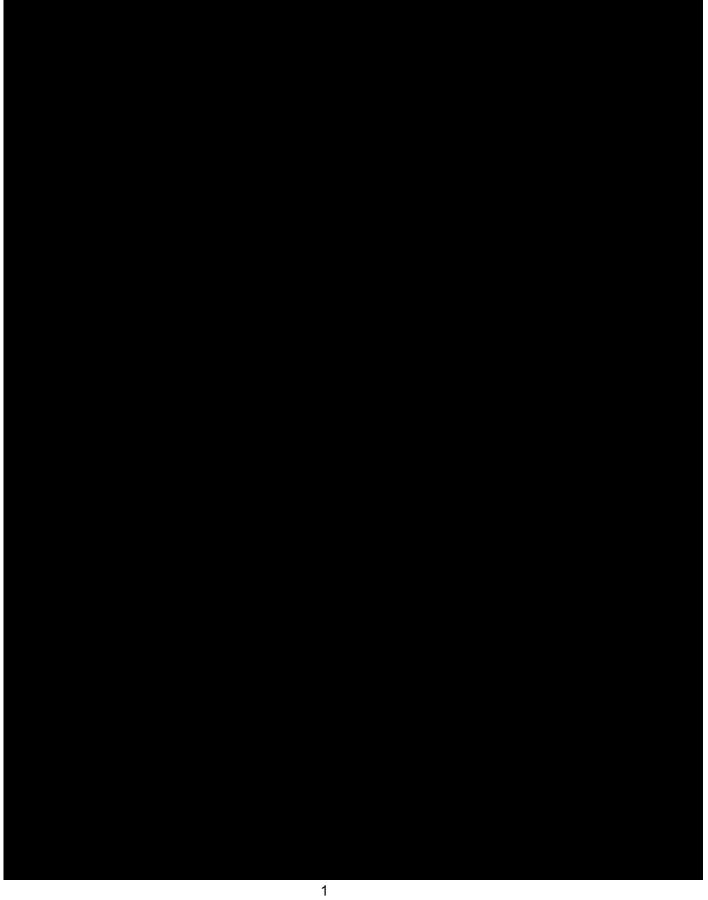
A	В	C	D	E	F	G	Н	
22-Oct-18		Council election		N/A	Recent Timeline - Staff	Council		
					Actions & Other			
22-Oct-18		McGuire interview w/ O'Reilly - Electrion Day (Tab 36 Jas'						
	Di	notes w/ Gord to Interview prep)						
23-Oct-18	D	C McGuire / Graham - clarifying not HIP						
25-Oct-18		Spectator article (N. O'Reilly) focused on resurfacing in		MEDIA - TAB 30	Media Coverage	Engineering	https://www.thespec.co	
		2019. Notes City doesn't know if something is wrong				Services	m/news-story/8986977	
		with the asphalt because it hasn't been thoroughly					15-million-resurfacing-	
		tested. Gord McGuire quoted saying that the City will be					of-red-hill-valley-	
		expediting the resurfacing of the RHVP and will not be					parkway-planned-for-	
		, ,					summer/	
		using the hot in place recycling technology.					<u>summer/</u>	
25-Oct-18		Outstanding assignment from Golders & Associations			Recent Timeline - Staff	Engineering		
25 001 18		from 2017 for friction testing. Gord asks Golders for a			Actions & Other	Services		
I		report on the work. Draft report indicates concerns with			Actions & Other	Services		
	*	surface characteristics of the RHVP and recommends						
		solutions to address (shot blasting, skid abrading,						
		microsurfacing). Draft report also includes an analysis of						
		the polished stone value, which confirmed the decision						
		to not use hot-in-place recycling technology						
25-Oct-18	Di	C O'Reilly article - no HIP						
26-Oct-18		C CIMA study PSA (inter. Closures on RHVP)						
1-Nov-18		CIMA's roadside safety audit draft report is received by		SAFETY - TAB 3	Recent Timeline - Staff	Traffic		
		Edward Soldo. (Finalized in January 2019)			Actions & Other			
1-Nov-18		Guiderail signage improvements initiated in Nov,			Recent Timeline - Staff	Traffic		
	*	completed in January – providing positive guidance for			Actions & Other			
		motorists						
1-Nov-18	De	C CIMA roadside safety draft received						
November (Mid)		RHVP timeline doc in progress						
,	De	C lining up for capital budget to Council and prelim mtgs						
	-	w/ new councillors						
8-Nov-18		FOI Request received requesting "Access to any reports,			Recent Timeline - Staff	All		
		memos, drafts, correspondence about friction testing on			Actions & Other	[
		the Red Hill Valley Parkway in the last five years AND any			, tellons a other			
		reports, memos (including drafts), or correspondence						
		about asphalt and/or pavement testing, assessments,						
		plans on the Red Hill Valley Parkway in the last two						
		years." - Approximately 600 records collected						
8-Nov-18		FOI received - FOI 18-189						
9-Nov-18		Dan tells Zegaric (is this right ?????)						
11-Nov-18	De	McGuire texts Gary asking if he saw FOI						
9-Nov-18		Dan McKinnon informs Interim City Manager Mike			Recent Timeline - Staff	General		
		Zegarac about the FOI and friction testing documents -			Actions & Other	Manager's		
		Legal and Risk Management are also informed				Office		
Nov 16-27, 2018	5.	Gord away from the office						
	D	~ ·						

	A	C D	E F	G H	ı
Tarking Tark	18	ectator article (N. O'Reilly) focused on asphalt spill on	MEDIA - TAB 31 Media Coverage	Engineering https://www.thespec.co	
Interviews with COH staff		e RHVP, links back to comments made in previous		Services and m/news-story/9045728-	
27-Nov-18 27-Nov-18 27-Nov-18 27-Nov-18 27-Nov-18 28-Dan, Gord, Gary have conversation (McGuire has notes) focused on Golder report (Eord asking five wever control to Concell (McGuire has notes) focused on Golder report (Eord asking five wever control to Concell (McGuire has notes) focused on Golder report (Eord asking five wever control to Concell (McGuire has notes) focused on Golder report (Eord asking five wever control to Concell (McGuire has notes) for the wever control to Concell (McGuire has notes) for the wever control to Concell (McGuire has notes) for the wever control to Concell (McGuire has notes) for the wever control to Concell (McGuire has notes) for the wever control to Concell (McGuire has notes) for the wever control to Concell (McGuire has notes) for the wever control to Concell (McGuire has notes) for the conditionation of the condition of the condition of the condition of the condition of		·		Traffic hot-sticky-mess-red-hill-	
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Foundation Company C	 18	an, Gord, Gary have conversation (McGuire has notes) -			
oc reported to Council) McKinnon asks when it was added to have expected Monce: Youth wate to the a knowledeable client" Recent Timeline - Staff All 3-Dec-18		, , ,			
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3-Dec-18	<i>;</i>	uncil inaguration		All	
McGuire has notes - asks for mtg. next week			Actions & Other		
Dec-18	\$				
4-Dec-18		1cGuire has notes - asks for mtg next week)			
4-Dec-18	3	cGuire gets Exec summary form CIMA of lighting			
Company of the property of t		port so that he could include in 18008a draft			
sas saudit (Domenic) has taken whole thing 6-Dec-18 6-Dec-18 6-Dec-18 7-Dec-18 7-Dec	3	ydena from Gord: tells BM that he did give auditor the			
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10 Dec 10	18		Actions & Other		
TES DEC TO DE LIMITORILE RETS LEBIA HOUR ERRY - NO HIGH SPEAK TO CHAIM					
until he gets OK from legal	.0				
	10				
12-Dec-18 DC Gord to Brydena / Nicole - Brian is in office and asks if we can have a conversation - legal says No	.0				

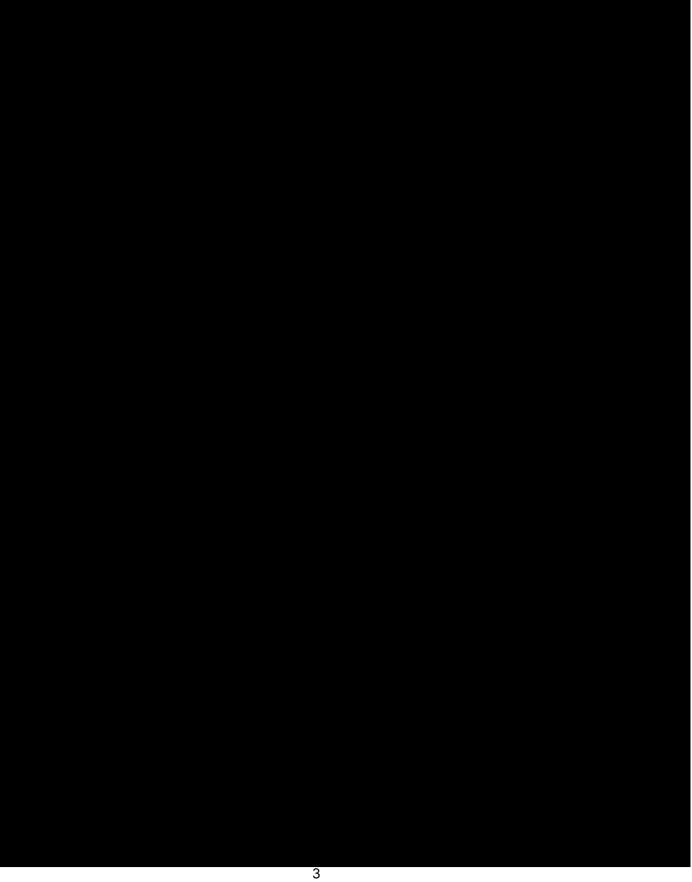
A	B C	D	E	F	G	Н	ı
13-Dec-18	Soldo reaches out to second safety consultant for						
	ndependent review of the work/issues - just to see if						
	available (Auty say not required to do this)						
	INTUS Road Safety Engineeering						
14-Dec-18	Dan, Gord, Zegarac, Nicole - we need to look at						
11 500 15	DW/18008 suggests we did friction testing, use bridge to						
	get in front of Council - make Info Report Jan 14 - 28 as						
14 Dec 19	options for when we can get there. Soldo e-mail to Malone authorizing to release roadside						
14-Dec-18							
10.0	safety report to legal services			D			
18-Dec-18	Special GIC meeting (cannabis only)			Recent Timeline - Staff	All		
				Actions & Other			
18-Dec-18	DC Briefed Mayor ? (HBD Gord)						
18-Dec-18	DC Gord has meeting with Golders to finalize Nov 2017						
	Friction / pavement report						
19-Dec-18	Regular Council meeting (no related items on agenda -			Recent Timeline - Staff	All		
	could have been a possibility)			Actions & Other			
Dec	DC City Shutdown						
2-Jan-19	DC CIMA e-mail - wants to know if still going to PWC on Jan						
	14th						
3-Jan-19	Gord asks Nicole/Ron - if you have connected with CIMA						
	DC yet - Ron asks to call						
7-Jan-19	DC still trying to finalize CIMA RSS report						
7-Jan-19	DC Karen Gordon formally hired						
7-Jan-19	Hartel Basine Zanana Karan C Nicola Edward Card						
, 54.1. 25	DC Dan						
8-Jan-19	DC Edward Gord met RHVP review - PW18008a review						
9-Jan-19	larvas conde o mail confirmia PHVD recurfocas just como						
	into Capital budget in 2017 (unusual)						
9-Jan-19	DC Finished upgrading guiderail / end treatments signage						
 9-Jan-19	DC Finished upgrading guideran / end treatments signage						
9-Jan-19	DC Gord / Jas / working on timeline (circa 2014)						
11-Jan-19	DC asking for CIMA to update Collision Rate Comparison						
	Doc for RHVP						
11-Jan-19	DC 9:30 to 10:30 CMO Boardroom - Jas / Dan / Gord / Jen /						
	Nicole / John / Karen / Edward / Ron						
14-Jan-19	Special Council meeting (cannabis only)			Recent Timeline - Staff	All		
				Actions & Other			
14-Jan-19	DC Gord asks Andoga, Oddi, Jacob & Becke if they have seen						
	tradewind prior to 2018? All say No						
14-Jan-19	DC RHVP - Dan / Gord / Jas / Ed						
15-Jan-19	DC Dan / Gord / Charles / Bridgitte mtg						
16-Jan-19	DC draft of CIMA Collision Rate Comparison (5 days) - Soldo						
	Shares right away						
16-Jan-19	Regular GIC meeting (no related items on agenda - could			Recent Timeline - Staff	All		
	have been a possibility)			Actions & Other	I		
17-Jan-19	DC Edward / Gord / Ferguson / Martin meet re: Golder			, actions & other			
17-Jan-19	DC another "all players" at CMO - Nicole Auty asking						
18-Jan-19	DC David B info on legal report to Council		-				

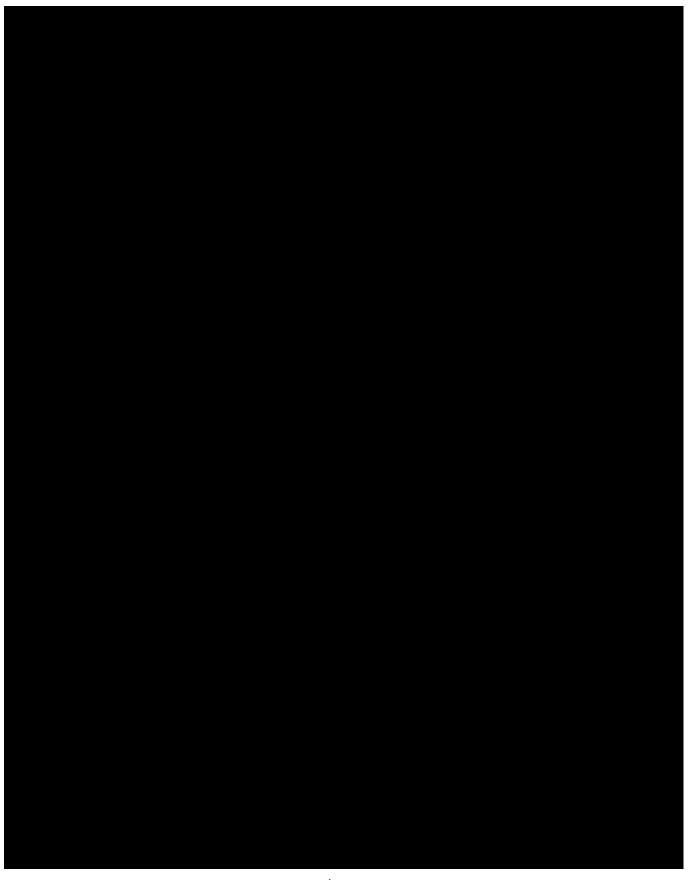
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L8-Jan-19	As part of the Council directed annual collision report,		SAFETY - TAB 5	Recent Timeline - Staff	Traffic	CIMA Memo: Linc and	
	CIMA is hired by Traffic to complete a review of RHVP			Actions & Other		RHVP Collision Rates,	
	collisions with comparable highways in Ontario – an			riotions a other		January 2019	
	, , ,					January 2019	
	update to the January 2018 collision review study.						
	Report shows RHVP has higher than normal collision						
	rates in comparison to similar facilities, with portions of						
	the RHVP having significantly higher collision rates.						
	and the time to the time of time of time of the time of ti						
20-Jan-19	Gord asking Ludomir to finalize the Nov 2017 pavement						
	report (continuing to do this)						
21-Jan-19	DC McGuire text from Moore about how to redo						
21-Jan-19	McGuire sends PW18008A to legal for review - Auty &				_		
21-Jan-19							
	Sabo - CC: McKinnon, Soldo, Graham						
21-Jan-19	DC Mike / Nicole / Gord / Edward / Dan						
22-Jan-19	DC McKinnon approves PW18008A and directs to get to						
	Clerks ASAP						
LATE JAN 2019	Reflective markers received and installed in February						
	DC Reflective markers received and installed in February						
23-Jan-19	DC original target to tell Council						
23-Jan-19	Council informed about FOI and potential			Recent Timeline - Staff	All		
23-3411-13	·				All		
	liability/reputational concerns by Dan McKinnon and			Actions & Other			
	Nicole Auty in-camera						
30-Jan-19	DC Auty responds to Gord's Dec 18 e0mail and asks if this is						
	2017 friction testing to go to CIMA						
30-Jan-19	DC Big all players mtg - Brian Malone / David Bon - the						
	phone wih us Brian - Big 3 Qs						
31-Jan-19	DC Edward / Martin / Gord / Susan - tender specs mtg						
4-Feb-19	CIMA (Brian Malone) is hired to conduct a review of the		SAFETY - TAB 4	Recent Timeline - Staff	All	CIMA Memo: RHVP	
7100 10	RHVP in context of friction testing from Tradewind 2013.		3711211 17754	Actions & Other	/	Pavement Friction	
				Actions & Other			
	Review answers: Are any changes needed to					Testing Results Review	
	recommendations in previous CIMA reports, are any						
	additional safety measures required now, Should the						
	RHVP be closed.						
4-Feb-19	staff run through presetations & communications plan						
	for sharing w/ Council						
5-Feb-19	DC CIMA memo from Auty						
5-Feb-19	DC GO TO COUNCIL						
5-Feb-19	Council received the 2017 Annual Collision report,		COUNCIL - TAB 95	Council Reports &	Traffic	PW19012	
3-LED-13	· · · · · ·		COUNCIL - TAB 95	'	ITAILIC	L AA T 2017	
	including information about collisions on the RHVP and			Directions			
	Linc.						
6-Feb-19	Council received an update on the LINC and RHVP safety -		COUNCIL - TAB 96	Council Reports &	Engineering	PW 18008A	
	including information about lighting and environmental			Directions	Services and		
	assessment required				Traffic		
5-Feb-19	Council received information related to reducing the		COUNCIL - TAB 97	Council Reports &	Traffic	PW 19014	
	speed limit on the LINC and RHVP			Directions			
5-Feb-19	Council informed of RHVP safety concerns during in-			Recent Timeline - Staff	All		
2-1 CD-13	· · · · · · · · · · · ·						
	camera session covering technical aspects,			Actions & Other			
	investigation/audit components, legal and						
	communication strategy moving forward						
5-Feb-19	Media Release: "Recommended lower speed limit on the			Recent Timeline - Staff	Communicatio		
	RHVP: resurfacing planned in spring 2019"			Actions & Other	ns		
13-Feb-19	Council recieves second in-camera update on RHVP			Recent Timeline - Staff	All		
				Actions & Other	["		
	safety concerns from staff		1	ACTIONS & OTHER	1		

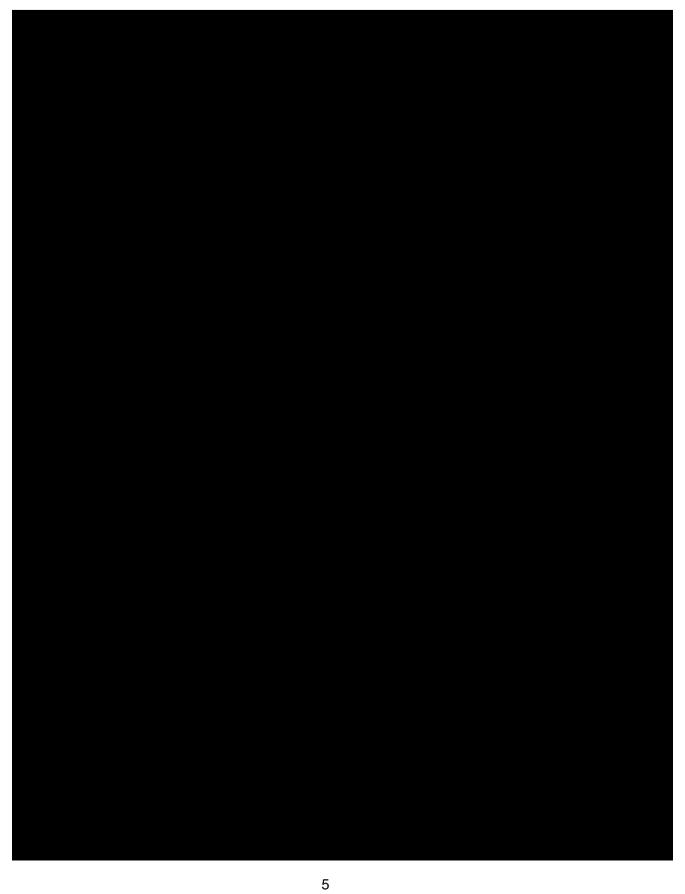
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14-Feb-19		Media Release: "Red Hill Valley Parkway Update:			Recent Timeline - Staff	Communicatio		
		Investigation, new safety reports made public and speed			Actions & Other	ns		
		limit change official"						
14-Feb-19		Second FOI Request received requesting "All reports			Recent Timeline - Staff	All		
		related to friction testing dated 2014 and after for the			Actions & Other			
		Red Hill Valley Parkway and accesses; and Reports						
		related to countermeasures against surface friction						
		issued for the RHVP 2014 and subsequent."						
15-Feb-19		New speed limit signs and flashing when wet beacons			Recent Timeline - Staff	Traffic		
		installed on the RHVP (complete Feb 17, 2019)			Actions & Other			
164								
16-Feb-19		Media Release: Rolling lane closures on Red Hill Valley			Recent Timeline - Staff	Communicatio		
		Parkway this weekend to install new speed limit signage			Actions & Other	ns		
165								
17-Feb-19		New speed limit comes into effect on RHVP between			Recent Timeline - Staff	All		
56		Greenhill Ave and QEW			Actions & Other			
167		Charles' email to Dan						
168		Dan's meeting with Charles						
.		collision stats - January 2018 Dan's email to Edward						
1169								

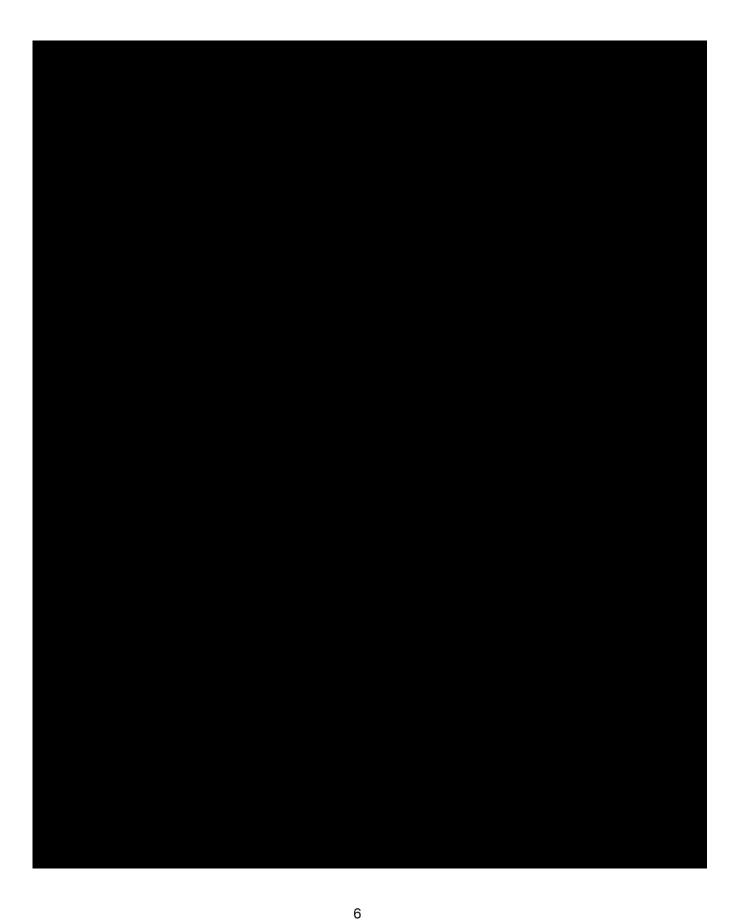


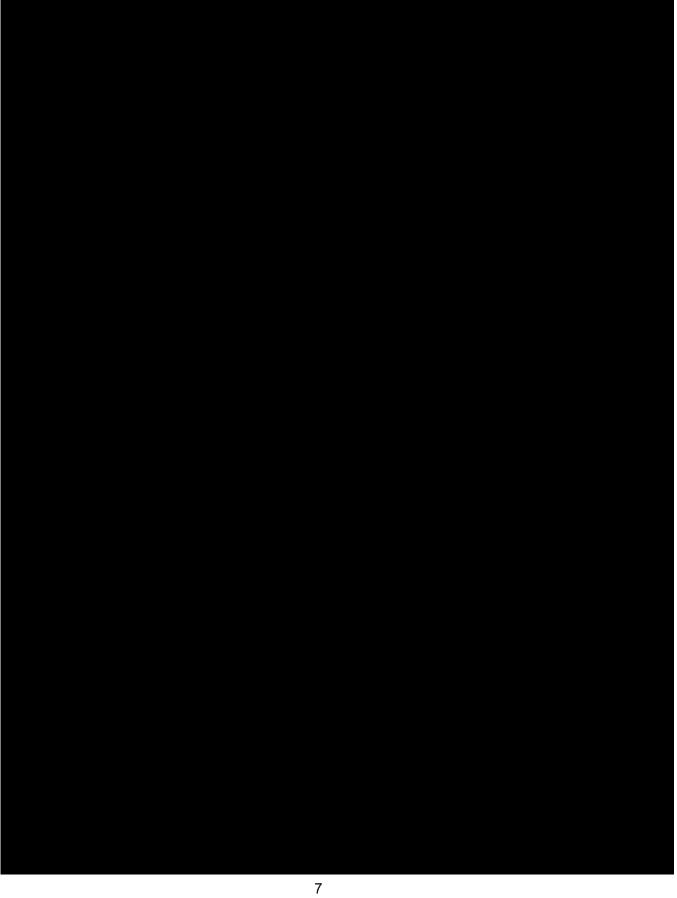


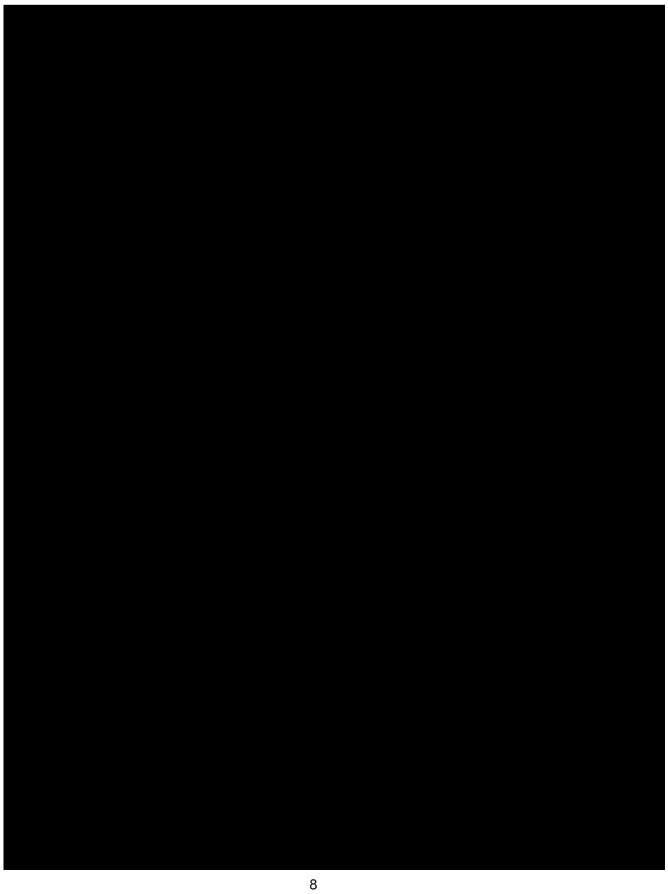


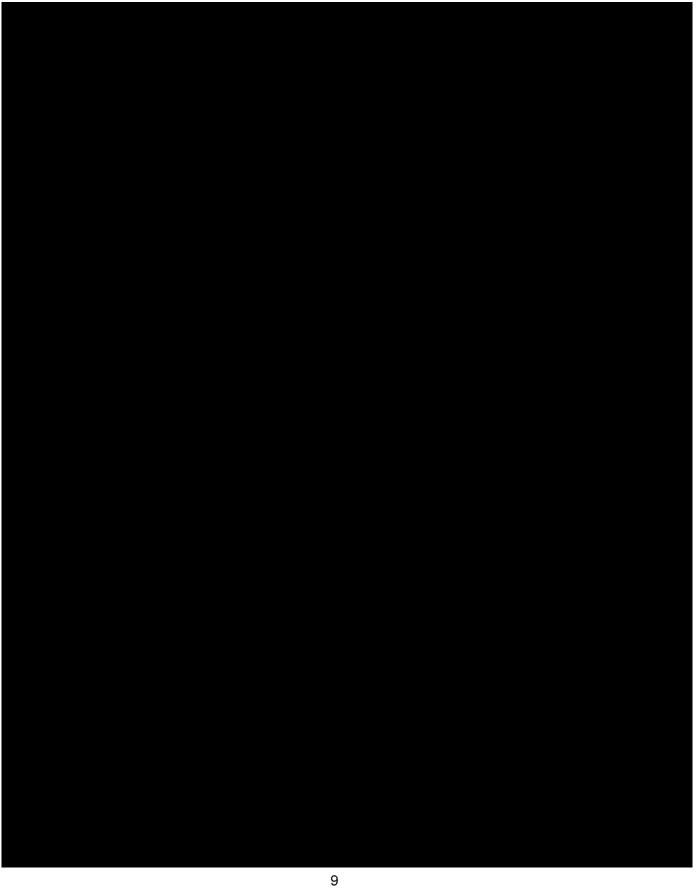


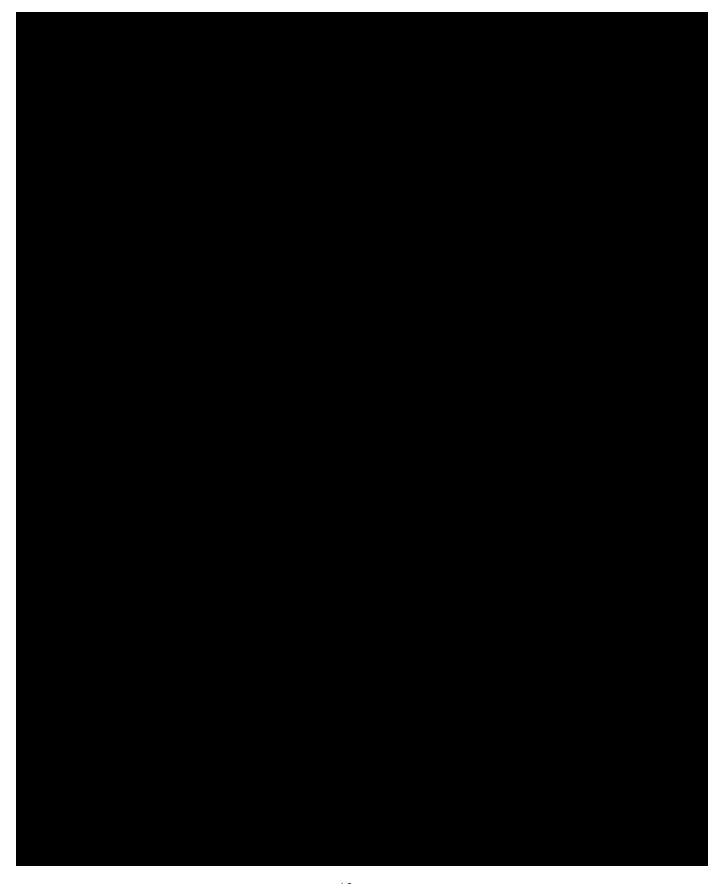


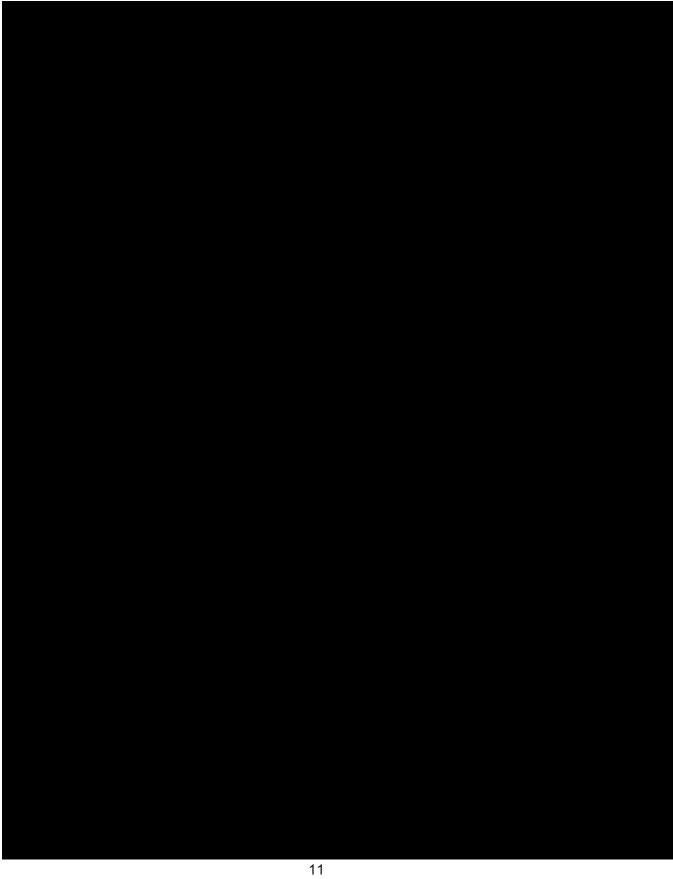
















CITY OF HAMILTON

CORPORATE SERVICES DEPARTMENT Legal and Risk Management Services Division

TO:	Mayor and Members of Council
COMMITTEE DATE:	January 23, 2019
SUBJECT/REPORT NO:	Potential Litigation Update (LS19007) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Nicole Auty (905) 546-2424 Ext. 4636
SUBMITTED BY:	Nicole Auty, City Solicitor Legal and Risk Management Services Division
	Corporate Services Department
SIGNATURE:	

Discussion of this Confidential Report in closed session is subject to the following requirement(s) of the City of Hamilton's Procedural By-law and the Ontario Municipal Act, 2001:

- Litigation or potential litigation, including matters before administrative tribunals, affecting the City;
- Advice that is subject to solicitor-client privilege, including communications necessary for that purpose;

RECOMMENDATION

- (a) That Report LS19007 be received.
- (b) That Report LS19007 respecting Potential Litigation remain confidential.

EXECUTIVE SUMMARY

The purpose of Report LS19007 is to advise Council of the potential of litigation arising from the release of City records relating to friction testing on the Red Hill Valley Expressway (RHVE) as a result of a Freedom of Information Request. It is unknown at the writing of this report whether that information will be released to the requestor in advance of City staff bringing a scheduled report to Public Works Committee on February 4th with an update on the status of the RHVE and an assessment of the potential liability associated with the release of the records regarding friction testing.

It is important that Council be aware of the potential litigation resulting from this release and that City staff are bringing a full report to Committee and Council in early February to give Committee and Council a complete status update on this asset.

Alternatives for Consideration – Not Applicable

FINANCIAL – STAFFING – LEGAL IMPLICATIONS (for recommendation(s) only)

Financial: There are financial impacts associated with potential increase in the City's liability and potentially an increase in insurance claim related costs. The exact amount is not known at this time.

Staffing: There are no staffing implications associated with this report.

Legal: The release of this information through the FOI process will have an impact on the City's liability associated with accidents on the RHVE. Solicitor-Client Privileged

Solicitor-Client Privileged

HISTORICAL BACKGROUND (Chronology of events)

The RHVE was constructed in 2007 using a design called perpetual pavement and a top course of Stone Mastic Asphalt (SMA). The SMA was friction tested upon opening and was found to have a lower score that was expected to increase with time.

The construction design of the RHVP assumed an Annual Average Daily Traffic (AADT) of 30,000 vehicles in year 1 with a projected peak of around 90,000 AADT in year 50. The actual traffic AADTs met or exceeded the 75,000 volume by year 6 which accelerated the need for rehabilitation work earlier than originally projected.

It has been reported to Council and in the media that there are a significant number of accidents on the RHVE, particularly in wet weather. In an appendix to Report PW18006 in January of 2018 it was identified that friction testing had been conducted.

In June of 2018 Gord McGuire was appointed Director of Engineering Services. As part of his orientation into that role, he reviewed the status of the work being proposed on the RHVE and in late September 2018 became aware of a draft report (the Tradewind report) that included friction testing done in 2013.

As a result of this report Mr. McGuire stopped exploring the opportunity to potentially rehabilitate the RHVE using a Hot in Place Recycling (HIR) technique. The HIR process would have re-used the existing asphalt which is the subject of the friction concerns. The project was then focussed on a conventional resurfacing method, and

specifications for new material were developed to meet current industry highway asphalt standards.

In November, 2018 an FOI request was submitted for friction testing done in the last 5 years and a second request involving pavement testing and assessments. Staff reviewed the request and have provided the 2013 Tradewind report and several others as potentially responsive records and the Tradewind report will likely be released.

RELEVANT CONSULTATION

Public Works staff Interim City Manager Corporate communications staff External legal counsel

ANALYSIS AND RATIONALE FOR RECOMMENDATION (Include Performance Measurement/Benchmarking Data if applicable)

The 2013 Tradewind report indicates that the standard in the UK for skid resistance was 0.48 (48 friction number). RHVP had friction numbers in the range of 30-40 which was below or well below the relevant UK standard for comparable highways. In contrast, the Lincoln Alexander Parkway had friction values in the range of 50-60, all comfortably above the UK standard. The UK standard used in the Tradewind report is generally not recognized in Canada and there is no comparable friction standard for pavement in Canada.

The concern is that the Tradewind report was not shared with other City staff at the time. As a result subsequent reports and analysis of the condition of the RHVE did not reference this report.

Solicitor-Client Privileged

Solicitor-Client Privileged

In addition, the Tradewind report and its content on friction testing have not been consistently addressed in the media and now that staff are aware of the report and have identified it as a responsive record to the FOI request, its release may also have some reputational impact on the City and wide media coverage.

Next Steps

Corporate communications staff are preparing a communications plan in the event the FOI request leads to release of information in advance of the PW report scheduled to come before council on February 4, 2019. The public report will update council on status of the various projects associated with the RHVE. There will also be an In Camera report to further identify the risks associated with the RHVE and the release of the Tradewind report.

Solicitor-Client Privileged

ALTERNATIVES FOR CONSIDERATION

Not Applicable

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.

Our People and Performance

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

APPENDICES AND SCHEDULES ATTACHED

N/A

Tab 37 Boghosian[dgb@boglaw.ca]
Malone[Brian.Malone@cima.ca]
Sent: Thur 1/31/2019 10:20:40 PM (UTC-05:00)

Subject: RE: RHVP

Thanks David. No, I had not seen these reports. Please forward the remaining parts.

Brian Malone

CIMA+

Burlington, Ontario Tel: 289-288-0287 x 6802

Cell: 905-466-0421

From: David Boghosian <dgb@boglaw.ca>

Sent: January-31-19 16:01

To: Brian Malone < Brian. Malone@cima.ca>

Subject: FW: RHVP

Hi Brian:

Nicole thought you should have Golder's 2014 report if you don't already have it. This is only part 1. If you do not already have it, let me know and I will send you the remaining 5 parts (broken up due to the size of the document).

Regards, David



David Boghosian

Managing Partner Tel: 416-367-5558 x 211 Fax: 416-368-1010 dgb@boglaw.ca

65 Queen Street West, #1000 Toronto, ON M5H 2M5 www.boglaw.ca

This email contains privileged or confidential information and is intended only for the named recipients.

If you have received this email in error or are not a named recipient, please notify the sender and destroy the email.

From: Auty, Nicole [mailto:Nicole.Auty@hamilton.ca]

Sent: Friday, December 07, 2018 3:21 PM **To:** David Boghosian < dgb@boglaw.ca>

Subject: FW: RHVP

📕 Hamilton

City of Hamilton

Legal and Risk Management Services

Mailing address: City Hall
71 Main Street West
Hamilton, ON Canada L8P 4Y5

www.hamilton.ca

Nicole Auty

City Solicitor

Legal and Risk Management Services Phone: 905.546.2424 ext. 4636

Fax: 905.546.4370

Physical Office: 50 Main St. East, 5th Floor, Hamilton, ON

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From: MacNeil, Byrdena

Sent: December-07-18 11:24 AM

To: Auty, Nicole **Subject:** FW: RHVP

Here is Part 1 of 6 of the Golder Report

Byrdena M. MacNeil, Solicitor

City of Hamilton - Legal Services Division

t: 905.546.2424, ext. 4637

f: 905.546.4370

e: byrdena.macneil@hamilton.ca

Courier Address: 50 Main Street East, 5th Floor, Hamilton, Ontario L8N 1E9 Mailing Address: City Hall, 71 Main Street West, Hamilton, Ontario L8P 4Y5

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From: Delry, Pam

Sent: December-07-18 11:14 AM

333

To: MacNeil, Byrdena
Subject: RHVP
Hamilton
City of Hamilton
Legal and Risk Management

Legal and Risk Management Services

Mailing Address: City Hall
71 Main Street West

71 Main Street West Hamilton, ON Canada L8P 4Y5 www.hamilton.ca Legal Assistant

Pam Delry

Legal and Risk Management Services, Corporate Services
City of Hamilton

Phone: 905.546.2424 ext. 3981

Fax: 905.546.4370

Courier/Service Address: 50 Main Street East, 5th Flr, Hamilton, ON L8N 1E9

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MEMO

TO: David Boghosian, Boghosian + Allen LLP

COPY TO: n/a

FROM: Brian Malone, CIMA+

DATE : February 4, 2019

SUBJECT: Red Hill Valley Parkway - Pavement Friction Testing Results Review

(CIMA+ File: B000920 / 200)

1. INTRODUCTION

The purpose of this memorandum is to detail our review of a report on the performance of roadway pavement done for the RHVP that was completed by Golder Associates in January 2014¹. That report included friction testing of the pavement surfaces of the Lincoln Alexander Parkway (LINC) and the RHVP which were completed for Golder by their subcontractor, Tradewind Scientific Ltd.

CIMA has previously completed reports delivered to the City of Hamilton for the Red Hill Valley Parkway, including a report dated November 2015 entitled Red Hill Valley Parkway Detailed Safety Analysis², a memo that CIMA completed in 2019 for Lincoln Alexander Parkway / Red Hill Valley Parkway which updated the collision data and provided summaries of collision rates on the roads³, and a review of speed limits on the LINC and RHVP completed in 2018. The 2014 Golder report was not part of materials available to CIMA when completing the abovementioned reports.

CIMA was asked to respond to three questions following our review of the Golder report.

³ Lincoln Alexander Parkway / Red Hill Valley Parkway Collision Rates, CIMA Canada Inc., Project Number B000558B, January 2019 (CIMA+ File: B000558B)



¹ Red Hill Valley Parkway Performance Review After Six Years in Service, Golder Associates, Report Number 13-1184-0026, January 2014.

² Red Hill Valley Parkway Detailed Safety Analysis (Final), CIMA Canada Inc., Project Number B000558, November 2015

February 4, 2019

2. RESPONSE TO QUESTIONS

You requested that I respond to three questions, in the context of receiving and reviewing the Golder report and contemplating it's finding as they may relate to the findings and conclusions in the 2015 CIMA report.

The three questions and our responses are below and the summary of our review of the Golder report follows.

Question 1)

In light of the information in the 2014 Golder report, are any changes needed to the recommendations in the previous CIMA reports to the City regarding safety on the RHVP?

Answer 1)

CIMA had made a number of recommendations regarding safety on the RHVP. Having reviewed the 2015 Golder report, including the details of measurements of road pavement friction, we have not identified any information that would substantively change our recommendations.

CIMA had identified that there was a high proportion of collisions on the RHVP occurring in wet road conditions. We indicated that the issue may be related to the pavement surface skid resistance (surface friction) and high vehicle operating speeds. Our recommendations included multiple actions directed to these two elements. Remedial actions recommended included; increased speed enforcement, installation of larger speed signs, undertaking of pavement friction testing, and installation of 'slippery when wet' signs.

Had the Golder report been provided to CIMA and reviewed prior to completing our report, we would appropriately have adjusted the friction testing recommendation to one that urged further investigation of the friction findings in the Golder report, relating to road design and operations. It is apparent that this action was, in fact, undertaken as CIMA has been informed that additional evaluations of the pavement were undertaken by Golder for the City in 2017.

CIMA did not recommend lowering the speed limit in our reports. We continue to not recommend lowering the limit after reviewing the Golder report. The Golder report confirms that the road friction meets the design requirements of the road. The design speed of 100 km/h used in the original design is capable of being provided by the road surface as measured by Golder. The posted speed limit of 90 km/h offers an additional safety factor.

I accept that lowering the speed limit could, theoretically, improve safety. However, that result is based on the premise that all drivers will adjust their speeds lower. Research has shown that drivers select an operating speed based on more than just the posted limit. If compliance with a lower limit is not achieved there can be negative consequences. The range of speeds may become wider, as some drivers comply with the new limit while others maintain their previous behaviour. Wider speed ranges can decrease safety. Negative outcomes from lowering the speed limit are possible. We would continue to recommend enforcement of the existing posted limit as the best option to improve safety.



Page 3 of 8

Red Hill Valley Parkway - Pavement Friction Testing Results Review (CIMA+ File: B000920 / 200) February 4, 2019

Question 2)

In light of the information in the 2014 Golder report, are any additional safety measures recommended to the City, recognizing that the RHVP is scheduled to be resurfaced in the late Spring of 2019;

Answer 2)

It is our understanding that the City has initiated action to undertake replacement of the pavement surface on the RHVP. With an expectation that the new surface will continue to have friction levels that meet or exceed the friction parameters used in the geometric design of the road and that the new surface will have friction levels consistent with the LINC, the recommendations in our earlier reports regarding surface friction will have been addressed.

The CIMA 2015 report included ten options that were recommended for consideration to improve safety on the RHVP. A number of those recommendations have been implemented and others are in progress or being further evaluated. Recognizing that repaving of the road is expected to occur in the late spring of 2019, we do not have any additional recommendations to add at this time.

One recommendation that may warrant a slight modification in the interim relates to speed enforcement. We had recommended 'regular' speed enforcement. Modified wording, to one of 'increased' or 'enhanced' speed enforcement in an effort to ensure closer compliance with the posted speed, could be used.

Question 3) In light of the information in the 2014 Golder report, should the RHVP be closed to vehicular traffic in whole or in part, until the completion of the resurfacing work.

Answer 3)

We do not recommend that the road should be closed until the completion of the resurfacing work.

An assessment of the road indicates that it operates within the design domain for which it was originally intended. The road surface friction is above the design parameters that support a design speed of 100 km/h and a posted speed of 90 km/h, albeit lower than the LINC and in a range that calls for further 'investigation'. Resurfacing that increases road surface friction will improve safety.

Any consideration of closure of the RHVP must also contemplate the possible safety drawbacks that would be associated with such action. Diverted traffic would use alternate routes, including the LINC, Centennial Parkway and other mountain access routes. Traffic increases on alternate routes would decrease safety, in some cases significantly. The RHVP is a controlled access facility with no pedestrian interaction and limited vehicle conflict points. Traffic diverted to alternate routes would be expected to increase congestion and result in more traffic interacting with crossing vehicle and pedestrians, likely resulting in less safe operations.



REVIEW OF GOLDER REPORT 13-1184-0026

Our response to the above questions is based on our review of the 2014 Golder report, including the Tradewinds Scientific section relating friction testing. The Golder report, in Section 5.0, states;

"Although the Friction Number (FN) values are higher than when measured in 2007 immediately after construction (between 30 and 34), they are considered to be relatively low. Typically, the FN values should be at least equal to or higher than 40 to be considered adequate."

This wording is referencing the results of road friction testing done by Tradewind Scientific. The Tradewind document refers to friction testing results using a device called a GripTester. Values are reported as Grip Numbers (GN), a measurement of friction. The Golder report has expressed the Tradewind GN numbers as Friction Numbers (FN).

For clarity, friction numbers can be referred to by two different formats. In road design the common format for friction is (f) with a range from 0.0 to 1.0. Zero indicates no friction and 1.0 indicates maximum friction. Alternately, friction is also referred to in the pavement industry as a Friction Number (FN) with a reference scale of 0 to 100. The two formats are interchangeable, with the appropriate adjustment. For example, an FN of 30 is equivalent to an (f) of 0.30.

The Tradewinds report references a table that shows Investigatory Skidding Resistance Levels (Risk Rating). It concludes that measured GN values, which average between 30 and 40 on the RHVP, are below a United Kingdom Investigatory Skidding Resistance Levels (Risk Rating) reference threshold for friction, stating;

"...friction averages as measured by the GripTester on the designated lanes and sections of the Red Hill Valley Parkway were below or well below the same UK Investigatory Level 2."

The Tradewind report included a reference table showing investigatory 'threshold' levels. However, the table they used is different from the reference table typically applied. The reference more broadly used for determination of investigatory levels is the table from the United Kingdom Pavement Management (UKPMS) publication for interpretation of Grip Tester data⁴, shown in Figure 1. We note that it is this table which is also referenced in the United States in the Guide to Pavement Friction⁵. We have assessed reported friction values using the UKPMS table.

Tradewinds reported that the friction testing results were 'below or well below' the investigatory levels. When assessed against the UKPMS table we found that the results were closer to the threshold levels than indicated by Tradewind.

⁵ Guide to Pavement Friction, NCHRP, 2009, page 79.



⁴ United Kingdom Pavement Management System, Volume 3, Chapter 11, Machine Data Collection for UKPMS – GripTester, Table 1, August 2005.

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Red Hill Valley Parkway - Pavement Friction Testing Results Review (CIMA+ File: B000920 / 200) February 4, 2019

Figure 1 – UKPMA: Table 1- Site Categories and Investigatory Levels

				Investigatory Level at 50 km/h							
Site Category and Definition SFC		SFC	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	
		GN	0.35	0.41	0.47	0.53	0.59	0.65	0.71	0.76	
Α	Motorway										
В	Dual carriageway – non event										
С	Single carriageway – non event										
Q Approaches to and across minor and major junctions, approaches to roundabouts											
K	Approaches to pedestrian crossings and high risk situations	other									
R	Roundabout										
G1	G1 Gradient 5 – 10 % longer than 50m										
G2	Gradient > 10% longer than 50m										
S1	Bend radius ≤ 500m – dual carriageway										
S2	Bend radius < 500m single carriageway										
Not	tces: HD 28/04 (DMRB. Volume 7. Section 3. Po "Report on Correlation of SCRIM with Mark." es: rence should be made to Chapter 4 of HD 28 ance on interpretation.	2 GripT	ester Tri	al at TR	-					for	
Key	:		*								
	Investigatory Levels that will generally be used Investigatory Levels that will be appropriate i are well mitigated and a low incidence of accidence	in Iow ris	ik situat	ions, suci		-		bere the i	iisks pre	રક માટે	

The table in Figure 1 assists in determining when results from friction tests indicate the need for further investigation. It is important to know that, while research does confirm a correlation between lower pavement friction levels and collisions, this correlation is not automatically confirmation of collision causation. Interpretation of the GripTester pavement friction data as they relate to safety requires greater consideration.

Road sections that have lower friction measurements indicate a need to undertake review of the location because of the *potential* that collision risk may be elevated. But friction measurements that are at investigatory levels are in no way a definitive indication that a location is 'unsafe'.

The research for the development of the investigatory level thresholds states that for some sites, where FN values are below 35, collision risk *may* increase, but it also notes that for many



February 4, 2019

sites with the same readings, collision risk will not exist. Thus, further investigation of conditions is needed.⁶

Our conclusion of the review of the Golder report is that the friction values measured are in the range that the UKPMS would identify as 'investigatory' and would need additional review of the roadway as a whole. The Golder / Tradewinds report made a similar overall conclusion from the data, albeit using a different reference table.

4. FRICTION VALUES FOR RED HILL VALLEY PARKWAY

This section provides an interpretation of the Golder findings as they relate to the geometric design and the operation of the RHVP as well as road safety.

4.1. Friction Levels in Design

Friction plays an important role in road design and operation. In Canada friction levels (f) are considered in two ways. One is the determination of the distance required for a vehicle to stop on a road and the other is the determination of the speed at which a vehicle can travel through a horizontal curve.

For a vehicle to stop, road friction must exist between vehicle tires and the road surface. The values assumed for the coefficient of friction (f) when designing a road ranges depending on the design speed of the road. Values are defined in the Transportation Association of Canada Geometric Design Guide for Canadian Roads (TAC-GDGCR).

The RHVP has a design speed of 100km/h and the (f) values used for road design would be f = 0.29, as shown in Table 1.2.5.2 from TAC-GDGCR.

1.2.5.2 Coefficient of Friction for Wet Pavements*					
Design Speed (km/h)	Operating Speed * (km/h)	Coefficient of Friction (f)			
30	30	0.40			
40	40	0.38			
50	47-50	0.35			
60	55-60	0.33			
70	63-70	0.31			
80	70-80	0.30			
90	77-90	0.30			
100	85-100	0.29			
110	91-110	0.28			
120	98-120	0.28			
130	105-130	0.28			

⁶ Accidents and the Skidding Resistance Standards for Strategic Roads in England, TRL Report TRL622, H. Viner, A Parry, 2005, Page 6.



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Red Hill Valley Parkway - Pavement Friction Testing Results Review (CIMA+ File: B000920 / 200) February 4, 2019

uch that centripetal

For a vehicle to travel around a horizontal curve, friction must be sufficient such that centripetal force does not force a vehicle off a road. The TAC-GDGCR assigns an additional (f) value for the design of horizontal curves. The (f) used in curve design are considerably lower than for stopping requirements, providing a significant degree of safety. The friction values for horizontal curves are based on a threshold of comfort felt by the driver as they move through the curve, not the physics limits of the curve itself.

TAC table 2.1.2.1 indicates that the (f) value used in horizontal curve design, f = 0.12, for design speeds of 100km/h. The value considers a reasonable level of safety under a range of driving conditions, including drivers exceeding the posted speed limit and driving on wet roads. Road design must meet both (f) criteria through a horizontal curve.

Table 2.1.2.1	Maximum Lateral Friction for Rural and High Speed Urban Design ¹
Design Speed (km/h)	Maximum Lateral Friction for Rural and High Speed Urban Design
40	0.17
50	0.16
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80	0.14
90	0.13
100	0.12
110	0.10
120	0.09
130	0.08

4.2. Friction Levels in Operation

Once a road is in operation the pavement friction values can be measured in the field. If measured values exceed the design values, the road will have conditions that allow operation in conjunction with the design speed.

The average friction levels measured on the RHVP, as reported by Golder, were indicated to range from FN values of 34 to 39, corresponding to (f) values of 0.34 to 0.39. These numbers are above the design parameters that were used in the road design for stopping distance, f=0.29, and horizontal curve design, f=0.12.

The Golder report indicated that some FN numbers are below the Investigatory Levels identified in the guidance, a finding we confirm. This indicates that further investigation of some sections of the road sections should be undertaken.



February 4, 2019

4.3. Discussion

Measurements of friction can be used in a number of ways.

Levels can be compared to the assumed design levels to ensure that the fundamental design parameters have been provided. The findings from the Golder report confirm that is the case on the RHVP.

Monitoring friction values during the operating life of a roadway can also be used to assess deterioration of the roadway infrastructure and assist in the overall determination of when then the infrastructure may approach the end of its lifecycle or require rehabilitation.

Friction measurements may also be useful in the comparison of the service being provided on different roads. The Golder / Tradewinds study completed comprehensive assessment of friction levels on both the LINC and the RHVP. The results show a significant difference in friction values between the two facilities.

While RHVP friction values are within the design domain expected for the road, they are significantly below those measured for the LINC. This difference can present a concern from a safety perspective. Road design principles allow for a wide range of operations by motorists. When pavement conditions are such that frictions values are significantly higher that those used in design, drivers are able to comfortably travel the road at higher speeds.

The difference in friction values for the LINC and the RHVP means that there is a different margin of safety available to drivers between the two roads. That variance between the facilities is something that drivers may not be readily aware of and can result in varying safety outcomes.

28830503

POVINCE OF ON

Brian J. Malone, P.Eng.



Tab 39

Message

From: Brian Malone [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=67C055668F2542418A0037674B420253-BRIAN MALON]

Sent: 2/5/2019 11:23:53 AM

To: David Boghosian [dgb@boglaw.ca]

Subject: RE: CIMA -

Attachments: B920-200-RHVP Friction Testing_e03.pdf

Updated memo is attached.

Brian Malone, P.Eng. CIMA+, Burlington, ON Office: 289-288-0287 x 6802

Cell: 905-466-0421



MEMO

TO

: Mayor Fred Eisenberger and Hamilton City Council

FROM

: Brian Malone, CIMA+

DATE

: February 4, 2019

SUBJECT

: Red Hill Valley Parkway - Pavement Friction Testing Results Review

(CIMA+ File: B000920 / 200)

1. INTRODUCTION

The purpose of this memorandum is to detail our review of a report on the performance of roadway pavement done for the RHVP that was completed by Golder Associates in January 2014¹. That report included friction testing of the pavement surfaces of the Lincoln Alexander Parkway (LINC) and the RHVP which were completed for Golder by their subcontractor, Tradewind Scientific Ltd.

CIMA has previously completed reports delivered to the City of Hamilton for the Red Hill Valley Parkway, including a report dated November 2015 entitled Red Hill Valley Parkway Detailed Safety Analysis², a memo that CIMA completed in 2019 for Lincoln Alexander Parkway / Red Hill Valley Parkway which updated the collision data and provided summaries of collision rates on the roads³, and a review of speed limits on the LINC and RHVP completed in 2018. The 2014 Golder report was not part of materials available to CIMA when completing the abovementioned reports.

CIMA was asked to respond to three questions following our review of the Golder report.

³ Lincoln Alexander Parkway / Red Hill Valley Parkway Collision Rates, CIMA Canada Inc., Project Number B000558B, January 2019 (CIMA+ File: B000558B)



¹ Red Hill Valley Parkway Performance Review After Six Years in Service, Golder Associates, Report Number 13-1184-0026, January 2014.

² Red Hill Valley Parkway Detailed Safety Analysis (Final), CIMA Canada Inc., Project Number B000558, November 2015

2. RESPONSE TO QUESTIONS

You requested that I respond to three questions, in the context of receiving and reviewing the Golder report and contemplating it's finding as they may relate to the findings and conclusions in the 2015 CIMA report.

The three questions and our responses are below and the summary of our review of the Golder report follows.

Question 1)

In light of the information in the 2014 Golder report, are any changes needed to the recommendations in the previous CIMA reports to the City regarding safety on the RHVP?

Answer 1)

CIMA had made a number of recommendations regarding safety on the RHVP. Having reviewed the 2015 Golder report, including the details of measurements of road pavement friction, we have not identified any information that would substantively change our recommendations.

CIMA had identified that there was a high proportion of collisions on the RHVP occurring in wet road conditions. We indicated that the issue may be related to the pavement surface skid resistance (surface friction) and high vehicle operating speeds. Our recommendations included multiple actions directed to these two elements. Remedial actions recommended included; increased speed enforcement, installation of larger speed signs, undertaking of pavement friction testing, and installation of 'slippery when wet' signs.

Had the Golder report been provided to CIMA and reviewed prior to completing our report, we would appropriately have adjusted the friction testing recommendation to one that urged further investigation of the friction findings in the Golder report, relating to road design and operations. It is apparent that this action was, in fact, undertaken as CIMA has been informed that additional evaluations of the pavement were undertaken by Golder for the City in 2017.

Question 2)

In light of the information in the 2014 Golder report, are any additional safety measures recommended to the City, recognizing that the RHVP is scheduled to be resurfaced in the late Spring of 2019;

Answer 2)

It is our understanding that the City has initiated action to undertake replacement of the pavement surface on the RHVP. With an expectation that the new surface will continue to have friction levels that meet or exceed the friction parameters used in the geometric design of the road and that the new surface will have friction levels consistent with the LINC, the recommendations in our earlier reports regarding surface friction will have been addressed.



The CIMA 2015 report included ten options that were recommended for consideration to improve safety on the RHVP. A number of those recommendations have been implemented and others are in progress or being further evaluated. Recognizing that repaving of the road is expected to occur in the late spring of 2019, we do not have any additional recommendations to add at this time.

One recommendation that may warrant a slight modification in the interim relates to speed enforcement. We had recommended 'regular' speed enforcement. Modified wording, to one of 'increased' or 'enhanced' speed enforcement in an effort to ensure closer compliance with the posted speed, could be used.

Question 3) In light of the information in the 2014 Golder report, should the RHVP be closed to vehicular traffic in whole or in part, until the completion of the resurfacing work.

Answer 3)

We do not recommend that the road should be closed until the completion of the resurfacing work.

An assessment of the road indicates that it operates within the design domain for which it was originally intended. The road surface friction is above the design parameters that support a design speed of 100 km/h and a posted speed of 90 km/h, albeit lower than the LINC and in a range that calls for further 'investigation'. Resurfacing that increases road surface friction will improve safety.

Any consideration of closure of the RHVP must also contemplate the possible safety drawbacks that would be associated with such action. Diverted traffic would use alternate routes, including the LINC, Centennial Parkway and other mountain access routes. Traffic increases on alternate routes would decrease safety, in some cases significantly. The RHVP is a controlled access facility with no pedestrian interaction and limited vehicle conflict points. Traffic diverted to alternate routes would be expected to increase congestion and result in more traffic interacting with crossing vehicle and pedestrians, likely resulting in less safe operations.



REVIEW OF GOLDER REPORT 13-1184-0026

Our response to the above questions is based on our review of the 2014 Golder report, including the Tradewinds Scientific section relating friction testing. The Golder report, in Section 5.0, states;

"Although the Friction Number (FN) values are higher than when measured in 2007 immediately after construction (between 30 and 34), they are considered to be relatively low. Typically, the FN values should be at least equal to or higher than 40 to be considered adequate."

This wording is referencing the results of road friction testing done by Tradewind Scientific. The Tradewind document refers to friction testing results using a device called a GripTester. Values are reported as Grip Numbers (GN), a measurement of friction. The Golder report has expressed the Tradewind GN numbers as Friction Numbers (FN).

For clarity, friction numbers can be referred to by two different formats. In road design the common format for friction is (f) with a range from 0.0 to 1.0. Zero indicates no friction and 1.0 indicates maximum friction. Alternately, friction is also referred to in the pavement industry as a Friction Number (FN) with a reference scale of 0 to 100. The two formats are interchangeable, with the appropriate adjustment. For example, an FN of 30 is equivalent to an (f) of 0.30.

The Tradewinds report references a table that shows Investigatory Skidding Resistance Levels (Risk Rating). It concludes that measured GN values, which average between 30 and 40 on the RHVP, are below a United Kingdom Investigatory Skidding Resistance Levels (Risk Rating) reference threshold for friction, stating;

"...friction averages as measured by the GripTester on the designated lanes and sections of the Red Hill Valley Parkway were below or well below the same UK Investigatory Level 2."

The Tradewind report included a reference table showing investigatory 'threshold' levels. However, the table they used is different from the reference table typically applied. The reference more broadly used for determination of investigatory levels is the table from the United Kingdom Pavement Management (UKPMS) publication for interpretation of Grip Tester data⁴, shown in Figure 1. We note that it is this table which is also referenced in the United States in the Guide to Pavement Friction⁵. We have assessed reported friction values using the UKPMS table.

Tradewinds reported that the friction testing results were 'below or well below' the investigatory levels. When assessed against the UKPMS table we found that the results were closer to the threshold levels than indicated by Tradewind.

⁵ Guide to Pavement Friction, NCHRP, 2009, page 79.



⁴ United Kingdom Pavement Management System, Volume 3, Chapter 11, Machine Data Collection for UKPMS – GripTester, Table 1, August 2005.

February 4, 2019

Figure 1 – UKPMA: Table 1- Site Categories and Investigatory Levels

	· ·									
			Investigatory Level at 50 km/h							
		SFC	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65
		GN	0.35	0.41	0.47	0.53	0.59	0.65	0.71	0.76
A	Motorway									
В	Dual carriageway – non event									
С	Single carriageway – non event									
Q	Approaches to and across minor and junctions, approaches to roundabouts	major								
K	Approaches to pedestrian crossings and other high risk situations									
R	Roundabout								,	
G1	Gradient 5 = 10 % longer than 50m									
G2	Gradient > 10% longer than 50m									
S1	Bend radius < 500m – dual carriageway									
S 2	Bend radius < 500m single carriageway									
<u>Note</u>	HD 28/04 (DMRB. Volume 7. Section 3. P. "Report on Correlation of SCRIM with Mark. es: es: cence should be made to Chapter 4 of HD 28	2 GripT	ester Tri							for
Key.	ance on interpretation.									
	Investigatory Levels that will generally be used Investigatory Levels that will be appropriate are well mitigated and a low incidence of accidence	in low ris	k situati	ons, suc				bere the 1	risks pres	ient

The table in Figure 1 assists in determining when results from friction tests indicate the need for further investigation. It is important to know that, while research does confirm a correlation between lower pavement friction levels and collisions, this correlation is not automatically confirmation of collision causation. Interpretation of the GripTester pavement friction data as they relate to safety requires greater consideration.

Road sections that have lower friction measurements indicate a need to undertake review of the location because of the *potential* that collision risk may be elevated. But friction measurements that are at investigatory levels are in no way a definitive indication that a location is 'unsafe'.

The research for the development of the investigatory level thresholds states that for some sites, where FN values are below 35, collision risk *may* increase, but it also notes that for many



sites with the same readings, collision risk will not exist. Thus, further investigation of conditions is needed.⁶

Our conclusion of the review of the Golder report is that the friction values measured are in the range that the UKPMS would identify as 'investigatory' and would need additional review of the roadway as a whole. The Golder / Tradewinds report made a similar overall conclusion from the data, albeit using a different reference table.

4. FRICTION VALUES FOR RED HILL VALLEY PARKWAY

This section provides an interpretation of the Golder findings as they relate to the geometric design and the operation of the RHVP as well as road safety.

4.1. Friction Levels in Design

Friction plays an important role in road design and operation. In Canada friction levels (f) are considered in two ways. One is the determination of the distance required for a vehicle to stop on a road and the other is the determination of the speed at which a vehicle can travel through a horizontal curve.

For a vehicle to stop, road friction must exist between vehicle tires and the road surface. The values assumed for the coefficient of friction (f) when designing a road ranges depending on the design speed of the road. Values are defined in the Transportation Association of Canada Geometric Design Guide for Canadian Roads (TAC-GDGCR).

The RHVP has a design speed of 100km/h and the (f) values used for road design would be f = 0.29, as shown in Table 1.2.5.2 from TAC-GDGCR.

e 1.2.5.2 Coefficient of Friction for Wet Pavements					
Design Speed (km/h)	Operating Speed ^a (km/h)	Coefficient of Friction (f)			
30	30	0.40			
40	40	0.38			
50	47-50	0.35			
60	55-60	0.33			
70	63-70	0.31			
80	70-80	0.30			
90	77-90	0.30			
100	85-100	0.29			
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For a vehicle to travel around a horizontal curve, friction must be sufficient such that centripetal force does not force a vehicle off a road. The TAC-GDGCR assigns an additional (f) value for the design of horizontal curves. The (f) used in curve design are considerably lower than for stopping requirements, providing a significant degree of safety. The friction values for horizontal curves are based on a threshold of comfort felt by the driver as they move through the curve, not the physics limits of the curve itself.

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The Golder report indicated that some FN numbers are below the Investigatory Levels identified in the guidance, a finding we confirm. This indicates that further investigation of some sections of the road sections should be undertaken.



4.3. Discussion

Measurements of friction can be used in a number of ways.

Levels can be compared to the assumed design levels to ensure that the fundamental design parameters have been provided. The findings from the Golder report confirm that is the case on the RHVP.

Monitoring friction values during the operating life of a roadway can also be used to assess deterioration of the roadway infrastructure and assist in the overall determination of when then the infrastructure may approach the end of its lifecycle or require rehabilitation.

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The difference in friction values for the LINC and the RHVP means that there is a different margin of safety available to drivers between the two roads. That variance between the facilities is something that drivers may not be readily aware of and can result in varying safety outcomes.

Brian J. Malone, P.Eng.





CITY OF HAMILTON CORPORATE SERVICES DEPARTMENT Legal and Risk Management Services Division

то:	Chair and Members General Issues Committee
COMMITTEE DATE:	February 6, 2019
SUBJECT/REPORT NO:	Road Infrastructure Litigation Review and Assessment (LS19010) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Nicole Auty (905) 546-2424 Ext. 4636
SUBMITTED BY:	Nicole Auty City Solicitor
SIGNATURE:	

Discussion of this Confidential Report in closed session is subject to the following requirement(s) of the City of Hamilton's Procedural By-law and the *Ontario Municipal Act*, 2001:

- · Personal matters about an identifiable individual(s), including City employees
- Litigation or potential litigation, including matters before administrative tribunals, affecting the City
- Advice that is subject to solicitor-client privilege, including communications necessary for that purpose

RECOMMENDATIONS

- (a) That Report LS19010 be received.
- (b) That Report LS19010 respecting Potential Litigation remain confidential

EXECUTIVE SUMMARY

As Council was advised on January 23, 2019 staff have become aware of information regarding friction testing on the Red Hill Valley Parkway (RHVP). Staff subsequently supplied the report along with other information on friction testing to FOI staff as responsive records to a pending FOI and have been working towards informing Council on the report and general implications. The implications include

SUBJECT: Road Infrastructure Litigation Review and Assessment (LS19010) (City Wide) - Page 2 of 5

Solicitor-Client Privileged

This report and the In Camera presentations will provide Committee with the most up to date information regarding the status of the safety measures implemented on the RHVP the audit and other staff work being undertaken as a result of discovery and pending release of the report, all of which background is necessary to consider the legal implications. Most importantly a recommended media messaging approach is being put forward to address safety concerns, limit motor vehicle accidents and the claims that may be generated from accidents arising before resurfacing occurs in early 2019, and address past responses to the media on this issue. The recommended approach to media messaging needs to address by subject friction report, rely on current and accurate expert analysis, and properly focus the public on safe driving behaviours that staff and experts believe are a contributing factor of motor vehicle collisions on the RHVP, and support ongoing police enforcement. The City can limit the number and consequences of roadway liability claims as well as the personal injury that often occurs, if it carries out proper and strategic messaging.

Alternatives for Consideration – See Page X or Not Applicable

FINANCIAL - STAFFING - LEGAL IMPLICATIONS

Financial:	The fina	ncial impacts are not known at this time, however it is reasonable to
anticipate	that	Solicitor-Client Privileged
Solicitor-Clien	t Privileged	
Staffing:	N/A	
Legal:		Solicitor-Client Privileged
		Solicitor-Client Privileged

HISTORICAL BACKGROUND

The chronology of consultants' reports, reports to council, media statements, and safety measures implemented that are known to this point will be provided in the In Camera presentation.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

RELEVANT CONSULTATION

Interim City Manager Public Works staff

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Employees.

SUBJECT: Road Infrastructure Litigation Review and Assessment (LS19010) (City Wide) - Page 3 of 5

Corporate Communications staff
External Consultants, CIMA, Communications, Legal

ANALYSIS AND RATIONALE FOR RECOMMENDATIONS

Staff are aware of friction testing results from 2013 which were not previously made known to Council or the public. This information is part of the subject matter of an FOI request. The friction testing report is expected to be released under FOI process, and the City can reasonably anticipate public release and commentary on safety of the RHVP. Expected media coverage would affect the City's interest in road safety/injury prevention and Solicitor-Client Privileged

Solicitor-Client Privileged

Since 2013, safety measures on the RHVE have been reviewed and recommendations made by consultants, staff and council to improve overall road safety which have been implemented on an ongoing basis. In particular, CIMA, a road safety consulting engineering firm has undertaken road safety reviews of the RHVE which have been reported back to council in 2013, 2015 and 2018. The focus of recommendations has been on changing driver behaviour that is believed to be a major source of ongoing collision rates.

In CIMA's 2015 and corresponding staff report, a number of collision counter measures were identified. Since that time, and as reported in PW18008 and in PW18008a a majority of the 18 safety and collision counter measures identified have been implemented. The measures that have not yet been completed will be included in the resurfacing project scheduled for spring 2019.

In order to advise council regarding the impact of these earlier friction testing results being considered inconclusive and not being shared more broadly, CIMA was provided 2013 and 2017 friction testing reports and was asked the following 3 questions:

- 1) Given you previous reports and the various components that contribute to road safety, can you please advise if any changes are needed to the recommendations in your recent (2018/19) reports to the City of Hamilton?
- 2) Are there any additional safety measures you would recommend the COH implement between now and when the road is resurfaced in spring 2019?
- 3) Should the RHVE be closed to vehicular traffic in whole or in part?;

SUBJECT: Road Infrastructure Litigation Review and Assessment (LS19010) (City Wide) - Page 4 of 5

The response was that no changes would be made to their existing recommendations and that there are no additional safety measures that are recommended beyond those already undertaken however, with a greater emphasis on speed enforcement. In addition it was not recommended that the road be closed in whole or in part pending the resurfacing in the spring.

The CIMA report outlining these will be provided in a CONFIDENTIAL attachment provided in Camera to committee.

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Communications plan

The recommended communication strategy, in the spirit of the City's desire to be transparent and accountable to residents, is to proactively share the information with the public ahead of the FOI response, including public awareness messaging about the importance of safe driving, safety improvements that have already been implemented on the RHVP, and further measures that will be included in the resurfacing project scheduled for spring 2019.

ALTERNATIVES FOR CONSIDERATION

N/A

ALIGNMENT TO THE 2016 - 2025 STRATEGIC PLAN

Community Engagement and 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.

Built Environment and Infrastructure

SUBJECT: Road Infrastructure Litigation Review and Assessment (LS19010) (City Wide) - Page 5 of 5

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" to LS19010 - letter from CIMA



Message

From: Melatti, Rosanna [/O=GOVT/OU=EMAIL/CN=RECIPIENTS/CN=RMELATTI]

Sent: 2/7/2019 11:18:26 AM

To: McKinney, Andrea [/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=McKinney, Andrea490]; Brown, Charles [/O=GOVT/OU=EXCHANGE

ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Brown, Charles6b2]

CC: Hornby, Allison [/O=GOVT/OU=EMAIL/cn=Recipients/cn=ahornsby]; Byrne, Patrick [/O=GOVT/OU=EXCHANGE

ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Bryne, Patrickd64]

Subject: FYI: Media Release: Recommended lower speed limit on the Red Hill Valley Parkway: Resurfacing planned in spring

2019

Attachments: Tradewind Scientific Report (January 2014).pdf; B920-200-RHVP Friction Testing_e03.pdf

From: Graham, Jasmine

Sent: Wednesday, February 6, 2019 10:34 PM

Subject: Media Release: Recommended lower speed limit on the Red Hill Valley Parkway: Resurfacing planned in spring

2019



MEDIA RELEASE

For Immediate Release February 6, 2019

Recommended lower speed limit on the Red Hill Valley Parkway: Resurfacing planned in spring 2019

HAMILTON, ON - On behalf of the City of Hamilton, staff apologize to Council and the general public for how this matter has come to their attention.

Earlier tonight, Hamilton's General Issues Committee went in-camera to receive a report related to matters on the Red Hill Valley Parkway (RHVP) and provided direction to staff to share the information that follows.

Today, Committee received detailed information for the first time regarding a consultant's report related to friction on the Parkway, dated November 2013. With the introduction of a new leadership team in Public Works, staff became aware of this document in late 2018, and through an audit process by the City's Auditor General.

As a result of this report, combined with information received through the annual collision statistics report received in public this evening, the City is taking precautionary action. This includes reducing the speed limit on the RHVP between Greenhill and the QEW to 80km per hour in both directions. We

are also expediting the resurfacing of the Parkway in spring 2019. Both of these actions are in the interest of public safety.

Excessive speed continues to be a factor in collisions on the RHVP. Council has also directed staff to request additional support from Hamilton Police Services, particularly as it relates to a targeted enforcement campaign for speed, aggressive driving and distracted driving.

External traffic engineering experts have recommended the Parkway remain open for use, but that motorists be cautioned about speeding. The posted speeds are maximums. Drivers should reduce speed appropriately, particularly for wet road conditions.

Both the 2013 friction testing report and a third party review of that report in conjunction with current collision statistics and recent safety improvements on the Parkway are attached to this media release.

Quick Facts:

- Friction is one element of the design and operation of any roadway road safety includes
 many aspects that are taken into consideration in tandem. These include things like design
 and geometry of the curves, grade of the road, signage, lighting and visibility, speed limits, how
 drivers interact with the roadway and the driving conditions at any given time.
- Typically, receiving low friction values would be an indication that a road operator should undertake a collision monitoring program and make adjustments to such things as pavement markings, signage, guiderails, end treatments, etc. Since 2015, the City has made the following improvements on the RHVP:
 - Oversized speed limit signs installed
 - Slippery when wet signs installed
 - Merge and bridge ices signs installed
 - Guiderail and end treatments upgraded
 - Guiderail treatments (reflective markers)
 - Recessed pavement markers (cat eyes) installed
 - Speed fine signs installed
 - Trimmed vegetation (various locations)
- The City also has additional ongoing and planned upgrades including digital feedback signs (returning February 2019), flashing beacons on slippery when wet signs, Q-end warning system and advance diagrammatic and lane exit signs (Hwy 403 Mohawk Road).
- Approximately 75,000 vehicles per day travel on the RHVP
- Earlier in 2018, the City was investigating the use of Hot-in-Place recycling technology for resurfacing of the RHVP. This technology will not be used during the resurfacing of the roadway in spring 2019 - new asphalt will be used, and the project will also include other safety upgrades

Finally, the City of Hamilton's Auditor General will conduct an independent investigation of the City's previous actions taken, internal processes, managerial systems and procedures regarding friction management in relation to the RHVP and report back with recommendations and management responses to the General Issues Committee. Resulting from this investigation will be a special report.

Council will direct staff as it relates to further information and decision making on next steps related to this matter.

Quote

"While we are extremely disappointed to learn that this information was not shared with Council when it was received, we appreciate staff bringing it to light now so that we could take immediate action. We are in the business of delivering high quality public services and are committed to doing everything we can to ensure ongoing public safety. We will be reducing the speed limit to 80 km per hour, requesting increased speed enforcement, making improvements to the RHVP in spring 2019, and directing that actions be taken to improve internal processes and procedures relative to information management."

Mayor Fred Eisenberger, City of Hamilton

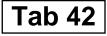
Attachments

- 1. Tradewind Scientific report, November 2013
- 2. Memo: Red Hill Valley Parkway Pavement Friction Testing Results Review, CIMA, February 4, 2019

-30-

MEDIA CONTACT

Jasmine Graham
Communications Officer
City of Hamilton
905-546-2424, ext. 1430
Jasmine Graham@hamilton.ca



Message

From: Shantz, Michelle [/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=SHANTZ, MICHELLE136]

Sent: 2/8/2019 1:26:11 PM

To: Eisenberger, Fred [/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Eisenberger, Fred2fc]

CC: Crone, Greg [/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Crone,

Gregd46]; Omazic, Drina [/O=GOVT/OU=EXCHANGE ADMINISTRATIVE GROUP

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=Omazic, Drina9d9]

Subject: FOR REVIEW: FINAL - STATEMENT BY MAYOR FRED EISENBERGER REGARDING RED HILL VALLEY PARKWAY REPORT

INVESTIGATION







For Immediate Release February 8, 2019

STATEMENT BY MAYOR FRED EISENBERGER REGARDING RED HILL VALLEY PARKWAY REPORT INVESTIGATION

HAMILTON, ON – Following the release of the Red Hill Valley Parkway report by staff earlier this week, it is difficult for Council and I to understand why this report was not brought forward until recently. That is why I give full support to conducting an independent external investigation and I am confident my Council colleagues also support that direction.

Current staff recognized their responsibility to bring the report forward to the public and council, so that we can take appropriate action. Council has directed staff to immediately improve internal processes and procedures relative to information management.

We are in the business of delivering high quality public services, being open and transparent with our community and are committed to doing everything we can to ensure ongoing public safety.

My Council colleagues and I extend sincere sympathies to the families who have been affected and how the nature and timing of this information must be impacting them. We cannot imagine the profound loss they have experienced.

I want the community to know that we have implemented a number of additional safety measures on the Red Hill Valley Parkway and we will continue to study and implement safety enhancements, in addition to lowering the speed limit and resurfacing the road.

-30-

Contact: Michelle Shantz Office of Mayor Fred Eisenberger 905-546-4225 michelle.shantz@hamilton.ca

speeding in excess of posted limits and distracted driving on the RHVP and Linc;

Result: Motion CARRIED by a vote of 16 to 0, as follows:

YES - Councillor Maureen Wilson

YES - Councillor Jason Farr

YES - Councillor Nrinder Nann

YES - Councillor Sam Merulla

YES - Deputy-Mayor Chad Collins

YES - Councillor Tom Jackson

YES - Councillor Esther Pauls

YES - Councillor John-Paul Danko

YES - Mayor Fred Eisenberger

YES - Councillor Judi Partridge

YES - Councillor Terry Whitehead

YES - Councillor Arlene VanderBeek

YES - Councillor Lloyd Ferguson

YES - Councillor Brenda Johnson

YES - Councillor Maria Pearson

YES - Councillor Brad Clark

(iii) (Clark/Whitehead)

- (a) That the City Manager in consultation with the City Solicitor be directed to seek outside legal counsel to brief City Council on the process to initiate an investigation pursuant to Ontario *Municipal Act* Section 274.1.a & b, Investigation by a Judge and the *Public Inquires Act* Section 33, Inquiries or an Independent External Investigation; and
- (b) That this Independent Legal Counsel will be directed to provide the following information to City Council within 30 days:
 - 1) Provide clarification on the powers of a Investigation under the *Municipal Act* and the *Public Inquiries Act*;
 - 2) What is the process for council to request a Judge in the Ontario Superior Court to undertake such an investigation;
 - 3) Who sets the parameters or scope of the investigation;
 - 4) Could evidence uncovered in the inquiry be used by third parties in criminal or civil litigation;
 - 5) What would the projected time frames and costs be?
 - 6) Could the final report address i.e. who knew, when did they know, why didn't they share the report, etc;
 - 7) Could the investigation final report assign blame or responsibility to any person, persons or corporations; and

8) Could the investigation provide recommendations to the City Council on policy changes, protocols, changes in governance process or practices.

Result: Motion CARRIED by a vote of 16 to 0, as follows:

- YES Councillor Maureen Wilson
- YES Councillor Jason Farr
- YES Councillor Nrinder Nann
- YES Councillor Sam Merulla
- YES Deputy-Mayor Chad Collins
- YES Councillor Tom Jackson
- YES Councillor Esther Pauls
- YES Councillor John-Paul Danko
- YES Mayor Fred Eisenberger
- YES Councillor Judi Partridge
- YES Councillor Terry Whitehead
- YES Councillor Arlene VanderBeek
- YES Councillor Lloyd Ferguson
- YES Councillor Brenda Johnson
- YES Councillor Maria Pearson
- YES Councillor Brad Clark

GENERAL ISSUES COMMITTEE REPORT 19-003 - CONTINUED

9. Independent Special Investigation of the City's Internal Processes, Managerial Systems and Procedures Regarding Friction Management in Relation to the Red Hill Valley Parkway (Item 11.4)

Result: Motion CARRIED by a vote of 16 to 0, as follows:

- YES Councillor Maureen Wilson
- YES Councillor Jason Farr
- YES Councillor Nrinder Nann
- YES Councillor Sam Merulla
- YES Deputy-Mayor Chad Collins
- YES Councillor Tom Jackson
- YES Councillor Esther Pauls
- YES Councillor John-Paul Danko
- YES Mayor Fred Eisenberger
- YES Councillor Judi Partridge
- YES Councillor Terry Whitehead
- YES Councillor Arlene VanderBeek
- YES Councillor Lloyd Ferguson
- YES Councillor Brenda Johnson
- YES Councillor Maria Pearson



Message

David Boghosian [dgb@boglaw.ca] From:

2/15/2019 4:48:19 PM Sent:

To: Auty, Nicole [/o=GOVT/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=Auty, Nicolec95]

Subject: Re: Friction Numbers

I think Edward should deal with CIMA directly.

Sent from my Samsung Galaxy smartphone.

----- Original message -----

From: "Auty, Nicole"

Date: 2019-02-15 3:58 PM (GMT-05:00)

To: David Boghosian

Subject: FW: Friction Numbers

David, please see below, are you comfortable with staff dealing with CIMA directly, or should it be through us?

City of Hamilton

Legal and Risk Management Services

Mailing address: City Hall 71 Main Street West

Hamilton, ON Canada L8P 4Y5

www.hamilton.ca Nicole Auty City Solicitor

Legal and Risk Management Services Phone: 905.546.2424 ext. 4636

Fax: 905.546.4370

Physical Office: 50 Main St. East, 5th Floor, Hamilton, ON

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----Original Message----From: Soldo, Edward

Sent: February-15-19 3:30 PM

To: Auty, Nicole; McKinnon, Dan; McGuire, Gord

Subject: RE: Friction Numbers

Nicole,

Just following up on this email.

Thanks

Edward Soldo, P.Eng. Director, Transportation Operations & Maintenance Public Works Department City of Hamilton

77 James St North., Suite 400., Hamilton, ON L8R 2K3

Phone: 905-546-2424 ext. 4622

Fax: 905-546-4473

Email: Edward.Soldo@hamilton.ca

-----Original Message-----From: Soldo, Edward

Sent: February 14, 2019 5:19 PM

To: Auty, Nicole; McKinnon, Dan; McGuire, Gord

Subject: Friction Numbers

Nicole

The last memo from Brian was through your office and the external lawyer.

I would like to contact CIMA regarding the new friction data we have from MTO in order for them to review it in the same context and to extrapolate a degradation curve based on the data.

Do we go through the same process with the external lawyer?

Thanks

Edward Soldo, P.Eng. Director of Transportation Operations and Maintenance City of Hamilton

Sent from my iPhone

INVESTIGATION re: RED HILL VALLEY PARKWAY

March 13, 2019

Report by Lenczner Slaght Royce Smith Griffin LLP for the City of Hamilton

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To Mr. Fred Eisenberger and City Council:

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Chad Collins	5
Tom Jackson	6
Esther Pauls	7
John-Paul Danko	8
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I. OUR MANDATE

We have been retained by the City of Hamilton (the "City") to provide advice with respect to the different kinds of investigations available under the *Municipal Act*, 2001 (the "Municipal Act"), the *Public Inquiries Act*, 2013 (the "Public Inquiries Act") and independent external investigations, as detailed under the Notice of Motion, dated February 13, 2019 (the "Notice of Motion").

The choice of investigation will largely depend on the issue that Council wishes to investigate. In Section II of this report, we provide our understanding as to the nature and scope of the investigation and, in Section IV, we provide our recommendation as to which investigation would be the most cost-effective and timely, while still ensuring public accountability and involvement.

Key features of each type of investigation, including the applicable procedure, the powers of the investigator, what information the final report can contain and the projected time frame and costs is provided in Section III of this report.

II. SCOPE OF INVESTIGATION

Council must first identify the nature and scope of the investigation, before it can select the type of investigation it wishes to commence.

As we understand it, the crux of the investigation concerns the failure to disclose a draft report prepared by Tradewind Scientific Ltd., dated November 20, 2013 (the "Report") to Council and to the public.

The Report was commissioned by Golder Associates Ltd. ("Golders") to test the friction levels on the Red Hill Valley Parkway (the RHVP") as part of a larger safety audit of the RHVP, between Dartnall Road and Greenhill Avenue, initiated by the City in September, 2013.

The Report uses UK standards of measurements to calculate friction levels and assesses these levels against a reference table, which identifies threshold levels at which results may be classified as requiring investigation or immediate intervention. The Report concluded that the friction averages measured on some areas of the RHVP were "below or well below the same" UK investigatory levels and recommended that further friction testing take place.

We understand that in a subsequent report by CIMA, dated February 4, 2019, it is noted that when the 2013 friction levels are assessed against the United Kingdom Pavement Management ("UKPM") table, (as opposed to the reference table used in the Report) the results were closer to the threshold levels, than what was indicated by Tradewind in the Report. The CIMA report also notes that the UKPM table is more broadly used than the reference table used in the Report.

In January, 2014, Golders submitted the Report to the City's Engineering Services. For unknown reasons, Council, and consequently the public, were not made aware of the information and recommendations in the Report.

In or around August or September, 2018, the Director of Engineering Services became aware of an email leading to the Report. The Report was disclosed to the public in or around February, 2019.

As we understand it, the purpose of the investigation is to determine why Council, and consequently the public, were not made aware of the information and recommendations contained in the Report in 2014, after the Report was provided to the Director of the Department of Engineering Services.

Based on our review, we understand that Council may also consider broadening the scope of the investigation to review the manner in which the City addressed all safety concerns about the RHVP, including the failure to disclose the findings in the Report.

III. INVESTIGATIONS

A. Overview

There are three types of investigations available under the Municipal Act:

- (1) a judicial inquiry under s. 274;
- (2) an investigation by the appointed Ombudsman under s. 223.13; and
- (3) an investigation by the appointed Auditor General under s. 223.19.

The investigator's procedural powers are provided under the Public Inquiries Act, in the case of the auditor general and the judicial inquiry and in the Ombudsman Act, in the case of the ombudsman investigation.

We understand that the City has appointed Charles Brown as the Auditor General, but has not yet appointed an ombudsman.

In this case, Council has the following options. It can:

- 1. request a judicial inquiry;
- 2. appoint an ombudsman to conduct the investigation;
- 3. appoint an ombudsman and direct that he or she delegate their powers to an independent, external investigator to conduct the investigation;
- 4. request that Mr. Brown conducts the investigation or replace Mr. Brown as auditor general and request that his replacement conduct the investigation; or
- 5. direct Mr. Brown to delegate his powers for the purposes of the investigation to an independent, external investigator.

While investigations by the auditor general and the ombudsman are similar, a judicial inquiry is an entirely distinct type of inquiry. Judicial inquiries are suited for complex, large scale investigations. While Council sets the initial scope of the investigation, once a judge is appointed, the nature and scope of the inquiry may be subject to change based on the judge's views. In essence, the municipality relinquishes control of the inquiry once a commissioner is appointed.

Judicial inquiries will invariably be more costly and time consuming than investigations by the ombudsman or the auditor general. They invariably involve a number of other parties, including legal counsel for the judge, for persons with standing and the municipality, as well as administrative and investigative staff.

Investigations by the auditor general and ombudsman are better suited where the subject of the investigation relates to a specific and narrow issue. In both cases, the scope of the inquiry is set by Council, allowing for better control of the process to, for example, ensure public accountability and involvement in the process, while keeping the investigation cost-effective.

In the sections below, we have summarized the key features of each type of investigation and enclose the relevant statutory provisions.

B. Judicial inquiry

Judicial inquiries are convened in the wake of public horror or outrage. They are expected to uncover the truth and are preventative, in that they seek to ensure that any mistakes uncovered will not be repeated. Unlike civil or criminal trials, no legal consequences flow from the commission's findings. 2

Judicial inquiries often involve complex factual matrixes, including voluminous documents and a large cast of characters. Examples of Canadian judicial inquiries include the Walkerton Inquiry into the contamination of the water supply and the Krever Inquiry into the contamination of the Canadian blood system.

Judicial inquiries under the Municipal Act have been used to investigate aspects of particular transactions. For example, in the 2002 Computer Lease Inquiry, the Honourable Madam Justice Bellamy was appointed to investigate transactions related to certain computer leasing and software contracts entered into by the City of Toronto between 1998 and 2001 and to consider the impact of these transactions on the City's tax payers. The Toronto City Council passed a resolution authorizing this investigation in February, 2002. It took until 2005 for the public hearings to be completed and a final report to be issued. The initial budget of \$1 million increased to over \$11 million by the conclusion of the inquiry.

² Justice Bellamy Report at pg. 22.

¹ "Toronto Computer Leasing Inquiry Report Volume 3: Inquiry Process", 2006; The Honourable Madam Justice Denise E. Bellamy, Commissioner ["Justice Bellamy Report"] at pg. 19.

Similarly, in February, 2018, the Town of Collinwood passed a resolution to commence a judicial inquiry with respect to the sale of the Town's electric utility. It took until April, 2018, for a judge of the Superior court to be appointed to commission the inquiry. The inquiry was estimated to take 9 months. Based on this estimation, the cost of the inquiry was set between \$1.4 to \$1.6 million. Unfortunately, the inquiry is still pending and will likely continue until the fall of 2019. It is unclear what the current cost of the inquiry is, however, it is unlikely to remain within the estimated budget

In the sections below, we provide specific information about the judicial inquiry process, as requested in the Notice of Motion.

1. Who sets the scope of the judicial inquiry?

Under section 274 of the Municipal Act, a municipality may pass a resolution to commence a judicial inquiry by a judge of the Superior Court. The scope of the judicial inquiry is quite broad, giving the municipality latitude to commence an inquiry on virtually any matter related to the municipality. Specifically, the municipality can request a judge to:

- a. investigate misconduct or breach of trust of another council member, an employee or contractor of the municipality in relation to their duties and obligations to the municipality;
- b. inquire into any matter connected with the good governance of the municipality; or
- c. inquiry into the conduct of any part of the public business of the municipality, including business conducted by a commission appointed by council or elected by electors.

Once a judge is appointed as commissioner of the inquiry, the municipality is stripped of its ability to control the inquiry process. For example, although the municipality sets the initial scope of the inquiry, the commissioner may, without consulting the municipality, expand the scope of the investigation where he or she deems it appropriate to do so.

2. How does a judicial inquiry proceed?

Once a resolution to commence a judicial inquiry is passed by city council, the municipality must write to the Regional Senior Justice and Chief Justice of the Superior Court to request that a judge be appointed to the inquiry. It may take several months to identify a judge that is available to commission the inquiry in light of judicial shortages and the backlog of cases.

The procedure of a judicial inquiry is not prescribed by statute or regulation. The commissioner is entitled to set his or her own policies and procedures. There are, however, standard procedural steps that commissioners are likely to undertake. These are detailed below and include references to Justice Bellmay's report in which her Honour provided guidance on the practical aspects of conducting a judicial inquiry following the completion of the Computer Leasing Inquiry.

a. Practical and Logistical Considerations

Once a judge is appointed as the commissioner of the inquiry, there are a number of practical and logistical requirements that must be tended to before the investigation can commence. Often, the commissioner will meet with the municipality to discuss the logistics of the inquiry, including budget, office, venue, equipment and staff.

After this initial meeting the commissioner will retain legal counsel. The role of commission counsel is to represent the judge and assist him or her in the conduct of the inquiry. All costs associated commission counsel are borne by the municipality.

After commission counsel is appointed, the commissioner will employ a number of other staff members necessary to efficiently run the inquiry. This includes a chief administrative officer to oversee the logistics, including securing an office and a hearing room, a communications officer to liaise with the media, junior lawyers, researchers, investigators, law clerks and administrative and technology support, who, among other things, will maintain the inquiry website. As the judicial inquiry is a public process, the inquiry website is an important point of accessibility.

b. Rules of Procedure

After the initial logistical concerns are addressed, the commissioner will establish the rules of procedure for the inquiry. This involves preparing a draft set of rules and circulating to members with standing for their comments. Depending on the number of individuals with feedback, this process could take several weeks.

c. Document Management

Depending on the number of documents involved in the inquiry, the commissioner may conduct a tender to retain the services of a document management company to maintain an electronic database of documents.

d. Determining who has Standing

In a public inquiry, anyone that has an interest in the subject matter of the inquiry is invited to apply to receive standing to participate in the inquiry to some extent. For example, some members may be given the right to access and review documents, others may be given the right to examine witnesses and make submissions in the hearing.

Advertisements are made in relevant media outlets to encourage individuals who have an interest in the hearing to apply for standing. Preliminary hearings are conducted to determine whether or not applicants may receive standing. The decision to grant standing falls within the exclusive purview of the commissioner.

Depending on the number of individuals that apply for standing, this phase could take several months to complete. In this case, we understand that there are a number of members of the public, including families that have lost loved ones on the RHVP and individuals who have threatened or commenced legal action against the City with respect to the RHVP that may wish to apply for standing if Council elects to commence a judicial inquiry.

e. The Investigation

The investigation phase is the least public part of the inquiry. It involves the collection of documents, identifying and interviewing relevant witnesses, retention of experts or external investigators. Depending on the scope of the investigation, the number of documents and witnesses, the investigation phase could take up to a year.

f. The Hearing

The precise nature of a hearing may vary depending on the structure implemented by the commissioner. However, hearings generally involve: opening statements, examination and cross examination of witnesses and closing submissions by commission counsel and those parties who have been granted standing.

3. What are the powers of the commissioner?

The commissioner's procedural powers in a judicial inquiry are enumerated in s. 33 of the Public Inquiries Act. This includes the ability to summons witnesses and compel production of documents from third parties. It also includes the power to apply to the Court to apprehend a witness who failed to appear upon receiving a summons.

4. What findings can the commissioner make?

In their final report, the commissioner can:

- make findings of fact. For example, he or she can make findings as to when an individual became aware of the Report;
- make findings of misconduct. For example, he or she can find that an individual ought to have circulated the Report upon becoming aware of its existence; and

• make recommendations on policy changes and protocols.

However, unlike a civil or criminal trial, a judicial inquiry cannot establish criminal culpability or civil liability. Indeed, there are no legal consequences to a public inquiry.³

Rather, in an inquiry the commissioner makes findings of fact and renders his or her opinion at the conclusion of the investigation.⁴ These opinions or facts are not enforceable and do not bind courts considering the same subject matter.⁵ As stated by the Federal Court:

A public inquiry is not equivalent to a civil or criminal trial. . . . In a trial, the judge sits as an adjudicator, and it is the responsibility of the parties alone to present the evidence. In an inquiry, the commissioners are endowed with wide-ranging investigative powers to fulfil their investigative mandate. . . . The rules of evidence and procedure are therefore considerably less strict for an inquiry than for a court. Judges determine rights as between parties; the Commission can only "inquire" and "report". . . . Judges may impose monetary or penal sanctions; the only potential consequence of an adverse finding . . . is that reputations could be tarnished.

5. What are the projected time frame and costs?

In our view, a judicial inquiry into why the Report was not disclosed to Council and/or to the public would take a minimum of a year and a half.

A broader investigation to review the manner in which the City addressed safety concerns relating to the RHVP, including the lack of disclosure about the Report may take up to two and a half years.

A judicial inquiry would cost a minimum of \$2 million up to potentially \$11 million. The costs are hard to predict and will depend on a myriad of factors, including the scope and nature of the investigation, the number of witnesses and documents, the number of individuals who are granted standing and whether any judicial applications are commenced.

C. Ombudsman Investigation

A municipality may appoint an ombudsman to conduct an independent investigation on a broad range of issues. Once an ombudsman is appointed, the municipality can direct the ombudsman to delegate its authority to an independent, external investigator to conduct the investigation.

³ Justice Bellamy Report at pg. 22

⁴ Justice Bellamy Report at pg. 23

⁵ Ibio

⁶ Beno v. Canada (Commissioner and Chairperson, Commission of Inquiry into the Deployment of Canadian Forces to Somalia), [1997] 2 F.C. 527, at para. 23.

The ombudsman, or the external investigator to whom the ombudsman has delegated his or her authority, can investigate any decision, recommendation, act done or omitted in the course of the administration of the municipality which affects any person in his, her or its personal capacity.

Past examples of investigations by the provincial ombudsman include an investigation into the City of Brampton's procurement practices and an investigation into the Ministry of Community Safety and Correctional Services' response to allegations of excessive abuse.

1. Who sets the scope of the ombudsman investigation?

The scope of the ombudsman's investigation will be set by the municipality.

The Municipality Act expressly authorizes the municipality to establish the ombudsman's duties and powers and requires the municipality to have regard to the ombudsman's independence, impartiality and the credibility and confidentiality of the investigative process when establishing these duties and powers.

2. Who can be appointed as an ombudsman?

Anyone can be appointed as an ombudsman; he or she need not be an employee of the municipality. The municipality can appoint external investigators, such as lawyers or auditors to perform the investigation.

The ombudsman can also delegate any of his or her powers and duties to any person, other than a member of Council. As such, Council can appoint a point person as the ombudsman, but instruct him or her to delegate the execution of the investigation to external investigators.

3. What is the procedure in an ombudsman investigation?

There is no prescribed investigation procedure by which an ombudsman must abide. This allows the ombudsman to devise a flexible procedure that is appropriate to the scale of the particular investigation.

As part of its mandate, Council can require the ombudsman to publish a draft procedural guide and invite limited, written feedback from stakeholders to ensure public accountability and involvement.

At a minimum, the investigation procedure will involve the review of documents, witness interviews, retention of experts, if necessary, and the production of a final report.

Council can require the ombudsman or external investigator to provide periodic reporting to ensure Council and the public is apprised of the status of the investigation.

4. What are the powers of the ombudsman?

Section 223.14(3) of the Municipal Act empowers the ombudsman to exercise the powers listed in s. 19 of the *Ombudsman Act* which, among other things, gives the ombudsman the right to

summons and examine an employee of the municipality or any other person who has information or documents relating to subject of the investigation.

5. What findings can an ombudsman make?

The ombudsman's investigation must be conducted in private. However, any information that is necessary to establish grounds for the conclusions and recommendations of the report can be made public.

In the final report, the ombudsman, or the external investigator to whom the ombudsman has delegated his or her authority to conduct the investigation, can address any issues identified by Council, including making:

- findings of fact. For example, the ombudsman can make findings as to when an individual became aware of the Report;
- findings of misconduct. For example, the ombudsman can find that an individual ought to have circulated the Report upon becoming aware of its existence; and
- recommendations on policy changes and protocols.

The ombudsman, or the external investigator, cannot make legal findings or conclusions. Any findings of fact or misconduct in his or her report cannot be used to establish civil or criminal liability.

6. What is the projected timeframe and expected costs?

Based on the information we have to date, an ombudsman investigation as to why the Report was not disclosed to Council and/or to the public would take between 2 to 4 months.

A broader investigation to review the manner in which the City addressed all safety concerns about the RHVP, including the lack of disclosure about the Report may take up to 9 months.

The cost of the ombudsman investigation would vary significantly depending on who is appointed to conduct the investigation. By way of comparison, in our view, it would cost approximately \$300,000 for a Bay street firm to investigate why Council, and consequently the public, were not made aware of the information and recommendations contained in the Report.

D. Auditor General Investigation

Under the Municipal Act, a municipality can appoint an auditor general to assist Council in holding itself and its administrators accountable for the quality of stewardship over public funds and for ensuring municipal operations achieve value for money.

Although there is no specific provision in the Municipal Act authorizing an auditor general to conduct investigations, a municipality is entitled to assign the auditor general specific duties, which could include requiring the auditor general to investigate a certain matter.

Once the municipality appoints an auditor general, it can direct the auditor general to delegate his or her authority to an independent, external investigator to conduct an investigation.

1. Who sets the scope of the investigation?

As is the case with the ombudsman investigation, the scope of the auditor general's investigation can be set by the municipality. The Municipality Act expressly authorizes the municipality to establish the auditor general's duties and powers.

2. Who can be appointed as an auditor general?

As is the case with the ombudsman, anyone can be appointed by the municipality and he or she need not be an employee of the municipality. The municipality may engage external investigators, such as lawyers or auditors to perform the investigation.

The auditor general can also delegate his or her powers and duties to any person, other than a member of Council.

3. What is the procedure in an auditor general's investigation?

Like the ombudsman investigation, there is no prescribed investigative procedure by which an auditor general must abide. At a minimum, the investigation procedure will involve the review of documents, witness interviews, retention of experts, if necessary, and the production of a final report.

4. What are the powers of an auditor general?

The auditor general's procedural powers are enumerated in s. 33 of the Public Inquiries Act (as opposed to the Ombudsman Act, which confers procedural powers on the ombudsman). This is significant because while in both cases, the investigator can summon witnesses and compel production of documents from third parties, only the auditor general has the power to apply to the Court to apprehend a witness who failed to appear upon receiving a summons. This power is not afforded to the ombudsman under the Ombudsman Act.

5. What findings can an auditor general make?

As is the case with the ombudsman, the auditor general, or the external investigator to whom the auditor general has delegated his or her authority, can make:

- findings of fact. For example, he or she can make findings as to when an individual became aware of the Report;
- findings of misconduct. For example, he or she can find that an individual ought to have circulated the Report upon becoming aware of its existence; and
- recommendations on policy changes and protocols.

The auditor general, or the external investigator, cannot make legal findings or conclusions. Any findings of fact or misconduct in his or her report cannot be used to establish civil or criminal liability.

6. What is the projected time frame and expected costs?

The cost and time projections for the auditor general investigation are the same as the ombudsman investigation.

We believe it would take approximately 2 to 4 months to investigate why the Report was not disclosed to Council or the public and up to 9 months for the broader investigation as to whether the City appropriately addressed safety concerns relating to the RHVP.

The cost of the investigation will vary greatly depending on who conducts the investigation. By way of comparison, in our view, it would cost approximately \$300,000 for a Bay street firm to investigate why Council, and consequently the public, were not made aware of the information and recommendations contained in the Report.

IV. Recommendation

Based on the information we have been provided, we do not recommend commencing a judicial inquiry to investigate why the Report was not disclosed to Council or the public. As detailed above, judicial inquiries are better suited for large, complex investigations and, as such, tend to be expensive and lengthy. Furthermore, while the municipality will bear all costs associated with the inquiry, it will have no control of the investigation process.

An investigation by the ombudsman or auditor general is better suited to investigate the failure to disclose the Report as it is a discrete issue that can efficiently be investigated through the production of documents and examination of witnesses. Council can devise the structure of the investigation to allow for public accountability and involvement, while ensuring the investigation is cost-effective and completed in a timely fashion.

Council can also direct the ombudsman or auditor general to delegate their powers to an independent, external investigator, such as lawyers or auditors, to conduct the investigation.

As a next step, we recommend that Council confirm the precise nature and scope of the investigation it wishes to commence. Following this, we would be please to provide a follow up report to confirm what kind of investigation Council should commence and address any questions that may remain after our presentation on March 20, 2019.

LSRSG 100901067

Ontario Statutes

Municipal Act, 2001

Part VI — Practices and Procedures (ss. 224-284.1)

Judicial Investigation

Most Recently Cited in: RSJ Holdings Inc. v. London (City), 2007 SCC 29, 2007 CarswellOnt 3919, 2007 CarswellOnt 3920, 36 M.P.L.R. (4th) 1, 36 M.P.L.R. (4th) 2, J.E. 2007-1242, 283 D.L.R. (4th) 257, [2007] S.C.J. No. 29, 364 N.R. 362, 226 O.A.C. 375, [2007] 2 S.C.R. 588, 157 A.C.W.S. (3d) 842 | (S.C.C., Jun 21, 2007)

S.O. 2001, c. 25, s. 274

S 274.

Currency

274.

274(1)Investigation by judge

If a municipality so requests by resolution, a judge of the Superior Court of Justice shall,

- (a) investigate any supposed breach of trust or other misconduct of a member of council, an employee of the municipality or a person having a contract with the municipality in relation to the duties or obligations of that person to the municipality;
- (b) inquire into any matter connected with the good government of the municipality; or
- (c) inquire into the conduct of any part of the public business of the municipality, including business conducted by a commission appointed by the council or elected by the electors.

274(2) Application of Public Inquiries Act, 2009

Section 33 of the *Public Inquiries Act*, 2009 applies to the investigation or inquiry by the judge.

274(3)Report

The judge shall report the results of the investigation or inquiry to the council as soon as practicable.

274(4)Counsel

The council may hire counsel to represent the municipality and pay fees for witnesses who are summoned to give evidence at the investigation or inquiry.

274(5)Representation by counsel

Any person whose conduct is called into question in the investigation or inquiry may be represented by counsel.

274(6)Costs

The judge may engage counsel and other persons to assist in the investigation or inquiry and the costs of engaging those persons and any incidental expenses shall be paid by the municipality.

Amendment History

2009, c. 33, Sched. 6, s. 72(5)

Currency

Ontario Current to Gazette Vol. 152:07 (February 16, 2019)

End of Document

Ontario Statutes
Public Inquiries Act, 2009
Procedures under Other Acts

Most Recently Cited in: Ontario (College of Physicians and Surgeons of Ontario) v. Mrozek, 2018 ONCPSD 17, 2018 CarswellOnt 5402 | (Ont. C.P.S.D.C., Apr 6, 2018)

S.O. 2009, c. 33, Sched. 6, s. 33

s 33. Former Part II inquiries

Currency

33.Former Part II inquiries 33(1)Definition

In this section,

"inquiry" includes a determination, examination, hearing, inquiry, investigation, review or other activity to which this section is applicable.

33(2)Standard procedure

This section applies where another Act or a regulation confers on a person or body the power to conduct an inquiry in accordance with this section or certain provisions of this section.

33(3)Power to summon witnesses, papers, etc.

The person or body conducting the inquiry may require any person by summons,

- (a) to give evidence on oath or affirmation at the inquiry; or
- (b) to produce in evidence at the inquiry such documents and things as the person or body conducting the inquiry may specify,

relevant to the subject matter of the inquiry and not inadmissible in evidence under subsection (13).

33(4)Form and service of summons

A summons issued under subsection (3) shall be in either the English or French version of the form prescribed by the regulations and shall be served personally on the person summoned and he or she shall be paid at the time of service the like fees and allowances for attendance as a witness before the person or body conducting the inquiry as are paid for the attendance of a witness summoned to attend before the Superior Court of Justice.

33(5)Stated case for contempt for failure to attend hearing, etc.

Where any person without lawful excuse,

- (a) on being duly summoned under subsection (3) as a witness at an inquiry makes default in attending at the inquiry; or
- (b) being in attendance as a witness at an inquiry, refuses to take an oath or to make an affirmation legally required by the person or body conducting the inquiry to be taken or made, or to produce any document or thing in his or

her power or control legally required by the person or body conducting the inquiry to be produced, or to answer any question to which the person or body conducting the inquiry may legally require an answer; or

(c) does any other thing that, if the person or body conducting the inquiry had been a court of law having power to commit for contempt, would have been contempt of that court,

the person or body conducting the inquiry may state a case to the Divisional Court setting out the facts and that court may, on the application of the person or body conducting the inquiry or of the Attorney General, inquire into the matter and, after hearing any witnesses who may be produced against or on behalf of that person and after hearing any statement that may be offered in defence, punish or take steps for the punishment of that person in like manner as if he or she had been guilty of contempt of the court.

33(6)Protection of witnesses

A witness at an inquiry shall be deemed to have objected to answer any question asked him or her upon the ground that his or her answer may tend to criminate the witness or may tend to establish his or her liability to civil proceedings at the instance of the Crown or of any person, and no answer given by a witness at an inquiry shall be used or be receivable in evidence against him or her in any trial or other proceedings against him or her thereafter taking place, other than a prosecution for perjury in giving such evidence.

33(7)Right to object

A witness shall be informed by the person or body conducting the inquiry of his or her right to object to answer any question under section 5 of the *Canada Evidence Act*.

33(8) No discipline of employees

No adverse employment action shall be taken against any employee of any person because the employee, acting in good faith, has made representations as a party or has disclosed information either in evidence or otherwise to a person or body conducting the inquiry under the applicable Act or to the staff of a person or body conducting the inquiry.

33(9)Offence

Any person who, contrary to subsection (8), takes adverse employment action against an employee is guilty of an offence and on conviction is liable to a fine of not more than \$5,000.

33(10)Application

This section applies despite any other Act and the oath of office of a public servant within the meaning of the *Public Service of Ontario Act*, 2006 is not breached where information is disclosed as described in subsection (8).

33(11)Effective date

This section applies to representations made, and information disclosed, on or after June 12, 2000.

33(12)Unsworn evidence admissible

A person or body conducting the inquiry may admit at an inquiry evidence not given under oath or affirmation.

33(13)Privilege

Nothing is admissible in evidence at an inquiry that would be inadmissible in a court by reason of any privilege under the law of evidence.

33(14)Release of documents

Documents and things produced in evidence at an inquiry shall, upon request of the person who produced them or the person entitled thereto, be released to the person by the person or body conducting the inquiry within a reasonable time.

33(15)Photocopies of documents

Where a document has been produced in evidence before a person or body conducting the inquiry, the person or body conducting the inquiry may or the person producing it may with the leave of the person or body conducting the inquiry,

cause the document to be photocopied and the photocopy may be filed in evidence in the place of the document produced, and a copy of a document produced in evidence, certified to be a true copy thereof by the person or body conducting the inquiry, is admissible in evidence in proceedings in which the document produced is admissible, as evidence of the document produced.

33(16)Power to administer oaths and require evidence under oath

A person or body conducting an inquiry has power to administer oaths and affirmations for the purpose of the inquiry and may require evidence to be given under oath or affirmation.

33(17)Powers of multiple appointees

Where two or more persons are appointed to make an inquiry, any one of them may exercise the powers conferred by subsection (3), (4), (14), (15) or (16).

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Ontario Statutes Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

S.O. 2001, c. 25, s. 223.13

S 223.13

Currency

223.13

223.13(1)Ombudsman

Without limiting sections 9, 10 and 11, those sections authorize the municipality to appoint an Ombudsman who reports to council and whose function is to investigate in an independent manner any decision or recommendation made or act done or omitted in the course of the administration of the municipality, its local boards and such municipally-controlled corporations as the municipality may specify and affecting any person or body of persons in his, her or its personal capacity.

223.13(2)Powers and duties

Subject to this Part, in carrying out the functions under subsection (1), the Ombudsman may exercise the powers and shall perform the duties assigned to him or her by the municipality.

223.13(3) Matters to which municipality is to have regard

In appointing the Ombudsman and in assigning powers and duties to him or her, the municipality shall have regard to, among other matters, the importance of the matters listed in subsection (5).

223.13(4)Same, Ombudsman

In carrying out his or her functions under subsection (1), the Ombudsman shall have regard to, among other matters, the importance of the matters listed in subsection (5).

223.13(5)Same

The matters referred to in subsections (3) and (4) are,

- (a) the Ombudsman's independence and impartiality;
- (b) confidentiality with respect to the Ombudsman's activities; and
- (c) the credibility of the Ombudsman's investigative process.

223.13(6)Powers paramount

The powers conferred on the Ombudsman under this Part may be exercised despite any provision in any Act to the effect that any such decision, recommendation, act or omission is final, or that no appeal lies in respect of them, or that no proceeding or decision of the person or organization whose decision, recommendation, act or omission it is shall be challenged, reviewed, quashed or called in question.

223.13(7) Decisions not reviewable

Nothing in this Part empowers the Ombudsman to investigate any decision, recommendation, act or omission,

- (a) in respect of which there is, under any Act, a right of appeal or objection, or a right to apply for a hearing or review, on the merits of the case to any court, or to any tribunal constituted by or under any Act, until that right of appeal or objection or application has been exercised in the particular case, or until after any time for the exercise of that right has expired; or
- (b) of any person acting as legal adviser to the municipality, a local board or a municipally-controlled corporation or acting as counsel to any of them in relation to any proceedings.

223.13(8) Delegation

The Ombudsman may delegate in writing to any person, other than a member of council, any of the Ombudsman's powers and duties under this Part.

223.13(9)Same

The Ombudsman may continue to exercise the delegated powers and duties, despite the delegation.

223.13(10)Status

The Ombudsman is not required to be a municipal employee.

Amendment History

2006, c. 32, Sched. A, s. 98

Currency

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End of Document

Ontario Statutes
Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98]

S.O. 2001, c. 25, s. 223.14

S 223.14

Currency

223.14

223.14(1)Investigation

Every investigation by the Ombudsman shall be conducted in private.

223.14(2)Opportunity to make representations

The Ombudsman may hear or obtain information from such persons as he or she thinks fit, and may make such inquiries as he or she thinks fit and it is not necessary for the Ombudsman to hold any hearing and no person is entitled as of right to be heard by the Ombudsman, but if at any time during the course of an investigation it appears to the Ombudsman that there may be sufficient grounds for him or her to make any report or recommendation that may adversely affect the municipality, a local board, a municipally-controlled corporation or any other person, the Ombudsman shall give him, her or it an opportunity to make representations respecting the adverse report or recommendation, either personally or by counsel.

223.14(3) Application of Ombudsman Act

Section 19 of the *Ombudsman Act* applies to the exercise of powers and the performance of duties by the Ombudsman under this Part and, for the purpose, references in section 19 of that Act to "any public sector body" are deemed to be references to "the municipality, a local board or a municipally-controlled corporation".

223.14(4) [Repealed 2014, c. 13, Sched. 9, s. 21.]

Amendment History

2006, c. 32, Sched. A, s. 98; 2006, c. 35, Sched. C, s. 134(3); 2014, c. 13, Sched. 9, s. 21

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Ontario Statutes Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

S.O. 2001, c. 25, s. 223.15

S 223.15

Currency

223.15

223.15(1) Duty of confidentiality

Subject to subsection (2), the Ombudsman and every person acting under the instructions of the Ombudsman shall preserve secrecy with respect to all matters that come to his or her knowledge in the course of his or her duties under this Part.

223.15(2)Disclosure

The Ombudsman may disclose in any report made by him or her under this Part such matters as in the Ombudsman's opinion ought to be disclosed in order to establish grounds for his or her conclusions and recommendations.

223.15(3)Section prevails

This section prevails over the Municipal Freedom of Information and Protection of Privacy Act.

Amendment History

2006, c. 32, Sched. A, s. 98

Currency

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Ontario Statutes

Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

Most Recently Cited in: Georgina (Town) v. Blanchard, 2016 ONCA 122, 2016 CarswellOnt 2112, 55 M.P.L.R. (5th) 228, 263 A.C.W.S. (3d) 776 | (Ont. C.A., Feb 12, 2016)

S.O. 2001, c. 25, s. 223.16

s 223.16 No review, etc.

Currency

223.16No review, etc.

No proceeding of the Ombudsman under this Part shall be held bad for want of form, and, except on the ground of lack of jurisdiction, no proceeding or decision of the Ombudsman is liable to be challenged, reviewed, quashed or called in question in any court.

Amendment History

2006, c. 32, Sched. A, s. 98

Currency

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Ontario Statutes Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

S.O. 2001, c. 25, s. 223.17

S 223.17

Currency

223.17

223.17(1) Testimony

The Ombudsman and any person acting under the instructions of the Ombudsman shall not be called to give evidence in any court, or in any proceedings of a judicial nature, in respect of anything coming to his or her knowledge in the exercise of his or her functions under this Part.

223.17(2)Same

Anything said or any information supplied or any document or thing produced by any person in the course of any investigation by or proceedings before the Ombudsman under this Part is privileged in the same manner as if the inquiry or proceedings were proceedings in a court.

Amendment History

2006, c. 32, Sched. A, s. 98

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Ontario Statutes Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

S.O. 2001, c. 25, s. 223.18

s 223.18 Effect on other rights, etc.

Currency

223.18Effect on other rights, etc.

The rights, remedies, powers, duties and procedures established under sections 223.13 to 223.17 are in addition to the provisions of any other Act or rule of law under which any remedy or right of appeal or objection is provided for any person, or any procedure is provided for the inquiry into or investigation of any matter, and nothing in this Part limits or affects any such remedy or right of appeal or objection or procedure.

Amendment History

2006, c. 32, Sched. A, s. 98

Currency

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Ontario Statutes Ombudsman Act

Most Recently Cited in: Iluyomade v. Toronto Community Housing Corp., 2018 ONSC 7727, 2018 CarswellOnt 22060 | (Ont. S.C.J., Dec 31, 2018)

R.S.O. 1990, c. O.6, s. 19

S 19.

Currency

19.

19(1)Evidence

The Ombudsman may from time to time require any officer, employee or member of any public sector body who in his or her opinion is able to give any information relating to any matter that is being investigated by the Ombudsman to furnish to him or her any such information, and to produce any documents or things which in the Ombudsman's opinion relate to any such matter and which may be in the possession or under the control of that person.

19(2)Examination under oath

The Ombudsman may summon before him or her and examine on oath,

- (a) any complainant;
- (b) any person who is an officer or employee or member of any public sector body and who, in the Ombudsman's opinion, is able to give any information mentioned in subsection (1); or
- (c) any other person who, in the Ombudsman's opinion, is able to give any information mentioned in subsection (1), and for that purpose may administer an oath.

19(3)Secrecy

Subject to subsection (4), no person who is bound by the provisions of any Act, other than the *Public Service of Ontario Act*, 2006, the *Municipal Act*, 2001 or the *City of Toronto Act*, 2006, as the case may be, to maintain secrecy in relation to, or not to disclose, any matter shall be required to supply any information to or answer any question put by the Ombudsman in relation to that matter, or to produce to the Ombudsman any document or thing relating to it, if compliance with that requirement would be in breach of the obligation of secrecy or non-disclosure.

19(3.1)Providing personal information despite privacy Acts

A person who is subject to the *Freedom of Information and Protection of Privacy Act*, the *Municipal Freedom of Information and Protection of Privacy Act* or the *Personal Health Information Protection Act*, 2004 is not prevented by any provisions in those Acts from providing personal information to the Ombudsman, when the Ombudsman requires the person to provide the information under subsection (1) or (2).

19(4)Idem

With the previous consent in writing of any complainant, any person to whom subsection (3) applies may be required by the Ombudsman to supply information or answer any question or produce any document or thing relating only to the complainant, and it is the duty of the person to comply with that requirement.

19(5)Privileges

Every person has the same privileges in relation to the giving of information, the answering of questions, and the production of documents and things as witnesses have in any court.

19(6)Protection

Except on the trial of any person for perjury in respect of the person's sworn testimony, no statement made or answer given by that or any other person in the course of any inquiry by or any proceedings before the Ombudsman is admissible in evidence against any person in any court or at any inquiry or in any other proceedings, and no evidence in respect of proceedings before the Ombudsman shall be given against any person.

19(7)Right to object to answer

A person giving a statement or answer in the course of any inquiry or proceeding before the Ombudsman shall be informed by the Ombudsman of the right to object to answer any question under section 5 of the *Canada Evidence Act*.

19(8)Prosecution

No person is liable to prosecution for an offence against any Act, other than this Act, by reason of his or her compliance with any requirement of the Ombudsman under this section.

19(9)Fees

Where any person is required by the Ombudsman to attend before him or her for the purposes of this section, the person is entitled to the same fees, allowances, and expenses as if he or she were a witness in the Superior Court of Justice, and the provisions of any Act, regulation or rule in that behalf apply accordingly.

Amendment History

2004, c. 3, Sched. A, s. 94; 2006, c. 19, Sched. C, s. 1(1); 2006, c. 35, Sched. C, s. 94(3); 2014, c. 13, Sched. 9, s. 11

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Ontario Statutes

Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

Most Recently Cited in: Inzola Group Limited v. City of Brampton, 2019 ONSC 7632, 2019 CarswellOnt 452 | (Ont. S.C.J., Jan 11, 2019)

S.O. 2001, c. 25, s. 223.19

s 223.19

Currency

223.19

223.19(1) Auditor General

Without limiting sections 9, 10 and 11, those sections authorize the municipality to appoint an Auditor General who reports to council and is responsible for assisting the council in holding itself and its administrators accountable for the quality of stewardship over public funds and for achievement of value for money in municipal operations.

223.19(1.1)Same

The Auditor General shall perform his or her responsibilities under this Part in an independent manner.

223.19(2) Exceptions

Despite subsection (1), the responsibilities of the Auditor General shall not include the matters described in clauses 296(1) (a) and (b) for which the municipal auditor is responsible.

223.19(3)Powers and duties

Subject to this Part, in carrying out his or her responsibilities, the Auditor General may exercise the powers and shall perform the duties as may be assigned to him or her by the municipality in respect of the municipality, its local boards and such municipally-controlled corporations and grant recipients as the municipality may specify.

223.19(4) Grant recipients

The authority of the Auditor General to exercise powers and perform duties under this Part in relation to a grant recipient applies only in respect of grants received by the grant recipient directly or indirectly from the municipality, a local board or a municipally-controlled corporation after the date on which this section comes into force.

223.19(5) Delegation

The Auditor General may delegate in writing to any person, other than a member of council, any of the Auditor General's powers and duties under this Part.

223.19(6)Same

The Auditor General may continue to exercise the delegated powers and duties, despite the delegation.

223.19(7)Status

The Auditor General is not required to be a municipal employee.

Amendment History

2006, c. 32, Sched. A, s. 98; 2009, c. 33, Sched. 21, s. 6(11)

Currency

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Ontario Statutes

Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

Most Recently Cited in: Greater Sudbury (City), Re, 2014 CarswellOnt 19392 | (Ont. Information & Privacy Comm., May 26, 2014)

S.O. 2001, c. 25, s. 223.20

s 223.20

Currency

223.20

223.20(1) Duty to furnish information

The municipality, its local boards and the municipally-controlled corporations and grant recipients referred to in subsection 223.19(3) shall give the Auditor General such information regarding their powers, duties, activities, organization, financial transactions and methods of business as the Auditor General believes to be necessary to perform his or her duties under this Part.

223.20(2) Access to records

The Auditor General is entitled to have free access to all books, accounts, financial records, electronic data processing records, reports, files and all other papers, things or property belonging to or used by the municipality, the local board, the municipally-controlled corporation or the grant recipient, as the case may be, that the Auditor General believes to be necessary to perform his or her duties under this Part.

223.20(3)No waiver of privilege

A disclosure to the Auditor General under subsection (1) or (2) does not constitute a waiver of solicitor-client privilege, litigation privilege or settlement privilege.

Amendment History

2006, c. 32, Sched. A, s. 98

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Ontario Statutes

Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

Most Recently Cited in: Greater Sudbury (City), Re, 2014 CarswellOnt 19392 | (Ont. Information & Privacy Comm., May 26, 2014)

S.O. 2001, c. 25, s. 223.21

S 223.21

Currency

223.21

223.21(1)Powers re examination

The Auditor General may examine any person on oath on any matter pertinent to an audit or examination under this Part.

223.21(2) Application of Public Inquiries Act, 2009

Section 33 of the Public Inquiries Act, 2009 applies to an examination by the Auditor General.

Amendment History

2006, c. 32, Sched. A, s. 98; 2009, c. 33, Sched. 6, s. 72(3)

Currency

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Ontario Statutes

Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

Most Recently Cited in: Greater Sudbury (City), Re, 2014 CarswellOnt 19392 | (Ont. Information & Privacy Comm., May 26, 2014)

S.O. 2001, c. 25, s. 223.22

S 223.22

Currency

223.22

223.22(1) Duty of confidentiality

The Auditor General and every person acting under the instructions of the Auditor General shall preserve secrecy with respect to all matters that come to his or her knowledge in the course of his or her duties under this Part.

223.22(2)Same

Subject to subsection (3), the persons required to preserve secrecy under subsection (1) shall not communicate information to another person in respect of any matter described in subsection (1) except as may be required,

- (a) in connection with the administration of this Part, including reports made by the Auditor General, or with any proceedings under this Part; or
- (b) under the Criminal Code (Canada).

223.22(3)Same

A person required to preserve secrecy under subsection (1) shall not disclose any information or document disclosed to the Auditor General under section 223.20 that is subject to solicitor-client privilege, litigation privilege or settlement privilege unless the person has the consent of each holder of the privilege.

223.22(4)Section prevails

This section prevails over the Municipal Freedom of Information and Protection of Privacy Act.

Amendment History

2006, c. 32, Sched. A, s. 98

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Ontario Statutes

Municipal Act, 2001

Part V.1 — Accountability and Transparency (ss. 223.1-223.24) [Heading added 2006, c. 32, Sched. A, s. 98.]

Most Recently Cited in: McCartney v. Ottawa (City), 2010 ONSC 2690, 2010 CarswellOnt 2938, 71 M.P.L.R. (4th) 286, 188 A.C.W.S. (3d) 66 | (Ont. S.C.J., May 7, 2010)

S.O. 2001, c. 25, s. 223.23

s 223.23 Testimony

Currency

223.23Testimony

Neither the Auditor General nor any person acting under the instructions of the Auditor General is a competent or compellable witness in a civil proceeding in connection with anything done under this Part.

Amendment History

2006, c. 32, Sched. A, s. 98

Currency

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Ontario Statutes
Public Inquiries Act, 2009
Procedures under Other Acts

Most Recently Cited in: Ontario (College of Physicians and Surgeons of Ontario) v. Mrozek, 2018 ONCPSD 17, 2018 CarswellOnt 5402 | (Ont. C.P.S.D.C., Apr 6, 2018)

S.O. 2009, c. 33, Sched. 6, s. 33

s 33. Former Part II inquiries

Currency

33.Former Part II inquiries 33(1)Definition

In this section,

"inquiry" includes a determination, examination, hearing, inquiry, investigation, review or other activity to which this section is applicable.

33(2)Standard procedure

This section applies where another Act or a regulation confers on a person or body the power to conduct an inquiry in accordance with this section or certain provisions of this section.

33(3)Power to summon witnesses, papers, etc.

The person or body conducting the inquiry may require any person by summons,

- (a) to give evidence on oath or affirmation at the inquiry; or
- (b) to produce in evidence at the inquiry such documents and things as the person or body conducting the inquiry may specify,

relevant to the subject matter of the inquiry and not inadmissible in evidence under subsection (13).

33(4)Form and service of summons

A summons issued under subsection (3) shall be in either the English or French version of the form prescribed by the regulations and shall be served personally on the person summoned and he or she shall be paid at the time of service the like fees and allowances for attendance as a witness before the person or body conducting the inquiry as are paid for the attendance of a witness summoned to attend before the Superior Court of Justice.

33(5)Stated case for contempt for failure to attend hearing, etc.

Where any person without lawful excuse,

- (a) on being duly summoned under subsection (3) as a witness at an inquiry makes default in attending at the inquiry; or
- (b) being in attendance as a witness at an inquiry, refuses to take an oath or to make an affirmation legally required by the person or body conducting the inquiry to be taken or made, or to produce any document or thing in his or

her power or control legally required by the person or body conducting the inquiry to be produced, or to answer any question to which the person or body conducting the inquiry may legally require an answer; or

(c) does any other thing that, if the person or body conducting the inquiry had been a court of law having power to commit for contempt, would have been contempt of that court,

the person or body conducting the inquiry may state a case to the Divisional Court setting out the facts and that court may, on the application of the person or body conducting the inquiry or of the Attorney General, inquire into the matter and, after hearing any witnesses who may be produced against or on behalf of that person and after hearing any statement that may be offered in defence, punish or take steps for the punishment of that person in like manner as if he or she had been guilty of contempt of the court.

33(6)Protection of witnesses

A witness at an inquiry shall be deemed to have objected to answer any question asked him or her upon the ground that his or her answer may tend to criminate the witness or may tend to establish his or her liability to civil proceedings at the instance of the Crown or of any person, and no answer given by a witness at an inquiry shall be used or be receivable in evidence against him or her in any trial or other proceedings against him or her thereafter taking place, other than a prosecution for perjury in giving such evidence.

33(7)Right to object

A witness shall be informed by the person or body conducting the inquiry of his or her right to object to answer any question under section 5 of the *Canada Evidence Act*.

33(8) No discipline of employees

No adverse employment action shall be taken against any employee of any person because the employee, acting in good faith, has made representations as a party or has disclosed information either in evidence or otherwise to a person or body conducting the inquiry under the applicable Act or to the staff of a person or body conducting the inquiry.

33(9)Offence

Any person who, contrary to subsection (8), takes adverse employment action against an employee is guilty of an offence and on conviction is liable to a fine of not more than \$5,000.

33(10)Application

This section applies despite any other Act and the oath of office of a public servant within the meaning of the *Public Service of Ontario Act*, 2006 is not breached where information is disclosed as described in subsection (8).

33(11)Effective date

This section applies to representations made, and information disclosed, on or after June 12, 2000.

33(12)Unsworn evidence admissible

A person or body conducting the inquiry may admit at an inquiry evidence not given under oath or affirmation.

33(13)Privilege

Nothing is admissible in evidence at an inquiry that would be inadmissible in a court by reason of any privilege under the law of evidence.

33(14)Release of documents

Documents and things produced in evidence at an inquiry shall, upon request of the person who produced them or the person entitled thereto, be released to the person by the person or body conducting the inquiry within a reasonable time.

33(15)Photocopies of documents

Where a document has been produced in evidence before a person or body conducting the inquiry, the person or body conducting the inquiry may or the person producing it may with the leave of the person or body conducting the inquiry,

cause the document to be photocopied and the photocopy may be filed in evidence in the place of the document produced, and a copy of a document produced in evidence, certified to be a true copy thereof by the person or body conducting the inquiry, is admissible in evidence in proceedings in which the document produced is admissible, as evidence of the document produced.

33(16)Power to administer oaths and require evidence under oath

A person or body conducting an inquiry has power to administer oaths and affirmations for the purpose of the inquiry and may require evidence to be given under oath or affirmation.

33(17)Powers of multiple appointees

Where two or more persons are appointed to make an inquiry, any one of them may exercise the powers conferred by subsection (3), (4), (14), (15) or (16).

Currency

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HAMILTON CITY COUNCIL MEETING

TRANSCRIPT OF PROCEEDINGS

held at Council Chambers, Hamilton City Hall 71 Main Street West, Hamilton, Ontario on Wednesday, March 20, 2019, at 4:57 p.m.

APPEARANCES:

Mayor Fred Eisenberger

Councillors Maureen Wilson Jason Farr Nrinder Nann Sam Merulla **Chad Collins** Tom Jackson **Ester Pauls** John-Paul Danko **Brad Clark** Maria Pearson Brenda Johnson Lloyd Ferguson Arlene VanderBeek Terry Whitehead Judi Partridge

Nicole Auti Eli Lederman

Charles Brown Mike Zegarac

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- 1 Hamilton, Ontario
- 2 --- Upon commencing on Wednesday, March 20, 2019,
- 3 at 4:57 p.m.
- 4 MR. EISENBERGER: Okay. Members
- 5 of council, we are back into our special council
- 6 meeting for this afternoon. I call the meeting to
- 7 order, recognizing and acknowledge that we meet on
- 8 traditional territory of the Mississauga
- 9 Haudenosaunee Nations and within the lands
- 10 protected by the Dish With One Spoon Wampum
- 11 agreement.
- 12 Members of the public are advised
- 13 that our meetings are webcast live by the City of
- 14 Hamilton and temporarily archived on the City's
- 15 website. Other individuals and the media may also
- 16 be audibly and/or visually recording this meeting,
- 17 as well, a reminder that all electronic devices are
- 18 to be switched to a non-audible function during
- 19 council meetings.
- 20 Madam Clerk, are there any changes
- 21 to the agenda, please.
- THE REGISTRAR: Yes, Mr. Mayor,
- 23 and as this is a special council meeting, a
- 24 two-thirds majority vote is required to add item
- 25 5.3 to the agenda, which is time-sensitive, by

- 1 three Local Planning Appeal Tribunal appeals by
- 2 Television City Hamilton Inc., settlement proposal.
- 3 It was referred from planning committee yesterday
- 4 to council.
- 5 MR. EISENBERGER: Okay. Thank
- 6 you. And the other -- that's it? Okay.
- 7 So on that item, Councillor Farr.
- 8 MR. FARR: Yes. I had a chance to
- 9 chat with our director, Jason Thorne, and as a
- 10 courtesy and hopefully with the willing of
- 11 committee, I'm asking that 5.3 on the agenda be
- 12 moved when we go in-camera to the front of the
- 13 in-camera items instead of at the end. It's very
- 14 straightforward. We'll get through it quickly, and
- 15 a number of staff, including legal, would be able
- 16 to vamoose.
- MR. EISENBERGER: Well, it's an
- 18 in-camera item, and we need two-thirds majority to
- 19 approve to have that --
- MR. FARR: I'll move that.
- 21 MR. EISENBERGER: Moved and
- 22 seconded by? Ms. Pearson. Okay. E-vote is
- 23 required. I'm adopting the new lingo. You vote,
- 24 please. You're welcome. The Jackson e-vote. All
- 25 right. E-vote again. E to vote. E-vote squared.

- 1 Arlene and Judi, we need you to
- 2 vote. You're voting on including an item on
- 3 Television City as part of the in-camera agenda.
- 4 Okay. Thank you. That's
- 5 definitely two-thirds majority, so that is on the
- 6 agenda and in-camera portion.
- 7 The member's counsel, are there
- 8 any declarations of interest? None. Member's
- 9 counsel, you have before you communications item
- 10 3.1. Is there any change to the disposition of the
- 11 communications item? So item 3.1 is a
- 12 communication from Andrea Horvath, Ontario NDP
- 13 leader, respecting the safety of the Red Hill
- 14 Valley Expressway in urging the City of Hamilton to
- 15 do the right thing and open the review of the
- 16 circumstance to a judicial review, and the
- 17 recommendation is that it be received.
- 18 So we want to move that? So are
- 19 we -- is anyone speaking to this item?
- 20 Councillor Clark. Okay.
- 21 Councillor Merulla, you're up.
- MR. MERULLA: Good evening, Mr.
- 23 Mayor, and I appreciate Andrea Horvath's letter.
- 24 Just as an update, I did e-mail out today to all of
- 25 you the press release where Andrea has asked the

- 1 premier and the government an apology based on the
- 2 MTO's involvement of the friction testing and the
- 3 fact they had the same identical raw data from 2007
- 4 to 2014 and did not make that public until last
- 5 month.
- 6 So if we can maybe formally have
- 7 that press release included in the agenda as well.
- 8 It would tie into this particular letter. So
- 9 through you, Mr. Mayor, how would I go about doing
- 10 that?
- 11 MR. EISENBERGER: Okay. I'll
- 12 check with Madam Clerk.
- 13 THE REGISTRAR: Is that the e-mail
- 14 that we received just prior to this meeting?
- 15 MR. MERULLA: That's correct. I
- 16 sent it out, yes.
- 17 THE REGISTRAR: We can add it as
- 18 3.2 of the same matter.
- MR. MERULLA: Perfect.
- 20 MR. EISENBERGER: Communication
- 21 item as well. Okay.
- MR. MERULLA: That's all. Thank
- 23 you very much.
- MR. EISENBERGER: Thank you. And
- 25 then, the recommendation would be for it to be

- 1 received? Thank you.
- 2 Councillor Jackson, I understand
- 3 you have a motion then on these items?
- 4 MR. JACKSON: Yes.
- 5 MR. EISENBERGER: Okay. Go ahead.
- MR. JACKSON: So then thanks, Mr.
- 7 Mayor. I move by myself, seconded by Ward 7
- 8 councillor, Esther Pauls, that communications 3.1
- 9 and now 3.2 that Councillor Merulla read from the
- 10 Honourable Andrea Horvath, NDP leader, respecting
- 11 the safety of Red Hill Valley Expressway, urging
- 12 the City to do the right thing, open the review of
- 13 the circumstances to judicial review, and the
- 14 apology that Councillor Merulla read from her to
- 15 the house be received.
- MR. EISENBERGER: Okay. Thank
- 17 you.
- 18 So again, e-vote required for the
- 19 communication items coming right up. Because
- 20 normally when we do communications as a whole even
- 21 though they're received or referred, we do the
- 22 whole group on electronic vote basis. No? We
- 23 normally do.
- 24 THE REGISTRAR: In this case,
- 25 they're both to be received, so it can be a show of

- 1 hands.
- MR. EISENBERGER: Oh, okay. All
- 3 right. Technicalities.
- 4 Okay. All in favour. Carried.
- 5 Thank you.
- 6 Yes, that's right. It kind of
- 7 makes you feel like we're back in a year ago.
- 8 Councillor Merulla, you have you
- 9 have item 4.1, a motion respecting an apology from
- 10 the Province of Ontario, respecting the Ministry of
- 11 Transportation friction testing results.
- 12 Councillor Merulla, you want to indicate and you
- 13 want to speak to that?
- MR. MERULLA: Thank you, Mr.
- 15 Mayor. And it's moved myself, seconded by
- 16 Councillor Collins, respecting an apology from the
- 17 Province of Ontario respecting the Ministry of
- 18 Transportation's friction testing results. Whereas
- 19 city council invites tension, the residents of the
- 20 City of Hamilton have received an apology from City
- 21 of Hamilton staff for the manner and the timing to
- 22 which council was informed of the friction testing
- 23 results on the Red Hill Valley Expressway.
- 24 And whereas city council invites
- 25 tension, the residents of the City of Hamilton have

- 1 not received an apology from the Province of
- 2 Ontario respecting the Ministry of Transportation's
- 3 friction testing results, which concurred with the
- 4 results within the City of Hamilton report during
- 5 the same period of time, and in doing so,
- 6 compounded the betrayal to city council and the
- 7 residents of the City of Hamilton.
- 8 Therefore, the result that city
- 9 council demand an apology from the Province of
- 10 Ontario respecting the Ministry of Transportation's
- 11 friction testing results on behalf of all residents
- 12 of the City of Hamilton. And just quickly, Mr.
- 13 Mayor, throughout this whole process, I think the
- 14 MTO's involvement has been somehow ignored up until
- 15 most recently in the house today when Andrea
- 16 Horvath demanded an apology from the government,
- 17 and also, an apology from the MTO which coincides
- 18 with my notice of motion that I sent out last week.
- The most interesting component
- 20 through this is that the raw data with respect to
- 21 the 2013 City of Hamilton friction test is
- 22 identical to the tests and results the Ministry of
- 23 Transportation had. So the raw data itself is
- 24 identical. What's really interesting and really
- 25 becomes a viewpoint of interest province-wide is

- 1 that the testing which the raw data that our staff
- 2 had filtered through a scrutiny process is
- 3 considered a platinum process versus that what the
- 4 MTO does, which is considered a bronze process.
- 5 So when they took that raw data
- 6 and they filtered it through their assessment, the
- 7 conclusion came back that everything was fine.
- 8 It's up to standard. Our staff brought it through
- 9 a more heavily scrutinized process, and the results
- 10 came back that it was below standard. The crux of
- 11 my concern on that is this: If the standard is a
- 12 bronze standard and the Ministry of Transportation
- 13 signed off the exact same raw data, that our staff
- 14 never did and considered it to be below standard
- 15 based on the friction testing, that how much of the
- 16 supplied science that the MTO uses is implied
- 17 throughout the entire province of Ontario, which
- 18 means that every single highway in the province of
- 19 Ontario would be subject to the same bronze
- 20 standard whereas our staff brought it to a platinum
- 21 standard.
- 22 And that's something that -- and
- 23 throughout the judicial review, which I'm strongly
- 24 supporting and we'll be discussing later on -- is
- 25 something we really need to focus in on in order to

- 1 get to the, I guess, bottom of the perception of it
- 2 being a problem versus the reality of it.
- 3 But clearly there's an issue here
- 4 province-wide. If their standard is considered to
- 5 be a bronze standard if they had the same raw data
- 6 and everybody thinks the sky is falling, I truly
- 7 look forward to that process in order to gain some
- 8 sort of understanding and grip on reality on this
- 9 particular issue. I appreciate your time. Thank
- 10 you.
- MR. EISENBERGER: Okay. Thank you
- 12 very much.
- 13 Councillor Clark, on that topic
- 14 then.
- 15 MR. CLARK: Thank you, Mr. Mayor,
- 16 and I appreciate the mover of the motion and his
- 17 intentions.
- 18 What I found peculiar and
- 19 problematic for myself when I learned that the
- 20 Ministry of Transportation had conducted testing in
- 21 2007 was that it was right after the highway the
- 22 Parkway was opened. And from my experience with
- 23 the Ministry of Transportation, they just don't go
- 24 around randomly testing highways, and I don't
- 25 understand why they chose at that moment to come to

- 1 Hamilton and test the Parkway under the
- 2 administration of the City of Hamilton, and really
- 3 to this day, it baffles me.
- And then they had follow-up tests,
- 5 and then they didn't share the information with our
- 6 transportation staff, our road staff, our
- 7 management people, which again baffled me, and we
- 8 need to find out why they would have done that, and
- 9 if they were looking for something or they were
- 10 curious about something or they had concerns about
- 11 something, why didn't they just simply speak up to
- 12 the City? Why did they do it in the manner that
- 13 they did? And I mean, we only found out about it
- 14 by happenstance.
- So I support the member's motion.
- 16 I think there's an awful lot more that we need to
- 17 find out about what the Province knew and what they
- 18 didn't know and why they didn't share it with us,
- 19 and I think that's why we included it in the
- 20 motion. Thank you.
- 21 MR. EISENBERGER: Okay. Thank
- 22 you.
- 23 Councillor Whitehead.
- MR. WHITEHEAD: Yeah, thank you.
- 25 I think part of the context is --

- 1 that we were already aware of is that in the
- 2 construction of the Red Hill Expressway, our staff
- 3 had consulted with MTO, and it was the MTO that was
- 4 already using what was apparently supposed to be a
- 5 higher type of product on some of the highways, and
- 6 through that consultation, we had decided to use
- 7 the same material. So I think they probably had
- 8 some interest in monitoring that type of material
- 9 and whether or not in fact it was delivering what
- 10 the specs had indicated.
- I do agree with the speaker -- the
- 12 former speakers that you would still think that
- 13 because it seemed to be an informal partnership in
- 14 the context of the type of material being used and
- 15 whether it met the specs that was indicated at the
- 16 time that we implemented it, that they would have
- 17 an interest in how it was performing so that -- you
- 18 know, obviously they got other highways that they
- 19 have -- well, my understanding -- the same product
- 20 on, that they would have an interest, but what,
- 21 again, boggles my mind is if they're going to come
- 22 in and do the testing, why those results wouldn't
- 23 be immediately shared with our own staff, and I
- 24 think that's a big, huge question. So I certainly
- 25 support what's before us here today and hope we get

- 1 some answers. Thank you.
- 2 And I too have already put it out
- 3 there and there's not going to be any surprise.
- 4 The motion I see here, we'll deal with after the
- 5 in-camera portion, but this is one of the few times
- 6 that you're not going to change my mind. I am
- 7 supporting the judicial review. Thank you.
- 8 MR. EISENBERGER: Thank you.
- 9 We're not there yet, so we can save that debate for
- 10 a little later.
- 11 Councillor Danko.
- MR. DANKO: Thank you, Mr. Mayor.
- So just on this motion
- 14 specifically, I genuinely appreciate the gist of
- 15 the motion, the purpose for bringing this forward,
- 16 but I think the base assumption here is that the
- 17 MTO did something wrong or got bad results or
- 18 somehow did something untoward that warrants an
- 19 apology, and at this point, I don't have evidence
- 20 of that, so unfortunately, I can't support the
- 21 request for an apology.
- MR. EISENBERGER: Okay. Thank
- 23 you.
- 24 Councillor Merulla.
- 25 MR. MERULLA: I'm not sure if I

- 1 made myself clear originally, so just for the
- 2 public record, the results from the Ministry of
- 3 Transportation released last month haven't been
- 4 announced to anyone. The raw data was identical to
- 5 the raw data that our staff had. So as it was
- 6 mentioned in the house today and the apology was
- 7 demanded today, the raw data itself then is
- 8 filtered through a process, and I'm sure Councillor
- 9 Danko knows better than I do that there are various
- 10 different standards and different processes from an
- 11 engineering perspective.
- 12 So the standard in which our city
- 13 staff used was superior to that than what the
- 14 Ministry of Transportation uses. So when you put
- 15 it through a highly scrutinized process, so the
- 16 data going in is identical, but the outcome
- 17 differed. The Province chose to not release that
- 18 raw data to us or to alarm anyone that there's a
- 19 potential problem. It's the exact same reason why
- 20 everybody's up in arms about our own staff.
- 21 So the Ministry and our staff did
- 22 the exact same thing. They tested the road. They
- 23 had the results and chose not to make that publicly
- 24 known. Our staff has apologized to council, and by
- 25 extension, the community. That begs the question

- 1 now: Why would we not ask for the same to be
- 2 applied to the MTO as the house today debated? And
- 3 my understanding is we see significant non-support.
- 4 So really, it is an
- 5 apples-to-apples comparison. It's identical. The
- 6 MTO staff and our staff, both had the same data,
- 7 and they both chose not to for some reason make it
- 8 publicly known, hence the reason why the motion is
- 9 before us. I appreciate your time.
- 10 MR. EISENBERGER: Okay. I think
- 11 we're clear on that, so we'll test the will of
- 12 council -- almost.
- Councillor Ferguson.
- MR. FERGUSON: Yeah, my only issue
- 15 is -- and I have a little bit of experience putting
- 16 highways and did it for over 30 years. The MTO is
- 17 always experimenting with new surface coarse mixes,
- 18 and municipalities do not build high-speed
- 19 highways, so they turn to the MTO, what's the best
- 20 mix to put in here, and over the years, the MTO's
- 21 had a lot of problems, whether it's rutting or
- 22 indication of steel slag chunks coming up of
- 23 surface coarse asphalt.
- I think our highway was one of the
- 25 first to use to use trap rock, a very hard rock out

- 1 of Quebec, which is 100 per cent crushed, and the
- 2 edges of that rock give you traction, and I suspect
- 3 that they were just going out and experimenting to
- 4 see how it's performing to know what they do with
- 5 our highways because we actually copied and pasted
- 6 their design, which is very typical for
- 7 municipalities.
- 8 So I suspect this whole time is a
- 9 bit of a tempest in a teapot, but I would like to
- 10 get that confirmed by the MTO also.
- MR. EISENBERGER: Okay. All
- 12 right. We have no further speakers on the issue
- 13 then, so the motion is before you. E-vote.
- What's e-vote? Did you cancel
- 15 that vote? Did you? Okay. Hang on. Okay. Thank
- 16 you.
- 17 Councillor Whitehead.
- 18 MR. WHITEHEAD: Well, it's
- 19 premature. I was concerned that we're going to be
- 20 having a conversation in-camera, depending on the
- 21 disposition of this council coming out of that
- 22 in-camera session.
- We may be calling on the Province
- 24 to facilitate any cost issues. And so, at one
- 25 point, we're slamming them and saying, "You should

- 1 apologize," and the other side, we may be saying,
- 2 "Step up to the plate and help fund, you know, an
- 3 investigation." So it just sort of concerned me
- 4 not knowing what the result will be coming out of
- 5 the in-camera session that we now -- we just -- the
- 6 same hand that we may be asking to help fund may be
- 7 the hand that we're making demands of, and I was
- 8 concerned about the --
- 9 MR. EISENBERGER: Okay. You could
- 10 have made that point a little sooner. That might
- 11 have been better, but at this point, we're passed
- 12 it already.
- So on the in-camera portion, we
- 14 have a potential motion moving to in-camera. We
- 15 have three in-camera items: One, city manager; the
- 16 other one, Television City; and third, the Red Hill
- 17 Valley Parkway.
- 18 Councillor Clark, do you want to
- 19 talk about the --
- MR. CLARK: Yes, thank you very
- 21 much, Mr. Mayor, and I'm sure everyone's read the
- 22 report. So this is item 5.2, which is about the
- 23 road infrastructure review from the outside legal
- 24 counsel. So I read the document now five times
- 25 except for the very back, which was all of the

- 1 Acts, and I appreciated that they provided all of
- 2 the statutes.
- 3 The report for me when I read it
- 4 was a -- virtually a line-by-line answering the
- 5 questions that we as a council proposed to them,
- 6 and they provided those answers back. They
- 7 provided advice to us in terms of how we may
- 8 proceed on what the options were, what the
- 9 advantages were.
- 10 When I read the report -- and I
- 11 completely agree that this is at this moment
- 12 solicitor-client privilege. It's a privilege that
- 13 is discretionary. It's a privilege that this
- 14 council can waive.
- 15 When I read the report, I could
- 16 not find any material points in the report that
- 17 would be a prejudice to the municipality and in any
- 18 form of outside litigation or lawsuits that may be
- 19 pending because it really didn't provide any
- 20 evidence from any wrongdoing or anything about the
- 21 actual road test. It only dealt with the law and
- 22 here's your options and here's the way you might
- 23 want to go and here's the potential cost, etc.,
- 24 etc.
- 25 So given all of that and given

- 1 that this is an incredibly compelling public
- 2 interest within our municipality, as I read the
- 3 report, it came to me that perhaps this report, we
- 4 should be waiving our solicitor-client privilege,
- 5 allow the report to be made public, have the
- 6 discussion with the solicitor about this report in
- 7 publics so everyone is all on the same page
- 8 throughout this.
- 9 We've already been hammered a few
- 10 times from pundits about our five-hour meeting on
- 11 this in-camera. At the end of the day -- and I'm
- 12 legitimately serious about this -- I don't see any
- 13 particular reason why we would need to keep this
- 14 in-camera and have the discussion in-camera. It
- 15 could be 100 per cent in public, and at the
- 16 appropriate time, I'd be happy to move the motion
- 17 to waive our solicitor-client privilege to allow
- 18 this to be discussed in public session.
- MR. EISENBERGER: Okay. Thank
- 20 you. Councillor Farr.
- 21 MR. FARR: Mine isn't on this
- 22 item, but a little bit earlier, I just did the
- 23 appropriate time. Let me know. I'd like to move a
- 24 motion to change the in-camera agenda to allow the
- 25 Television City item to appear first on the agenda

- 1 at the appropriate time unless I can do that now.
- 2 MR. EISENBERGER: We will do that
- 3 in-camera, so it will be fine.
- 4 MR. FARR: Oh, you will. Thank
- 5 you.
- 6 MR. EISENBERGER: Councillor
- 7 Johnson.
- MS. JOHNSON: Thank you, Mr.
- 9 Mayor, and I did not read this five times but I did
- 10 read it, and I come to the same conclusion: Why
- 11 isn't this public? And I really believe that if
- 12 this report was made public and a public debate was
- 13 held on this public document, then the public would
- 14 understand why we made that informed decision. So
- 15 I support waiving the solicitor-client privilege as
- 16 well and release this report. I'd be happy to
- 17 second it as well.
- MR. EISENBERGER: Thank you.
- 19 Councillor Merulla.
- MR. MERULLA: Just quickly, Mr.
- 21 Mayor, from my perspective, this thing needs to be
- 22 open in public. We have absolutely nothing to
- 23 hide, so let's just get it out there. Let's do it
- 24 and let's do it as quickly as possible because we
- 25 need to start the judicial review as quickly as

- 1 possible. Thank you.
- MR. EISENBERGER: Thank you.
- 3 Councillor Partridge.
- 4 MS. PARTRIDGE: Yes, thank you,
- 5 Mr. Mayor, and I agree 100 per cent. I read it
- 6 through and the two examples that are pointed to in
- 7 this particular report have long been public and
- 8 reviewed by the public and out in the public, so I
- 9 could see nothing in this report that met all of
- 10 the criteria for why we would keep this report or
- 11 even this discussion in-camera. So I believe too
- 12 that it should be public. Thank you.
- MR. EISENBERGER: Thank you.
- 14 Councillor Whitehead, you're on.
- 15 Not on? I'm happy to move on.
- 16 Councillor Vanderbaek.
- MR. WHITEHEAD: No, no --
- 18 MR. EISENBERGER: Speak to me.
- 19 All right. You're on.
- 20 MR. WHITEHEAD: The mike wasn't
- 21 on. I have no legal advice to ask for. There is
- 22 no real legal advice here. This is more of a
- 23 process decision and a political decision, so for
- 24 those reasons, it doesn't make any sense for me
- 25 whatsoever to go in-camera on this item, and so, I

- 1 wholeheartedly support us having this conversation
- 2 in public.
- 3 MR. EISENBERGER: Thank you.
- 4 Councillor Vanderbaek.
- 5 MS. VANDERBAEK: Thank you. So
- 6 for all of the above reasons, I too think that this
- 7 definitely needs to be in public. Thank you.
- 8 MR. EISENBERGER: I've put myself
- 9 on the speaker's list, which I can't do but I'm
- 10 going to do now. So I'm going to turn it over to
- 11 Councillor Jackson.
- So I understand and I'm not -- I'm
- 13 of the same ilk that I want this report to be
- 14 public, and I think it would helpful to have a
- 15 public debate, but I do want to hear from our legal
- 16 staff in terms of the potential issues that would
- 17 cause us some trouble if we start debating them
- 18 publicly.
- 19 So to our solicitor, Nicole, we
- 20 can either do that in-camera because we are going
- 21 to go in-camera for two items, and I would request
- 22 that we get those two items out of the way. One of
- 23 them, as you know, is the city manager issue, and
- 24 we don't have to be waiting here for hours on end
- 25 to have to deal with that issue.

1	And the other one is in Television
2	City that Councillor Farr wants to put to bed, and
3	then we can I would like to have some legal
4	advice in terms of where the potential problems
5	might be, so you know, some of that we could get
6	now, but more appropriately, I think it might be a
7	brief conversation in-camera to do that, and then
8	come out of camera with the public document.
9	So Madam Solicitor, can you give
10	us some thoughts on some of the difficulties with
11	what we're proposing to do? I mean, it's eyes wide
12	open, so we need to know what areas we might get in
13	trouble in and what areas we are fully free to
14	discuss.
15	MR. JACKSON: City solicitor.
16	MS. AUTI: Through the chair to
17	the mayor, so the concerns that I would have and
18	certainly I would welcome the opportunity to have
19	more of a discussion in-camera on just the
20	rationale for going in or out, but I can give you
21	sort of my high-level thoughts at this point.
22	I recognize obviously and see
23	council's desire to have a transparent discussion
24	on the issue. That said, there are obviously risks
25	associated with that, particularly as there are

- 1 ongoing litigation matters, potential personnel
- 2 issues, and I would just want to have an
- 3 opportunity to discuss those.
- 4 The report itself, there is a
- 5 distinction obviously between the content of the
- 6 report and the opportunity to have a discussion and
- 7 a frank conversation with the external counsel that
- 8 have been retained to provide you with that
- 9 external advice, so we may want to have a
- 10 conversation around whether the report is released,
- 11 whether you have the discussion, and have an
- 12 opportunity to have that frank conversation and
- 13 probe those issues.
- I don't want to get into too much
- 15 of the detail, but certainly in my mind, there's at
- 16 least the issue of the breadth of the investigation
- 17 and that particular conversation, and I would
- 18 suggest potentially is, in my mind, better done
- 19 in-camera so that you could have an opportunity to
- 20 have those conversations freely. That said, I
- 21 quess that I prefer to get a chance speak to that
- 22 in-camera, but I'm in council's hands as always.
- MR. EISENBERGER: Thank you, Ms.
- 24 Chair. I mean, I think I would want counsel to
- 25 have a brief opportunity to understand, you know,

- 1 some of the legal ramifications of what we're about
- 2 to do, and we can't really do that out of camera,
- 3 so I'm not suggesting that we bury this report.
- 4 I'm fully in favour of having a public discussion.
- 5 I want this report to get out, but I want us all
- 6 to be aware of the potential legal pratfalls that
- 7 might be existing here, so I would ask that we have
- 8 a brief discussion in-camera on that.
- 9 MR. JACKSON: Sure. Back to you,
- 10 Mr. Mayor.
- MR. EISENBERGER: Thank you.
- 12 Councillor Ferguson.
- MR. FERGUSON: I was going to ask
- 14 the exact same thing you did. I was going
- 15 hopefully that we go in-camera and ask the city
- 16 solicitor were we putting ourselves at risk or are
- 17 we exposed? Is there any potential lawsuits that
- 18 could come out of this report? And then if there
- 19 isn't, then we'll go back in public and have the
- 20 debate. So I'm 100 per cent in line with what your
- 21 thinking is.
- MR. EISENBERGER: Okay. Thank
- 23 you.
- 24 Councillor Clarke.
- 25 Was it Councillor Danko? Is it

- 1 your first time on this one? Maybe not. So
- 2 Councillor Danko.
- 3 And Councillor Clark, if you'd
- 4 indicate, I'd put you back on.
- 5 MR. DANKO: So just on the
- 6 discussion, is it the intention to have the
- 7 discussion in public as well? So I have some
- 8 questions to the external legal counsel that I
- 9 don't think I can skirt around between what is
- 10 public and what's not, and I'd like to have at
- 11 least a portion of that discussion in-camera.
- MR. EISENBERGER: Okay. Thank
- 13 you.
- I'm going to turn to -- I think
- 15 Councillor Clark was up first. So you were there,
- 16 and then we can go from there.
- 17 Councillor Farr.
- 18 MR. FARR: Okay. So the motion's
- 19 on the floor. You hear the motion. What prevents
- 20 us as we have in the past, we keep this public, and
- 21 if we're straying, you just let us know we're
- 22 straying, and just like we've done many other times
- 23 before, we'll be sure to heed your advice, and if
- 24 you suggest that we're straying into an area that
- 25 needs to be discussed in-camera, then we'll act

- 1 accordingly, I'm sure.
- 2 Through you, Mr. Mayor.
- 3 MR. EISENBERGER: Nicole.
- MS. AUTI: Through you, Mr. Mayor.
- 5 So I hear you, Councillor. My concern is that at
- 6 that point, the statement may or may not have been
- 7 made in public, so I'm happy to have the
- 8 conversation and give you my advice on how to best
- 9 protect yourself if you do decide to waive the
- 10 privilege and not only on the report but also on
- 11 the discussion and the interaction between
- 12 yourselves and the exterior legal counsel.
- I can do that in public, and I can
- 14 give you my caution and direction on that. I think
- 15 it would be beneficial, and certainly, you would be
- 16 able to have a more fulsome discussion around what
- 17 those cautions should be. Ultimately, we have in
- 18 the past and at least in my experience with you in
- 19 the last couple of years, we have in one other
- 20 instance done that. Within that instance, we did
- 21 in go in-camera to have the discussion first and
- 22 then waived privilege on the report following that.
- 23 So I would recommend that at a
- 24 minimum is to at least have a brief -- however
- 25 brief -- opportunity to have that discussion

- 1 in-camera, and then you can make a decision on what
- 2 to do coming out of that, whether you want to waive
- 3 privilege on the report and continue to have the
- 4 debate in public.
- 5 MR. FARR: Okay. Well, I'm of
- 6 mind that you publicly caution us then on areas
- 7 that we should avoid, as you just suggested among
- 8 the two suggestions. So that is just to let you
- 9 know, and if we to get to that point, if I need to
- 10 formally ask that she -- that Nicole, sorry,
- 11 caution us publicly on where we would be straying,
- 12 then we can maintain our support.
- MR. EISENBERGER: Thank you.
- 14 Councillor Jackson.
- MR. JACKSON: Mr. Mayor, I support
- 16 your suggestion. Our city solicitor has requested
- 17 -- recommended we at least begin in-camera. She's
- 18 our lawyer. She's protecting the corporation
- 19 council. I want to at least hear the advice in
- 20 camera and then at some point in time have a full
- 21 discussion out of camera. Thank you.
- MR. EISENBERGER: Thank you.
- I think it was Councillor Clark
- 24 that was back at the top of the list, and then
- 25 we'll go from there.

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1
                      MR. CLARK:
                                  Thank you, Mr. Mayor,
 2
    and I can't speak to the protocols and what has
    happened in the last four years. I wasn't here. I
 3
 4
    can speak to my previous eight years, and there was
    a number of times where the council felt that the
 5
 6
    information was of compelling public interest, and
 7
    it should be released to the public and the
 8
    discussions should be in public, and the city
 9
    solicitor as Councillor Farr indicated simply if a
10
    councillor was asking a question, and it was
    straying into an area where there was potential
11
12
    prejudice to the municipality, then the city
13
    solicitor spoke up directly and cautioned them, and
14
    the line of questioning stopped, and they went into
15
    camera later on to finish those questions.
16
    can see both options completely viable.
17
                      MR. EISENBERGER:
                                        Thank you.
18
                      Councillor Whitehead.
19
                      MR. WHITEHEAD:
                                      Thank you. I
20
    heard our solicitor talk concerns about the scope,
21
    and from my perspective, going into a judicial
22
    review, for example, I mean, I don't think we can
23
    actually define scope of investigation, so --
24
                      MR. EISENBERGER: We're weighing
25
    in to debate on the actual topic now.
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- 1 talking about whether we go into camera or not into
- 2 camera.
- MR. WHITEHEAD: Yeah, but --
- 4 MR. EISENBERGER: Let's not --
- 5 MR. WHITEHEAD: I heard --
- 6 MR. EISENBERGER: I caution you to
- 7 not talk about the specifics.
- 8 MR. WHITEHEAD: I'm not getting
- 9 into answers on that issue. I'm trying to
- 10 understand how scope becomes a legal confidential
- 11 issue.
- 12 MR. EISENBERGER: That's legal
- 13 advice that you'd want to give in-camera.
- 14 Nicole.
- MS. AUTI: Through you Mr. Mayor.
- 16 So in my mind, at some point, counsel will need to
- 17 give direction whether it's -- well, at some point
- 18 as to the breadth of whatever investigation you
- 19 choose. Some of that interaction and discussion
- 20 around where you land on that spectrum of what is
- 21 included in that might get into issues that touch
- 22 on liability, and I can't really say more than that
- 23 at this point without kind of --
- MR. WHITEHEAD: Thank you.
- MS. AUTI: -- wandering into that,

- 1 but that's my concern, but we can certainly --
- 2 either way, I mean, I will always give you my best
- 3 advice in public or not, so I will do my best.
- 4 MR. EISENBERGER: Thank you.
- 5 Councillor Partridge -- no, sorry.
- 6 Councillor Wilson, first time.
- 7 And Councillor Partridge, put
- 8 yourself on again, please.
- 9 MS. PARTRIDGE: I'm on.
- MR. EISENBERGER: It should go
- 11 off. There we go.
- 12 Councillor Wilson.
- MS. WILSON: Thank you. I think
- 14 it's obvious the two aren't mutually exclusive. I
- 15 think what I'm hearing is that there is a will and
- 16 a want to have a discussion fully in public, but I
- 17 heed the counsel of our solicitor, and that's what
- 18 she is here for, to give us the counsel, and I
- 19 would appreciate hearing that counsel at the
- 20 beginning of discussion. So thank you.
- 21 MR. EISENBERGER: Thank you.
- 22 Councillor Partridge.
- MS. PARTRIDGE: Yes, thank you,
- 24 Mr. Mayor, and I'm of similar mind. I think, you
- 25 know, if we go in-camera to begin with, that's

- 1 specifically to have the discussion around, you
- 2 know, certainly any HR issues or employee issues,
- 3 but as far as discussing the actual report, that
- 4 needs to be done out in full session and out in the
- 5 public.
- 6 So I would just say that, you
- 7 know, let's not stray into discussing the report.
- 8 When we are in-camera, we need to stay specific to
- 9 any of the in-camera applicable issues. Thank you.
- 10 MR. EISENBERGER: Okay. I think
- 11 there's fundamental agreement that I think
- 12 everybody wants the report to be public, so I don't
- 13 think there's any disagreement on that. I think
- 14 the disagreement is that we at least at the outset
- 15 get some legal advice in terms of how we trip into
- 16 that.
- 17 So Councillor Merulla.
- 18 MR. MERULLA: Mr. Mayor, with all
- 19 due respect, we're headed towards a judicial
- 20 review. We're not going to have any
- 21 confidentiality under that -- I don't think people
- 22 understand the power of a judicial review. So we
- 23 are delaying the inevitable. Nothing is going to
- 24 be subject to confidentiality, and our lawyer is
- 25 simply giving us advice, but we make the decision.

- 1 So folks, we are delaying the
- 2 inevitable. Let's just open this whole thing up.
- 3 Let's have a public discussion. I'm prepared to
- 4 release this report today right now at this moment,
- 5 to be frank, because I know there's support for
- 6 judicial review. So if you're going to support a
- 7 judicial review and seek confidentiality
- 8 simultaneously, you're sucking and blowing at the
- 9 same time.
- 10 MR. EISENBERGER: We're not doing
- 11 that. So we are going to go in-camera on two items
- 12 for sure, Television City and the city manager.
- 13 And so, in the context of that, I don't see any
- 14 harm in getting a brief overview from our solicitor
- 15 in terms of any of the potential problems of some
- 16 of the discussions that might be had out of camera
- 17 based on this report. That's all I'm saying, and
- 18 we're going to go into camera anyway.
- 19 MR. MERULLA: That's fine. I see
- 20 that as a problem, but respectfully, I disagree. I
- 21 say that we deal with the other issues in-camera,
- 22 but this one here, we just simply do it out in the
- 23 open because I know where it's headed, and we can't
- 24 delay the inevitable. It's kind of -- it's silly.
- MR. EISENBERGER: Okay. It's the

- 1 will of council at any given point.
- 2 So Councillor Pearson.
- MS. PEARSON: Mr. Mayor, thank
- 4 you, and I certainly appreciate city solicitor's
- 5 position, and I agree. I support going in-camera.
- 6 I hate to be at the end of this years from now and
- 7 going we missed something because we didn't get
- 8 in-camera information, so -- or didn't ask the
- 9 questions that we could have asked in-camera.
- 10 So I want to uphold that here
- 11 tonight. I think we should be prudent in doing
- 12 that, and I will support that we take that time.
- 13 If everybody's prudent in moving forward, then
- 14 hopefully it will be very fast in-camera and not
- 15 like the last meeting a month ago, and we can get
- 16 at least the answers to the questions that we have.
- 17 Thank you.
- 18 MR. EISENBERGER: Okay. Thank
- 19 you.
- 20 Councillor Clark.
- 21 MR. CLARK: So if I recall the
- 22 practice in the past, that is, if there are a
- 23 number of councillors who are wanting to seek
- 24 counsel from our legal counsel, then historically,
- 25 the practice is we go in-camera to hear that

- 1 counsel so that the majority doesn't punish the
- 2 minority, and they don't have that opportunity.
- 3 So I'm fine with that. I
- 4 understand that the intent to go in-camera is to
- 5 hear the city solicitor's advice in terms of how
- 6 far we can go with questions and statements on this
- 7 document, and then the intent is to come out of
- 8 camera so it should be relatively short and release
- 9 the document and have the discussion. Correct?
- 10 MR. EISENBERGER: That's the
- 11 intent, yes.
- 12 MR. CLARK: Then I would support
- 13 doing that. I'll move my motion.
- MR. EISENBERGER: So I'll ask for
- 15 a motion to move into camera then. Moved by Clark,
- 16 seconded by Ferguson. The motion is to go into
- 17 camera on all three items at the outset.
- 18 Let me get to the -- what's the
- 19 procedural issue? Microphone, Terry.
- 20 MR. WHITEHEAD: Correct me if I'm
- 21 wrong, once it's on the floor, it's in possession
- 22 of council.
- 23 MR. EISENBERGER: So there was no
- 24 motion made. There were people talking about doing
- 25 motions, but nobody actually formally made a

- 1 motion. I've heard a motion now from Councillor
- 2 Clark, seconded by Councillor Ferguson, to move
- 3 into camera.
- 4 Some have suggested that we
- 5 separate them, which is fine, but let me read the
- 6 motion to move into camera based on subsection
- 7 8.1(b), (d), (e), and (f) of the City's Procedural
- 8 Bylaw 18-270 and Section 239(2)(b), (d), (e), and
- 9 (f) of the Ontario Municipal Act, as amended, as
- 10 the subject matter pertains to personnel matters
- 11 about an identifiable individual, including City
- 12 employees, labour relations, or employee
- 13 negotiations, litigation or potential litigation,
- 14 including matters before administrative tribunals
- 15 affecting the City, and receiving advice that is
- 16 subject to solicitor-client privilege, including
- 17 communications necessary for that purpose.
- 18 So the motion was to separate
- 19 items, so to go into camera on Television City, do
- 20 we need separate electronic votes on all of them?
- 21 On the first item then, Television
- 22 City. Please indicate.
- 23 Councillor Clark.
- MR. CLARK: Again, I feel
- 25 compelled to clarify that we agree that we're going

- 1 in-camera in five to hear from the city solicitor
- 2 to caution us in terms of what questions and
- 3 statements, how far we can go with those questions
- 4 and statements. We're not going in to hear the
- 5 actual report. The report will be released, and
- 6 we'll hear from the lawyer outside in public
- 7 session. We all agree to that because it's a
- 8 little bit different than what we're moving here.
- 9 That's why I'm just making sure.
- 10 MR. EISENBERGER: No, I agree with
- 11 that. I think most everyone else does. That's
- 12 certainly my intent.
- Everyone agreed on that? Yes.
- 14 Other than that those aren't supporting that --
- 15 THE REGISTRAR: It would just be
- 16 Section F of the procedural bylaw and of the
- 17 Municipal Act for 5.2.
- MR. EISENBERGER: Okay.
- 19 THE REGISTRAR: For
- 20 solicitor-client advice.
- 21 MR. EISENBERGER: Right. Okay.
- So on three items then. On the
- 23 first item, Television City, all in favour? Thank
- 24 you.
- 25 On the second item, the city

- 1 manager report. Thank you for that. Unanimous.
- 2 And on the last item, to get to
- 3 item F of the City's bylaw to get advice from our
- 4 solicitor regarding the privilege. All in favour?
- 5 All right. And the vote is -- okay. So that's
- 6 carried.
- 7 All right. Thank you. So I now
- 8 ask the public and any staff to please vacate the
- 9 room for a period of our closed session meeting and
- 10 exit the chambers. The members of the public will
- 11 be invited to return once our deliberations are
- 12 complete. And we will wait the appropriate five
- 13 minutes.
- 14 --- Upon commencing the in-camera session
- 15 at 5:40 p.m.
- 16 --- Upon resuming at 7:50 p.m.
- MR. EISENBERGER: Okay. So we
- 18 have two items to identify. One of them is
- 19 Television City.
- 20 Councillor Farr, you have the
- 21 motion?
- MR. FARR: Move by myself,
- 23 seconded by Councillor Clark. Local Planning
- 24 Appeal Tribunal appeals by Television City Hamilton
- 25 Inc., statement proposal, Ward 2: A, that the

- 1 direction provided to staff in closed session be
- 2 approved; and B, that Report LS19012 and its
- 3 appendices and recommendations respecting Local
- 4 Appeal Tribunal appeals by Television City Hamilton
- 5 Inc. settlement proposal remain confidential.
- 6 MR. EISENBERGER: Okay. Thank
- 7 you. And the seconder was? Sorry, I missed that.
- 8 MR. FARR: Clark.
- 9 MR. EISENBERGER: Okay. Thank
- 10 you.
- 11 E-vote. All that are here have
- 12 voted. Thank you. And that's approved.
- 13 Councillor Jackson, if you would
- 14 take the chair. Please indicate here, and I will
- 15 put forward a motion. Okay.
- MR. JACKSON: Mr. Mayor.
- MR. EISENBERGER: Thank you. And
- 18 it's moved by myself, seconded by Councillor
- 19 Pearson on the city manager recruitment process,
- 20 that: A, that the executive director of human
- 21 resources be directed to offer Janette Smith the
- 22 position of chief administrative officer, city
- 23 manager, effective May the 6th, 2019; and B, that
- 24 the clerk be directed to prepare the necessary
- 25 bylaw to appoint and prescribe the duties and

- 1 responsibilities of the chief administrative
- 2 officer for council's consideration on March 27th,
- 3 2019.
- 4 MR. JACKSON: Good.
- 5 MR. EISENBERGER: Thank you.
- 6 MR. JACKSON: Okay. All right.
- 7 E-vote.
- 8 MR. FERGUSON: Hey, I'm the deputy
- 9 mayor. Hey.
- 10 MR. EISENBERGER: Okay. Where's
- 11 our recordkeeping here? Okay. But you have voted,
- 12 so let's --
- MR. FERGUSON: That's all right.
- MR. EISENBERGER: And the final
- 15 tally is?
- 16 MR. JACKSON: Let the new city
- 17 manager know, Mr. Mayor, it was unanimous.
- 18 MR. EISENBERGER: Thank you all
- 19 very much, and thank you to the recruitment and
- 20 congratulations to Janette Smith, and we'll be
- 21 introducing her on the 27th of March.
- On to the next item, we have a
- 23 direction on the report relative to the Red Hill
- 24 Valley Parkway. We are going to have a
- 25 presentation. There is a --

- 1 So remind me, Madam Clerk, we're
- 2 going to make the report public. Do I need a
- 3 motion in that to waive solicitor-client privilege?
- 4 THE REGISTRAR: You do.
- 5 MR. EISENBERGER: Okay. Thank
- 6 you. So I'll have that motion moved by Clark,
- 7 seconded by Pearson.
- 8 All in favour? I think electronic
- 9 vote on this one would be important to waive
- 10 solicitor-client privilege. Point of order? Yes.
- 11 So just to be clear, I asked
- 12 Janette what she preferred, Ja-nette or Jan-ette,
- 13 and she prefers either one, but thanks for that
- 14 technicality.
- 15 So back to the motion, the move to
- 16 waive solicitor-client privilege on the Red Hill
- 17 Valley Parkway report, electronic vote now. Thank
- 18 you. Also unanimous.
- Thank you very much. I'm now
- 20 going to turn it over to Nicole Auti for her
- 21 overview presentation and then to our expert legal
- 22 counsel. If you could introduce them, by the way,
- 23 that would be helpful.
- MS. AUTI: Thank you, Mr. Mayor.
- 25 So I will turn it over to Eli Lederman to speak to

- 1 you on the matter that you've requested, which is
- 2 the various vehicles and types of investigations
- 3 that are available to council. So Mr. Lederman
- 4 will go through that and certainly can answer
- 5 council's questions on that, subject to the
- 6 conversation that we've just had.
- 7 MR. EISENBERGER: Okay. Just
- 8 before we do, have we made copies of the report
- 9 available to media?
- 10 THE REGISTRAR: No, we have not.
- 11 We -- not confidential copies.
- MR. EISENBERGER: Right. So we
- 13 waive solicitor-client privilege to make the
- 14 document public and to get legal advice in public.
- 15 And so, I'm asking: Are we giving the report to
- 16 media and other people that are interested? And
- 17 you say you've made copies, so are we free to
- 18 release those now? Thank you. I just want to be
- 19 clear. So if they could hand those out, that will
- 20 be great, and I'll turn it back over to our legal
- 21 counsel.
- Thank you, sir. Sorry for the
- 23 interruption.
- MR. LEDERMAN: Thank you, Mr.
- 25 Mayor. I intend to address briefly this evening to

- 1 review some of the facts and the issues raised in
- 2 the report that we've been asked to prepare. Let
- 3 me briefly start by outlining our mandate, and that
- 4 is that we were asked to prepare a report on the
- 5 investigation procedures available under the
- 6 Municipal Act of 2001 and to assist council in
- 7 assessing its options regarding the appropriate and
- 8 most effective investigation procedure to employ.
- 9 As you've seen from what we've
- 10 said in our report, the most effective procedure
- 11 will in large measure depend on the scope of the
- 12 investigation, and the critical question to be
- 13 determined is: What questions do you want answered
- 14 from the chosen form of investigation? Let me
- 15 provide to you some of the factual background as we
- 16 understand them and that have been presented to us
- 17 that led to our review of the different options and
- 18 our ultimate recommendation.
- 19 First, we are aware that there was
- 20 a draft report prepared by Tradewind Scientific
- 21 Limited dated November 20, 2013. That report had
- 22 been commissioned by Golder Associates Limited to
- 23 test friction levels on the Red Hill Valley Parkway
- 24 as part of a larger safety audit.
- 25 In January of 2014, the report was

- 1 submitted to the City's department of engineering
- 2 services. The information and/or findings
- 3 contained in that report were not presented to
- 4 council or to the public. We understand from the
- 5 facts that had been presented to us that in August
- 6 or September of 2018, the director of engineering
- 7 services became aware of this report, and the
- 8 report was then disclosed to the public in February
- 9 of 2019.
- 10 Based upon that factual
- 11 background, council can commence an investigation
- 12 with varying degrees of scope, and the
- 13 determination that this council will make will have
- 14 to have regard to which questions are sought to be
- 15 answered as a result of that factual background.
- 16 Let me briefly outline for you the different
- 17 investigation options.
- There are three types of
- 19 investigations available under the Municipal Act.
- 20 The first is a judicial investigation often
- 21 referred to as a judicial inquiry pursuant to
- 22 Section 274 of the Act. Second, an investigation
- 23 can be carried out by an appointed ombudsman
- 24 pursuant to Section 223.13 of the Act. And third,
- 25 an investigation by the appointed auditor general

- 1 may be pursued under Section 223.19 of the act.
- 2 The procedural powers that are
- 3 granted to both a commissioner who is appointed
- 4 under -- pursuant to a judicial inquiry and to an
- 5 auditor general are both governed by the Public
- 6 Inquiries Act under Section 33. The powers that
- 7 are conferred upon an ombudsman are under a
- 8 separate piece of legislation called the Ombudsman
- 9 Act.
- The powers of both the ombudsman
- 11 and the auditor general pursuant to the legislation
- 12 can be delegated to a third party who would then
- 13 undertake an investigation. This leaves council
- 14 with, in effect, five options: One, it can request
- 15 a judicial inquiry; two, it could appoint an
- 16 ombudsman to conduct the investigation; three, it
- 17 could appoint an ombudsman and direct that he or
- 18 she delegates their powers to an independent
- 19 external investigator to conduct the investigation;
- 20 four, it could request the current auditor general,
- 21 which is Mr. Charles Brown, to conduct the
- 22 investigation or replace Mr. Brown and direct his
- 23 replacement to conduct the investigation; or fifth,
- 24 it could direct Mr. Brown to delegate his powers
- 25 for the purposes of the investigation to an

- 1 independent external investigator.
- 2 Let me briefly address the
- 3 different options under the Municipal Act starting
- 4 with the option of seeking or requesting a judicial
- 5 inquiry or judicial investigation. Let me begin by
- 6 providing an overview of what a judicial inquiry
- 7 has been said to accomplish. The Honourable
- 8 Justice Bellamy, who was the commissioner, the
- 9 judge who was appointed to commission the Toronto
- 10 Computer Leasing Inquiry said this about public
- 11 inquiries:
- 12 Public inquiries are often
- 13 convened in the wake of public shock, horror,
- 14 disillusionment, or suspicion. They are expected
- 15 to uncover the truth. Inquiries are
- 16 investigations, and in that sense, they are
- 17 informative and educational. They are also
- 18 preventative in that they seek to ensure that any
- 19 mistakes uncovered will not be repeated.
- There are some examples. Some are
- 21 quite notable of the types of judicial inquiries
- 22 that have been conducted in the past. As I
- 23 mentioned, Justice Bellamy had conducted the
- 24 inquiry into the Toronto computer leasing matter,
- 25 and that involved an inquiry into all aspects of

- 1 leasing contracts for computers and software
- 2 between the City of Toronto and two companies,
- 3 including into the history of the contracts and
- 4 their impact on the right payers of Toronto.
- 5 That judicial inquiry took three
- 6 and a half years. It consisted of 241 hearing
- 7 days. There were 156 witnesses called to testify.
- 8 There were 124,000 documents, 22 parties
- 9 withstanding, and I'll come back to the standing
- 10 point in a moment. It involved 60 lawyers. The
- 11 costs of that inquiry were in the range of \$11
- 12 million, and the report that was generated from
- 13 that inquiry made 241 recommendations.
- 14 There is another example that is
- 15 the Krever Inquiry, which was an inquiry into the
- 16 contamination of the Canadian blood supply. That
- 17 judicial inquiry took four years, consisted of
- 18 175,000 documents, and 25 parties were granted
- 19 standing, and the cost was approximately \$15
- 20 million for the conduct of that judicial inquiry.
- 21 The scope of a judicial inquiry
- 22 can be set by council. Council can ask for a
- 23 judicial inquiry on a broad range of matters.
- 24 Section 274 of the Municipal Act provides that if a
- 25 municipality so request by resolution, a judge of

- 1 the Superior Court of Justice shall: A,
- 2 investigate any supposed breach of trust or other
- 3 misconduct of a member of council, an employee of
- 4 the municipality, or a person having a contract
- 5 with the municipality in relation to the duties or
- 6 obligations of that person to the municipality; or
- 7 B, it may inquire into any matter connected with
- 8 the good government of the municipality, and under
- 9 those two provisions of the Municipal Act, those
- 10 would be the applicable provisions which would
- 11 warrant or enable council to ask for a judicial
- 12 inquiry into the matters at issue raised here.
- 13 And even though council can
- 14 include in the request for a judicial inquiry the
- 15 scope of that investigation, once a judge -- which
- 16 would be a sitting judge of the Superior Court of
- 17 Justice -- is appointed to commission the inquiry,
- 18 he or she may amend the scope as he or she deems
- 19 necessary to investigate or to commission the
- 20 matters he or she sees fit, and the municipality in
- 21 that circumstance is not consulted on the process
- 22 undertaken by the commissioner.
- With respect to the actual process
- 24 that is engaged by the commissioner, there is no
- 25 specific or prescribed process that a commissioner

- 1 must follow. Each inquiry -- judicial inquiry,
- 2 that is -- has its own policies and procedures
- 3 established by the commissioner at the outset of
- 4 the inquiry.
- 5 There are some standard practical
- 6 and procedural steps that must be or that are
- 7 typically implemented upon the appointment of a
- 8 judicial inquiry. There are logistics involving
- 9 the renting of office space, equipment, and a
- 10 hearing room for the conduct of a hearing. There
- 11 are staffing issues involving a hiring of legal
- 12 counsel, administrative and investigative staff.
- There are rules of procedure that
- 14 are established to seek -- that are drafted and
- 15 seek feedback from stakeholders. There's a
- 16 document management system that are engaged to
- 17 manage an electronic database of documents
- 18 particularly in cases that involve a significant
- 19 volume of documents. It may involve the retention
- 20 of a third party to manage the documents.
- 21 There are issues with respect to
- 22 standing pursuant to a judicial inquiry. Standing
- 23 means that there are parties -- they may be given
- 24 the right to review documents, examine witnesses,
- 25 and make submissions. That process of granting

- 1 standing to certain parties in a hearing, in a
- 2 judicial inquiry, can be time-consuming and often
- 3 causes delays in the process of the inquiry.
- In many ways, that can explain a
- 5 number of the delays or why it is that a judicial
- 6 inquiry takes longer than some of the other forms
- 7 of investigation, which we've outlined in our
- 8 report and which I'll come to. There is the
- 9 investigation process that is part of the inquiry
- 10 which involves collecting documents, identifying
- 11 and interviewing witnesses, and retaining experts
- 12 where necessary, and then ultimately, the judicial
- 13 inquiry culminates in a public hearing where there
- 14 are opening statements, examinations and
- 15 cross-examinations and closing submissions by
- 16 commission counsel and all other parties who have
- 17 standing.
- 18 The powers that are conferred upon
- 19 the commissioner are enumerated under the Public
- 20 Inquiries Act, which allows for a commissioner to
- 21 summon witnesses and documents relevant to the
- 22 inquiry, of course with the exception of privileged
- 23 documents or privileged evidence, and it allows for
- 24 a commissioner to apply to the Court where a
- 25 witness is under summons and doesn't appear. You

- 1 could -- the commissioner can apply to the Court to
- 2 enforce that summons to compel a witness to attend
- 3 and testify.
- 4 Those same powers under Section 33
- 5 of the Public Inquiries Act are also afforded to an
- 6 auditor general who can conduct an investigation
- 7 under the Municipal Act, which I will come to. The
- 8 power to compel a witness under summons to appear,
- 9 that is also provided to the auditor general but is
- 10 not a power that is conferred to an ombudsman under
- 11 the Ombudsman Act.
- 12 Just finishing with the process
- 13 involved with the judicial inquiry is after the
- 14 hearing and the witnesses have all testified. The
- 15 commissioner will deliver a report and can make
- 16 findings of fact, can make findings of misconduct,
- 17 and can make recommendations on policy changes and
- 18 protocols.
- 19 A commissioner's findings under a
- 20 public judicial inquiry cannot establish criminal
- 21 culpability or civil liability. There are no legal
- 22 consequences to a public inquiry, and in fact,
- 23 commissioner's determinations or findings in a
- 24 report following a judicial inquiry have no greater
- 25 impact than the findings arrived at by an ombudsman

- 1 or by an auditor general under the legislative
- 2 provisions.
- 3 There is -- just to highlight that
- 4 point, it has been found by the courts looking at
- 5 the impact of findings made pursuant to judicial
- 6 inquiry that judges determine rights as between
- 7 parties. The commission, meaning the commissioner
- 8 appointed to convene a judicial inquiry, can only
- 9 require and report. Judges who are hearing civil
- 10 or criminal trials, they may impose monetary or
- 11 penal sanctions. The only potential consequence of
- 12 an adverse finding in a judicial inquiry is that
- 13 reputations could be tarnished and recommendations
- 14 are obviously made.
- 15 Let me provide to you some advice
- 16 or input with respect to the typical time frame and
- 17 anticipated costs that may be associated with a
- 18 judicial inquiry, and some of these may be
- 19 considered disadvantages to proceeding with a
- 20 judicial inquiry over some of the other forms of
- 21 investigation that we have identified.
- We are of the view that one
- 23 disadvantage associated with a judicial inquiry is
- 24 its potential time and expense in that a judicial
- 25 inquiry is typically expensive because of the

- 1 length of time that it takes, the number of
- 2 parties, the number of counsel involved, all of the
- 3 issues that I described for you as to some of the
- 4 typical logistics involved in pursuing a judicial
- 5 inquiry.
- It's our experience that the cost
- 7 of an inquiry can range between 2 million to \$11
- 8 million and can take at a minimum about a year and
- 9 a half to come to a conclusion from the time that
- 10 it is commenced. It's our experience that many
- 11 judicial inquiries exceed the initial budget and
- 12 the expected time frame measure. That's because
- 13 there are a number of unanticipated issues that
- 14 arise during the course of a judicial inquiry.
- 15 First, the commissioner may
- 16 broaden the scope of the inquiry that was not
- 17 anticipated or expected. Second, there may be
- 18 legal skirmishes or disputes that arise that delay
- 19 the progress of the inquiry. For example, if
- 20 there's an issue relating to a party who seeks
- 21 standing and is not afforded standing, there can
- 22 then be a debate or a judicial review application
- 23 within the context of the inquiry. The inquiry is
- 24 put on hold while those issues get determined and
- 25 could lead to further delay to getting to the

- 1 answers that are being sought pursuant to the
- 2 judicial inquiry.
- 3 To put it in perspective, another
- 4 -- the judicial inquiry involving the Toronto
- 5 leasing issue, that inquiry cost approximately \$11
- 6 million against its original budget, which we
- 7 understand would have been about \$1 million.
- 8 Let me turn then to the other two
- 9 forms of investigations that we have identified in
- 10 our report and our matters to consider as potential
- 11 avenues to investigate the facts that we've been
- 12 advised about. These are investigations by the
- 13 ombudsman or an investigation by the auditor
- 14 general, and I intend to walk you through how these
- 15 investigations are distinct from judicial
- 16 inquiries.
- 17 One key difference is that there
- 18 is greater control as to who is controlling the
- 19 process whereas a commissioner appointed under the
- 20 judicial inquiry can go beyond the scope where the
- 21 mandate set or expected when an ombudsman or an
- 22 auditor general is appointed to conduct an
- 23 investigation, terms of reference, and questions
- 24 are put to that individual or that group to
- 25 investigate and answer the questions that have been

- 1 framed and posed.
- 2 Investigations carried out by the
- 3 ombudsman and the auditor general are similar.
- 4 Although they are distinct from judicial inquiries,
- 5 the two of them are similar. Let me begin by
- 6 referring you to Section 223.13 of the Municipal
- 7 Act, which expressly allows council to appoint an
- 8 ombudsman to carry out an investigation relating to
- 9 prescribed matters.
- 10 223.13 permits the appointment of
- 11 an ombudsman who reports to council and whose
- 12 function is to investigate an independent manner
- 13 any decision or recommendation made or act done or
- 14 omitted in the course of the administration of the
- 15 municipality, its local boards and such
- 16 municipally-controlled corporations as the
- 17 municipality may specify and affecting any person
- 18 or body of persons in his or her personal capacity.
- 19 Similarly, the provisions of the
- 20 appointment, the provisions of the Municipal Act
- 21 that would allow for the appointment of the auditor
- 22 general to conduct the investigation is set out in
- 23 223.19 of the Municipal Act. It permits the
- 24 appointment of the auditor general to assist
- 25 council in holding itself and its administrators

- 1 accountable for the quality of stewardship over
- 2 public funds and for achievement of value for money
- 3 in municipal operations and that the auditor
- 4 general may exercise powers and shall perform the
- 5 duties as may be assigned to him or her by the
- 6 municipality. In other words, it allows the
- 7 municipality to specifically appoint an auditor
- 8 general to conduct an investigation into specified
- 9 matters.
- 10 Let me address briefly who can be
- 11 appointed as the auditor general or as the auditor
- 12 general's delegate or as the ombudsman or as the
- 13 ombudsman's delegate. The legislation permits the
- 14 municipality to appoint anyone, including external
- 15 investigators, or employees of the City can also
- 16 appoint a retired judge to act as either the
- 17 ombudsman or act as the auditor general for
- 18 purposes of carrying out investigations under these
- 19 provisions that I've just identified.
- 20 So whereas a judicial inquiry
- 21 involves the request of the Court and chief justice
- 22 and the regional senior justice to appoint a
- 23 sitting judge of the superior court to act as a
- 24 commissioner under the ombudsman investigation or
- 25 an auditor general's investigation, anyone can be

- 1 appointed to carry out the investigation, including
- 2 a retired judge or any other independent party, to
- 3 carry out -- or whoever, council or the
- 4 municipality, sees as appropriate to conduct the
- 5 investigation.
- But similar to the judicial
- 7 inquiry, the procedure for an ombudsman
- 8 investigation or an auditor general's
- 9 investigation, there is no prescribed procedure,
- 10 and the ombudsman or the auditor general is devise
- 11 a flexible procedure that is appropriate to the
- 12 scope of the investigation to be carried out.
- 13 Council can direct the auditor
- 14 general or the ombudsman to publish a draft
- 15 procedural guide and invite written feedback from
- 16 stakeholders to ensure public accountability and
- 17 involvement in the process for carrying out the
- 18 investigation.
- 19 At a minimum, the procedure
- 20 involved by an auditor general or ombudsman would
- 21 involve typically the review of documents,
- 22 conducting interviews of witnesses, retaining
- 23 experts, if necessary, and drafting a final report.
- 24 Council can then require the ombudsman or the
- 25 auditor general to provide periodic reporting to

- 1 ensure council and the public is apprised of the
- 2 status of the investigation.
- 3 Like a public inquiry, an auditor
- 4 general can summons witnesses and documents
- 5 relevant to the investigation except of course for
- 6 privileged evidence or documents, and equally, the
- 7 auditor general can apply to the court where a
- 8 witness fails to comply with the summons and can
- 9 obtain an order from the court, compelling a
- 10 witness to testify or to be interviewed, if
- 11 necessary.
- 12 Even though an ombudsman can
- 13 summons witnesses and documents relevant to the
- 14 investigation, except for privileged documents, an
- 15 ombudsman does not have the same power that the
- 16 auditor general does to apply to the Court to
- 17 enforce or to compel a witness to participate or to
- 18 be interviewed the way that the auditor general or
- 19 a commissioner under the judicial inquiry has.
- 20 The ombudsman or the auditor
- 21 general, they can both make findings of fact,
- 22 findings of misconduct, and make recommendations on
- 23 policy changes and protocols much like a
- 24 commissioner of the judicial inquiry can do as
- 25 well. Findings of fact or misconduct cannot be

- 1 used to establish civil or criminal liability
- 2 similar to the process pursuant to a judicial
- 3 inquiry.
- 4 Information received in the course
- 5 of the investigation conducted by the ombudsman or
- 6 the auditor general, including evidence from
- 7 witnesses, are to be kept confidential. However,
- 8 the information from the investigation can be
- 9 disclosed in the final report generated by the
- 10 ombudsman or by the auditor general as the case may
- 11 be.
- 12 With respect to the ability for to
- 13 us advise council with respect to the anticipated
- 14 timing and costs associated with either -- any of
- 15 these investigations in large measure is dependent
- 16 upon the ultimate scope that is determined to be
- 17 pursued. The investigation regarding a more
- 18 limited matter in terms of why a report was not
- 19 disclosed to council and/or to the public. In our
- 20 view, that would probably take between two to four
- 21 months for an ombudsman or an auditor general to
- 22 investigate and deliver a report.
- Of course, the cost of an
- 24 ombudsman's investigation or the cost of an auditor
- 25 general's investigation will also depend on who is

- 1 selected to act as the delegate of the ombudsman or
- 2 the delegate of the auditor general. It would
- 3 depend on whether a retired judge is retained for
- 4 that purpose or whether it is a law firm that is
- 5 retained for the purposes of carrying out the
- 6 investigation or whether it's an accounting firm
- 7 that is retained for that purpose.
- 8 And so, the cost associated with
- 9 that will vary depending on who is selected or
- 10 appointed to carry out the investigation. Based on
- 11 our assessment of cost at this stage without
- 12 knowing the precise scope, we would estimate for a
- 13 four-month investigation as an auditor general's
- 14 investigation or as an ombudsman's investigation.
- 15 As we've said in our report, we
- 16 would estimate the cost if a moderate-sized firm
- 17 was retained for the purposes of conducting
- 18 investigation to be in the range of \$300,000.
- 19 As you've seen from our statements
- 20 and set out in our report, it is not our view that
- 21 a judicial inquiry is well suited for the
- 22 investigation based on the facts as we understand
- 23 them, but rather, that either the auditor general
- 24 or an ombudsman investigation would probably be
- 25 more suited for both a timing and cost perspective

- 1 and for a public disclosure perspective to be the
- 2 most suitable method of getting to the answers
- 3 behind what it is that the municipality is seeking
- 4 to obtain.
- 5 Of course, the selection or the
- 6 appointment of the appropriate individual to
- 7 conduct the investigation is important in that it
- 8 ought to be a neutral independent objective
- 9 investigator to conduct the investigation to ensure
- 10 that all necessary facts are obtained, and a report
- 11 is delivered that is available and accessible to
- 12 the public to understand what recommendations or
- 13 what findings have been made by either the
- 14 ombudsman or the auditor general.
- 15 In our view, a judicial inquiry
- 16 which are initiated are often initiated when there
- 17 are complex facts, large volumes of documents that
- 18 need to be reviewed and assessed, and many, many
- 19 witnesses who need to testify as to a state of
- 20 affairs to allow for a commissioner to arrive at a
- 21 conclusion and to provide recommendations typically
- 22 involve much more complex and more significant
- 23 documents in terms of large volumes of documents to
- 24 deal with those types of matters.
- 25 As an investigation is broader in

- 1 scope and as they are -- if there are larger or
- 2 bigger issues to be reviewed, then in those
- 3 circumstances, judicial inquiries can often become
- 4 the appropriate way of investigating these types of
- 5 matters in coming to a conclusion or
- 6 recommendation.
- 7 Where there are more discreet
- 8 issues that are being sought to be investigated and
- 9 where there are specific recommendations that are
- 10 being sought -- arising out of a specific or
- 11 isolated set of circumstances, in those cases, an
- 12 ombudsman's investigation or an auditor general's
- 13 investigation may be more appropriate and much more
- 14 cost effective.
- 15 As we've indicated in our report,
- 16 the next steps as we've identified them is for
- 17 council to determine the scope of the
- 18 investigation, and subject to the determination of
- 19 that scope, a follow-up report can be prepared for
- 20 the purposes of determining and proceeding with the
- 21 recommended or proposed type of procedure to
- 22 investigate the matters at issue.
- Those are my comments with respect
- 24 to the various procedures.
- MR. EISENBERGER: Thank you very

- 1 much for the thorough presentation on the report.
- 2 We have questions. I'll start with Councillor
- 3 Terry Whitehead.
- 4 MR. WHITEHEAD: Thank you, Mr.
- 5 Mayor.
- 6 I'm surprised that in your
- 7 reference, I read the full Bellamy report in
- 8 regards to the investigation to book -- I think it
- 9 was Councillor Collins that allowed me the
- 10 opportunity to read it and understand some of the
- 11 benefits of these processes and significant regards
- 12 to the changes in procurement in Toronto. But you
- 13 didn't mention Elliot Lake is probably the most
- 14 recent inquiry.
- And in that inquiry -- and I'm
- 16 going to read something from the commissioner
- 17 because this is what I think the public is looking
- 18 for in respect to the process. So first of all,
- 19 every -- the hearings, the investigations, the
- 20 witnesses, everything was on camera, on cable, was
- 21 televised. It was probably the most transparent
- 22 process in regards to the community as practical.
- 23 I don't know if you distinguished that the other
- 24 options as you identified would take the same
- 25 approach.

- 1 MR. LEDERMAN: No, that's correct.
- 2 The judicial inquiry would involve a hearing which
- 3 is conducted in public. The ombudsman's
- 4 investigation or an auditor general's
- 5 investigation, those interviews are conducted in
- 6 private and then ultimately the report made by the
- 7 auditor general or the ombudsman is made public.
- 8 MR. WHITEHEAD: So I want to make
- 9 that distinction right off the bat. It's a much
- 10 more transparent process through the judicial
- 11 inquiry process than the other options you put on
- 12 the table. I'm looking at just one paragraph out
- 13 of the findings, and I think this touches me in the
- 14 context that I came from. Like, I was very
- 15 familiar with the issues in the mall when it was
- 16 originally built. It was a two-year process -- or
- 17 less than two years, just less than two years, so
- 18 you're right about sort of the time frame.
- 19 550,000 pieces of evidence was
- 20 produced, but this is just one paragraph. The
- 21 evidence is inconvertible, that the collapse of the
- 22 section of the roof of Algo Mall was caused by the
- 23 severe rusting of the connection between the one
- 24 column and one beam, but although it wasn't rust
- 25 that defeated the structure of the Algo Mall, the

- 1 real story behind the collapse is one of human, not
- 2 material failure.
- 3 Many of those who coin our
- 4 occupation -- or occupation touched the mall
- 5 displayed failings, its designers, its builders,
- 6 its owners, its architects, its engineers, as well
- 7 as a municipal and provincial officials charged
- 8 with the duty of protecting the public. Some of
- 9 these failings were minor. Some were not. They
- 10 range from apathy, neglect, indifference through
- 11 mediocrity, ineptitude, and incompetence and
- 12 outright greed and obfuscation and duplicity,
- 13 occasional voice of alarm and warning.
- 14 There's some similarities here in
- 15 respect to what's happening here in Hamilton.
- 16 Warning signs went unseen by eyes likely averted
- 17 for fear of jeopardizing the mall's existence and
- 18 the social economic centre of Elliot Lake. I just
- 19 want to frame that in the context of what's
- 20 happening here in Hamilton.
- 21 So we have a major expressway, and
- 22 regardless of the fact that a report appears to be
- 23 allegedly withheld -- because I don't want to get
- 24 into any legal lawsuits, but let's say allegedly
- 25 withheld -- whether it impacted our function as a

- 1 council to make the right decisions at the right
- 2 time.
- 3 And then the other piece of that
- 4 is people died on the Red Hill, and their families
- 5 are asking the same question. Could this be
- 6 averted? I don't know the answers to those
- 7 questions, and the only way that we could appease
- 8 those families is having an open --
- 9 So when you say, like, how
- 10 significant the issue is in regards to the
- 11 community, to me, ultimately, it's about trust and
- 12 ability for this council to make right decisions
- 13 based on the best information before them, and if
- 14 it appears that is called into question, then we've
- 15 lost the confidence of this community. So we have
- 16 a role and responsibility. So this is grander than
- 17 the investigation. This is about an open
- 18 transparent process that enables the broader
- 19 community to understand what actually took place.
- MR. EISENBERGER: Okay. And so,
- 21 I'm going to ask you to focus on --
- MR. WHITEHEAD: So that's a frame.
- 23 MR. EISENBERGER: So we don't have
- 24 a motion on the floor right now.
- MR. WHITEHEAD: I understand.

- 1 MR. EISENBERGER: You're debating
- 2 between options. We should be asking questions of
- 3 the presenter before we get to any recommendation.
- 4 MR. WHITEHEAD: I just framed it.
- 5 So now the --
- 6 MR. EISENBERGER: Okay. Your
- 7 frame is pretty deep.
- MR. WHITEHEAD: -- question is:
- 9 Can the other two models effectively do that as
- 10 opposed to a judicial inquiry?
- MR. LEDERMAN: Well, ultimately,
- 12 that's going to be for the municipality to decide,
- 13 that in my view, what you achieve through an
- 14 ombudsman's investigation or from an auditor
- 15 general's investigation is a report that is made
- 16 available to the public that will make
- 17 recommendations, that will make conclusions about
- 18 what happened, and flowing from that,
- 19 recommendations as to whether anything needs to be
- 20 changed, whether there ought to be any amendments
- 21 or changes in policy or direction so that council
- 22 can move forward.
- 23 All the way that a report from a
- 24 commissioner following a judicial inquiry is made
- 25 available to the public and affects the conduct of

- 1 council. So it's in that sense that the result
- 2 that is generated by either an ombudsman's
- 3 investigation or an auditor general's investigation
- 4 are both important and necessary as part of
- 5 providing public confidence, that the matter has
- 6 been reviewed and investigated and acted upon by
- 7 providing a determination or conclusions, findings
- 8 as to whether there were findings of fact, findings
- 9 of -- if there's any misconduct.
- 10 All of that can be achieved
- 11 through an auditor general's investigation, an
- 12 ombudsman's investigation just as that can be
- 13 achieved through the judicial inquiry process. The
- 14 only difference in terms of public involvement is
- 15 that whereas the public is involved at getting
- 16 information and input from the public for setting
- 17 the procedure that would be employed by the
- 18 ombudsman or auditor general investigation, the
- 19 actual interviews that are conducted are conducted
- 20 privately by the ombudsman or the auditor general
- 21 as opposed to publicly during the course of the
- 22 hearing.
- MR. WHITEHEAD: I'm really happy
- 24 you distinguished that because I think that is the
- 25 fundamental issue from my perspective, the ways

1	where I'm going and what my position is. In your
2	report here under the judicial review, you
3	indicate: "Inquiry into the conduct of any part of
4	the public business of the municipality, including
5	business conducted by the commissioner appointed by
6	the council"
7	Sorry, that's not the one.
8	The one you had here is basically
9	oh, here it is.
10	MR. EISENBERGER: Give us a page
11	number, please.
12	MR. WHITEHEAD: Page 737.
13	"Once a
14	judge is appointed as a
15	commissioner of the
16	inquiry, the municipality
17	is stripped of its ability
18	to control the inquiry
19	process. For example, all
20	the municipality sets is
21	the initial scope of the
22	inquiry. The commissioner
23	may without consulting the
24	municipality expand the
25	scope of the investigation

1	where he or she deems
2	appropriate to go."
3	Does that apply to the other two
4	options?
5	MR. LEDERMAN: No. The other two
6	options allows for the terms of reference to be
7	framed by the municipality to say, "Here are the
8	issues" or "Here are the questions that are sought
9	to be investigated."
L 0	And so, what that allows is it
1	allows some measure of control to ensure that an
12	inquiry that may have been started for the purposes
L3	of investigating a certain set of facts does not
L 4	creep or go beyond what was anticipated, which is
L5	controlled by the commissioner who has the
16	discretion to expand the scope or adjust the scope
L7	as he or she deems fit.
18	So that's the difference between
L 9	the level of control that is framed by the
20	different investigations.
21	MR. WHITEHEAD: So I appreciate
22	so far, we distinguished two distinctful pieces
23	between the other option you identified of the
24	judicial inquiry.
5	One the judicial inquiry is

- 1 clearly a more transparent, open process which the
- 2 community can observe. In fact, in this one, they
- 3 actually even attended -- not just watch it on
- 4 screen, but they can actually attend and watch the
- 5 cross-examinations and the questions and so forth,
- 6 the procedural arguments, whatever took place.
- 7 The second piece that you clearly
- 8 distinguished is that we appear to have control of
- 9 the other two, and this one, if the judicial
- 10 commissioner feels necessary to go beyond that
- 11 scope, they have the ability to do so. To me, that
- 12 speaks of public confidence.
- You know, help me understand if
- 14 I'm a layperson or family member that had somebody
- 15 die on the Red Hill Expressway, would the
- 16 perception of a controlled process versus one that
- 17 is, you know, clearly of much greater independence
- 18 -- maybe it's a rhetorical question.
- MR. EISENBERGER: Well, it's a
- 20 subjective question, so I don't think -- that's
- 21 your opinion. I think we're going to ask our legal
- 22 advisor an opinion on that issue.
- 23 MR. WHITEHEAD: No, that's fair.
- 24 That's fair. I mean, I was asking as a rhetorical
- 25 question. Didn't expect an answer because, really,

- 1 this is about public confidence.
- 2 Thank you.
- 3 MR. LEDERMAN: There is a point
- 4 though that could be answered about that, which is
- 5 that the ability to provide an ombudsman or the
- 6 auditor general with the power to go beyond the
- 7 scope of his or her mandate can also be provided in
- 8 that the municipality could advise or instruct the
- 9 ombudsman or the auditor general to, if they so
- 10 wished, if they feel necessary to go beyond the
- 11 scope. Typically, the municipality would set the
- 12 terms of reference for the auditor general.
- MR. WHITEHEAD: Thank you. I
- 14 didn't see that on the other comparatives. I just
- 15 saw it on the judicial inquiry that that power and
- 16 authority was there, so to me, that was a
- 17 distinguishing piece between the other two and this
- 18 one.
- 19 MR. LEDERMAN: The distinction is
- 20 that in a judicial inquiry, the commissioner --
- 21 there is no way of limiting the commissioner from
- 22 going beyond that. That's not to say that the
- 23 municipality cannot ask the ombudsman or auditor
- 24 general to have unlimited --
- MR. WHITEHEAD: Fair enough.

1 Thank you. 2 MR. EISENBERGER: Thank you. 3 Councillor Merulla. 4 MR. MERULLA: Thank you, Mr. 5 Mayor. 6 And on that point because that was 7 going to be my next question, nowhere in any report 8 that I've read or anything that we discussed was 9 that ever elaborated on. So through you, Mr. 10 Mayor, clearly you at the beginning of your 11 presentation stated that the rationale for 12 supporting either an ombudsman and/or the --13 MR. EISENBERGER: Auditor general. 14 MR. MERULLA: -- the AG was the 15 fact that you had more control over the actual 16 investigation, but now you're saying that, in 17 essence, we can open it up and expand it to the 18 same extent as a judicial review; is that correct? MR. LEDERMAN: You do have more 19 20 control with respect to the appointment of an 21 ombudsman or an auditor general in that the

though, the municipality could choose to open the

legislation enables the municipality to set the

terms of reference or to set the scope of the

mandate to be investigated. As part of that

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- 1 scope and allow the discretion to be given to the
- 2 auditor general to pursue an investigation however
- 3 he or she sees fit.
- 4 That is different than the powers
- 5 which -- or the control which the municipality does
- 6 not have once a commissioner has been appointed,
- 7 which is that a commissioner has the ability to go
- 8 outside of the scope set by the municipality even
- 9 if the municipality had proposed a set frame of
- 10 reference or terms of reference for the
- 11 commissioner.
- MR. EISENBERGER: Councillor
- 13 Merulla.
- MR. MERULLA: Okay. So through
- 15 you, Mr. Mayor, so when it comes to control, we can
- 16 actually eliminate our control and open up the
- 17 scope completely; is that correct? We can give a
- 18 blank cheque with respect to the control.
- MR. LEDERMAN: I quess if -- I
- 20 don't know about the term "blank cheque," but
- 21 certainly with the abilities that the municipality
- 22 has with respect to the appointment of an auditor
- 23 general, it can certainly ask the auditor general
- 24 to go down whatever path he or she feels necessary
- 25 to review the matters at issue.

- 1 MR. MERULLA: Okay. Now, on the
- 2 second point with respect to the private versus the
- 3 public process, that, we have no control over.
- 4 That's correct. So the ombudsman and the AG, they
- 5 will be private interviews and not within a public
- 6 realm; is that correct?
- 7 MR. LEDERMAN: The interviews
- 8 conducted by the ombudsman or the auditor general,
- 9 yes. Those would be carried out in private. The
- 10 report generated by the ombudsman or the auditor
- 11 general would be made public. The process for the
- 12 manner in which the auditor general or the
- 13 ombudsman carries out the investigation may also
- 14 involve the input of the public to insist in
- 15 getting input from stakeholders as to what would be
- 16 the most effective process, so there is public
- 17 involvement in that process if the ombudsman or
- 18 auditor general wish to obtain that.
- 19 MR. MERULLA: Now, by assessing
- 20 which option is the most open and transparent with
- 21 respect to the day-to-day operation of that
- 22 investigation, clearly the judicial review is the
- 23 most open and transparent process. Through you,
- 24 Mr. Mayor.
- MR. EISENBERGER: Solicitor.

- 1 MR. LEDERMAN: It depends on how 2 you define "transparency." Certainly with respect 3 to the testimony of witnesses during a live hearing, that is correct. You would have that ability to have witnesses testify in the public 5 6 through a judicial inquiry whereas the interviews that are conducted by the ombudsman or the auditor 7 8 general are conducted privately, but the reports 9 that are generated both by a commissioner under 10 judicial inquiry and the reports generated by an ombudsman or auditor general are all public. 11 12 MR. MERULLA: Yes, but -- through 13 you, Mr. Mayor -- you must give credence to the 14 scrutiny of the public lens of the entire process 15 that's being unravelled publicly as opposed to a 16 series of private interviews versus something that 17 is publicly scrutinized through judicial review. 18 So I guess the openness of that, in my perspective, 19 is what I'm trying to pinpoint. And public 20 accountability can only, in my opinion, be exposed
- under the glare of public light and scrutiny. 22 So moving on to the actual scope
- of the issue itself, clearly I think everyone 23
- 24 recognizes that I am supporting a judicial review.
- 25 I am doing so because of the openness, the

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- 1 transparency of it as well as there's an aspect to
- 2 this that was brought up in our previous discussion
- 3 surrounding my ability to the city itself.
- 4 My understanding, what we're
- 5 explained at our previous meeting in February was
- 6 that, indeed, going the route of a judicial review,
- 7 there's less liability at stake for the city than
- 8 an AG process and/or an ombudsman process; is that
- 9 correct?
- MR. LEDERMAN: No. There's no
- 11 difference with respect to a potential liability
- 12 regardless of whether it is pursued by way of a
- 13 judicial inquiry or whether it is pursued through a
- 14 ombudsman's investigation or an auditor general's
- 15 investigation.
- 16 MR. MERULLA: Okay. So we did get
- 17 two different answers to that particular question
- 18 because at the previous meeting in February, we
- 19 were told that there's less liability associated
- 20 with a public inquiry. So just a point of note to
- 21 --
- MR. EISENBERGER: That would have
- 23 come from Nicole Auti, I would assume.
- So Nicole, do you want to clarify?
- MS. AUTI: Through you, Mr. Mayor,

- 1 I'm reluctant to have discussions about what we
- 2 discussed in-camera at a previous --
- MR. MERULLA: It wasn't in-camera.
- 4 I think I brought it up --
- 5 MR. EISENBERGER: It had to be
- 6 in-camera.
- 7 MS. AUTI: The only information
- 8 I've given to council on that subject was
- 9 in-camera, so without council authorizing me to
- 10 speak about that in public, I am limited in my
- 11 ability to do so.
- MR. EISENBERGER: Okay. Thank
- 13 you.
- MR. MERULLA: Would you concur
- 15 with what our outside council just stated then is
- 16 my question.
- MS. AUTI: Through you, Mr. Mayor,
- 18 again, I'm reluctant to give council my legal
- 19 opinion in public on that particular point. It's
- 20 beyond what we had discussed in terms of the
- 21 process generally. I'm happy to give that opinion
- 22 in-camera if council would wish me to do so.
- MR. EISENBERGER: Thank you.
- 24 Councillor Merulla.
- MR. MERULLA: Okay. So I'm a

- 1 little concerned about -- I know I heard previously
- 2 in what I said publicly even to what I'm hearing
- 3 today, but regardless, in looking at the next
- 4 focus, now the actual control issue which
- 5 Councillor Whitehead brought up, to me, it suggests
- 6 -- when you say the control aspect and now that
- 7 you've clarified that component too suddenly, which
- 8 is --
- 9 So I need you to elaborate again
- 10 -- because this, again, is new to me at this moment
- 11 -- two things: First, the liability issue is not a
- 12 non-starter, when it was; secondly, no one's ever
- 13 mentioned the fact that we can open up the control
- 14 until now. So can you just elaborate on that point
- 15 as well? So we're talking the control aspect is
- 16 identical between a judicial review and an AG and
- 17 ombudsman process.
- 18 MR. EISENBERGER: Okay. Thank
- 19 you.
- 20 MR. LEDERMAN: Yes. So as I
- 21 indicated before, with a judicial inquiry, there is
- 22 no ability to confine or to restrict the
- 23 commissioner from choosing to pursue matters that
- 24 are outside of the proposed scope or terms of
- 25 reference of the investigation or inquiry selected

- 1 or recommended or requested by the municipality.
- 2 For an ombudsman's investigation
- 3 or an auditor general's investigation, there is the
- 4 ability for the municipality to control the terms
- 5 of reference or the scope of the investigation to
- 6 be carried out by either the ombudsman or the
- 7 auditor general. But as part of that, the
- 8 municipality can advise the auditor general to go
- 9 beyond the scope that it has set just as a judicial
- 10 commissioner has that ability as well.
- MR. MERULLA: But through a
- 12 judicial review, he would go beyond that scope
- 13 without direction; is that correct? So he would
- 14 follow the evidence and go where he needs to go
- 15 whereas in this particular case, we would have to
- 16 direct him to go there; is that correct?
- 17 MR. LEDERMAN: So a commissioner
- 18 would be entitled to expand the scope of the
- 19 investigation as he or she sees fit. A ombudsman
- 20 or an auditor general would not be able to do that
- 21 unless the municipality conferred that right onto
- 22 the ombudsman or auditor general.
- MR. EISENBERGER: Councillor
- 24 Merulla.
- MR. MERULLA: Well, that differs

- 1 again from what we were told. Okay. I'll leave it
- 2 at that for now. I just need to hear everyone
- 3 else. Thanks.
- 4 MR. EISENBERGER: Okay.
- 5 Councillor Danko.
- 6 MR. DANKO: Thank you, Mr. Mayor.
- 7 So Mr. Lederman, on your report
- 8 under what findings can be made, it is findings of
- 9 fact, findings of misconduct, and also
- 10 recommendations on policy changes and protocols, so
- 11 three kind of separate areas of findings that could
- 12 be made. And from my reading of the report, all
- 13 three questions of what findings could be made are
- 14 the same for all three options for judicial
- 15 inquiry, ombudsman, and auditor, correct?
- MR. LEDERMAN: That's correct.
- MR. DANKO: Under the powers of
- 18 the three options, the one that stands out as being
- 19 -- I don't know if this is the right term, but less
- 20 powerful as the ombudsman. So I'm just going to
- 21 leave that one out and focus on the judicial
- 22 inquiry versus the auditor general's report. So on
- 23 the question of summons, is there any difference
- 24 between the two?
- MR. LEDERMAN: Between the

- 1 judicial inquiry and the auditor general
- 2 investigation?
- 3 MR. DANKO: Yes.
- 4 MR. LEDERMAN: No, there's no
- 5 difference. They are both granted the same powers
- 6 under the Public Inquiries Act.
- 7 MR. DANKO: So third parties,
- 8 employees of the corporation. Is there any limit
- 9 to who can be summoned?
- 10 MR. LEDERMAN: No. There is no
- 11 limit. They're either option.
- MR. DANKO: Either option. Okay.
- 13 What about compelling documents, compelling
- 14 internal documents versus external third parties?
- 15 Is there any difference between the two?
- MR. LEDERMAN: There is no
- 17 difference. Both a commissioner under judicial
- 18 inquiry or an auditor general can summons documents
- 19 in the same fashion.
- 20 MR. DANKO: So if a witness is
- 21 summoned and they decide that they don't want to
- 22 appear under either one, what remedies are
- 23 available under either the auditor general and the
- 24 judicial inquiry to compel a witness to testify?
- MR. LEDERMAN: They have the same

- 1 powers in that a commissioner can apply to the
- 2 Court to enforce a summons, and of course, in the
- 3 course of a judicial inquiry, that would involve
- 4 compelling a witness to testify in a hearing, and
- 5 the power to compel a witness to be subjected to
- 6 the interview requested by the auditor general. So
- 7 it's the same power to compel by applying to the
- 8 Court for that remedy.
- 9 MR. DANKO: Okay. So again, same
- 10 between the two.
- MR. LEDERMAN: Yes.
- MR. DANKO: When a witness
- 13 testifies, are they under oath? Are they obligated
- 14 to be truthful in their answers between the two?
- 15 MR. LEDERMAN: They are under oath
- 16 during the course of a judicial inquiry, during a
- 17 hearing.
- 18 MR. DANKO: So under an auditor
- 19 general, they're not sworn in under oath?
- 20 MR. LEDERMAN: In an auditor
- 21 general pursuant to the summons, they would be
- 22 interviewed under oath as well.
- MR. DANKO: Okay. And are there
- 24 penalties if they withhold evidence, if they
- 25 destroy evidence, if they lie while they're

- 1 testifying, or -- I don't know what the term is for
- 2 that, contempt of court or -- you know, perjury.
- MR. LEDERMAN: So perjury is a --
- 4 it is an offence that would have to be pursued as a
- 5 criminal act that would have to be proven in court
- 6 in a criminal proceeding. So it would be subject
- 7 to proof that a witness either during the course of
- 8 sworn testimony during a public hearing or a
- 9 witness who has sworn under oath to give truthful
- 10 evidence during the course of an interview, if it
- 11 were proven that they had provided false evidence
- 12 in either forum, they could be subject to criminal
- 13 sanction for failing to testify pursuant to their
- 14 oath.
- 15 MR. DANKO: And that would be for
- 16 either form, the judicial inquiry or the auditor
- 17 general's report.
- 18 MR. LEDERMAN: That's correct. It
- 19 would all be subject to the obligations of the
- 20 summons, so it's all dictated by the terms of the
- 21 summons.
- MR. DANKO: So to summarize so
- 23 far, the findings are the same. The powers of the
- 24 inquiry are more or less the same. I'm going to
- 25 move on to the independence. So one of the big

- 1 differences that I think has been teased out is
- 2 that a judicial inquiry is conducted in public
- 3 versus the auditor general's investigation which
- 4 would be done privately.
- 5 So for a public perception point
- 6 -- I'm not going to ask you to comment on this, but
- 7 I could see that you would have the perception that
- 8 a judicial inquiry would be more independent. And
- 9 also on the terms of control where the municipality
- 10 sets the scope, the judicial inquiry, there's more
- 11 of a chance that the judge will investigate what he
- 12 thinks needs to be -- he or she -- investigated
- 13 versus an auditor general's where they're subject
- 14 to the terms of reference. However, we just heard
- 15 that that could be on open-ended terms.
- So do you have anything to add on
- 17 the independence of the judicial inquiry versus an
- 18 auditor general's report?
- 19 MR. LEDERMAN: So with respect to
- 20 the independence, in large measure, the
- 21 independence that is achieved through a judicial
- 22 inquiry comes with the independence of the
- 23 judiciary, the fact that there is a sitting judge
- 24 who is appointed to commission an inquiry. There
- 25 is the benefit of -- there can be no suggestion

- 1 that the inquiry is not independent when you have a
- 2 judicial officer appointed to conduct the
- 3 investigation or the inquiry.
- 4 And equally, with respect to who
- 5 may be selected to conduct the auditor general's
- 6 investigation, that if a retired judge or other
- 7 objective or neutral credible party were to be
- 8 retained for the purposes of conducting the
- 9 investigation, I would equally find that
- 10 independence can be achieved through that lens as
- 11 well.
- MR. DANKO: So in selecting the
- 13 judge who would be in charge of a judicial inquiry,
- 14 the municipality wouldn't select that specific
- 15 judge. They would just say, "We apply for a
- 16 judicial inquiry," and that would be selected by --
- 17 MR. LEDERMAN: That's correct. A
- 18 request would be made to the chief justice of the
- 19 Superior Court of Justice of Ontario as well as to
- 20 the regional senior justice of this region for the
- 21 purposes of finding a judge, and it would be up to
- 22 the chief justice and the regional senior justice
- 23 for the purposes of appointing a judge to conduct
- 24 the judicial inquiry.
- MR. DANKO: So that would be

- 1 another level of independence. For the auditor
- 2 general, would it be possible to task the AG to
- 3 select somebody that the municipality is not
- 4 involved with in picking that person? Just so you
- 5 have the same level of independence.
- 6 MR. LEDERMAN: Absolutely. I
- 7 mean, what could happen is the municipality could
- 8 set a process for the selection of the appropriate
- 9 auditor general or delegee to conduct the
- 10 investigation by that process itself being left to
- 11 a neutral party to select a request that an
- 12 independent impartial person be appointed to
- 13 conduct that investigation.
- MR. DANKO: And in your discussion
- 15 there, I think I heard you mention that from a
- 16 public disclosure perspective, an auditor general's
- 17 report would be recommended. Can you elaborate on
- 18 that?
- MR. LEDERMAN: So the report
- 20 that's generated by the auditor general or in the
- 21 case of the ombudsman, that is made publicly
- 22 accessible. And the way that report would be
- 23 written would be to first set out the mandate that
- 24 had been given to the auditor general or to the
- 25 ombudsman. They would review the evidence that

- 1 they had obtained during the course of the
- 2 investigation, and that would include information
- 3 that they had obtained from witnesses.
- 4 It would identify important
- 5 information they obtained from the review of the
- 6 relevant documents, and it would ultimately arrive
- 7 at inclusions, whether they're findings of fact,
- 8 whether they're findings of misconduct, whether
- 9 there are policy recommendations that would then
- 10 flow from that report. All of that would be
- 11 captured in the report and delivered and made
- 12 available to the public.
- MR. DANKO: So moving on to kind
- 14 of the time frame involved here, so I think we've
- 15 established that -- or in my mind, we have anyway
- 16 -- the auditor general's investigation has the
- 17 power to reach similar findings -- the same
- 18 findings. They have the similar powers of
- 19 investigation -- same powers of investigation.
- 20 They have slightly different levels of independence
- 21 but can be made quite similar.
- The one big difference that I
- 23 notice is there's a much, much shorter time frame
- 24 for the auditor general's investigation. So maybe
- 25 you can comment on the benefit of a

- 1 two-to-four-months investigation. I think the
- 2 report said nine months maximum to find out what
- 3 happened. And also of critical importance -- to
- 4 me, anyway -- is to make policy change and
- 5 protocols as soon as possible to change the systems
- 6 that are in place.
- 7 MR. LEDERMAN: Absolutely. And in
- 8 large measure, the time frame that we've identified
- 9 and the differences also is dependent on the
- 10 ultimate scope that is determined to be
- 11 investigated, but subject to the determination as
- 12 to the scope that is to review, by and large, an
- 13 auditor's investigation would be faster in arriving
- 14 at a completed investigation and a list of
- 15 recommendations than a judicial inquiry.
- 16 So that in many respects is by
- 17 virtue of the fact that a judicial inquiry will
- 18 involve the public hearing. There will be issues
- 19 about who has standing to participate in that
- 20 judicial inquiry, all having the effect of
- 21 extending the amount of time it takes to get to a
- 22 final report with recommendations.
- MR. DANKO: So on scope, I have 30
- 24 scope questions that I would have liked to discuss
- 25 in-camera, so I'm going to skip most of those.

- 1 However, I think the two -- they had to -- to where
- 2 the scope may land, the two that are, I think,
- 3 missing from a lot of this discussion, we're
- 4 talking a lot about findings of fact: Where, who
- 5 did what, when did they do it, and why, looking for
- 6 somebody to blame.
- 7 Could you expand a little bit on
- 8 what the findings of misconduct in either judicial
- 9 inquiry or the auditor general scope might look
- 10 like?
- 11 MR. LEDERMAN: That's difficult to
- 12 answer without having a investigation being carried
- 13 out. It would be a difficult thing for me to
- 14 assess as to how a finding of misconduct might be
- 15 arrived at or whether there is any misconduct at
- 16 all. That obviously would be one of the issues for
- 17 the investigator, whether it's a commissioner of an
- 18 inquiry or whether it is an auditor general to
- 19 determine. So it would be difficult for me to give
- 20 you an example of that.
- MR. DANKO: So would it be
- 22 necessary to define findings of misconduct as part
- 23 of the scope in either one?
- MR. LEDERMAN: It wouldn't be
- 25 necessary, but it certainly could be one of the

- 1 questions put to the investigation to ascertain
- 2 whether any acts of misconduct had occurred.
- 3 MR. DANKO: My last question --
- 4 and thank you for indulgence here -- is on
- 5 recommendations on policy changes and protocols
- 6 because, again, to me, that is just as important
- 7 than the findings of fact. Is there -- facts. Is
- 8 there any difference between what we would
- 9 anticipate a judicial inquiry to recommend as far
- 10 as policy changes and protocols versus the auditor
- 11 general?
- MR. LEDERMAN: No. Again, it
- would be entirely subject to the determinations
- 14 made by either the commissioner or by the auditor
- 15 general to them, based on those determinations,
- 16 make recommendations to changes in policies or
- 17 protocols if necessary. Both can flow from either
- 18 the inquiry or from an auditor general's
- 19 investigation.
- 20 MR. DANKO: So again, the big
- 21 difference though is we would anticipate getting
- 22 those recommendations within nine months versus
- 23 years.
- MR. LEDERMAN: Yes, subject of
- 25 course to the scope that is ultimately conferred on

- 1 the investigation.
- 2 MR. DANKO: So I'll conclude
- 3 there, and I think -- I still have an open mind
- 4 here. I haven't made up my mind versus judicial
- 5 inquiry or auditor general's investigation.
- 6 However, I'll listen to the rest of the speakers,
- 7 but I think there is good merit of going with the
- 8 AG report even though that might not be the
- 9 politically expedient choice. So thank you for the
- 10 answers. I appreciate it.
- MR. EISENBERGER: Good questions.
- 12 Thank you very much.
- And good answers as well. Thank
- 14 you.
- 15 Councillor Brenda Johnson.
- MS. JOHNSON: Thank you, Mr.
- 17 Mayor.
- 18 And thank you very much for your
- 19 overall explanation for all three. I know it's
- 20 getting late. I would have preferred probably a
- 21 chart that said this is what they -- and have it
- 22 comparable, so bear with me.
- 23 For your first option, the
- 24 inquiry, I don't know how familiar you are with the
- 25 incidences that you have quoted in here and how

- 1 they started off being something small and end up
- 2 being much larger and way over budget. Would you
- 3 have any opinion as to whether or not maybe the
- 4 scope was too vague, so therefore, they were able
- 5 to go into different directions rather than to stay
- 6 focused and be in one area or can you comment on
- 7 why you think it went so over budget?
- 8 MR. LEDERMAN: I can't really
- 9 speak to the precise reasons as to why past
- 10 judicial inquiries have exceeded their original
- 11 expected time frames or cost other than to tell you
- 12 from our experience with judicial inquiries what
- 13 are some features about judicial inquiries that
- 14 have the ability to cause delay and increase cost.
- 15 And that, in many respects, has to
- 16 do with if there are issues that arise that involve
- 17 legal challenges to the courts that places a delay
- 18 in the hearing. It has to do with the length of
- 19 time that it takes to have witnesses testify live
- 20 at a hearing. That, in and of itself, often takes
- 21 longer than anticipated.
- There are many schedules that get
- 23 adjusted and need to be readjusted as a result of
- 24 witness availability, so there are those general
- 25 features that make the ability to predict or set

- 1 out the time frames associated with the judicial
- 2 inquiry difficult.
- 3 MS. JOHNSON: And thank you for
- 4 that answer. My second question is: You also
- 5 suggested that an office would be required;
- 6 staffing may be required; document management
- 7 system, probably retaining a third party to manage
- 8 those documents, but again, this is where the chart
- 9 would have been helpful. Would the ombudsman and
- 10 the AG require the same criteria?
- MR. LEDERMAN: Likely not, but
- 12 again, it would depend on the scope that is set so
- 13 that if there are masses and volumes of documents
- 14 that are anticipated for an auditor general to
- 15 review or an ombudsman to review, then that could
- 16 affect the manner in which those documents are
- 17 provided to the auditor general or to the
- 18 ombudsman.
- 19 MS. JOHNSON: Okay. Thank you.
- 20 And the previous speaker was doing a good job
- 21 comparing the two, and it took a lot of my
- 22 questions away, but I also wanted to include the
- 23 ombudsman into this, so I could get a fulsome
- 24 understanding.
- So for all three, is it the

- 1 investigation starts, it finishes, but no updates
- 2 are provided in between? Nothing is provided to
- 3 the public to say, "We're almost done" or "We've
- 4 completed three-quarters"? I guess I'm watching
- 5 too much CNN, but is there any way that is -- does
- 6 that make sense? Do we get updates or does the
- 7 public get updates?
- 8 MR. LEDERMAN: Yes. So the
- 9 process in which updates are provided can be
- 10 entirely set by the municipality and can insist
- 11 that the ombudsman or auditor general provide
- 12 updates to the public and to the municipality at
- 13 various points along the way during the course of
- 14 the investigation. So all of the procedures and
- 15 the rules governing those investigations can be set
- 16 and established by the municipality to ensure that
- 17 information is being provided and things are moving
- 18 on track.
- 19 MS. JOHNSON: Okay. And my
- 20 understanding is the auditor general and the
- 21 inquiry can summon witnesses and compel production
- 22 of documents. I heard that conversation before.
- 23 Am I to believe now the ombudsman wouldn't be able
- 24 to compel witnesses, wouldn't be able to compel
- 25 documents?

- 1 MR. LEDERMAN: So the ombudsman
- 2 can issue summonses to witnesses to interview them
- 3 and to issue summons to review documents. The
- 4 difficulty of the difference is if the witness
- 5 refuses to comply, the ombudsman, under the
- 6 legislation, does not have the same power that the
- 7 auditor general or a commissioner has under
- 8 judicial inquiry to apply to the Court to compel
- 9 compliance with the summons.
- MS. JOHNSON: Okay. But the other
- 11 two can.
- MR. LEDERMAN: Yes.
- MS. JOHNSON: Okay. So again,
- 14 this is where the chart would have been helpful.
- 15 The investigation must be conducted in private.
- 16 However, any information that is necessary to
- 17 establish grounds for the conclusions and
- 18 recommendations of the report can be made public.
- 19 Is that not the same with all three, that the
- 20 report becomes public in all three?
- 21 MR. LEDERMAN: That's correct.
- 22 The report is public in all three.
- MS. JOHNSON: Okay. Again, the
- 24 chart would have been great -- for me, anyways.
- 25 Well, no, it does because then I can say this is

- 1 comparing apples to apples for me, and what I'm
- 2 doing is I'm going back and forth from page to page
- 3 to see if there's any inconsistency with the
- 4 language.
- 5 Those are my questions right now,
- 6 and I apologize, I was late coming in today. I was
- 7 at the MPC at 8:30 this morning, so thank you.
- 8 MR. LEDERMAN: Thank you.
- 9 MR. EISENBERGER: Councillor
- 10 Vanderbaek.
- MS. VANDERBAEK: Thank you, Mr.
- 12 Mayor. Through you, Mr. Mayor, I just want to
- 13 clarify something and make sure that I've
- 14 understand it correctly. The judicial inquiry is
- 15 the only vehicle where witnesses are required to be
- 16 interviewed in public; is that correct?
- 17 MR. LEDERMAN: Yes. That is that
- 18 process where there is a hearing in which the
- 19 witnesses would testify live as part of the
- 20 inquiry.
- 21 MS. VANDERBAEK: Thank you. And I
- 22 think I understood you to say that the ombudsman
- 23 and the auditor general are within the control of
- 24 the municipality and the public. So if the public
- 25 wanted certain things to be investigated and

- 1 council agreed to it, council could tell either of
- 2 those two individuals that they need to look at
- 3 those things.
- 4 MR. LEDERMAN: That's correct.
- 5 MS. VANDERBAEK: Is that the same
- 6 thing for the judicial inquiry? Can we tell the --
- 7 I understand that they can expand it where they
- 8 want, but can we tell them that we want these
- 9 things investigated, and are they compelled to
- 10 investigate those things?
- MR. LEDERMAN: So the municipality
- 12 can advise the commissioner that these are the
- 13 things that are sought to be investigated. The
- 14 commissioner typically will follow that request but
- 15 is not limited in that request. The commissioner
- 16 can go beyond that scope and can pursue other lines
- 17 of inquiry.
- 18 MS. VANDERBAEK: Thank you. So
- 19 through you, Mr. Mayor, I want to back up one
- 20 space. Are they compelled to address those
- 21 questions that we ask them to address?
- MR. LEDERMAN: The legislation
- 23 does speak in a form of "shall," that they shall
- 24 investigate the matters that are put before the
- 25 commissioner, so in that sense, it does suggest

- 1 that they are compelled to do it. And practically
- 2 speaking, most commissioners will pursue the
- 3 inquiry that they've been asked to pursue. The
- 4 only difference is is that they are not required to
- 5 limit their inquiry to what has been requested by
- 6 the municipality.
- 7 MS. VANDERBAEK: Thank you. So
- 8 they're not bound by our questions. They could go
- 9 beyond them. I thought that's what you had said.
- 10 If we make application for a judicial review, can
- 11 it be denied? Can it be determined that it is not
- 12 complex enough or it does not meet the criteria?
- 13 MR. LEDERMAN: No. Pursuant to
- 14 the terms of the legislation, if the request is
- 15 made of the chief justice and regional senior
- 16 justice, a commissioner shall be appointed.
- MS. VANDERBAEK: Thank you. And
- 18 my last question: One of the things that bothers
- 19 me about the option of a judicial inquiry is the
- 20 length of time that it potentially could take
- 21 before -- and I'm thinking in particular not so
- 22 much about the entire community, but the portion of
- 23 the community that has suffered heartache and loss
- 24 on that Red Hill Expressway, for them to get
- 25 answers.

- And so, what I'd like to know is:
- 2 Can our appointed auditor general do some kind of
- 3 a simultaneous investigation and report to us on
- 4 the processes that happened and how those might be
- 5 improved?
- 6 MR. LEDERMAN: Before arriving at
- 7 a final conclusion, is that --
- 8 MS. VANDERBAEK: Before the
- 9 judicial inquiry comes back with a final
- 10 conclusion, can simultaneously our auditor general
- 11 employed by the City -- because Charles Brown is
- 12 our auditor general -- can he and his staff
- 13 simultaneously be looking at what happened in his
- 14 view process-wise, procedure-wise in the division
- 15 or the department?
- 16 MR. LEDERMAN: The difficulty with
- 17 running two processes that are investigating the
- 18 same issues at once is that you run the risk of the
- 19 two processes conflicting with each other, both in
- 20 terms of scheduling, timing, and the review of
- 21 documents. So there would be a practical reason to
- 22 avoid commencing two separate processes that are
- 23 evaluating the same issue.
- 24 Typically, what would be done is
- 25 an investigation is carried out either through the

- 1 form of a judicial inquiry or through the form of
- 2 an auditor general's investigation to arrive at the
- 3 conclusions and make recommendations, and it would
- 4 be difficult to have those two processes running in
- 5 tandem where they're investigating the very same
- 6 issues.
- 7 MS. VANDERBAEK: Thank you. Those
- 8 are my questions.
- 9 Thank you, Mr. Mayor.
- MR. EISENBERGER: Okay. Thank
- 11 you.
- 12 Councillor Pearson.
- MS. PEARSON: Thank you. Thank
- 14 you very much, and I do appreciate all the
- 15 questions around the table because they've been
- 16 asked and answered, and I appreciate the answers.
- 17 I've been ticking off, so I don't want to belabour
- 18 anymore if I don't need to.
- I just wanted to ask because I am
- 20 going through just on a different -- so under the
- 21 -- so the judicial inquiry, I understand the powers
- 22 there and I understand the difference with the
- 23 ombudsman, but under the auditor general, it says
- 24 something that's a little bit different that is not
- 25 mentioned in any other, and I'm just trying to find

- 1 it again. My apologies. It has to do with --
- 2 shoot. Sorry.
- 3 Anyways, I'll go in the second
- 4 question, and I'll keep looking for this. The
- 5 other is: Under the judicial inquiry, I understand
- 6 the process if somebody doesn't want to give
- 7 evidence, then it becomes a further legal issue as
- 8 perjury or whatever, gives incorrect answers as
- 9 they're being subject to investigation, correct?
- 10 MR. LEDERMAN: It could be.
- 11 MS. PEARSON: Or closed if it's
- 12 done by an attorney general.
- 13 MR. LEDERMAN: If a witness is
- 14 testifying under oath and it is subsequently
- 15 determined where there are grounds to believe that
- 16 the witness has given false evidence, that witness
- 17 regardless of whether it's through the judicial
- 18 inquiry or through an auditor general investigation
- 19 could be subject to sanctions for perjury.
- 20 MS. PEARSON: And under the
- 21 auditor general, that was always mentioned as far
- 22 as -- it would be obligations of a summons, and
- 23 they would also -- if they don't meet those, they
- 24 would have -- who would set fines and charges?
- 25 MR. LEDERMAN: So those are two

- 1 separate matters. There is a power to issue a
- 2 summons for a witness or to review a document, and
- 3 then if a witness then fails to comply with that
- 4 summons, the investigator, whether it's the auditor
- 5 general or whether it is a commissioner by way of
- 6 the inquiry can apply to the Court to enforce the
- 7 summons.
- 8 MS. PEARSON: So that process is
- 9 totally independent of the investigation though,
- 10 correct?
- 11 MR. LEDERMAN: Correct.
- MS. PEARSON: Okay. Thank you. I
- 13 appreciate that. I can't find the paragraph, so
- 14 I'll ask with indulgence that I may come back and
- 15 ask the question further. Thank you.
- MR. EISENBERGER: Thank you.
- 17 Councillor Clark.
- 18 MR. CLARK: Thank you, Mr. Mayor.
- 19 I appreciate this.
- 20 Mr. Lederman, I wonder if I might
- 21 indulge the committee to give you some bragging
- 22 rights. Could you share with us some of the public
- 23 inquiries that you were directly involved in?
- MR. LEDERMAN: So I could only
- 25 speak to -- our firm has been active in a number of

- 1 judicial inquiries over time. Probably the most
- 2 recent is -- well, there's a public inquiry
- 3 happening now involving the town of Collingwood,
- 4 and our firm is acting for the municipality in
- 5 respect of that inquiry.
- 6 There is an outstanding provincial
- 7 judicial inquiry involving the matters relating to
- 8 the Elizabeth Wettlaufer issues in which our firm
- 9 was acting as commission counsel in that inquiry.
- 10 That hearing has been conducted. The report is
- 11 outstanding, has not been released at this point in
- 12 time but is expected, I think, in July of this
- 13 year.
- MR. CLARK: And your firm was
- 15 involved in both inquiries?
- MR. LEDERMAN: Correct.
- MR. CLARK: And your role in those
- 18 inquiries?
- MR. LEDERMAN: So I was not the
- 20 lead counsel in those matters, and I was not
- 21 involved in those, but my colleagues at my firm
- 22 have been directly involved. And Mr. Lenczner, who
- 23 is involved in this process, he too has been
- 24 involved in judicial inquiries in the past.
- MR. CLARK: That kind of backfired

- 1 on me. I'm sorry, I was hoping for a long list of
- 2 inquiries that you were directly involved with, but
- 3 thank you very much. Your firm is well-known
- 4 across the province, and everyone I know speaks
- 5 quite highly of your firm, so --
- 6 MR. LEDERMAN: Thank you.
- 7 MR. CLARK: -- kudos for that.
- 8 Can we touch briefly on, Mr.
- 9 Mayor, the auditor general, the ombudsman.
- 10 My understanding of the Act is
- 11 that they conduct their interviews in private, and
- 12 in essence, they interview witnesses
- 13 confidentially. Is that correct for both of them?
- MR. LEDERMAN: That during the
- 15 course of the ombudsman's investigation and an
- 16 auditor general's investigation? Yes. They would
- 17 meet with the investigator for the purposes of
- 18 obtaining the information or the evidence from
- 19 them, and that is done behind closed doors.
- 20 MR. CLARK: Thank you. And when
- 21 they compile, draft the final report, they may
- 22 reference the actual quotes from the interviews
- 23 that they have conducted? Do they actually
- 24 reference the individual witnesses that gave that
- 25 quote or do they just give a witness number and

- 1 this was the quote?
- 2 MR. LEDERMAN: Well, they can
- 3 identify the individuals who they spoke with and
- 4 obtained that evidence from.
- 5 MR. CLARK: Thank you. And can
- 6 you clarify whether or not under the Municipal
- 7 Freedom of Information and Protection of Privacy
- 8 Act, whether or not third parties may compel an
- 9 auditor general or an ombudsman to provide their
- 10 notes and their interviews and transcripts of those
- 11 interviews?
- MR. LEDERMAN: Well, they cannot
- in that the process is mandated by the legislation
- 14 that the investigation carried out by the ombudsman
- 15 or auditor general is to be kept confidential.
- MR. CLARK: So to summarize, if I
- 17 may. So the auditor general, the ombudsman have
- 18 the authority to conduct interviews with the
- 19 witnesses who are deemed to be a witness. I'm
- 20 assuming that they somehow take notes. There could
- 21 be transcriptions, I don't know, but at the end of
- 22 the day, the only thing that becomes public is any
- 23 specific quote that the auditor general or the
- 24 ombudsman deems appropriate to add to their report,
- 25 and nobody has an opportunity to see the actual

- 1 transcripts of the interviews.
- 2 MR. LEDERMAN: That's correct.
- 3 The working product would not be part of the
- 4 report, but it would be up to the auditor general
- 5 or the ombudsman to include whatever information he
- 6 or she feels necessary to support the conclusions
- 7 and ultimate recommendations made by the ombudsman
- 8 or auditor general.
- 9 MR. CLARK: Thank you. I
- 10 appreciate that clarification. My colleagues are
- 11 on the table knowing there's a bit of a -- I'm not
- 12 going to say what you're thinking -- political
- 13 junkie and policy wonk. So I was intrigued by your
- 14 comment that an auditor general can find misconduct
- 15 because historically -- and I went through a number
- 16 of auditor general reports. I don't recall too
- 17 many auditor generals actually finding misconduct
- 18 or finding fault with anything.
- 19 MR. LEDERMAN: I quess it would
- 20 depend on the terms of reference or the scope that
- 21 was provided to the auditor general in those cases.
- 22 If there was a specific request as part of the
- 23 auditor general's mandate to ascertain whether
- 24 there's been any act of misconduct, it would
- 25 certainly be open to the auditor general to

- 1 specifically make that finding if, at the
- 2 conclusion of his or her investigation, the facts
- 3 supported that conclusion.
- 4 MR. CLARK: Because I found it
- 5 interesting that -- and I'm trying to remember who
- 6 the auditor general that was involved with the
- 7 tainted blood scandal, and then of course, the
- 8 Krever Inquiry, different reports came back, and
- 9 again, reading many provincial auditor general
- 10 reports and federal auditor general reports, I
- 11 don't see finger-pointing to an individual for
- 12 misconduct or wrongdoing.
- MR. LEDERMAN: Again --
- MR. CLARK: Historically, I have
- 15 not seen it and whereas the Krever Inquiry very
- 16 clearly went to that direction, and it was a public
- 17 request.
- 18 MR. LEDERMAN: Again, I think that
- 19 can be ensured that the municipality, if it so
- 20 chose to appoint an auditor general's
- 21 investigation, could make that a specific mandate
- 22 for the auditor general to assess and make a
- 23 finding as to whether or not any act of misconduct
- 24 has occurred and to make recommendations flowing
- 25 from that.

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- 1 MR. CLARK: I appreciate that.
- 2 You also indicated that there is no ability to
- 3 limit a commissioner from expanding the scope of
- 4 the judicial investigation, so the superior court
- 5 appoints a judge. The judge comes in, receives the
- 6 scope or the information that the municipality
- 7 wants to have investigated. During the course of
- 8 their investigation, they uncover some other
- 9 information that they feel is compelling and a part
- 10 of the inquiry. It has to be a part of the
- 11 inquiry. It has to be compelling to the inquiry.
- 12 It isn't this wide basis they can look at anything
- 13 they want.
- MR. LEDERMAN: That's true. It
- 15 would be -- and the only time it would arise is if
- 16 the commissioner felt it was necessary in order to
- 17 arrive at a conclusion arising from the inquiry.
- 18 MR. CLARK: And so, where are the
- 19 limitations to a justice when conducting a public
- 20 inquiry in terms of how far a field he can or she
- 21 can go with their inquiry? The way -- forgive me
- 22 if I'm misinterpreting, you make it sound like they
- 23 can do anything.
- MR. LEDERMAN: Well, in effect,
- 25 when a commissioner has been appointed, they will,

- 1 practically speaking, pursue the scope that has
- 2 been proposed. All I'm saying is that the
- 3 legislation does not preclude a commissioner from
- 4 going beyond that scope however he or she deems
- 5 fit.
- 6 MR. CLARK: Your wording was very
- 7 precise there, and I appreciate that. Practically
- 8 speaking, you're looking at the scope. That's
- 9 their role, so any expansion of the investigation
- 10 has to be specific to the scope. It came from that
- 11 scope. It's something that they uncovered as a
- 12 "you know what, I need to talk to this witness
- 13 too." So it's not as -- as my colleagues here are
- 14 not familiar with this stuff, it's not a question
- 15 of "let's just widen this out and spend a bit more
- 16 money."
- 17 MR. LEDERMAN: I guess it depends
- 18 though on when or how the scope could get expanded.
- 19 It may be that the commissioner determines to
- 20 expand the scope even before documents have been
- 21 reviewed in which case that then becomes the new
- 22 scope of the inquiry.
- MR. CLARK: You're saying there's
- 24 no rules from the superior court that guides the
- 25 commissioner in his role or her role.

- 1 MR. LEDERMAN: It's not that there
- 2 are no rules. It's that the legislation as far as
- 3 the statute goes does not constrain a commissioner
- 4 appointed to conduct an inquiry to be limited to
- 5 what the terms of reference or whatever the scope
- 6 has been proposed by the municipality.
- 7 MR. CLARK: So are there rules
- 8 that the justice would have to deal -- has to live
- 9 by? It's the judge ordered by the superior court.
- 10 It can't just -- I mean, I just find it
- 11 fascinating that you're suggesting they can go as
- 12 far field as they want with no recrimination. That
- 13 seems to be what you're saying.
- MR. LEDERMAN: All I can tell you
- 15 is what the legislation does. The legislation does
- 16 not preclude a commissioner from going beyond the
- 17 scope that has been proposed to him or her.
- 18 MR. CLARK: And it doesn't prevent
- 19 a commissioner from, strictly speaking, sticking to
- 20 the narrow scope that was provided from the
- 21 municipality.
- MR. LEDERMAN: Not at all. In
- 23 fact, the commissioner could very well just stick
- 24 to what had been proposed without going beyond the
- 25 scope of the mandate. That's correct.

1	MR. CLARK: I'm curious why and
2	this is my last question, if I may.
3	MR. EISENBERGER: Through the
4	chair.
5	MR. JACKSON: Thank you, sir.
6	MR. EISENBERGER: Thank you.
7	MR. CLARK: Why in your report
8	you referenced the Krever Inquiry and the Toronto
9	leasing scandal. Comparatively speaking, they're
10	like apples and oranges to the scope of the
11	investigation that we're talking about here. The
12	Krever Inquiry was a national incident affecting a
13	significant population, affected many employees,
14	many public civil servants. Clearly the cost of
15	the Krever report was significant, given the scope.
16	The Toronto leasing scandal ended
17	up being the largest corruption scandal in the
18	history of the Province of Ontario and ended up
19	being a significant inquiry because of those
20	allegations. It's kind of hard to have those

23 to find out what happened with the non-disclosure

compared to we're looking at an inquiry here where

there was a non-disclosure of a report, and we want

24 report.

21

22

So in your report, you say a

- 1 million dollars to \$11 million. \$11 million scares
- 2 people significantly. That's a significant number.
- 3 What's the likelihood of that, given that this is
- 4 a small municipality and this is a relatively
- 5 narrow issue?
- 6 MR. LEDERMAN: So hard for me to
- 7 assess the likelihood in terms of the cost.
- 8 MR. CLARK: But would you agree
- 9 with me that the Krever example and the Toronto one
- 10 is the far end of the scale?
- MR. LEDERMAN: I would as compared
- 12 to the issues that seemed to be -- that needed to
- 13 be investigated presently, and that's in large
- 14 measure why it is that in our view, a judicial
- 15 inquiry is not the most effective mechanism for
- 16 investigating the issues to be determined and for
- 17 answering the questions that this city council
- 18 requires to be answered.
- So when you look at the other
- 20 examples of judicial inquiries, you're absolutely
- 21 right. They involve a much more significant -- the
- 22 number of witnesses that are involved are
- 23 presumably much more significant. The number of
- 24 documents to be reviewed are probably much more
- 25 significant. Again, it depends on the scope that

- 1 is set for the investigation, but when you look at
- 2 the past judicial inquiries that have been
- 3 conducted, they are all for the most part on the
- 4 other end of the spectrum in terms of the cost and
- 5 time that it would take to investigate the issues
- 6 that are in play.
- 7 In the present case, it may be
- 8 that the issue to be determined or to be
- 9 investigated is fairly discreet, and that in and of
- 10 itself would militate in favour of a much more
- 11 narrow approach to coming to a quick and fulsome
- 12 investigation as to what happened and provide
- 13 recommendations to ensure that any changes that
- 14 needed to be made are made without delay.
- MR. EISENBERGER: Okay. Thank
- 16 you.
- 17 Councillor Clark.
- 18 MR. CLARK: Thank you.
- 19 So the priority or the motivation
- 20 for the recommendation is a quick and fulsome
- 21 report back on the incident, and it's fair to say
- 22 that some around this table are seeing the priority
- 23 as having an open and transparent examination of
- 24 the witnesses and in open public format so that
- 25 people can actually see what's going on. The

- 1 challenge for me and many of my colleagues is that
- 2 when an auditor general and an ombudsman do that
- 3 type of investigation, the examinations remain
- 4 confidential except for any quotes that they choose
- 5 to put in a report.
- And so, can you see the difference
- 7 in terms of what the end goal is? If the end goal
- 8 for a municipality is to be open and as transparent
- 9 as possible than having a public hearing -- which
- 10 we're used to in this setting all the time.
- 11 Municipalities have public hearings virtually every
- 12 week -- that type of public hearing is a priority
- 13 for a municipality over and above having the quick
- 14 brief report where the information is actually
- 15 hidden for all times in transcripts that no one
- 16 will ever see. Can you see the difference?
- 17 MR. LEDERMAN: I understand.
- 18 These are the issues that --
- MR. CLARK: -- we're wrestling
- 20 with.
- 21 MR. LEDERMAN: This council will
- 22 have to make a determination. All I can tell you
- 23 is how the different investigations are distinct
- 24 and how they're similar, and ultimately, it will be
- 25 for this council decide which is the most

- 1 appropriate in light of the factual circumstances
- 2 to be investigated in this matter, having regard to
- 3 the amount of time, having regard to the expense,
- 4 and having regard to what is sought to be achieved
- 5 and to what degree is the process in the different
- 6 investigative methods, to what extent are they
- 7 transparent if accessible to the public.
- 8 MR. CLARK: And finally, I just
- 9 want to thank you and your colleague sincerely.
- 10 This was produced to you in short order, and you
- 11 have come back with a comprehensive report to us in
- 12 short order, and the report has helped inform us in
- 13 our deliberations, so I sincerely thank you for
- 14 that, and I thank Nicole for her efforts to
- 15 reaching out to you. She had mentioned to us that
- 16 she knew about the Collingwood judicial
- 17 investigation and knew the solicitors, so this has
- 18 been very helpful for us.
- So thank you, all three of you.
- MR. LEDERMAN: Thank you.
- MR. EISENBERGER: Okay. Thank
- 22 you.
- 23 Councillor Partridge.
- MS. PARTRIDGE: Yes, thank you,
- 25 Mr. Mayor, and I want to thank everyone for the

- 1 great questions that have been over the last couple
- 2 of hours, and I've just got a couple of very quick
- 3 ones. I think my comment, first of all, is -- the
- 4 struggle is as the former speaker said and others
- 5 have said around the table with the judicial
- 6 inquiry.
- 7 The perception by our residents
- 8 may be that it's going to happen right away, and
- 9 they're going to get an answer right away, and that
- 10 it will be a public process. Well, we know it will
- 11 be a public process, but it is going to take a
- 12 length of time.
- So my question, Mr. Mayor, through
- 14 you: In terms of the judicial review that would be
- 15 done, how would the public be informed about the
- 16 public aspects of it? So in terms of the timings
- 17 of the hearings, the locations, etc.
- 18 MR. LEDERMAN: So typically, what
- 19 happens is once the commissioner has been
- 20 appointed, counsel for the commissioner will then
- 21 get appointed as well. A website is typically
- 22 established in which all of the information
- 23 regarding timelines, schedules, attendances of
- 24 witnesses are published and updated.
- MS. PARTRIDGE: Okay. So that is

- 1 the public part of it, and then that would also be
- 2 shared on the City's website or councillors can put
- 3 it in their newsletters.
- 4 I'm just looking for some feedback
- 5 on that, Mr. Mayor.
- 6 MR. LEDERMAN: Yes. All of that
- 7 would be publishable and can be disseminated
- 8 through various vehicles.
- 9 MS. PARTRIDGE: Okay. Thank you.
- 10 And in terms of the length of time, would the
- 11 public also be informed about that as we move
- 12 along? So at each stage, is there going to be an
- 13 update of the website? Will there be any kind of
- 14 notifications put in the newspaper? I'm assuming
- 15 that all of that cost would be borne by the
- 16 municipality.
- 17 MR. LEDERMAN: Yes, it would, and
- 18 there would be updates. So to the extent that
- 19 schedules that were set need to be extended because
- 20 there's been some delay or contingency that has
- 21 occurred, the schedule would be updated on the
- 22 website and the extensions obviously, yes. All
- 23 costs associated with the inquiry would be borne by
- 24 the municipality.
- 25 MS. PARTRIDGE: Thank you. I

- 1 appreciate that. I'm just going to ask Councillor
- 2 Merulla --
- 3 Could you just move over to the
- 4 next chair, sir, so that I can have some -- much
- 5 better, much better. Now you're in their line of
- 6 vision, but that's okay. I don't care about that.
- 7 I appreciate that, Councillor.
- 8 And so, my next question is on the
- 9 auditor general because it's my understanding that
- 10 the auditor general certainly, Mr. Mayor, appears
- 11 from the report to have more power than the
- 12 ombudsman. Is that accurate?
- MR. LEDERMAN: Yes, in one
- 14 respect, and that is with respect to the ability to
- 15 enforce a summons whereas the ombudsman can issue a
- 16 summons. The ombudsman cannot apply to the Court
- 17 under the legislation to enforce it or as the
- 18 auditor general cannot only issue the summons but
- 19 could also apply to the Court to enforce it.
- MS. PARTRIDGE: Okay. Thank you.
- 21 And Mr. Mayor, my next question is with regards to
- 22 the process for applying -- I don't know if
- 23 "applying" is the right word, but for an auditor
- 24 general, what is the process that the City would
- 25 have to go through? I'm assuming we would not use

- 1 our own auditor general.
- 2 MR. LEDERMAN: It would be open to
- 3 the legislation to use your auditor general, but in
- 4 order to achieve any such question about the
- 5 ability of the auditor general to conduct the
- 6 investigation, I would suspect that the most
- 7 appropriate way would be to have a delegate of the
- 8 auditor general conduct the investigation, and a
- 9 determination could be made about the process that
- 10 would be employed to appoint or select an
- 11 independent and qualified investigator to conduct
- 12 the investigation.
- 13 MS. PARTRIDGE: But in your
- 14 report, Mr. Mayor, when I read through the report
- 15 and I'm looking at page 13 of 37, it says who could
- 16 be appointed as auditor general. It's pretty
- 17 broad. Could you just unpack that a bit for those
- 18 who are watching -- God bless you -- and for those
- 19 that are here.
- 20 MR. LEDERMAN: Yes. So the role
- 21 performed by the auditor general to conduct this
- 22 investigation can be anyone selected for that
- 23 purpose. It could be a law firm to conduct the
- 24 investigation. It could be a retired judge to
- 25 conduct the investigation or any individual who is

- 1 deemed to be independent and impartial can be
- 2 appointed for the purposes of conducting this
- 3 investigation under the auditor general's
- 4 investigation.
- 5 MS. PARTRIDGE: And the process
- 6 for that?
- 7 MR. LEDERMAN: That would be
- 8 established by the municipality and can be done in
- 9 consultation with public stakeholders to sort out
- 10 and devise the most open and transparent process
- 11 for that investigation to be carried out.
- MS. PARTRIDGE: And the City --
- 13 through you, Mr. Mayor, if I understand correctly
- 14 then with an auditor general, it would be the
- 15 municipality that -- with legal advice that would
- 16 set the scope of the inquiry. Is that accurate?
- 17 MR. LEDERMAN: Yes. The
- 18 municipality and council can provide the terms of
- 19 reference or the scope to be said or to be
- 20 investigated by the auditor general to conduct the
- 21 investigation. The only issues that would need to
- 22 be considered as part of that is the cost to be
- 23 borne if the scope -- the larger the scope of the
- 24 investigation, then the cost of the investigation
- 25 would have to be taken into account as well.

- 1 MS. PARTRIDGE: Okay. Thank you.
- 2 And I'm not going to suggest, Mr. Mayor, for one
- 3 minute that cost isn't important, but you know,
- 4 we're dealing with something much bigger than that
- 5 here, and I think, you know, the accountability,
- 6 the trust, the transparency, the history of what
- 7 has happened on the Red Hill, and the history of
- 8 what has happened since 2013, all of those are
- 9 coming into play.
- 10 And you know, I'm hesitant to have
- 11 the City set -- or the municipality set the scope
- 12 with an auditor general, although, you know, I like
- 13 the idea of the auditor general, but on the other
- 14 hand, if there is need to expand the scope, I would
- 15 rather have that happen and be an opportunity to --
- 16 you know, to really be able to dig into it as well
- 17 and to bring others outside of our municipality,
- 18 you know, other levels of government that may be
- 19 appropriate, and that, you know, again, should not
- 20 be the decision of the municipality but the
- 21 decision of whoever's doing the judicial inquiry.
- So thank you, Mr. Mayor. I do
- 23 appreciate all the answers.
- MR. EISENBERGER: Okay. Thank
- 25 you.

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1 But scope will be decided by the 2 municipality on all the options, correct? 3 MR. LEDERMAN: That's correct. 4 MR. EISENBERGER: Councillor 5 Pauls. 6 Thank you. As I sit MS. PAULS: 7 here and we talk about being transparent and all 8 that, I say as my fellow, John-Paul Danko, said, 9 there wasn't much difference between the auditor 10 general and the judicial other than a few other things like being private and all that. I think 11 12 the perception, we need to have the public that an 13 auditor general is almost the same as judicial. 14 haven't done a great job of doing that. We're 15 learning little by little. I find out that if the 16 auditor general finds any criminal activity, that 17 we could pursue that, can we? 18 MR. LEDERMAN: Yes. If I 19 understand the question correctly, the auditor 20 general would be conferred the same power that a 21 commissioner under a judicial inquiry has to 22 investigate the matters at issue, including 23 determining whether there's been acts of

misconduct, and the report is public and accessible

to the public as well.

24

25

- 1 MS. PAULS: Exactly. So I believe
- 2 the public needs to know that because if we assume
- 3 we're just doing a judicial because we know there's
- 4 criminal activities going on, you know, I don't
- 5 know if that's what we want to do. If the auditor
- 6 general can do all this a much faster time where
- 7 the public -- I can't imagine two, three years
- 8 going on with this. If we could do the same thing
- 9 as the auditor general, I think we should let the
- 10 public know that it is a great investigation, just
- 11 like we're learning tonight. So that's my opinion
- 12 in this.
- MR. EISENBERGER: Okay. Thank
- 14 you. And that is a debating point, so -- and I
- 15 appreciate that, so you can weigh into that when
- 16 and if we have a motion on the floor. I'm going to
- 17 go to Councillor Ferguson.
- MR. FERGUSON: Thank you, Mr.
- 19 Mayor. There has been a lot of good questions, and
- 20 I appreciate Councillor Pauls going ahead of me
- 21 because she said there's not a big difference. I
- 22 think there is. The big difference is the auditor
- 23 general and the ombudsman -- correct me if I'm
- 24 wrong, sir -- will take two to three months and
- 25 cost about \$300,000, where the judicial inquiry

- 1 will take three years and anywhere between one and
- 2 \$11 million.
- And you're writing really a blank
- 4 cheque because we lose control of that once you
- 5 turn it over to judicial inquiries. That's what I
- 6 heard, if that's correct, and if they see they want
- 7 to agree to the scope, they could spend up to \$11
- 8 million, which would be a big sticker shock to our
- 9 constituents, I believe. And of course, all three
- 10 of them, there's a public report presented, and the
- 11 public report will review all the witness testimony
- 12 and come to conclusions, state facts and what
- 13 happened.
- 14 As I listen around the table, one
- 15 of the concerns I got, there's some members of
- 16 council that went public with their view for a
- 17 judicial inquiry before we heard from the expert,
- 18 and that puts them in a tough spot, and our expert
- 19 is telling us don't go the judicial inquiry route
- 20 because it's going to take too long. I mean, in
- 21 three years' time, what else is going to get messed
- 22 and covered up before we have policy change.
- 23 MR. EISENBERGER: So we're getting
- 24 kind of into the debate territory, so I'm going to
- 25 ask everyone from here on 2.4 to ask specific

- 1 clarification questions of the solicitor. Once we
- 2 have a motion on the floor, we'll have a discussion
- 3 about which direction we should go. That's the
- 4 debating point.
- 5 And Councillor Whitehead.
- 6 MR. FERGUSON: Yeah, lighten up.
- 7 I mean, I never interrupted you while you were
- 8 talking.
- 9 MR. EISENBERGER: You're one to
- 10 call interfere on -- breaking the basis.
- 11 MR. FERGUSON: Could you get
- 12 control of the councillor, please, because I don't
- 13 like being interrupted.
- MR. EISENBERGER: Okay.
- MR. FERGUSON: Thank you.
- MR. EISENBERGER: I'll have him
- 17 stop interrupting you while you're interrupting
- 18 him.
- MS. PAULS: Can I say something?
- MR. EISENBERGER: No, not right
- 21 now. Hang on. Hang on. No, no. Thank you.
- 22 Councillor Ferguson, please have
- 23 the floor. You're asking questions of clarity?
- MR. FERGUSON: I'm getting clarity
- 25 as I go.

- 1 MR. EISENBERGER: Please stick to
- 2 clarity issues.
- 3 MR. FERGUSON: You've lost my
- 4 momentum.
- 5 MR. EISENBERGER: I'm sorry, but
- 6 I'm also trying to get to --
- 7 MR. FERGUSON: I understand.
- 8 MR. EISENBERGER: -- the debating
- 9 point that everyone wants to get to.
- 10 MR. FERGUSON: I'm a first-time
- 11 speaker.
- MR. EISENBERGER: Yes, you are.
- MR. FERGUSON: Thank you. And so,
- 14 the difference is two to three months versus three
- 15 years and \$300,000 versus one to \$11 million --
- 16 sorry?
- 17 MR. EISENBERGER: So can you let
- 18 them finish and I'll monitor the meeting. You can
- 19 -- I'll turn to you when the time is appropriate
- 20 for you to make your points.
- 21 Councillor Ferguson, please
- 22 continue.
- MR. FERGUSON: I was interrupted.
- 24 I was just trying to summarize what I had said
- 25 earlier.

- 1 MR. EISENBERGER: Carry on.
- 2 MR. FERGUSON: If Councillor
- 3 Whitehead could just stay quiet for a minute, I'll
- 4 finish in a hurry.
- 5 And so -- well, the difference is
- 6 I've already summarized one to 11 million versus
- 7 \$300,000. I don't want to be accused of debating
- 8 again because I think I've already made this point,
- 9 but I get constantly interrupted.
- And so, I think we need, sir, to
- 11 have a transparency and trust matter resolved. I
- 12 would suspect we also have a pecuniary duty to
- 13 watch costs, and we have to strike that balance.
- 14 Would you agree with that?
- 15 MR. LEDERMAN: Well, ves. I would
- 16 think that the ultimate determination that council
- 17 makes with respect to which investigation procedure
- 18 should be pursued, in my view, would have regard to
- 19 all of the factors that you've identified,
- 20 including the length of time it would likely take
- 21 to complete the different forms of investigations
- 22 and the estimated costs and how they are different
- 23 in the different forms of --
- MR. FERGUSON: We have to strike
- 25 that balance.

- 1 MR. LEDERMAN: It is certainly --
- MR. FERGUSON: Based on the expert
- 3 advice that you're providing to us today, would you
- 4 also agree that if we go the attorney general
- 5 route, it's probably appropriate to have RAG hire
- 6 an outside AG, so it's not seen -- we can't be
- 7 accused of covering something up because we've gone
- 8 external?
- 9 MR. LEDERMAN: My view about the
- 10 efficacy of the investigation would be BS. I would
- 11 recommend that if the municipality were to
- 12 determine to investigate this through the form of
- 13 an auditor general's investigation, that a
- 14 independent impartial person --
- MR. FERGUSON: Outside.
- 16 MR. LEDERMAN: Outside would be
- 17 appointed to conduct the investigation as
- 18 experience.
- 19 MR. FERGUSON: Okay. Thank you.
- 20 I agree with that. And you also agree that it'd be
- 21 a good idea to give them the options you suggested
- 22 we could to advance the scope if they discover
- 23 something. They need to follow that string.
- MR. LEDERMAN: I don't know that I
- 25 would extend it to give a blanket discretion to

- 1 someone appointed to conduct an investigation, but
- 2 perhaps there is a middle ground to say if during
- 3 the course of your investigation you feel it
- 4 necessary to expand the scope, then that should
- 5 then be brought forward for approval before they go
- 6 off and pursue that line of investigation on their
- 7 own accord.
- 8 MR. FERGUSON: Okay. So Mr.
- 9 Mayor, that's my -- so there's outside AG with
- 10 ability to expand scope if they're required.
- 11 That's all.
- 12 MR. EISENBERGER: Okay. Thank
- 13 you. I'm just going to go down the list here
- 14 because I think they're all second-time speakers.
- So Councillor Pearson --
- 16 Okay. Promise? So real quick?
- MR. FARR: One question.
- MR. EISENBERGER: Okay.
- 19 MR. FARR: Just stating it's from
- 20 the report and it's to our outside legal. So on
- 21 page 8 of 37, Mr. Mayor, fourth paragraph down --
- 22 third paragraph down. Once a judge is appointed as
- 23 the commissioner of the inquiry, there are a number
- 24 of practical and logistical requirements, and it
- 25 goes on. So then in the fourth paragraph, it says:

1	"After
2	this initial meeting, the
3	commissioner will retain
4	legal counsel."
5	So we'll hire a judge, and that
6	judge will hire a lawyer or lawyers through you?
7	MR. LEDERMAN: On the judicial
8	inquiry.
9	MR. FARR: On the practical and
10	logistical considerations of the judicial inquiry
11	segment of this.
12	MR. EISENBERGER: Mr. Lederman.
13	MR. LEDERMAN: That's correct.
14	The commissioner who is the judge appointed to
15	conduct the inquiry would then have counsel
16	retained for the purposes of advising the
17	commissioner in the conduct of the inquiry, and
18	that is a significant role played by counsel to
19	give advice and to effectively conduct the inquiry
20	and assist the commissioner in conducting an
21	inquiry.
22	Equally, the municipality would
23	have its counsel representing its interests during
24	the course of the inquiry. So there's a separate
25	layer of lawyers that are retained specifically for

- 1 the purpose of acting as commission counsel.
- 2 MR. FARR: Right. But then the
- 3 commissioner also goes out, hires a lawyer, and
- 4 then hires a chief administrative officer, so a CAO
- 5 who oversee logistics. It says here a
- 6 communications officer liaise with the media.
- 7 Junior lawyers -- so more lawyers -- researchers,
- 8 investigators, law clerks, administrative,
- 9 technological support, through you, then the crux
- 10 of my question: Would you suggest in having been
- 11 part of judicial inquiries and part of -- that a
- 12 lot of the costs are borne on staffing?
- MR. LEDERMAN: Certainly that is
- 14 an element of the cost. Staffing is a significant
- 15 element of the cost. Again, it's largely dependent
- 16 on the number of documents, so if there are a
- 17 significant volume of documents, then that might
- 18 require additional staff to help manage those
- 19 documents so that they are available for the
- 20 commissioner in the process of conducting the
- 21 inquiry.
- So it is dependent on the scope
- 23 and the degree of information that is needed to be
- 24 reviewed for the purposes of conducting the
- 25 inquiry, but generally speaking, inquiries will

1	necessarily involve lawyers being retained for the
2	purposes of acting as commission counsel, and then
3	there are a number of back office or other
4	administrative functions that need to be performed,
5	all adding to the expense.
6	MR. EISENBERGER: Okay. Thank
7	you.
8	Councillor Pearson.
9	MS. PEARSON: And I found the
10	question. Just for the relevance on it, Mr.
11	Lederman, thank you again, and you've answered,
12	again, some more questions that I had. It's on
13	page 31 of 37, so just going through some of the
14	differences, and it mentions under Section 223.20,
15	no waiver of privilege. I think this is under the
16	AG.
17	"A
18	disclosure to the auditor
19	general under Section 1 or
20	2 does not constitute a
21	waiver of solicitor-client
22	privilege, litigation
23	privilege, or settlement
24	privilege."
25	Could you just clarify that? It's

- 1 the only area that I saw this, page 31 of 37.
- MR. LEDERMAN: Yes. So the way
- 3 this provision works under the Municipal Act is
- 4 that when a auditor general or an ombudsman compels
- 5 the production of documents -- and equally would be
- 6 the case for the compulsion of documents by a
- 7 commissioner under a judicial inquiry -- what that
- 8 means is it can access documents and compel the
- 9 production of documents, but if there are
- 10 privileged components of that document, it does not
- 11 amount to a waiver of privilege.
- So they cannot necessarily get
- 13 access to documents that are subject to privilege,
- 14 and that would be the case in both a inquiry and a
- 15 auditor general's investigation. So the ability to
- 16 obtain evidence is always going to be subject to
- 17 the caveat that there may be certain information
- 18 that is protected by privilege. Obviously those
- 19 protections are not ironclad, and challenges could
- 20 be made to assess whether privilege is validly
- 21 asserted over certain information or documents.
- MS. PEARSON: Thank you for that
- 23 and appreciate it, but they stand as the same all
- 24 across the board for all three opportunities.
- MR. LEDERMAN: In terms of the

- 1 ability to compel information, it's all subject to
- 2 the ability to maintain privilege over the
- 3 information if there is privilege.
- 4 MS. PEARSON: Thank you for that.
- 5 And I guess the last question I just want to ask,
- 6 there was a comment about if it was the AG or the
- 7 ombudsman, their investigation notes are
- 8 confidential, so I guess the question would be --
- 9 and I'm assuming -- number one: Can council direct
- 10 the release of these notes at an appropriate time?
- 11 MR. LEDERMAN: No. The
- 12 legislation is clear that they shall be kept
- 13 confidential, so that cannot be compelled.
- MS. PEARSON: And we would assume,
- 15 then, that whoever prepares it embellishes as much
- 16 as possible on all the information provided in the
- 17 public documentation, correct?
- 18 MR. LEDERMAN: I'm sorry, I'm not
- 19 sure I follow that question.
- MS. PEARSON: So if it's the AG
- 21 that we get, whoever takes on that responsibility
- 22 -- and I support it being somebody appointed by our
- 23 AG outside of our AG here -- that that person would
- 24 contain as much as the information as they see
- 25 absolutely proper to include in public

- 1 documentation, that would be given to us.
- 2 MR. LEDERMAN: The information
- 3 that is published by the auditor general conducting
- 4 investigation report would include in that report
- 5 the information he or she felt necessary to support
- 6 the conclusions or the recommendations arrived in
- 7 that report which is made publicly accessible.
- MS. PEARSON: Thank you for that.
- 9 That's it. Thank you, Mr. Mayor
- 10 MR. EISENBERGER: Thank you.
- 11 Councillor Clark.
- MR. CLARK: I have a motion to
- 13 read and it's seconded by Councillor Merulla.
- 14 Shall I read it now?
- 15 MR. EISENBERGER: So I do have two
- 16 additional speakers so --
- Okay. Well, let me ask the mover
- 18 of the motion if he's interested in having one more
- 19 speaker that's here waiting to speak -- sorry,
- 20 you're on the motion? Okay.
- 21 Go ahead, Councillor.
- MR. CLARK: Thank you.
- Be it resolved that outside legal
- 24 counsel in consultation with the acting city
- 25 manager and the city solicitor be directed to

- 1 prepare the necessary documents to file an
- 2 application before the superior court to initiate a
- 3 judicial investigation pursuant to the Ontario
- 4 Municipal Act, Section 274.1(a) and (b),
- 5 investigation by a judge, and the Public Inquiries
- 6 Act, Section 33, Public Inquiries, and that the
- 7 scope of the judicial investigation could include
- 8 but not be limited to the following questions which
- 9 are to be referred to outside legal counsel for
- 10 review and a report back to the General Issues
- 11 Council Committee.
- 12 And I can speak to it or --
- MR. EISENBERGER: Yes. Please,
- 14 yes. So I'm going to assume that we're done with
- 15 legal advice and we're into a debate on the motion.
- MR. CLARK: Do you want me to move
- 17 receipt of the --
- MR. EISENBERGER: Do we need to do
- 19 that exactly at this point?
- MR. CLARK: I don't know.
- 21 MR. EISENBERGER: I don't think
- 22 so. Perfect. Carry on.
- MR. CLARK: Thank you, sir. I
- 24 appreciate that.
- 25 So regardless of the outcome of

Τ	any vote on this matter, the discussion has been
2	most important and enlightening. I have
3	appreciated and respected the candour, the
4	professionalism, the respect, and the leadership of
5	our mayor and council colleagues as we learned
6	about the non-disclosure of the Tradewind
7	Scientific friction report.
8	This revelation has caused many
9	residents to have a crisis of trust and faith in
10	their municipal government. It is best summed up
11	through the words of Dr. David Smosarski, who lost
12	his daughter, Olivia, in a horrific accident on the
13	Red Hill Parkway. In a letter to council, Dr.
14	David Smosarski said and I quote:
15	"I am
16	sure you can imagine my
17	surprise and anger to hear
18	that there was information
19	pertaining to the surface
20	of the Parkway 18 months
21	before the passing of my
22	daughter. I do not
23	understand why this report
24	was not brought to the
25	knowledge of the public and

1	yourselves for so many
2	years. It is extremely
3	disconcerting and shakes
4	the foundation of belief
5	and trust in our municipal
6	government."
7	In many respects, Mr. Mayor, this
8	issue is an existential crisis for us as one of the
9	most important priorities for any municipal
10	government is public safety. Our abilities to make
11	informed decisions about the safety of the Red Hill
12	Valley Parkway were undermined by the
13	non-disclosure of the document in November 2013 and
14	September 2018.
15	The recent revelation has damaged
16	the public's trust in this city and in the city
17	council. Council was surprised, and quite frankly,
18	shocked to learn about the existence of this
19	report. Even more significant was the profound
20	feeling of betrayal. The revelation of this report
21	has put councillors in an unprecedented,
22	unenviable, and literally an untenable position.
23	Going forward, I personally have a
24	few priorities in how we move. I think we all want
25	the truth, the complete truth that gives a full

- 1 picture. I want full transparency. I want to
- 2 ensure that it does not happen again. I want to
- 3 rebuild trust with our citizens and to improve our
- 4 government structure and policies.
- 5 Personally, I have witnessed a
- 6 number of judicial investigations, auditor general
- 7 and ombudsman reports over the years. The
- 8 acceptance of their veracity of such reports has,
- 9 in my experience, always been the highest in a
- 10 judicial investigation. Why? Simply because it is
- 11 a completely open and transparent process.
- 12 Observers, media, citizens are free to witness the
- 13 examination of the witnesses and experts.
- I cannot understate the importance
- 15 of this opportunity to rebuild public trust. The
- 16 complexities of human nature lead people to trust
- 17 their own observations more than reading the
- 18 interpretations of witness examinations, statements
- 19 of politicians, and dare I say media reports.
- In a judicial investigation,
- 21 people trust, accept and believe the findings of a
- 22 justice not just because of their total judicial
- 23 independence and the completely 100 per cent arm's
- 24 length process but because the testimony,
- 25 cross-examinations, and presentations of evidence

- 1 is held in an open public setting where any
- 2 interested party can attend. They can watch the
- 3 recordings. They can read the transcripts. This
- 4 process is the only option that rebuilds trust with
- 5 complete surety.
- In the end, that is the real
- 7 issue, the loss of trust. We cannot rebuild trust
- 8 by delegating an ombudsman and auditor general to
- 9 conduct an investigation where their interviews of
- 10 witnesses are private and remain confidential.
- 11 While the substance or the quotes of their
- 12 testimony may be referenced in a final report, the
- 13 actual interviews remain forevermore confidential,
- 14 and as we confirmed here tonight cannot even be
- 15 accessed through Freedom of Information request.
- I am aware of the trepidations
- 17 regarding the potential cost of the judicial
- 18 investigation. I feel compelled to mention that
- 19 comparing a possible judicial investigation on this
- 20 narrow Hamilton issue to other more complex public
- 21 inquires like the Krever Inquiry into the tainted
- 22 blood or the Toronto leasing scandal appear to me
- 23 to be examples of where the scopes were much
- 24 broader, provincial or even national, and their
- 25 final costs were well expected in those inquiries.

1	The Collingwood judicial
2	investigation seems to be much more in line with my
3	expectations in terms of a narrow scope. From my
4	personal perspective, the open, transparent arm's
5	length nature of a council requesting the Ontario
6	Superior Court to appoint a judge to conduct a
7	judicial investigation where witnesses are
8	examined, cross-examined in open session is what is
9	needed and what is wanted by this community.
10	As such, I support a judicial
11	investigation. I have amended my motion to refer
12	the questions and the second part of the motion to
13	outside counsel for review and consideration to
14	help us formulate the final scope in terms of
15	reference for such an investigation.
16	I want to thank Councillor Merulla
17	for seconding the notion, and I leave your vote to
18	your good judgment. Thank you.
19	MR. EISENBERGER: Thank you.
20	Councillor Whitehead.
21	MR. WHITEHEAD: Thank you, Mr.
22	Mayor.
23	As Commissioner Bélanger said at
24	the ILA Inquiry, I think it's very important to
25	stress that the commission while created by the

- 1 government and publicly funded is entirely
- 2 independent. It draws its conclusions and makes
- 3 recommendations based entirely upon evidence
- 4 presented to the commissioner by commission counsel
- 5 during the hearings.
- 6 The submissions of the
- 7 participants and upon the advice it received from
- 8 the invited experts and publicly accessible
- 9 roundtables at no time during the entirety of his
- 10 proceedings was there been any form of intervention
- 11 or interference by government or by any participant
- 12 or third party. All the commission funding
- 13 recommendations were accepted by the attorney
- 14 general, my request for a time extension and
- 15 release the budget contingency funds were granted
- 16 without reservation or exception.
- 17 And then the other thing I wanted
- 18 to highlight because there is a distinction between
- 19 what a attorney general can compel versus judicial
- 20 commission, and the commissioner actually addresses
- 21 here. That's why there's inconsistency with the
- 22 advice you're getting and what actually took place.
- 23 The commissions process have been completely
- 24 public and transparent, and I have resisted all
- 25 request to make them less so, except in two

- 1 circumstances.
- 2 I ordered non-publication of
- 3 photographs of the deceased victims and ordered
- 4 blacked out irrelevant personal information
- 5 concerning the spouse of the participant. So
- 6 that's the only exception -- and there was a lot of
- 7 request in this hearing because I followed it. The
- 8 beauty about it is you could follow it from
- 9 Hamilton because it was all posted as well.
- 10 So when I take a look at -- and
- 11 Councillor Clark really summarized it nicely. This
- 12 isn't just about cost. This is not just about
- 13 whether it's going to be six months or a year and a
- 14 half. What this is about is public confidence in
- 15 the decision-makers around this table.
- This issue is relevant to the
- 17 families who lost their lives or members on the Red
- 18 Hill Expressway. It's relevant to them. You can't
- 19 shake that. It's relevant to our critics. It's
- 20 relevant to our friends. This issue has profoundly
- 21 impacted many people in this community and the
- 22 confidence of this council to have an open
- 23 transparent process in which people could observe,
- 24 participate, and be happy with in regards to the
- 25 accountability process.

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1	I'm not suggesting the other
2	alternatives that have been put on the table are
3	bad processes. I don't think it answers the call
4	in regards to meeting what the general public in
5	our community expect, and that's an open and
6	transparent process in which they can observe the
7	questioning, the documentation that's being
8	presented to the judge or the commissioner.
9	You just have to be and Elliot
L O	Lake and take a look at the profound impact this
1	process it was part of clearing the air, and the
L2	council was under significant pressure because they
L3	were the ones that bought them all. They're the
L 4	ones that took the engineering ports, and they're
L5	the ones that were more aware of what the issues
L 6	were prior to the collapse than the broader
L7	community.
18	Well, guess what, ladies and
L 9	gentlemen around this table, the general public,
20	regardless of how the media has printed this out
21	and presented it and regardless whether staff
22	apologized for a report that we didn't get, there's
23	still many people out there that believe that
24	council's responsible for the actions of our staff
5	and how this unfolded

- 1 So at the end of the day, we're
- 2 decision-makers. We ultimately have to make the
- 3 right decision and what process we embark on that
- 4 is fair, that is independent, that is transparent,
- 5 and the other -- the attorney general doesn't even
- 6 come close. Judicial review is the only choice,
- 7 and anyone that doesn't support that, shame on you.
- 8 Thank you.
- 9 MR. EISENBERGER: Councillor
- 10 Danko.
- 11 Shame on that statement.
- 12 Go ahead, sorry.
- MR. DANKO: Thank you, Mr. Mayor.
- I want to know what happened, and I think much
- 15 more importantly, I think the families out there
- 16 who have lost loved ones or have been injured or
- 17 have -- you know, even something as minor as
- 18 suffered a collision and had to face the financial
- 19 consequences of that on this road, they need to
- 20 know what happened. I'm really struggling and I'm
- 21 still struggling with this decision.
- I think the points that Councillor
- 23 Clark made so eloquently about the value of the
- 24 public hearing process, I genuinely really take
- 25 that to heart. The transparency involved there is

- 1 so important. However, I'm also interested in the
- 2 way forward, and in that sense, I'm talking about
- 3 changing our policies and our protocols to make
- 4 sure that something like this doesn't happen again.
- 5 And in that sense, I'm not just
- 6 talking about Red Hill. I'm talking about our
- 7 entire corporate culture, any complacency that
- 8 might be there, the expectations that are on our
- 9 staff to what their professional obligations are,
- 10 and to be frank, fear of reprisals from council.
- 11 And I think those are issues that need to be
- 12 addressed as soon as possible.
- So listening to this discussion,
- 14 my head is still saying to go with the
- 15 recommendations of our expert legal counsel, and
- 16 that a judicial investigation is not the best way
- 17 forward. Now, having said that, I -- honestly, I
- 18 still don't know which button I'm going to push,
- 19 but I'm very -- "pleased" is not the right word,
- 20 but I'm glad that we were able to have this
- 21 discussion in public so that anybody that wants to
- 22 know how seriously we all take this issue and that
- 23 the choices that were in front of us, it's all out
- 24 there on the public record.
- 25 So in terms of the motion that's

- 1 on the table, just one final point on that is that
- 2 most of the scoping that's in there -- and I
- 3 understand that we're going to ask this to go back
- 4 to our legal counsel to help define the scope, but
- 5 I want to make sure that beyond the findings of
- 6 fact, that we're also asking specifically for
- 7 findings of misconduct and also recommendations for
- 8 policy changes and protocols. So I'll leave it at
- 9 that. Thank you.
- 10 THE CHAIR: Thank you.
- 11 Councillor Merulla.
- MR. MERULLA: Thank you, Mr.
- 13 Mayor. Now, I want to thank Councillor Clark and
- 14 Councillor Danko and Whitehead. I think the bottom
- 15 line is that everybody wants to find the best
- 16 solution, and I look at this issue only because of
- 17 how intimately involved I've been with that road
- 18 from construction to where we are today, but more
- 19 importantly, I think it's important to clearly
- 20 state tonight, again, that the road is safe if it's
- 21 used as prescribed, and we know that. And that's
- 22 what we have concurrence with even with studies
- 23 subsequent to the one that wasn't shared with us.
- So when we look back to where we
- 25 were in 2007 to where we are today, we know

- 1 anecdotally that we had a number of residents claim
- 2 to us that there were issues with the road, whether
- 3 it be slippery, whether it be issues when it's wet,
- 4 and we as a council -- particularly Councillors
- 5 Jackson, Collins, and myself -- brought forward --
- 6 and Connely as well last term, and I believe
- 7 Whitehead was involved with one issue as well -- a
- 8 number of very thorough investigations or motions
- 9 for staff to report back on.
- 10 Even the girls -- the families of
- 11 the young girls that were killed on the road were
- 12 named in these motions on behalf of the family. We
- 13 brought forward those motions. We were thanked by
- 14 those families for doing that, and all along the
- 15 line, every report we received, we continually
- 16 added to the capital and operating aspects of the
- 17 road to ensure public safety.
- 18 We also never took their answer
- 19 for granted. When they came back, when staff came
- 20 back with the report and say, "Everything's fine,"
- 21 we didn't just take it for granted and accept it.
- 22 We continued to push forward and it's all
- 23 documented. And because we pushed forward, we were
- 24 able to get the reports that basically now people
- 25 are concerned about. Those reports were, in

- 1 essence, borne by the work of the committee and
- 2 council as a result of complaints from the
- 3 community, and I think that's been lost in this
- 4 entire discussion.
- 5 So in the scope itself, granted we
- 6 need to know where things went wrong, if they did
- 7 indeed, but also we need to have the scope
- 8 incorporate where we did go right because at no
- 9 time did committee and council simply take anyone's
- 10 word for it that everything is fine. That said,
- 11 everything's fine. We said, "Well, you know what,
- 12 glad you told us that but dig deeper and deeper and
- 13 deeper," and we have a great deal of successes as a
- 14 result.
- 15 Also, what's really interesting is
- 16 that this report that's in question in 2013, the
- 17 one thing that would have happened from that report
- 18 would have led to another report. At no time was
- 19 there a direct correlation between that report and
- 20 the raw results, which by the way, even if they
- 21 would have sent that report out to the public as a
- 22 press release, unless you're trained to decipher
- 23 what it means, it's like reading a Chinese Bible.
- 24 It's just you wouldn't, as a layperson, understand
- 25 what that raw data means. That's why we hire staff

- 1 and engineers to interpret that data to deduce what
- 2 the conclusions are, and we rely on that heavily.
- 3 So when I have private discussions
- 4 with staff about "Hey, what's going on with these
- 5 anecdotal complaints surrounding slippery roads?"
- 6 and they tell me, "No, there's nothing there," and
- 7 if I then publicly state --
- 8 And back in 2015, when I brought
- 9 forward my motion with respect to photo radar,
- 10 specifically targeted the friction, and I share
- 11 that with everyone, including the public with the
- 12 staff member, and he clearly stated that -- when I
- 13 asked him, "Is that road equivalent or better than
- 14 the 400-series highways?" The response was: "It
- 15 surpassed the standards of the provincial
- 16 highways."
- So everybody is aghast when they
- 18 heard this, but -- now, let's rewind to what I had
- 19 mentioned earlier about the apology from the MTO.
- 20 The real interesting component to this is that what
- 21 he has said based on the facts, it's true because
- 22 the MTO, as I mentioned, uses an inferior process
- 23 to assess the raw data, and the process that he
- 24 used was a superior process, which then the outcome
- 25 came in below standard, which then begs the

- 1 question: How many other highways throughout this
- 2 province are in that shape where they're signing
- 3 off as being acceptable when they're below
- 4 standard?
- 5 So this is a massive issue
- 6 province-wide, and more importantly, the issue of
- 7 the MTO is an incredibly important aspect to this
- 8 investigation because within that same series of
- 9 questions, he references the fact that the MTO had
- 10 done some testing in 2007. So there was
- 11 communication between our staff and the MTO.
- 12 So the bottom line is this: We
- 13 need to know what happened, but we need to know
- 14 what happened with all stakeholders. And as you
- 15 know, we are a creature of the province, and the
- 16 MTO at the end of the day controls who we are, and
- in this particular case, not only do they control
- 18 who we are, they were right in the middle of this
- 19 and never shared it with us hence the reason why
- 20 we've asked for that apology and hence the reason
- 21 why Andrea Horvath asked for that apology today.
- 22 And keep in mind that some might
- 23 think that that might be heavy-handed against the
- 24 Province, but you have to understand that this is a
- 25 new government, and it was the old government that

- 1 would be held accountable. So there is some merit
- 2 to suggest that they being part of this process
- 3 should be paying for a portion of this, but I can
- 4 assure you that --
- 5 I was reading the Washington Post
- 6 the other day and something really stood out in my
- 7 head in reading that democracy dies in darkness,
- 8 and one thing that we learned about this process is
- 9 that there's a big difference between watching
- 10 someone answer a question under oath publicly
- 11 versus reading a report of somebody being privately
- 12 interviewed. It's a world of difference, folks,
- 13 and what we owe the public is that public interview
- 14 under oath rather than that private one, that
- 15 someone is just going to transcribe subsequently.
- 16 So say what you will about this.
- 17 I know some people are throwing the \$11 million
- 18 amount. I think Councillor Clark said it
- 19 brilliantly. I think that is exaggerated for
- 20 whatever reason, but it's a range, and granted,
- 21 could be -- I don't believe it's that high, but I
- 22 don't see this as an expense. I see this as an
- 23 investment, and it's an investment about the most
- 24 important thing in a democracy or in a governing
- 25 body has to offer, and that's trust.

- 1 And when you're in a situation
- 2 where public believes that that trust had been
- 3 breached, there's no price tag that should be
- 4 attached to trying to remove that or try to resolve
- 5 that problem. And to suggest that the money is
- 6 more important than extorting that trust, I think,
- 7 it's problematic.
- 8 So although I don't think it's
- 9 going to be that much, it probably will be costly,
- 10 but it's far more costly to have the conspiracy
- 11 theories continue down the road for years to come,
- 12 when in reality, I know I'm not afraid of the
- 13 truth. I welcome a public inquiry and I look
- 14 forward to it, and I appreciate your time. Thank
- 15 you.
- 16 THE CHAIR: Great. Thank you.
- 17 Councillor Vanderbaek.
- MS. VANDERBAEK: Thank you, Mr.
- 19 Mayor. I said this a little earlier, and you know,
- 20 I think that everybody realizes if they've watched
- 21 this meeting tonight, they have to realize that
- 22 everyone around this table wants to be open and
- 23 wants transparency. And for me, this is as much
- 24 about the public trust as it is about the need for
- 25 an investigation. And so, I think for some, it's

- 1 going to be about assessing blame, but in fact,
- 2 it's really about finding truth.
- And so, my pragmatic self says an
- 4 auditor general can do the job, and we have an
- 5 auditor general and his staff that I believe are
- 6 fully capable of doing this. They are fully
- 7 capable of doing this. They lack one thing, and
- 8 that is supreme independence from this corporation
- 9 and from this council, and I don't think that what
- 10 they can bring to the table is a rebuilding of
- 11 trust in our community.
- 12 And you know, there's a lot of
- 13 noise in the community in the last few weeks, and I
- 14 don't mean that negatively. I just mean there's
- 15 been a lot of noise about -- busy noise about the
- 16 need for a judicial inquiry, and I don't want to
- 17 make a decision based on an overwhelming amount of
- 18 demand for a judicial inquiry. I want to make a
- 19 decision based on what I think is the best way to
- 20 make the need in this community and this council.
- 21 And really, a good part of that is
- 22 recognizing the terrible heartbreak that discovery
- 23 must have caused many families in our city who have
- 24 lost or had injured members of their family and
- 25 ripped the scab off of a healing pain that probably

- 1 brought back to day 1 everything that happened and
- 2 the possibility that maybe something could have
- 3 been done to avoid that dreadful void in their
- 4 life.
- 5 And I think that when you look at
- 6 the depth of that, we have a responsibility to
- 7 recognize it. And so, for me, the very reasons
- 8 that our expert advisor brought to the table about
- 9 why we should not do a judicial inquiry are
- 10 probably the very reasons why we should. You know,
- 11 it's the freedom of the commissioner to expand
- 12 scope. It's out of council's control in many ways.
- 13 The cost potential, that scares me a bit, but more
- 14 importantly, there's a time frame to be looked at.
- 15 And so, I mean, that's one reason
- 16 why perhaps it's not been recommended. It will
- 17 take a long time. It might take a long time, but
- 18 you know, there's public interviews. We can't
- 19 direct them where we can direct an ombudsman or an
- 20 auditor general. I think that those reasons for
- 21 not doing a judicial review are the very reasons
- 22 why in this community at this point in time we need
- 23 to do it.
- I think we owe it to ourselves to
- 25 bear our soul and let what happens happen and what

- 1 had happened publicly and give people the
- 2 opportunity to freely go to a website and check
- 3 what's going on and know what's coming next. And
- 4 everything has a cost. You stand up. Your feet
- 5 hurt. You sit down and your rear end spreads.
- 6 Everything has a cost, and we need to --
- 7 So in my estimation, we have to
- 8 accept that cost. And it may cost us money and it
- 9 may be hard and we might not like the answers, but
- 10 we have a responsibility, I believe, to put aside
- 11 what might be our usual way of dealing with things
- 12 to try and save money and to do what we know works
- 13 anyway and put ahead of it the trust building that
- 14 this community needs to see in us.
- And so, for that reason, I will be
- 16 supporting this motion even though my Scottish
- 17 blood and my Dutch husband probably would think
- 18 that I should be doing something a little more
- 19 cost-efficient. I just believe that we have a very
- 20 real responsibility in this instance to do more.
- 21 So that's where I stand. Thanks.
- MR. EISENBERGER: Thank you.
- Councillor Wilson.
- MS. WILSON: Thank you, Mr. Mayor.
- 25 This is an extremely difficult decision. I so

- 1 appreciated so many of the questions -- in
- 2 particular, because he asked all of mine and he did
- 3 it in a much better job than I could ever do,
- 4 Councillor Danko, comparing the different vehicles
- 5 and the manner of investigation -- and what I took
- 6 from that series of questions was that, in fact,
- 7 there is very little difference in that it depends
- 8 on the will and the direction of this council.
- 9 We can provide the auditor general
- 10 an unlimited scope in relation to this. That
- 11 person can engage with the public and seek feedback
- 12 in a public place about the scope. They can report
- 13 periodically at their discretion to the public on
- 14 how their work is going, but I think the
- 15 reservation is in the trust and confidence. And it
- 16 has been stated on many occasions that is the only
- 17 currency that government can provide, but I think
- 18 having made that comparison and listening to the
- 19 recommendation of the external counsel, I worry
- 20 that -- and acknowledging that the interviews and
- 21 the testimony provided in those interviews will not
- 22 be public. It will be private.
- 23 I have the greatest of faith in
- 24 whomever -- if someone was chosen on behalf of the
- 25 auditor general -- I am an institutionalist by

- 1 heart -- that they would take this exercise
- 2 seriously. Their reputation is on the line as
- 3 well, and when they lifted those quotes out of the
- 4 interview, they would do so in respect of the
- 5 process in knowing that the families want answers,
- 6 knowing that the corporation needs answers, knowing
- 7 that staff needs answers, so I have no doubt at all
- 8 in the integrity of whomever was chosen.
- 9 And then I listen to Councillor
- 10 Clark's compelling statement, and I don't discount
- 11 at all, as Councillor Merulla said, the bomb that
- 12 comes from at least being given the opportunity to
- 13 turn on your monitor, and if you so -- if you are
- 14 inclined to follow the testimony and what that
- 15 offers to someone who has some -- whose family has
- 16 been forever maimed, I can't imagine what that
- 17 feels like, but I can only partially imagine what
- 18 that might feel like to be able to have that public
- 19 opportunity.
- So I am really torn, but I also
- 21 feel obliged, and although this may not sit well,
- 22 that we have overall a larger trust in confidence
- 23 issue that extends far beyond this file. I don't
- 24 think it is unique to this council and to this city
- 25 because it is part of the rise of populism, and

- 1 we're seeing a distrust of institutions across the
- 2 western hemisphere and beyond, and that worries me
- 3 very much.
- And that is also something that I
- 5 think if we are -- and I believe we are --
- 6 committed to the principles of trust and confidence
- 7 and the values behind them, that we must be
- 8 committed to them in everything that we do. That
- 9 means considering as a corporation everything from
- 10 our FOI process, everything from how we are
- 11 encouraging and enabling our citizens to vote and
- 12 get to the polls. That means encouraging, enabling
- 13 our citizens to see themselves in our budgets, not
- 14 just the people who are able to get to the polls.
- 15 So for me, it extends far beyond
- 16 this file, and I say that without trying to
- 17 diminish the hurt of the families. So I am quite
- 18 torn on this, and I'm -- the trust in confidence
- 19 issue is very compelling but so is the need to get
- 20 on with the protocols and the practices that will
- 21 help lend and build back that trust.
- 22 And that's what I am anxious for
- 23 more quickly than perhaps a judicial inquiry can
- 24 provide for us, but perhaps I will have to wait for
- 25 it, and I hope that in that scope, that we are able

- 1 to talk about the political culture that may cause
- 2 some members of our staff not to want to bring
- 3 something forward because it may be inconvenient or
- 4 not within the political direction or the answer
- 5 that we thought we wanted. So I hope all of those
- 6 things.
- 7 Going forward, I will be listening
- 8 for and looking for and asking questions about
- 9 myself as a citizen and along with the councillors,
- 10 so I'm really quite torn on this, but I am
- 11 certainly being persuaded about the public
- 12 confidence issue, but I will have to wait one more
- 13 minute. And the public can judge me accordingly.
- MR. EISENBERGER: Okay. Thank
- 15 you.
- 16 Councillor Ferguson.
- MR. FERGUSON: Thank you, Mr.
- 18 Chairman, and let me just start by saying the first
- 19 three speakers on the motion tonight who made the
- 20 comment that they thought the \$11 million number
- 21 was exaggerated -- and by the way, those three
- 22 individuals went public, saying they want a
- 23 judicial inquiry before we got the expert
- 24 information provided to us, I find that
- 25 interesting.

- 1 I'm going to read to you from page
- 2 6 of the report that we received tonight about the
- 3 Toronto computer incident and what happened. It
- 4 says the Toronto city council passed a resolution
- 5 authorizing this investigation in February 2002.
- 6 It took until 2005 for the public hearing to be
- 7 completed and the final report issued. The initial
- 8 budget of one million increased to over 11 million
- 9 by the conclusion of the inquiry.
- 10 So we're in the exact same
- 11 position here that Toronto was. They thought it
- 12 was going to cost a million, and it cost over 11
- 13 million because you're writing a blank cheque
- 14 because you lose complete control. I believe that
- 15 the auditor general will be independent. If this
- 16 motion fails, I'm perfectly prepared to put a
- 17 motion on the floor that we go to an auditor
- 18 general and that it be an outside person, so it
- 19 can't be seen that it's not independent and we're
- 20 trying to cover something up.
- 21 Unlike Councillor Wilson, I have
- 22 full confidence in the auditors and their
- 23 professional integrity and that they will be
- 24 independent and be serious about the job and
- 25 deliver an appropriate report. And I heard the

- 1 story about the two families and how they lost
- 2 their loved ones, which is terrible, but damn it,
- 3 they deserve to understand what happened in three
- 4 months, not three years, and we are going to get
- 5 this result in three months for \$300,000 and not
- 6 one to \$11 million.
- 7 Those are two very compelling
- 8 arguments. I have to believe that the auditor
- 9 general will include in their report, which will be
- 10 very transparent available to anybody who wants to
- 11 read it, that they will make the appropriate quotes
- 12 from what they find out when they're interviewing.
- 13 They have to. I've seen these reports too, and
- 14 they always quote the witnesses and what they said,
- 15 and once again, I have confidence in all of them.
- So I can't support the motion
- 17 tonight. I think it's time-irresponsible; it's
- 18 cost-irresponsible, and it puts those families --
- 19 drag it out for three years. I hear Councillor
- 20 Danko saying we may have a culture problem, this
- 21 organization. If that's true, I want to know in
- 22 three months. I don't want to know in three years
- 23 because a lot more things could happen during that
- 24 time period. So I can't support the motion before
- 25 us, but I'd be happy to put the motion, Mr. Mayor,

- 1 for an outside AG if the motion fails. Thank you.
- 2 MR. EISENBERGER: Thank you.
- 3 Councillor Farr.
- 4 MR. FARR: Thanks, Mr. Mayor, and
- 5 thank you to my colleagues. Great questions.
- 6 Appreciate the debate. Very difficult, obviously,
- 7 for a whole lot of reasons. Thanks to the mover
- 8 and the seconder, and especially the public. We
- 9 always appreciate the engagement. It's probably
- 10 not easy at that end either, given the
- 11 circumstances, and there's so many different
- 12 stories to tell here, but I think I can -- I'm
- 13 going to sum it up for myself, anyway.
- On January 23rd, so you know, I
- 15 have never seen nor do I expect I will ever see
- 16 senior staff -- and particularly, Dan and Public
- 17 Works staff -- or hear or feel the sincere regret,
- 18 true, obvious, deep regret when they had to briefly
- 19 inform us that "in a couple of weeks, we need to
- 20 tell you details on this one report." I don't
- 21 think I'll ever witness that again as an elected
- 22 official. I think it was on that evening that I
- 23 think we all knew there was something very, very
- 24 serious and extremely different than what we're
- 25 used to happening here.

- 1 And we deal with a wide variety of
- 2 issues and some are very, very uncomfortable, and
- 3 others are happy-go-lucky, and others take a long
- 4 time to consider and some are divisive and others
- 5 are unanimous, but this was a scenario and a moment
- 6 in time that I don't think will ever be replicated.
- 7 I really don't. So starting from that January
- 8 23rd, it's clear we needed to look at this
- 9 differently.
- So here we have a motion that is,
- 11 you know, putting us in a direction that's new to
- 12 all of us, and for some, that's -- you know, that
- 13 can be scary. Some of us don't want to have to
- 14 explain, and we will should this motion be passed
- 15 here to our constituents who feel guite comfortable
- 16 on the road.
- And we're hearing them on the --
- 18 there are two types of pundits on this issue, and
- 19 some are convinced that people need to pay
- 20 attention, and I see people texting all the time.
- 21 I hear it on the radio interviews when the
- 22 call-outs go and the phoners happen. I see people
- 23 weaving. They don't know how to drive; they don't
- 24 know how to merge, and those same people may be
- 25 living in our wards and asking us, "Why do you need

- 1 to spend \$11 million?" It's about driver
- 2 behaviour.
- And in a lot of ways on this and
- 4 so many other roads, accidents and unfortunate
- 5 deaths occur because of driver behaviour and
- 6 stupidity, frankly. So I don't know if that will
- 7 ever change. It'd be great. It'd be utopial if it
- 8 did. My question earlier, it was geared toward,
- 9 you know, trying to get a greater understanding on,
- 10 you know, what -- is anything between a million and
- 11 11 million, and who knows, maybe more if you do a
- 12 judicial inquiry. The previous speaker is making
- 13 very good points. That's why we call him "Frugal
- 14 Fergie."
- 15 That said, when I'm asking about a
- 16 CAO, a judge, a judge who appoints a lawyer, a
- 17 lawyer appoints junior lawyers, law clerks,
- 18 administrative, investigators, researchers, there's
- 19 a reason why it gets into the many millions, and
- 20 there's a reason why, quite obviously, all these
- 21 people, some of whom may retire on this one
- 22 objective. I'm not kidding. They may retire on
- 23 this one multiyear objective based on what they may
- 24 be able to take in monetarily from it, but that's a
- 25 big piece.

- 1 But I think -- through you to Mike
- 2 -- if we're paying -- is it the bulk out of tax
- 3 stabilization? Is it a reserve, a non-tax levy
- 4 impact for most of the expenditures even though we
- 5 don't know? We wouldn't know in a judicial
- 6 inquiry. It's pretty much open-ended where we get
- 7 in whatever amount to pay for these many, many
- 8 professionals that will be involved for many years.
- 9 MR. EISENBERGER: Mike.
- MR. ZEGARAC: Through you, Mr.
- 11 Mayor, we would report back with a recommendation.
- 12 It would likely be a reserve as a one-time
- 13 expenditure. It could be the tax stabilization
- 14 reserve or another non-obligatory reserve.
- 15 MR. FARR: In tax stabilization
- 16 and other reserves, they would have been described
- 17 in the past as, to my recollection, rainy day funds
- 18 or funds that pay for eventualities. That pretty
- 19 much sums it up in a lot of cases.
- 20 MR. ZEGARAC: Through you, Mr.
- 21 Mayor, it's typically -- tax stabilization would be
- 22 the reserve we would typically turn to. Again, we
- 23 would want to review what our commitments are
- 24 against that reserve, and again, we would report
- 25 back with recommendations, whether it would be a

- 1 reserve or a series of reserves.
- 2 MR. FARR: Through you, is Charles
- 3 still here -- Brown? Can I ask a Charles Brown a
- 4 question?
- 5 And Charles, I'll say in advance
- 6 if you make your way up: If you can't answer this
- 7 question, that's fine, but there's a lot of work --
- 8 no matter what direction we go, AG, a judicial,
- 9 there's a great deal of work to be done. And
- 10 Charles, can you, in open session, share any work
- 11 on this particular one issue, in this one report,
- 12 that you've done to date, and if you can, what
- 13 happens to that work that you've done as our
- 14 auditor general?
- MR. EISENBERGER: Charles.
- MR. BROWN: So what happens when
- 17 council made the decision that they would go
- 18 external, we would cease formally investigating the
- 19 issue. We turned our minds toward essentially
- 20 protecting what we had gathered already so that
- 21 once it was decided who would investigate, we could
- 22 pass that on untainted. And so, that's the
- 23 position that we're in.
- MR. EISENBERGER: Farr.
- MR. FARR: And once you do, that's

- 1 public then in a judicial inquiry?
- 2 MR. BROWN: That's up to -- you
- 3 know, that's up to the commission, how they would
- 4 handle that evidence. Presumably, we would show
- 5 them the evidence that we had gathered. We would
- 6 be questioned about it. I'm not sure what the
- 7 process -- how it would unfold from that point on.
- 8 I assume that we would be questioned in public
- 9 about it.
- 10 MR. FARR: Okay. So finally, to
- 11 our outside legal whose recommendation -- who I
- 12 thought I heard is attached to two judicial
- 13 inquiries now and has in the past had a great deal
- 14 of experience, yet he's recommending here today
- 15 that we do not go in that direction, and it's based
- 16 on a very narrow scope compared to maybe other
- 17 judicial inquiries and all the other reasons that
- 18 were shared. I just want to thank them. I
- 19 appreciate that recommendation. It really gave me
- 20 pause. I did not publicly share how I felt.
- 21 All of us felt a lot of things,
- 22 Mr. Mayor, but coming into today or receiving this
- 23 a few days ago, you know, it was enlightening, and
- 24 it was even more so with the discussions we've had
- 25 in the last few hours, but full circle, Mr. Mayor,

- 1 this is as rare as it's going to get for us as
- 2 elected officials in our political careers.
- I genuinely feel that the staff
- 4 who've been reporting on this today, particularly
- 5 those from Public Works, are forever affected, and
- 6 we appreciate the apology, and I think that they
- 7 appreciate that what we need to do and no matter
- 8 where we land, I think, hopefully we get some
- 9 support for a judicial inquiry. They're going to
- 10 cooperate and in the end appreciate those results.
- 11 MR. EISENBERGER: Great. Thank
- 12 you.
- 13 Councillor Partridge.
- MS. PARTRIDGE: Yes, thank you,
- 15 Mr. Mayor, and I have one question and then I'll do
- 16 my comments. My question through you to the
- 17 lawyer, who I can't see right now --
- 18 Thank you, Councillor. I truly
- 19 appreciate it.
- 20 So my question is: My
- 21 understanding is that when a municipality does a
- 22 judicial review, there are funds available through
- 23 the Province to tap into; is that correct?
- MR. LEDERMAN: It has occurred.
- 25 Requests have been made in which some funding has

- been provided by the Province but it's --
- MS. PARTRIDGE: Thank you.
- 3 Because that is my understanding that absolutely we
- 4 could make application to the province if that was
- 5 the direction that we choose to go in. So there's
- 6 been some statements thrown out here that, you
- 7 know, we're going to be looking at several years;
- 8 we're going to be looking at \$11 million; we're
- 9 going to be -- we don't know at this point, but
- 10 quite honestly, cost has its place, but in this
- 11 particular case, what we need -- we as a council
- 12 need -- is information.
- 13 Our staff need information. We
- 14 need to know what has happened. The families
- 15 deserve more information, and I believe that the
- 16 depth of information is only going to come through
- 17 a judicial review. And so, you know, the
- 18 devastation of our staff, the devastation of our
- 19 parents, of our residents out there, I can't even
- 20 imagine the more information we have -- and quite
- 21 frankly, our legal staff. We don't know where this
- 22 is going. We have no idea what the next few months
- 23 or year may bring with more legal action.
- I think it is incumbent upon this
- 25 council to ask for a full judicial review. I think

- 1 it is a responsible thing to do, not just
- 2 reasonable. It is responsible. And we have that
- 3 responsibility. I'm not going to reiterate some of
- 4 the previous comments that were made so eloquently
- 5 by my colleagues, but we need to do this for many,
- 6 many reasons because at the end of the day, it's
- 7 not only the right thing to do; it is the necessary
- 8 thing to do with a judicial review. Thank you.
- 9 MR. EISENBERGER: Thank you.
- 10 Councillor Nann.
- MS. NANN: Thank you, Mr. Mayor.
- 12 I want to start off, first of all, saying thank you
- 13 to all the public who've been calling, who've been
- 14 e-mailing, who've been asking for some
- 15 accountability of me as their ward councillor on
- 16 this issue. I also want to thank staff and the
- 17 external legal team for coming in and providing us
- 18 with the information that we needed to be able to
- 19 make the most informed choice.
- 20 And I truly appreciate my
- 21 colleagues around the table for all the lines of
- 22 questioning that have come forward throughout the
- 23 several hours we've been at this. This is most
- 24 likely the heaviest scenario that I've had to deal
- 25 with this in this kind of context in my entire

- 1 professional life. And so, as a result, I've been
- 2 spending a lot of time listening very, very
- 3 carefully because I'm 100 per cent committed with
- 4 all of you around this table to ensure that we get
- 5 the truth, that we are absolutely committed to
- 6 transparency, and that we are all bound to our
- 7 accountability as elected officials.
- 8 I'm also a bit of a systemic wonk.
- 9 So somebody else had mentioned that they're a
- 10 policy wonk in this table. I'm more of a systemic
- 11 procedural wonk, and from that perspective, I care
- 12 deeply about what we're going to change in terms of
- 13 how we do our business. And I have complete
- 14 confidence in our auditing staff and services to do
- 15 their work, but I also have tremendous confidence
- 16 in our Public Works division, which has proven to
- 17 me in the course of the 90-something days that I've
- 18 been here to have the most rigorous processes in
- 19 place for constant improvement in this entire
- 20 corporation and who've actually helped expose this
- 21 issue for all of us.
- 22 And so, in that regard, I believe
- 23 that there's work underway already to continue to
- 24 improve our procedures. That said, there's more to
- 25 learn, and I believe that trust and confidence with

- 1 our residence is the most paramount thing right now
- 2 and that requires a judicial inquiry, so I'll be
- 3 supporting the motion. Thank you.
- 4 MR. EISENBERGER: Okay. Thank
- 5 you.
- 6 Councillor Collins.
- 7 MR. COLLINS: Thanks, Mr. Mayor,
- 8 and for me, it's not a difficult decision. I think
- 9 I committed quite early in the process in terms of
- 10 where I was going to go on this, and you know, I've
- 11 had a very long history with Red Hill, and you
- 12 know, just thinking coming into tonight's meeting
- 13 in terms of the controversy associated with that
- 14 project.
- 15 And for those of us who represent
- 16 the area, Councillor Merulla and I, and I know even
- 17 the mountain councillors, Councillor Jackson and
- 18 others before who are no longer on council who've
- 19 had to deal with Red Hill, and I think back to the
- 20 nineties when we went through the EA process, and
- 21 at that point in time, if you recall, transparency
- 22 was a huge issue.
- 23 And so, looking back to that
- 24 process, extensive public meetings, I mean, this
- 25 project was scrutinized to no end by three levels

- 1 of government, including other stakeholders like
- 2 the Conservation Authority and others,
- 3 environmental groups.
- 4 And then through the nineties, it
- 5 gravitated to the noise mitigation issues, and I
- 6 know we were in people's backgrounds, and they were
- 7 very concerned about the noise. And then we went
- 8 through the construction process, and then we went
- 9 through the occupation process where people were
- 10 sitting in trees in the valley, and we couldn't get
- 11 equipment down there, and then it was on to the
- 12 opening. And after the opening, it was flooding.
- And with this file, it just seems
- 14 like there's always something next, and so, for me,
- 15 this is a part of that transparent process that
- 16 we've been in in the past. Through all the issues
- 17 that have come up, I think it's very important to
- 18 get all the information on the table. And so, for
- 19 me, the judicial inquiry, I think, accomplishes
- 20 that.
- 21 And most recently, beyond the
- 22 flooding, it's obviously been for me in terms of
- 23 responding to constituent complaints, it's been the
- 24 speeding and the lighting. And so, for those
- 25 people who've been on council for any length of

- 1 time, as Councillor Merulla mentioned, we've been
- 2 at this I don't know how many times to Public Works
- 3 in terms of motions to say, "Is there something we
- 4 can do about the speeding? Is there something we
- 5 can do about the lighting?" We've undertaken
- 6 safety reviews.
- 7 And so, I'm interested in
- 8 understanding where the process may have gone
- 9 wrong, and like Councillor Merulla, I believe
- 10 there's no shortage of information out there to
- 11 suggest that -- and to point in the direction that
- 12 council has gone, I think, above and beyond in
- 13 terms of being proactive at looking for ways and
- 14 means in which to make the roads safer and the area
- 15 and the environment around the road safer.
- And that brings me from
- 17 transparency to the word "control," and for me,
- 18 looking at all the options that were in front of us
- 19 tonight, I keep thinking about that word "control,"
- 20 and I was looking for the option that gave us a way
- 21 forward with keeping council the further away from
- 22 the process, and I think the judicial review
- 23 accomplishes that. It's the process that takes us
- 24 right out of the equation. I think it's in the
- 25 report here. If the public wants to read it, it

- 1 talks about that this can go in a different
- 2 direction.
- 3 This scope can broaden over time
- 4 if, in fact, people who are leading this process
- 5 see fit to take it in that direction, and I'm fine
- 6 with that. I think there's so much information out
- 7 there that it'd be beneficial to go over those
- 8 things that we've done in the past, I think, that
- 9 have made the road safer, and I think that same
- 10 process will expose maybe some of the weaknesses
- 11 and some of the warts in terms of where things
- 12 didn't go as planned and where we could have gone
- 13 further.
- And so, for me, you know, the
- 15 theme for me is about that issue of control. I
- 16 really want nothing to do with this process, and
- 17 I'm cognizant of the cost. I'm always someone, I
- 18 think, around this table who, you know, talks about
- 19 budgets and those things, but we're oftentimes --
- 20 you know, as part of what we do at committee, we're
- 21 thrown some curveballs with projects and issues
- 22 that come up where we just didn't anticipate paying
- 23 for something like that.
- I would point to the Emerald Ash
- 25 Borer disease. We didn't anticipate many years ago

- 1 we'd be paying \$25 million to deal with that issue.
- 2 The court costs. We were evicted from the court.
- 3 We were told we were no longer a tenant. We had
- 4 to retrofit a building for 20-plus million. We did
- 5 that over the course of a couple of months.
- So I use those as examples of
- 7 situations where things come our way, and we're
- 8 forced to pay a price for them, and I have no
- 9 problem paying whatever costs is associated with
- 10 this to get to the bottom of it because I think
- 11 that whole issue of transparency and that whole
- 12 issue of control, again, are two important themes
- 13 for me.
- 14 And as I said in our first meeting
- 15 in-camera -- and I've said this publicly to my
- 16 constituents and to my family and friends -- I live
- 17 a couple blocks from that road, and I'm on it
- 18 regularly. I'm on it maybe two to three times a
- 19 day, on weekends, a little bit more as I'm
- 20 chauffeuring people around, and you know, I want to
- 21 make sure that that road is as safe as possible for
- 22 everyone who uses it, and my constituents expect us
- 23 to go down this road in terms of the judicial
- 24 review.
- My neighbours expect us to go down

- 1 this road, and I know my family and I myself expect
- 2 us to go down this road to ensure that we get --
- 3 that we make our way through this process in a way
- 4 that everyone at the end of it can look back and
- 5 say we did everything possible to overturn every
- 6 single stone to get all the answers in place so
- 7 there are no conspiracy theories, you know, three,
- 8 five, ten years from now to say they were hiding
- 9 something.
- 10 For me, this is just the cleanest
- 11 and I think the most transparent process that we
- 12 could take, and for those reasons, as I've said in
- 13 the past and I'll say again tonight, those are the
- 14 reasons why I'm going to support the process that's
- 15 in front of us and the motion that Councillor Clark
- 16 has presented.
- MR. EISENBERGER: Okay. Thank
- 18 you.
- 19 I think Councillor Brenda Johnson
- 20 first time.
- 21 MS. JOHNSON: Thank you. I didn't
- 22 know I was first time. I thought Councillor
- 23 Pearson was first time. I'm still writing my
- 24 notes. That's fine.
- MR. EISENBERGER: It's hard to

- 1 keep track.
- 2 MS. JOHNSON: I'll tell you right
- 3 now, five hours ago, I had my mind made up for
- 4 something. When in-camera, my mind started to sway
- 5 another way, came out of camera, started asking
- 6 questions. My mind's been floating all over the
- 7 place. And I keep coming back to -- now that I'm
- 8 on the MPCA, there was a big auditor general's
- 9 report, 105 pages. It wasn't open hearings. It
- 10 was unleashing documents. It was interviewing
- 11 people on the side, I guess, as people just -- I've
- 12 heard that term today.
- 13 It was 105 pages, and it took me
- 14 probably a week to get through it and really digest
- 15 it properly because that's how well it was put
- 16 together, and it's been out there in the public now
- 17 for, I believe, about maybe three -- maybe five
- 18 months, and I don't recall anyone -- and this was a
- 19 very highly contentious issue.
- 20 Fortunately, no one has lost their
- 21 lives over it, so let's put that in perspective,
- 22 but it was a very high -- and lots of public
- 23 scrutiny, and I don't recall anybody saying it was
- 24 a conspiracy theory because they couldn't watch the
- 25 person being interviewed. What they wanted was

- 1 answers. That's all they wanted. Give us the
- 2 answers and give us the proof of where you got
- 3 those answers. That's all they wanted and they got
- 4 it.
- 5 So now, everyone's going back to
- 6 that report, saying, "What have you done now with
- 7 the recommendations that were in that report?" So
- 8 I keep going back to that, to my experience with
- 9 this report. I've read other auditor general
- 10 reports as well, but this one is the most frequent
- 11 in my mind right now, and after five years -- or
- 12 five hours -- it feels like five hours -- being
- 13 here, my brain's a little bit fuzzy, and I can't go
- 14 back that far.
- 15 But I keep coming back to that
- 16 report and how conclusive it was, how it brought
- 17 facts forward. It was expedient. It was quick.
- 18 It had everything in front of them, and I don't
- 19 recall anybody saying, "But I didn't get to see
- 20 that person being interviewed, so how am I sure
- 21 that is the exact same thing they said?" It's what
- 22 people wanted. They wanted answers. I can't speak
- 23 on behalf of the families that have been affected
- 24 by this situation, but I would hope they would just
- 25 want the answers.

- So I would like to test the will
- 2 of the AG report along with Councillor Ferguson,
- 3 let this vote go by, and if it doesn't go by, I'd
- 4 like to test the will of the auditor general
- 5 because my experience with them up to now has been
- 6 positive. It's been thorough and the answers were
- 7 in those pages.
- 8 So those are my comments for now,
- 9 and we'll just see how the rest of this goes.
- MR. EISENBERGER: Okay. Thank
- 11 you.
- 12 Councillor Pearson.
- MS. PEARSON: Thank you, Mr.
- 14 Mayor. So as my colleagues around the table, some
- 15 of them mentioned this has been probably one of the
- 16 most difficult decisions that I think I have ever
- 17 had to deal with around this council table in my
- 18 days as a Hamilton councillor, and even issues --
- 19 well, I'm not going to say Stoney Creek. We had
- 20 some major issues in Stoney Creek, but none of them
- 21 were affected lives being taken, and I think that's
- 22 what I'm weighing off on this. And I came into
- 23 this meeting tonight not in support of a judicial
- 24 inquiry. I'll put that out on the line right now.
- I had a few residents send me

- 1 e-mails saying do the right thing, and I have to
- 2 weigh off: Well, yes, we have to do the right
- 3 thing, but doing the right thing is also being
- 4 fiscally responsible, and at the end, getting the
- 5 same result. So I've been absolutely torn. I want
- 6 to thank also staff, the outside external solicitor
- 7 that sat here all evening and gave us as best as he
- 8 could all the information, and certainly, his
- 9 recommendation that a judicial inquiry is not the
- 10 most appropriate mechanism for this inquiry.
- 11 I certainly weighed that and
- 12 weight all the comments around the table. At the
- 13 end of the day, I also weigh the fact of the
- 14 timelines because we're ready to pave, to repave
- 15 the Red Hill Parkway, and I'm not sure exactly when
- 16 that's going to start. And looking at going
- 17 through an auditor general process, we may take
- 18 three months to whatever that might give us some
- 19 answers that we could address before we get new
- 20 pavement down.
- 21 I don't know. I'm quesstimating
- 22 on that, but are those potential options that could
- 23 have been there? And I'm weighing that as well.
- 24 There's other issues, though, in the reports that
- 25 came forward with not just the friction testing.

- 1 There were other issues. And I've only become a
- 2 member of Public Works this term, but I've said in
- 3 many meetings over the terms --
- And believe me, there's been many
- 5 issues that had been raised with regards to issues
- 6 of the construction of the Red Hill, not just some
- 7 of the bends, but the lighting, the edges, etc.,
- 8 and I know that initiatives are being put in place.
- 9 And some of the reasons there were restrictions
- 10 were involvement with communities at the time of --
- 11 you know, we didn't want to see certain things put
- 12 in because of the habitat and the animals, etc.
- So there's good reasons some
- 14 things were done and some things weren't, but going
- 15 forward, I think we have to look at safety being
- 16 the foremost in our eyes. So I looked at, you
- 17 know, timelines, dollars. At the end of the day, I
- 18 truly sit here and believe that even if we went
- 19 through an auditor general process, I believe there
- 20 will be the public that will continue to question
- 21 us.
- 22 And just as it my colleague,
- 23 Councillor Collins, who has much more history on
- 24 the Red Hill than I did -- and I did become a
- 25 subcommittee member in 2003. We've always been

- 1 open and transparent about this roadway. We've
- 2 been proud of this roadway. Can't deny that at
- 3 all. Been absolutely proud of it, but we've also
- 4 been very open and transparent on any issues, and I
- 5 don't think that we should pull back on this one
- 6 either.
- 7 I think at the end of the day, it
- 8 may be a report from an auditor general, but if
- 9 it's a matter of people absolutely seeing the
- 10 process unfold in front of them every day or
- 11 whenever the hearings are held or interviews are
- 12 held, then so be it. At least that information is
- 13 there before them. And believe me, this is not
- 14 something that I have weighed on lightly. It's
- 15 been a very, very, very difficult review in my head
- 16 tonight as to exactly where we should go with this,
- 17 but I don't want --
- 18 And it may be the families of the
- 19 deceased to come back and say, "You know what,
- 20 we're not quite sure, and we still question the
- 21 auditor general's report." And I know that people
- 22 are shaking their heads, "Well, that's not
- 23 possible." It's always possible but when they can
- 24 absolutely see what's happening of a process, then
- 25 I think that would put closure to the investigation

- 1 once the final report is prepared and presented and
- 2 everything is documented.
- To our staff, I certainly commend
- 4 Public Works and always have. I believe our staff
- 5 -- and I'm going to put Public Works out there, but
- 6 our staff at all levels go above and beyond the
- 7 call of duty every day to represent and protect the
- 8 citizens of the city of Hamilton. I can't say
- 9 that, you know, reading the reports, I'm not an
- 10 engineer. I can't make heads or tails of the
- 11 friction testing and the reports that are before
- 12 us.
- 13 What's the difference between what
- 14 was prepared and not presented to us in 2013 to
- 15 what's here in 2015, 2016, whatever, I couldn't
- 16 tell you. But I do know, reading the reports,
- 17 they're saying there is no standard across Canada.
- 18 There is no friction standard. So I'm curious as
- 19 to when we put new asphalt then, what are we going
- 20 to need then?
- 21 So I'm hoping some of the answers
- 22 will come out, and it may take a little longer.
- 23 That's the only unfortunate part of this, but some
- 24 of these answers, they will come out and they will
- 25 be guidance going forward. So it was great

- 1 thought, great feelings of everybody's -- in all of
- 2 our hearts, I think, are on our arms today as to
- 3 where we want to be and what we want to be able to
- 4 confidently go forward in the future and face any
- 5 member who lost a family member on the Red Hill
- 6 Parkway, that we've done absolutely everything we
- 7 can.
- 8 And I think taxpayers at the end
- 9 of the day will appreciate that, and I believe --
- 10 just as Councillor Collins said -- we've been faced
- 11 with issues. Emerald Ash Borer. Did anybody ever
- 12 bat an eyelash to two and a half million dollars a
- 13 year, my ward being the heaviest affected? With
- 14 Emerald Ash, of 19.6 per cent of the trees in my
- 15 boulevards were ashtrays. Did anyone ever bat an
- 16 eyelash to that? And we're still paying, and I
- 17 don't believe it's going to end once all the trees
- 18 are down.
- So you know, we get faced with
- 20 things every day. At the end of the day, I want to
- 21 be confident that people have confidence in us and
- 22 in the information that is presented, and if it's a
- 23 judicial review that will put closure to this and
- 24 give us direction going forward in the future, then
- 25 that's where I want to stand tonight, Mr. Mayor.

- 1 MR. EISENBERGER: Okay. Thank
- 2 you.
- 3 Councillor Jackson.
- 4 MR. JACKSON: Thanks, Mr. Mayor.
- 5 I want to thank the expert legal counsel. I don't
- 6 know if Mr. Lederman is still here, but I want to
- 7 thank Eli for being here this evening. Thank our
- 8 own legal staff; to general manager, Dan McKinnon,
- 9 your Public Works department. It does incredible
- 10 work in our city. Mr. Mayor, the only reason why
- 11 I'm supporting a judicial inquiry, the only reason
- 12 is because of the optics of the 2013 mystery
- 13 report.
- I was a proud supporter and still
- 15 am, Mr. Mayor, when we were on council together in
- 16 1997, when we opened up the Lincoln Alexander
- 17 Parkway, an important transportation corridor for
- 18 our city, not only for transportation of goods and
- 19 services, but quite frankly, it took 60 to 70,000
- 20 cars a day off of some of the residential roads on
- 21 the mountain to improve the quality of life for
- 22 neighbourhoods on the mountain.
- I was a proud supporter in 2007,
- 24 Mr. Mayor, when we opened the Red Hill Valley
- 25 Parkway, and once again, you and I with members of

- 1 council were there at that opening, finishing that
- 2 connection of that transportation corridor, hooking
- 3 up from the 403 all the way to the QEW, once again,
- 4 to help alleviate heavy vehicles, transportation
- 5 trucks, taking them off the Kenilworth accesses of
- 6 our communities where most of our families, kids,
- 7 seniors live.
- 8 That's one of the main reasons why
- 9 I supported both those transportation corridors,
- 10 knowing that it would relieve much of the heavy
- 11 traffic that should never have been on a lot of our
- 12 escarpment passes that have led to erosion along
- 13 the escarpment areas. So along with the economic
- 14 benefits as well, Mr. Mayor, and for tourism, and
- 15 it's helped to as well grow the south mountain,
- 16 Upper Stoney Creek area as well for those who have
- 17 desired to move and live in our city.
- 18 You know, once the Red Hill
- 19 opened, I had two main complaints from the
- 20 overwhelming majority of my residents that I've had
- 21 the honour to represent. The overwhelming majority
- 22 of them have election after election after election
- 23 been a good strong supporter to build the Red Hill
- 24 Valley Parkway, get it done because of the need of
- 25 that important corridor.

- 1 The two main complaints, Mr. Mayor
- 2 -- and I know I've shared this with you -- that I
- 3 heard once it opened was, "Tom, it's awfully dark
- 4 driving down there at times." I check with our
- 5 staff, the professionals, councillor, when it was
- 6 built. You know, there were environmental
- 7 concerns. There was some wildlife concerns. And
- 8 so, I basically conveyed that messaging back to the
- 9 constituents. They -- you know, "All right. So be
- 10 it, Councillor Jackson."
- 11 The other one I had was, "You
- 12 know, Councillor, from time to time, especially
- 13 down bound, it can be a little slippery at times,
- 14 but I checked with staff. No. You know,
- 15 Councillor, everything, the way it was built,
- 16 whatever, met code, met standard for the time." I
- 17 conveyed that messaging back to my constituents.
- And again, Mr. Mayor, to put it in
- 19 context, 75,000 vehicles a day. My arithmetic
- 20 tells me that's over two million vehicles a month.
- 21 That's close to 24 million vehicles a year that
- 22 used these two important transportation corridors.
- 23 Imagine where those vehicles, many of them -- yes,
- 24 you could say, "Well, Tom, they would have stayed
- 25 on the 403 or the QEW."

- 1 Again, a lot of that brought
- 2 business into our area. A lot of that brought
- 3 people who desired to live in Hamilton into our
- 4 area, but a lot of that took a lot of heavy truck
- 5 traffic and heavy vehicular traffic off of our
- 6 beautiful escarpment passes that lead to our
- 7 neighbourhoods, whether on the mountain or across
- 8 the lower city.
- 9 So there was a quality of life
- 10 benefit to building these transportation corridors.
- 11 I'm sorry for the tragedies. I can't even imagine
- 12 the loss of life, but again, Mr. Mayor, keeping it
- 13 in perspective, 24 million vehicles a year use
- 14 these two transportation corridors for our
- 15 community. They're important, and they will
- 16 continue to be important, and I will not shy away
- 17 from supporting them and their existence.
- 18 And when the police say that they
- 19 nab road rage idiots doing 140 kilometres on the
- 20 Red Hill Valley Parkway, that tells me alone driver
- 21 behaviour sometimes is run amuck on these
- 22 corridors, especially with the Red Hill with people
- 23 thinking they could use it like the Indy 500. It's
- 24 ridiculous, but it's coming down for me, Mr. Mayor.
- 25 I'll support the judicial inquiry for the one

- 1 reason only, the unfortunate optics of the 2013
- 2 mystery report. Thanks, Mr. Mayor.
- 3 MR. EISENBERGER: Thank you. And
- 4 if you could take the chair actually.
- 5 So I want to thank -- yes, I will.
- 6 Thank you so much.
- 7 MR. JACKSON: Okay. Mayor
- 8 Eisenberger.
- 9 MR. EISENBERGER: So somebody said
- 10 there's something about "My bum's numb and my
- 11 brain's getting there too," so I'm going to get
- 12 this out quickly. You know, this has been probably
- 13 the most difficult issue I've ever faced in terms
- 14 of my political time here, and I think that will be
- 15 the same for everyone that's here, and I do want to
- 16 say -- and I took a particular exception to this
- 17 notion -- that there ought to be a shame in some
- 18 direction in terms of the way people vote here.
- 19 I think I respect all of the votes
- 20 that are going to happen here no matter what side
- 21 of the equation you end up on because, you know
- 22 what, there's merit in containing cost and there's
- 23 merit in getting a speedy answer. And so, I don't
- 24 disparage anyone that chooses that path as a
- 25 legitimate way forward through some other AG

- 1 process or whatever, so I think that unfortunate
- 2 comment was unfortunate, and I have full respect
- 3 for everyone that's truthfully agonizing over this
- 4 issue as I am, and I think we all are.
- 5 I also want to pay respects to the
- 6 current staff that actually brought this thing
- 7 forward, and so, you know, there's notion that -- I
- 8 mean, some can allude to culture. My view of the
- 9 culture of the organization is much different than
- 10 some. I believe we have a respectful staff that
- 11 are working in the best interest of our community.
- 12 And in this particular instance,
- 13 you know, some of the staff that brought this
- 14 forward could have actually deep-six this thing,
- 15 and we would have been none the wiser, quite
- 16 frankly, and they didn't because they knew that
- 17 this was an issue that needed to come to the
- 18 surface, and I know they agonized when I met with
- 19 them and first heard about it. I saw some very
- 20 agonized and disappointed individuals that knew
- 21 very well what kind of angst this was going to
- 22 cause, so I give them respect for bringing this
- 23 forward.
- Now, are there other issues to
- 25 look at that might have, you know, been

- 1 complicating in this issue from, you know, in days
- 2 gone past? Clearly there is, and I would say that,
- 3 you know, the whisper campaign out there that talks
- 4 about, you know, responsibility and who knew what,
- 5 when, well, I'm totally open to having a full
- 6 review done to determine who knew what, when and
- 7 where and what did they do about it.
- 8 And so, I too am kind of where
- 9 Councillor Jackson is, that I have this one
- 10 niggling issue, which is, there is a report that
- 11 was done that didn't come to the floor to this
- 12 council and should have. And so, how do we then
- 13 make sure that we have as open and transparent a
- 14 process possible to get to that issue and give the
- 15 community at large the kind of confidence that
- 16 they're going to need that will let them know that
- 17 this council has not had their hands on this, that
- 18 there's been a totally independent process attached
- 19 to this, and that it had full vetting in terms of a
- 20 public disclosure on all of that.
- 21 And so, I understand and I
- 22 appreciate and respect those that might pick the
- 23 attorney general process, and it's certainly
- 24 something that crossed my mind as well, but I don't
- 25 think it fulfils the fullness of that transparency

- 1 that I think will give clarity to the answer
- 2 completely and totally, and no one could argue that
- 3 we had any hand in steering this process and/or
- 4 avoiding any consequences.
- 5 So I'm reluctantly going to
- 6 support the judicial review because, you know, it
- 7 is staggering to think that an open-ended process
- 8 can lead to some significant costs. So I would be
- 9 very mindful going forward of the scope, and so,
- 10 given that we're broadening out a judicial review
- 11 process, I think we ought to be considering a
- 12 narrow scope as opposed to a broader scope because
- 13 I think most of us know what the beginning of this
- 14 process is, and it is that one singular report and
- 15 how that was managed or not managed.
- And so, I'm not fishing for any
- 17 other problems. If something does arise that comes
- 18 through the course of this thing and the
- 19 commissioner says, "Yeah, we need to dig into this
- 20 as well," fair ball, but I don't know that we ought
- 21 to go fishing for something new and exciting to dig
- 22 into to have even more research and review done on
- 23 all of this.
- So I'm going to support the
- 25 judicial review. I'm going to encourage, you know,

- 1 a refined scope to ensure that it's not a crazy,
- 2 crazy, you know, scattered review on just about
- 3 anything that's out there, and I know that we're
- 4 going to turn to the expert legal advice that we
- 5 had today.
- And you know, I do appreciate that
- 7 there might have been differences between what we
- 8 heard from our solicitor and the current expert
- 9 advice. I think our solicitor did say she was not
- 10 an expert in this field, and I think the advice we
- 11 got today was clear and concise, and you know, I
- 12 think it formed a basis of, you know, good soul
- 13 decision-making for all of this.
- 14 And so, having said all that, I
- 15 respect everyone's decision on this. Whether
- 16 you're on the judicial review side or not, both of
- 17 them have merit. I would say that for some of us
- 18 that have been around a while, having the air
- 19 cleared here, making sure that we don't involve
- 20 ourselves and that this is transparent as it needs
- 21 to be and can be, I think it's probably the issue
- 22 that tips me to the other side of the judicial
- 23 review. So I thank you for that opportunity --
- MR. JACKSON: With respect to Mr.
- 25 Mayor --

- 1 MR. EISENBERGER: We have
- 2 additional commenters, so I'm going to go --
- 3 they're all second time or third time, am I
- 4 correct? Second time? First time? All second
- 5 time? Okay. So I'm going to go to all -- I'm just
- 6 going to go in this order.
- 7 Councillor Clark.
- 8 MR. CLARK: Thank you, Mr. Mayor.
- 9 First, I want to thank everyone
- 10 for their respectful and thoughtful debate. Heard
- 11 too often in issues like this, passion is going to
- 12 get into the way, and individuals may say things
- 13 that they may not necessarily wanted to say, but we
- 14 understand where it comes from in terms of their
- 15 overall passion.
- The vast majority of councillors
- 17 around the table really were wrestling with
- 18 something that was really problematic, and I can
- 19 honestly say I saw the pains of anguish as we're
- 20 getting answers and questions from the lawyers, and
- 21 I can pick out at least the half dozen that really
- 22 were torn between the two or three options that are
- 23 before us.
- To Councillor Danko, you're
- 25 absolutely correct. You raised the issue that the

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1
    scope questions does not address making
 2
    recommendations to improve city policies,
    procedures to prevent such future incidents.
 3
    was my assumption that that's an automatic within a
    judicial investigation. Be that as it may, I'm
 5
 6
    more than happy to add it to one of the questions
 7
    so that it goes off to our legal counsel.
 8
                      With regards to your question
 9
    about wrongdoing or misconduct, it was actually
10
    item 1.6 in the questions, and it reads:
11
                                                "Was
12
                              there any malfeasance,
13
                              wrongdoing, or misconduct
14
                             by any person or persons in
15
                              relations to the role in
16
                              the non-disclosure of the
                              document?"
17
18
                      So we have covered off those
    issues, and if you'd like to actually move the
19
20
    amendment to 17, I'm happy to receive that or if
21
    you wanted a friendly one, either way, I think you
22
    actually caught something that's important to the
23
    process.
24
                      I was really intrigued, Mr. Mayor,
25
    by the comments that an auditor general's report
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- 1 and investigation would only take two to three
- 2 months. I haven't seen that happen too often, and
- 3 our auditor general is smiling because it doesn't
- 4 happen that often. I had two different audits done
- 5 on two different ministries that I was involved in
- 6 on very narrow items that we had to deal with, one
- 7 in transportation, one in labour, and they took
- 8 over a year.
- 9 And I know for a fact from the
- 10 previous auditor that was here audits routinely
- 11 take eight months to a year, and in this case,
- 12 there's four -- six reports now that the auditor
- 13 general or whoever's going to do this report is
- 14 going to have to read and cross-correlate to see
- 15 the differences between the reports and where the
- 16 facts are, and then investigate and interview those
- 17 individuals. That's just on the start.
- 18 In terms of getting ahead of the
- 19 process, I can tell you that Mr. Zegarac, right
- 20 after this happened -- and I think it maybe might
- 21 have been two weeks later. Mr. Zegarac, I had a
- 22 quick conversation with him and just suggested on
- 23 the fly that he may want to audit e-mails and make
- 24 sure that there is a direction given to staff to
- 25 retain records, and he informed me they had already

- 1 done it and that the auditor general had already
- 2 given that instruction also, and all the staff in
- 3 Public Works were already doing that.
- 4 So the actual work of finding the
- 5 evidence has already started and has been retained,
- 6 which really does cut down on the overall length of
- 7 time of an investigation. And I give credit to our
- 8 staff, Mr. Mayor. They did that on their own
- 9 immediately. Not only did they come to us with the
- 10 report, but they immediately acted to preserve
- 11 records. And that's in contrast to the Toronto
- 12 report on the leasing. I remember that one very
- 13 clearly.
- 14 Records were destroyed. There
- 15 were shredding parties. There were allegations of
- 16 fraud and corruption, and it was a huge challenge
- 17 for that investigation to unearth what transpired.
- 18 There is no surprise that it cost \$11 million when
- 19 you consider exactly what they had to deal with.
- 20 And so, we can't compare one apple to another apple
- 21 even if it was a Granny Smith to a McIntosh. There
- 22 is completely different scopes to these projects.
- On the MPC, absolutely.
- 24 Councillor Johnson is 100 per cent correct. They
- 25 requested an auditor general's report. It was

- 1 interesting though that the MPCA could not request
- 2 the auditor general's report because the
- 3 Conservation Authority has acted and given that
- 4 authority. They had to go to the region of
- 5 Niagara, and the region of Niagara couldn't do it
- 6 because they didn't have control over the
- 7 Conservation Authority.
- 8 So they had to go to the
- 9 provincial government and ask the provincial
- 10 government to launch the auditor general's report
- 11 into the MPCA, and it took over a year and a half.
- 12 Just for the record. And when we're talking about
- 13 costs running away with us, you're absolutely
- 14 correct. Councillor Collins talked about trees.
- 15 Councillor Pearson talked about that issue. I put
- 16 one on the table and --
- 17 Mayor Eisenberger, you'll recall
- 18 this because you were never on for this in the very
- 19 beginning. I was minister of transportation at the
- 20 time, and the City decided to sue the federal
- 21 government. Remember?
- MR. EISENBERGER: Mm-hmm.
- MR. CLARK: And we had these
- 24 wonderful external lawyers come in, and I heard all
- 25 about it because Mayor Wade at the time came to me

- 1 and asked if I could sign on the capital agreement,
- 2 that the City could actually -- or the region could
- 3 get money out of the capital agreement to help pay
- 4 for these coasts, and the projections of the win
- 5 from the outside legal counsel was "Whoa, this is a
- 6 slam dunk, and it's only going to cost you this
- 7 every year after that."
- 8 And I think it went on for, like,
- 9 six years, and the cost just kept ratcheting up
- 10 because when I got on council, we started to deal
- 11 with it and try to figure out -- and you were the
- 12 mayor and we're trying to figure, "Okay. How do we
- 13 get out of this," now limiting our costs. It ran
- 14 away with us, and the intent going in was not to
- 15 have that happen. It happens when you're dealing
- 16 with litigation. It happens when you're looking
- 17 into things like this.
- 18 So at the end of the day, I really
- 19 believe that the heart of everyone in this room is
- 20 in the same place, the minds of everyone in the
- 21 same place. They have the best interests of the
- 22 municipality of Hamilton and the citizens. Their
- 23 desire is to get to the truth. We may have
- 24 differences of opinion as to how and what mechanism
- 25 we do that, but we're all along that same page, and

- 1 we will do it together as we move forward.
- 2 So I thank the councillors who are
- 3 supporting the motion, and I will call the question
- 4 at the appropriate time. We have other speakers
- 5 though.
- 6 MR. EISENBERGER: Councillor
- 7 Whitehead.
- 8 MR. WHITEHEAD: Thank you. Just a
- 9 couple of quick clarifications. Well, one, because
- 10 the mayor had opened up, and I think he was making
- 11 reference to my comment, which was respectfully I
- 12 said -- and so, I want to look at my colleagues and
- 13 indicate to them that there's an emotional tie to
- 14 me to these processes. The Elliot Lake one, I
- 15 thought I had lost my parents. I really did for
- 16 four hours, so I am emotionally tied, and I was
- 17 glued to the whole process of the inquiry. So yes,
- 18 I am emotional about these processes in regards to
- 19 the confidence brought by the people in the
- 20 community.
- 21 The other piece I wanted to
- 22 identify is that the Elliot Lake audit got 75 per
- 23 cent of the funding. So I want to apologize -- I
- 24 don't know if I apologized, but I am emotional when
- 25 it comes to this. I want to put that on the table,

- 1 so you have context.
- 2 MR. EISENBERGER: Did you
- 3 apologize? Is that what you said?
- 4 MR. WHITEHEAD: Yeah, I did.
- 5 MR. EISENBERGER: Okay. Thank
- 6 you.
- 7 MR. WHITEHEAD: Very sincerely.
- 8 MR. EISENBERGER: Okay.
- 9 Appreciate that.
- 10 MR. WHITEHEAD: You all get an
- 11 apple tomorrow morning.
- 12 MR. EISENBERGER: I don't want an
- 13 apple.
- MR. WHITEHEAD: So I just wanted
- 15 to put it out there that, you know, I follow that
- 16 one very, very, very closely, and it was
- 17 incredible, the real-time information that was
- 18 being provided.
- The other thing that wasn't
- 20 mentioned here -- so one is you comply or the
- 21 commissioner can make a request for funding from
- 22 the Province of Ontario. Elliot Lake, 75 per cent
- 23 of funds was, in fact, funded by the attorney
- 24 general's office. That wasn't in reference here,
- 25 but apparently they do it under certain

- 1 circumstances, and that's something we'd have to
- 2 explore.
- 3 The other one is -- the Elliot
- 4 Lake one was much more complex than this, and it
- 5 was done in probably about 15 months, so -- and
- 6 that was more complex. And the last piece was that
- 7 actual families or participants can actually make
- 8 requests in good standing. So whether -- you know,
- 9 some of the families have lost -- I think there was
- 10 seven families or seven deaths in that time frame.
- 11 They could actually make
- 12 application or their lawyers can make application.
- 13 They can participate in the process. So now you
- 14 actually got an engagement opportunity for someone
- 15 who feel that there's a relevance to this issue to
- 16 them. I think they can feel equally satisfied that
- 17 they can ask those questions or participate in the
- 18 process where they can't in the other AG process.
- 19 I want to highlight those because those are
- 20 differentials as well.
- 21 MR. EISENBERGER: Okay. Thank
- 22 you.
- 23 Councillor Wilson.
- MS. WILSON: Thank you, Mr. Mayor.
- 25 I'll be brief. I think there was -- you alluded

- 1 to my use of the word "culture" or perhaps someone
- 2 else, and I just want to put it on the public
- 3 record it's really important for me that I have the
- 4 utmost confidence in the professionalism and the
- 5 council that I receive every day from the public
- 6 servants -- some of them who sit behind me. Most
- 7 of them, you know, they sit elsewhere, and I try
- 8 and reciprocate that in how I treat them, whether
- 9 we're in council or out of council or whether we're
- 10 in a meeting, and it's important to me that that be
- 11 clearly understood.
- 12 I think Mr. McKinnon is
- 13 outstanding. I think his staff is outstanding, so
- 14 I just wanted to make that clear. My reference to
- 15 culture frankly is political culture. It's not
- 16 organizational, okay? And sometimes when we're
- 17 debating very important matters, you have to hear
- 18 yourself talk in order to try and work your
- 19 thoughts out sometimes.
- 20 And you try and bring issues back
- 21 into your -- what I call my value frame, how I
- 22 assess where I'm going to go with something, and
- 23 for me, the auditor general avenue was very
- 24 compelling because of how expeditious we could
- 25 provide answers to people, and I think that is also

- 1 part of healing and for us to be informed on our
- 2 process as we have to learn from it and apply it to
- 3 everything that we do.
- But at the end of the day, my
- 5 value process -- my value lens is that of process
- 6 and ensuring the trust and confidence of our
- 7 residents on this one to enable them to have access
- 8 to the questions and the interviews. I think
- 9 they've told me that that's important, and when I
- 10 check that against my lens, it's also very
- 11 important to me, so thank you very much.
- MR. EISENBERGER: Okay. Thank
- 13 you.
- 14 Councillor Ferguson.
- 15 MR. FERGUSON: Thank you. In the
- 16 event this motion carries, I have three other items
- 17 I'd like staff to consider when they come back to
- 18 us with scope. Do I need to move an amendment now
- 19 or simply hand it towards the solicitor?
- 20 MR. EISENBERGER: Well, the motion
- 21 talks about scope, so you could certainly add
- 22 amendments to that scope if that's what you wanted
- 23 to do at this point in time.
- MR. FERGUSON: Okay. Can I move
- 25 those amendments?

- 1 MR. EISENBERGER: The motion's on
- 2 the floor, so if you want to make amendments, it's
- 3 yours to --
- 4 MR. FERGUSON: Okay. There's
- 5 three that I would like to have added to the scope.
- 6 They're very benign, but I'd like to know what is
- 7 the standard in Ontario for friction. I got it
- 8 written out here for you. What is the standard in
- 9 Ontario for friction because I understand there
- 10 isn't one, but I don't know. There's been a lot of
- 11 discussion around that.
- 12 Number two is: Are results for
- 13 friction for highways across the provinces amenable
- 14 to us or amenable to the public?
- And number three: Is speed,
- 16 traffic, weaving, and lighting as big an issue as
- 17 friction on the Red Hill Valley Parkway?
- 18 So those are three things I'd like
- 19 counsel to consider when it comes back to us as
- 20 potential scope. So I'd like to move those three,
- 21 please.
- MR. EISENBERGER: All right. Move
- 23 and seconded. We'll take that as a friendly then,
- 24 Councillor?
- MR. FERGUSON: No, just put it to

- 1 a vote.
- 2 MR. EISENBERGER: That's fine.
- 3 Moved and seconded. All in favour? Carried.
- 4 Thank you.
- 5 MR. FERGUSON: Do I need
- 6 electronic --
- 7 MR. EISENBERGER: Oh, yes, of
- 8 course. Yeah. It felt good though, didn't it?
- 9 Yeah. Flashback. On the amendment. Yes.
- 10 One more speaker on the motion, I
- 11 hope, and then we'll get to it. Thank you. That's
- 12 carried.
- 13 Councillor Danko.
- MR. DANKO: Thank you. And on the
- 15 amendment that Councillor Clark mentioned, I'm
- 16 happy if he takes that as a friendly. That's fine
- 17 with me, including recommendations on policy
- 18 changes and protocol. And just on the main motion,
- 19 I think I'm going to go with my heart here that
- 20 says you can't err on the side of transparency, and
- 21 in many ways, a lack of transparency may be what
- 22 got us into this position in the first place, so
- 23 thank you.
- MR. EISENBERGER: Okay. Thank
- 25 you.

1	Councillor Clark.
2	MR. CLARK: I want to read the
3	friendly amendment that Councillor Danko proposed
4	and I accepted, so it would be item 1.7 or maybe
5	not because Councillor Ferguson's might be for
6	that, so I'll leave it to staff, but it says:
7	"Review and make
8	recommendations to improve
9	city policies and
10	procedures to prevent such
11	future incidents."
12	MR. EISENBERGER: Okay.
13	MR. CLARK: That's a friendly
14	amendment and it will be just a part in the main
15	motion.
16	MR. EISENBERGER: Right. Thank
17	you.
18	So on the main motion that is
19	before you, e-vote required.
20	MS. JOHNSON: Can we vote on this
21	two separate? One is to go to the judicial review
22	and that's the first portion, and the rest is all
23	what's encompassed. I'm all for what's
24	encompassed. It's the first line, so
25	MR. EISENBERGER: You can ask to

- 1 either separate and vote for them independently or
- 2 be recorded as opposed to item A. Which one did
- 3 you want? Okay. So there's a request to separate.
- 4 So Councillor Clark.
- 5 MR. CLARK: I'm just looking at
- 6 the language here. So the first part talks about
- 7 the judicial investigation. The second part says
- 8 that the scope of the judicial investigation could
- 9 include but not be limited to the following and to
- 10 be referred to outside legal counsel for review.
- 11 MR. EISENBERGER: So it's not
- 12 separated, so we'll take it all as one. All in
- 13 favour, please indicate by electronic vote. Here
- 14 we go. Okay. And that's carried, so thank you
- 15 very much and thank you for that, I thought, a very
- 16 positive and respectful debate by large, so much,
- 17 much appreciated and a difficult one nonetheless.
- 18 One moment please. I have a motion, approve the
- 19 direction -- and we're done with that.
- 20 On the bill list, Councillor
- 21 Jackson, you have a motion on the bill's list
- 22 somewhere. Let's just assume that you do. So on
- 23 the bill's list, all in favour of moving the bills
- 24 list and -- you got it? Well, I would but if you
- 25 have the bill --

- 1 MR. JACKSON: Mr. Mayor, I move by
- 2 myself, seconded by Ward 7, Councillor Esther
- 3 Pauls, that the bill of 19-043 be passed and that
- 4 you put your corporate seal on it. Thank you.
- 5 MR. EISENBERGER: Thank you. All
- 6 in favour. Electronic vote.
- 7 Maureen, while you're there.
- 8 Thank you.
- 9 Carried. Thank you. And a motion
- 10 to adjourn, moved by Vanderbaek, seconded by
- 11 everybody else, including Councillor Pearson. All
- 12 in favour. Carried. Wow. I still have time for
- 13 bed.
- 14 --- Whereupon the proceeding concluded
- 15 at 11:40 p.m.

5.3 Local Planning Appeal Tribunal Appeals by Television City Hamilton Inc., (PL180255) - Settlement Proposal (LS19012) (Ward 2) (Item 5.3)

(Farr/Clark)

- (a) That the direction provided to staff in Closed Session be approved; and,
- (b) That Report LS19012 and its appendices and recommendations respecting Local Planning Appeal Tribunal appeals by Television City Hamilton Inc. (PL180255) Settlement Proposal, remain confidential.

Result: Motion CARRIED by a vote of 14 to 1, as follows:

NO - Councillor Maureen Wilson

YES - Councillor Jason Farr

YES - Councillor Nrinder Nann

YES - Councillor Sam Merulla

YES - Deputy-Mayor Chad Collins

YES - Councillor Tom Jackson

YES - Councillor Esther Pauls

YES - Councillor John-Paul Danko

YES - Mayor Fred Eisenberger

YES - Councillor Judi Partridge

YES - Councillor Terry Whitehead

YES - Councillor Arlene VanderBeek

YES - Councillor Lloyd Ferguson

NOT PRESENT - Councillor Brenda Johnson

YES - Councillor Maria Pearson

YES - Councillor Brad Clark

MOTIONS (Continued)

4.2 Judicial Investigation respecting the Lincoln Alexander & Red Hill Valley Parkways

(Clark/Merulla)

- (a) That the City's outside legal counsel, in consultation with the Acting City Manager, be directed to prepare the necessary documents to file an application before the Superior Court to initiate a Judicial Investigation, pursuant to *Ontario Municipal Act*, 2001, as amended, Section 274.1.a & b, (Investigation by a Judge), and the *Public Inquires Act*, Section 33, (Public Inquiries); and,
- (b) That the scope of the Judicial Investigation could include, but not be limited to, the following questions and be referred to outside legal counsel for review and a report back to the General Issues Committee:
 - (i) Who received, was briefed or was advised on the existence of the November 20th, 2013 Tradewind Scientific Friction Testing Survey

- Summary Report on the Lincoln Alexander & Red Hill Valley Parkways (the document) in 2013 or subsequent years;
- (ii) Who was the individual or individuals, who decided not to disclose the document in 2013;
- (iii) What was the rationale for not disclosing the document in 2013;
- (iv) Who received a copy, was briefed or was informed about the existence of the document in 2018;
- (v) What was the rationale for not disclosing the document in September 2018:
- (vi) Did the document provide sufficient cause to make safety changes to the roads, or provide cause for further study;
- (vii) What role, if any, did the non-disclosure of the document play in the increase in accidents, injuries or fatalities on the roads;
- (viii) Did anyone in the Public Works Office or Roads Department request, direct or conduct any other friction test, asphalt assessment, or general road safety reviews or assessments on the roads;
- (ix) Did subsequent consultant reports provide additional support or rebuttal to the document's conclusions;
- (x) Did the Ministry of Transportation's (MTO) recently revealed friction tests provide additional support or rebuttals to the document's conclusions;
- (xi) What was the rationale for the Ministry of Transportation to not disclose their findings from the city and the public:
- (xii) Who was briefed within the Ministry or the Minister's Office about the findings of the MTO's friction tests;
- (xiii) Did the MTO friction test provide sufficient cause to make safety changes to the roads, or provide cause for further study;
- (xiv) What role, if any, did the non-disclosure of the MTO friction tests play in the increase in accidents, injuries or fatalities on the roads;
- (xv) Did the MTO conduct any other road assessment, friction tests, or general safety reviews or assessments on the roads;
- (xvi) Was there any malfeasance, wrong doing or misconduct by any person or persons in relations to their role in the non-disclosure of the document;

(xvii) Review and make recommendations to improve City policy and procedures to prevent such future incidents.

(Ferguson/Clark)

That the Motion regarding a Judicial Investigation respecting the Lincoln Alexander & Red Hill Valley Parkways, be amended by adding new sections (xviii), (xix) and (xx), to read as follows:

- (xviii) What is the standard in Ontario for friction;
- (xix) Are results for friction for highways across the Province available;
- (xx) Is speed, traffic weaving and lighting as big an issue as the friction tests;

Result: Amendment CARRIED by a vote of 16 to 0, as follows:

YES - Councillor Maureen Wilson

YES - Councillor Jason Farr

YES - Councillor Nrinder Nann

YES - Councillor Sam Merulla

YES - Deputy-Mayor Chad Collins

YES - Councillor Tom Jackson

YES - Councillor Esther Pauls

YES - Councillor John-Paul Danko

YES - Mayor Fred Eisenberger

YES - Councillor Judi Partridge

YES - Councillor Terry Whitehead

YES - Councillor Arlene VanderBeek

YES - Councillor Lloyd Ferguson

YES - Councillor Brenda Johnson

YES - Councillor Maria Pearson

YES - Councillor Brad Clark

Main Motion, as amended reads as follows:

- (a) That the City's outside legal counsel, in consultation with the Acting City Manager, be directed to prepare the necessary documents to file an application before the Superior Court to initiate a Judicial Investigation, pursuant to *Ontario Municipal Act*, 2001, as amended, Section 274.1.a & b, (Investigation by a Judge), and the *Public Inquires Act*, Section 33, (Public Inquiries); and,
- (b) That the scope of the Judicial Investigation could include, but not be limited to, the following questions and be referred to outside legal counsel for review and a report back to the General Issues Committee:
 - (i) Who received, was briefed or was advised on the existence of the November 20th, 2013 Tradewind Scientific Friction Testing Survey

- Summary Report on the Lincoln Alexander & Red Hill Valley Parkways (the document) in 2013 or subsequent years;
- (ii) Who was the individual or individuals, who decided not to disclose the document in 2013;
- (iii) What was the rationale for not disclosing the document in 2013;
- (iv) Who received a copy, was briefed or was informed about the existence of the document in 2018;
- (v) What was the rationale for not disclosing the document in September 2018:
- (vi) Did the document provide sufficient cause to make safety changes to the roads, or provide cause for further study;
- (vii) What role, if any, did the non-disclosure of the document play in the increase in accidents, injuries or fatalities on the roads;
- (viii) Did anyone in the Public Works Office or Roads Department request, direct or conduct any other friction test, asphalt assessment, or general road safety reviews or assessments on the roads;
- (ix) Did subsequent consultant reports provide additional support or rebuttal to the document's conclusions;
- (x) Did the Ministry of Transportation's (MTO) recently revealed friction tests provide additional support or rebuttals to the document's conclusions;
- (xi) What was the rationale for the Ministry of Transportation to not disclose their findings from the city and the public:
- (xii) Who was briefed within the Ministry or the Minister's Office about the findings of the MTO's friction tests;
- (xiii) Did the MTO friction test provide sufficient cause to make safety changes to the roads, or provide cause for further study;
- (xiv) What role, if any, did the non-disclosure of the MTO friction tests play in the increase in accidents, injuries or fatalities on the roads;
- (xv) Did the MTO conduct any other road assessment, friction tests, or general safety reviews or assessments on the roads;
- (xvi) Was there any malfeasance, wrong doing or misconduct by any person or persons in relations to their role in the non-disclosure of the document;

- (xvii) Review and make recommendations to improve City policy and procedures to prevent such future incidents;
- (xviii) What is the standard in Ontario for friction;
- (xix) Are results for friction for highways across the Province available;
- (xx) Is speed, traffic weaving and lighting as big an issue as the friction tests:

Result: Main Motion, AS AMENDED, CARRIED by a vote of 14 to 2, as follows:

YES - Councillor Maureen Wilson

YES - Councillor Jason Farr

YES - Councillor Nrinder Nann

YES - Councillor Sam Merulla

YES - Deputy-Mayor Chad Collins

YES - Councillor Tom Jackson

YES - Councillor Esther Pauls

YES - Councillor John-Paul Danko

YES - Mayor Fred Eisenberger

YES - Councillor Judi Partridge

YES - Councillor Terry Whitehead

YES - Councillor Arlene VanderBeek

NO - Councillor Lloyd Ferguson

NO - Councillor Brenda Johnson

YES - Councillor Maria Pearson

YES - Councillor Brad Clark

BY-LAWS

(Jackson/Pauls)

That Bill No. 19-043, be passed and that the Corporate Seal be affixed thereto, and that the By-laws, be numbered, be signed by the Mayor and the City Clerk to read as follows:

By-law No.

O43 To Confirm the Proceedings of City Council

Result: Motion CARRIED by a vote of 16 to 0, as follows:

YES - Councillor Maureen Wilson

YES - Councillor Jason Farr

YES - Councillor Nrinder Nann

YES - Councillor Sam Merulla

YES - Deputy-Mayor Chad Collins

YES - Councillor Tom Jackson

YES - Councillor Esther Pauls

RED HILL VALLEY PARKWAY INQUIRY

- 1 with subsequent testing results, you would agree
- 2 with me that it could recommend friction testing
- 3 annually, quarterly, in order to make that
- 4 comparison, but this does not do that?
- 5 A. Well, I would disagree to
- 6 some extent. I think the use of the word
- 7 "baseline" does imply just that, literally the
- 8 beginning point or a baseline to which future
- 9 comparisons can be made, but --
- 10 Q. Finish that sentence,
- 11 Mr. Malone. It's to compare to design
- 12 specifications?
- A. No. I was going to
- 14 continue by saying my understanding was there was
- 15 no friction testing available or done by the City;
- therefore, a baseline had not been established,
- 17 nor had anything been compared to anything else.
- 18 So, if there's a design specification that
- 19 potentially becomes a comparator that this
- 20 baseline, if and when achieved, can be compared
- 21 to.
- Q. So, you would agree with
- 23 me it would have been important to note that after
- 24 the City obtains that baseline, that they obtain
- 25 additional testing to compare the baseline to?

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RED HILL VALLEY PARKWAY INQUIRY

Τ	A. In 2022, I would agree
2	with you that may be something that's more clear.
3	In 2013, the importance of friction in the
4	diagnosis, in the determination of factors that
5	may be causal factors in collisions was not clear
6	at all. In fact, there were other factors that
7	were much more clearly identified, including
8	speed, and potentially driver behaviour.
9	And so, I won't say this was
10	trivialized in the report. It was a significant
11	recommendation to include, but it was not nearly
12	as clearly understood as to be a potentially
13	contributing factor as it may be today. But I'll
14	have to add I still haven't really seen any
15	conclusion that friction was deemed to be a causal
16	factor.
17	Q. I understand. And, you
18	know, when we look at cost-benefit ratio
19	underneath, we see that it says:
20	"Based on the results,
21	the City may be in a
22	better position to
23	determine if further
24	action is required."
25	And so, you know, it certainly





Legal Services Division

Date: December 18, 2018

To: Diana Sabados, Supervisor, Claims Administration

Risk Management Services

From: Dana-Elisabeta Lezau, Solicitor

Legal Services

Subject: Hamilton et al ats. Hansen

Bernat et. al ats. Hamilton

Bernat ats. Hamilton

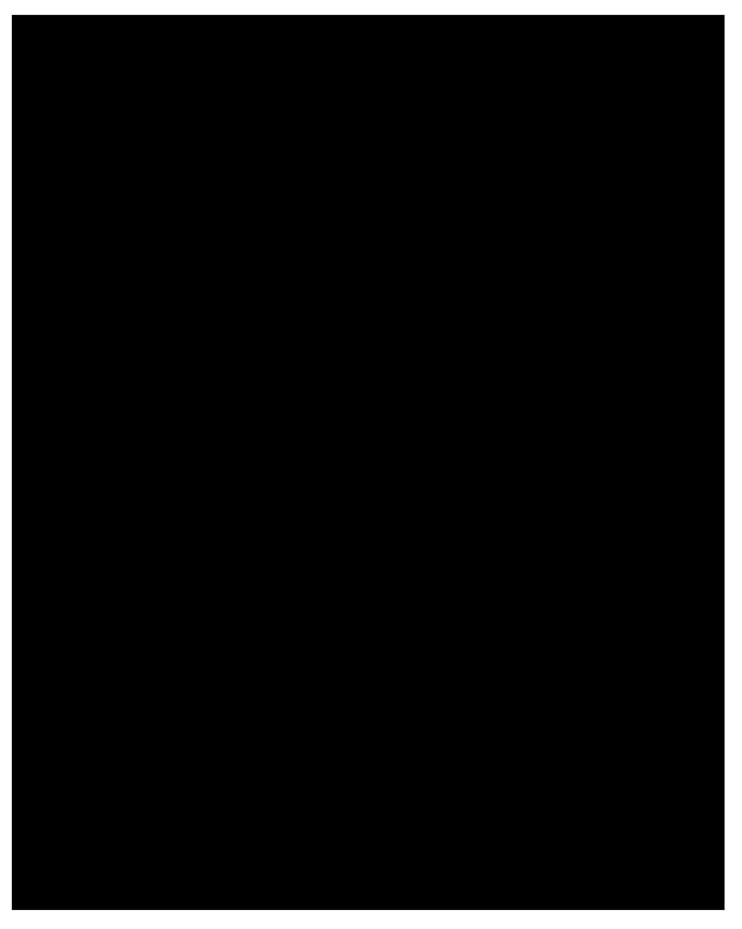
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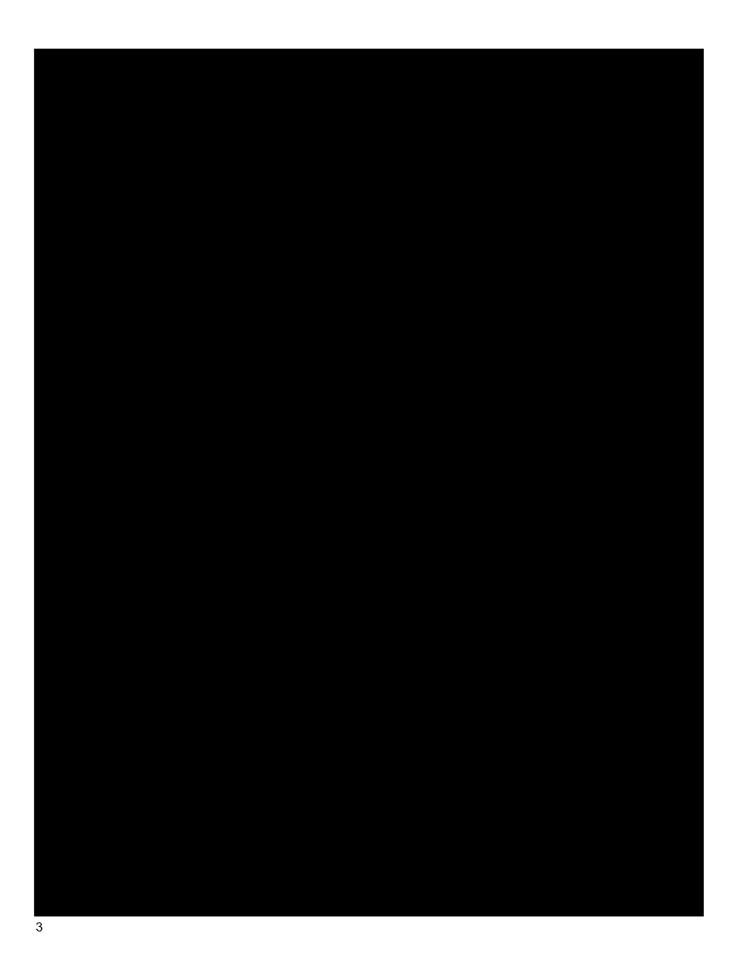
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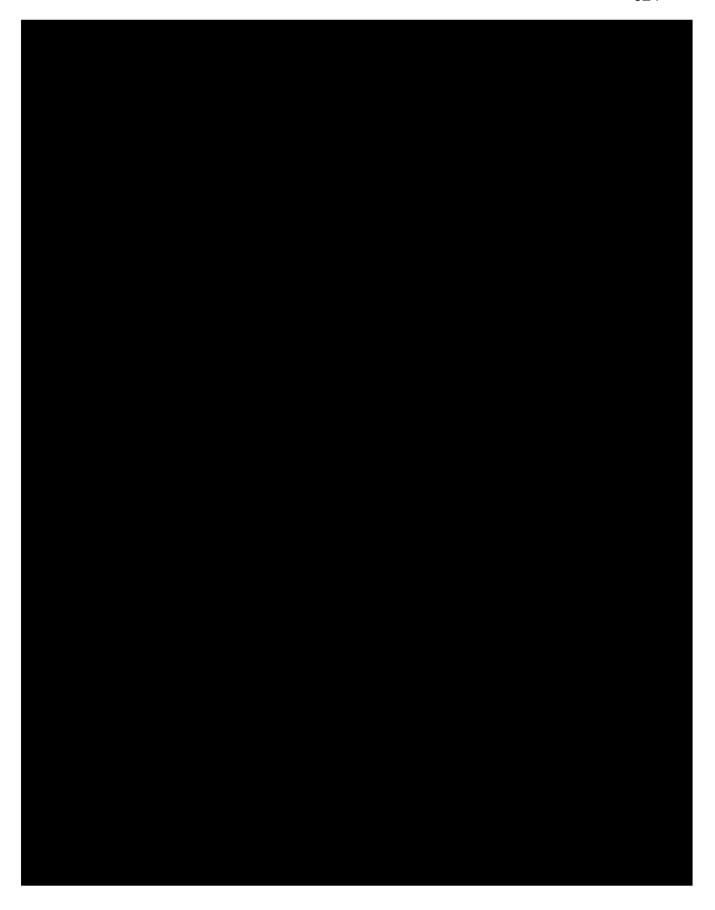
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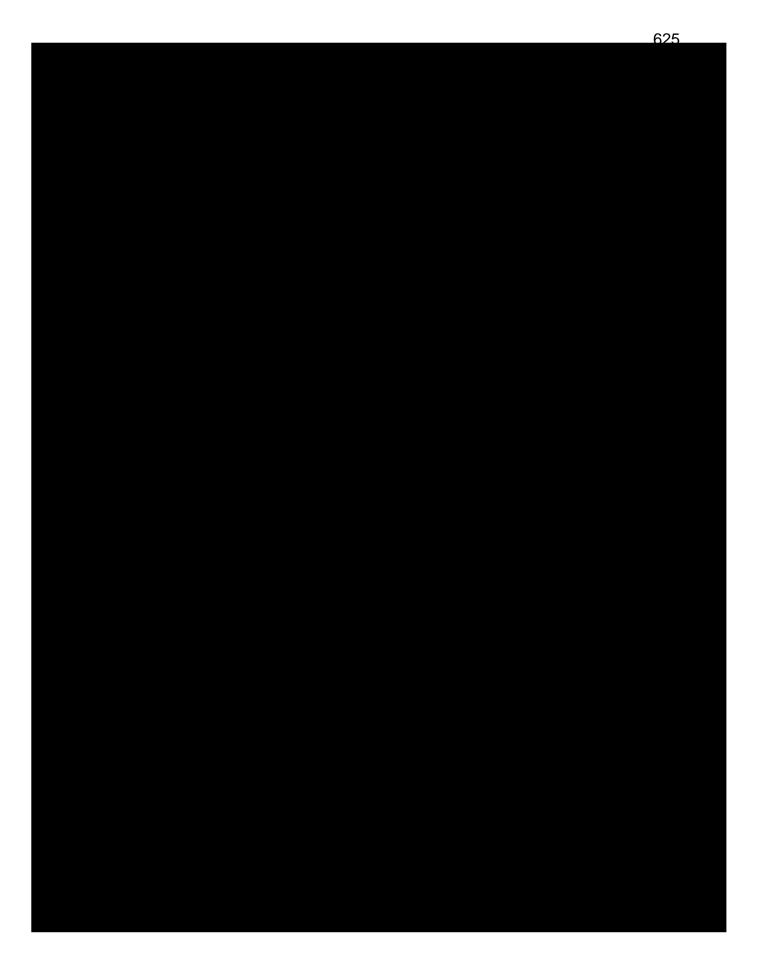
Examinations Report

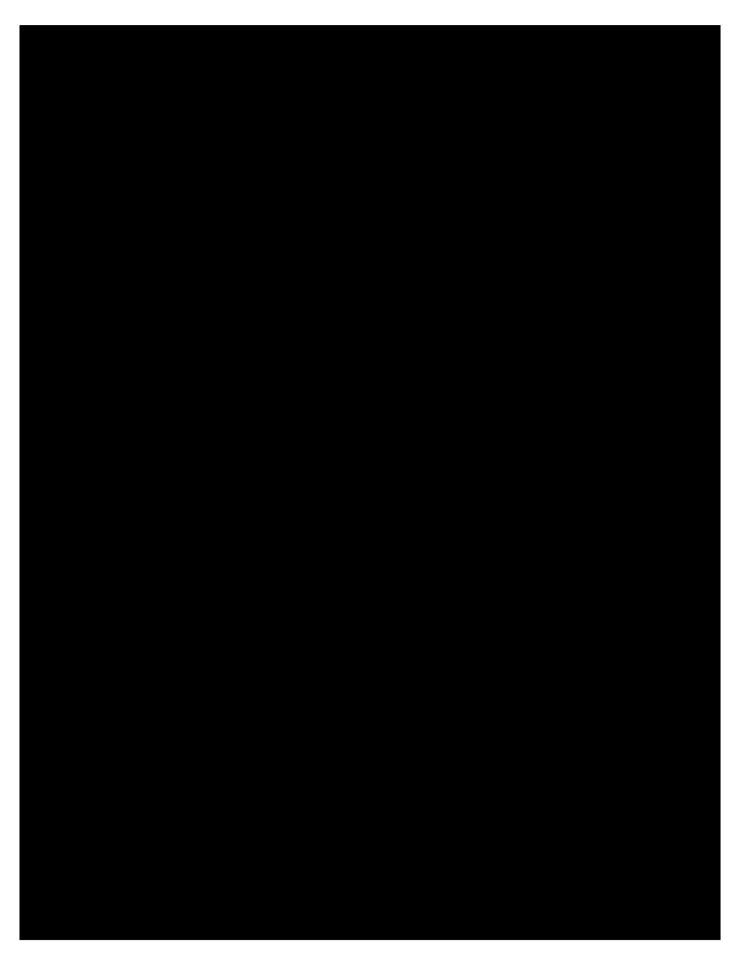




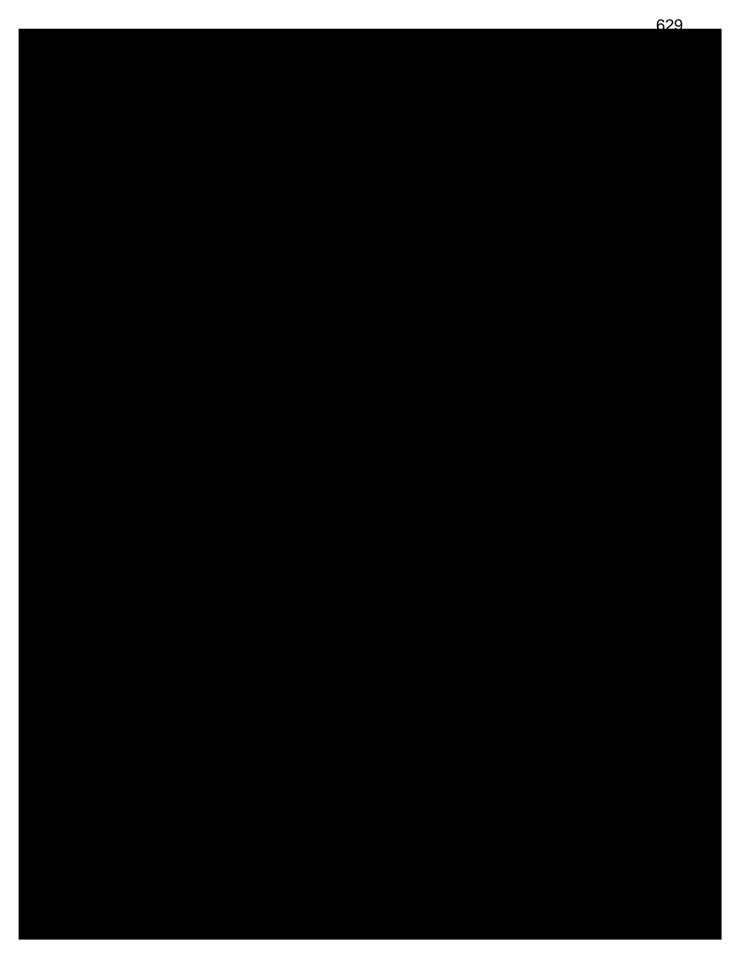














c. City's examination - Marco Oddi, Project Manager for the Red Hill

- The City's examination for discovery was quite instructive for counsel.
 Marco came across as extremely knowledgeable and answered on point.
 He explained why the particular asphalt was used for both the roadway and the ramps and confirmed that the City followed provincial standards in place at the time;
- He also answered the question as to why no concrete barrier or guard rail.
 Red Hill was designed to be a three-lane each way expressway. However, the City opted for a two-lane so that they could determine whether a three-lane was necessary depending on the traffic and the frequency of use. For a two-lane, there is no engineering requirement to either erect a concrete

barrier or guard rail. There's the posted speed of 90km/hr and the median between the NB and SB is wide enough (also in accordance with the provincial standards) to allow the vehicles to come to a full stop, assuming the driver is driving within the speed limit;

 Marco also testified that the only reason why a concrete barrier or a guard rail would be installed has nothing to do with either being required both from a physics or an engineering perspective. The reason would be what he called "social costs" – things like newspaper articles reporting on accidents – however, that leaves out the real causes of accidents: driver negligence or inexperience, things against which the City cannot protect itself against;

 On the question of friction testing, Marco testified that it is done as part of the maintenance and performance of the roadway. Overall, the roadway is functioning as it was intended. However, the City cannot prevent people from going over the speed limit and creating accidents.

