

**OVERVIEW DOCUMENT #6:
THE 2013 CIMA REPORT AND THE 2013 GOLDBER
AND TRADEWIND REPORTS**

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A. Introduction

1. In 2013, Hamilton retained CIMA to prepare a safety review of the RHVP. That same year, Hamilton retained Golder to conduct, among other projects, a review of the RHVP five years after its opening. Golder, in turn, retained Tradewind to conduct friction testing.

2. Overview Document #6 will address both the 2013 CIMA Report and the Golder/Tradewind report. This Overview Document 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.

3. 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.¹ A complete list of the individuals and their respective information can be found at Appendix A of Overview Document #6.

4. The facts contained in Overview Document #6 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.

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 #6, see Appendix A.

B. October 2012 to January 2013

1. October 24, 2012 Meeting Between Mr. Moore and Dr. Uzarowski

5. On October 9, 2012, Ludomir Uzarowski (Principal, Pavement and Materials Engineering, Golder) exchanged emails with Gary Moore (Director, Engineering Services, Public Works, Hamilton) and Diana Cameron (Administrative Assistant to the Director of Engineering Services, Engineering Services, Public Works, Hamilton), under the subject line “Meeting in Hamilton”:

[LU]: Could you please let me know when we can meet? I will be going to TAC on Saturday, Oct 13 coming back on Thursday, Oct 17.

[DC]: Gary is away from the office returning October 22nd. Let me know how long you need and what days you are available and I will set something up.

[LU]: I would like to meet with Gary as soon as he is back, i.e. in the week of Oct 22nd. I anticipate that Gary will be very busy after returning. I cannot be more specific with when I can go to Hamilton since I am a witness expert on behalf of MTO and can be called to Court in North Bay any day of that week of the next one. I will know exactly when closer to Oct 22nd.

[DC]: Any idea of your timing for next week as Gary’s schedule is quickly filling up.²

6. A meeting between Mr. Moore and Dr. Uzarowski was set for October 24, 2012 from 1:00pm-2:00pm.³

7. Dr. Uzarowski’s notebooks include an entry for a meeting with Mr. Moore on October 24, 2012. The entry included the following topics:

Meeting with Gary Moore

1/ RHVP instrumentation

√ 2/ Modified specs. – implementation

WMA

² [HAM0023050_0001](#)

³ [HAM0000411_0001](#)

v 3/ WMA

- Hamilton

- MTO Special LS-318

"Draft – Practice for the Design of Superpave WMA" 12.05.31

4/ Pavement design – matrix

5/ - Pav. rehab in PMS

6/ High RAP mixes

Phase III

Marco – next week

geotech roster requirements

talk to Gerd

RHVP instrumentation

- data sorting

- point of analysis

- \$30-40,000

Phase III

- Implementation, enforcement

- it's there

- rehab – updated matrix

pav. Design matrix incl. rehab selection

like Superpave matrix

Asset management

Rideability, cracks, structural

Rich by John Kerry - first day
do
review the results to ensure the
right history is done and enforcement

end of 2 year period – repair

the joints – reheat & additional AC

4/ RVHP proposal – Rabiah⁴

8. A subsequent entry in the notebook, dated October 25, 2012, noted:

1/ Hamilton RHVP

VH 2/ Hamilton Phase III⁵

9. Another entry, dated November 21, 2012 included the following:

A/ Hamilton

– RHVP monitoring station – start

– 5 years later⁶

2. The origin of the 2013 CIMA Report and Councillor Collins' motion

10. On November 26, 2012, Councillor Chad Collins (Ward 5, Hamilton) sent an email to Councillor Brad Clark (Ward 9, Hamilton) and Councillor Tom Jackson (Ward 6, Hamilton) that proposed a motion to the Public Works Committee.⁷ Councillor Collins wrote:

Hi guys, I've received a number of complaints both past and present regarding the dark area of the Red Hill Parkway, where the road crosses the edge of the escarpment. Staff has consistently advised that they've designed the road to the highest standards. While that might be the case, I have received numerous requests to improve the area, especially the lane markings. I've attached a copy of a motion I'd like to put to PW that formally

⁴ [GOL0007411](#) at image 26

⁵ [GOL0007411](#) at image 27

⁶ [GOL0007428](#) at image 2

⁷ [HAM0023128_0001](#)

requests staff to investigate the options that might help us improve the safe travel of motorists along this stretch of road. Any suggestions, deletions or alterations?

11. On January 16, 2013, the Public Works Committee met with Councillors Lloyd Ferguson (Ward 12, Hamilton), Terry Whitehead (Ward 8, Hamilton), Collins, Jackson, Sam Merulla (Ward 4, Hamilton), Robert Pasuta (Ward 14, Hamilton), Russ Powers (Ward 13, Hamilton), Brian McHattie (Ward 1, Hamilton), Scott Duvall (Ward 7, Hamilton), Maria Pearson (Ward 10, Hamilton), and Brenda Johnson (Ward 11, Hamilton) present.⁸ Report 13-001 of the Public Works Committee records that the following motion was passed:

(h) MOTIONS (Item 9)

(i) Red Hill Parkway Improvements (Item 9.1)

On a Motion staff were directed to investigate upgrading the lighting on the Red Hill Parkway in the vicinity of the Mud/Stone Church Rd interchanges; and

Staff were directed to investigate better reflective signage and lane markings or other initiatives to assist motorists in the same area; and

That a full costing of all options and alternatives be presented to committee for their consideration.

12. On January 16, 2013, after the motion was passed at the Public Works Committee, Martin White (Manager, Traffic Operations & Engineering; Energy, Fleet & Traffic; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) emailed Ron Gallo (Senior Project Manager, Signals and Systems, Traffic Operations & Engineering; Energy, Fleet and Traffic; Corporate Assets and Strategic Planning, Public Works, Hamilton), and Gord McGuire (Manager, Geomatics & Corridor Management,

⁸ [HAM0004275_0001](#) at image 8.

Engineering Services, Public Works, Hamilton) to advise them about the decision and to suggest that Hamilton hire a consultant to carry out the work.⁹

13. On January 17, 2013, Mike Field (Project Manager, Street Lighting & Electrical Engineering, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton) emailed Mr. Gallo (copying Mr. McGuire and Gary Kirchknopf (Senior Project Manager, Traffic Planning, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton)) and stated:

After discussing this with Gord and Gary, it is our opinion that the safety issue should be reviewed holistically. Therefore, the consultant's scope should encompass street lighting review and what counter-measure benefits would be attributed to adding lighting. As you can imagine, adding lighting would be supremely expensive and before we consider it, we need to determine what is the best solution.

As you and I discussed, if Traffic is going to proceed with contracting a consultant, then please include me in the conversation to assist in defining the project scope,¹⁰

14. On January 23, 2013, City Council approved Report 13-001 of the Public Works Committee.¹¹

3. Hamilton staff implement motion and develop scope of project

15. On January 23, 2013 at 1:00 pm, Mr. White, Mr. Gallo, Mike Cosentino (Superintendent, Traffic Operations, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), Stephen Cooper (Superintendent, Traffic Operations, Traffic Engineering & Operations; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), Mr. Field, and Stewart Lloyd (Administrative Secretary (Temporary), Traffic Operations & Engineering;

⁹ [HAM0041413_0001](#)

¹⁰ [HAM0041413_0001](#)

¹¹ [HAM0004275_0001](#)

Energy, Fleet, Facilities & Traffic; Transportation, Energy & Facilities; Public Works, Hamilton) met to review the motion.¹² The minutes of that meeting record that Mr. Cooper would become the Project Manager, develop the RFP for the project, assign an engineering firm from the City's roster to carry out the work, and obtain a purchase order for the project. The minutes listed several considerations for the RFP:

Broad safety audit will identify shortcomings in lighting, markings etc.

Identify Gaps – suggest improvements

Is signage suitable

Is lighting suitable

Horizontal Alignment

Other Technologies i.e. wet bead.

Examine inline pavement markings

Cats eyes

Mike Field to provide street lighting review strategy to Steve

Prior improvements

16. The minutes also record that the final report was “to contain recommended improvements/alternatives to lighting, signing and marking with associated costs.”¹³

17. On January 24, 2013, Ms. Cameron advised Mr. Field, Mr. McGuire, and Mr. Moore that John Mater (Director, Corporate Assets & Strategic Planning, Public Works, Hamilton) and his group would be taking the lead on the motion and would report back to the Public Works Committee on November 18, 2013.¹⁴

¹² [HAM0000427_0001](#)

¹³ [HAM0000427_0001](#)

¹⁴ [HAM0004274_0001](#)

C. February – March 2013

1. February 1, 2013 - Dr. Uzarowski Proposes Paper – Evaluating Performance of RHVP Five Years After Construction

18. On February 1, 2013, Dr. Uzarowski emailed Mr. Moore.¹⁵ Dr. Uzarowski wrote that he was attaching an abstract for a proposed paper for “TAC 2013,” which appears to mean the 2013 Transport Association of Canada conference. The abstract proposed a paper co-authored by Dr. Uzarowski, Mr. Moore and Vimy Henderson (Pavement and Materials Engineer, Golder), with a title of “Evaluating Performance of the Perpetual Pavement on the Red Hill Valley Parkway Five Years After Construction.” The abstract read as follows:

The Red Hill Valley Parkway (RHVP) in the City of Hamilton (City) is a high profile modern urban expressway with a total length of about 7.5 km, a 90 km/hr posted speed limit, controlled access and four lanes (two lanes in each direction). The City decided that, given the projected full use traffic volumes, which will be as high as 100,000 vehicles per day, the conventional wisdom of designing of deep strength pavement for a 20 year life was not acceptable. Therefore they decided to use a perpetual pavement structure intended to handle 90 million ESAL's over a 50 year time period for the new construction of the RHVP. The perpetual pavement on the RHVP was constructed in 2007.

The pavement structure consists of a 40 mm Stone Mastic Asphalt (SMA) surface course, a 50 mm premium SP 19.0 upper binder course, a 70 mm premium SP 25.0 lower binder course, a 80 mm Rich Bottom Mix (RBM) layer, 150 mm of granular base, and 370 mm of subbase. During the construction a full-time inspector was present on site to monitor the quality of construction. A visual distress inspection was carried out on the pavement immediately following construction which identified that no visible cracking was evident and the construction joint in the pavement were was very good quality.

Five years after construction the pavement is in excellent condition. In light of the fact that the pavement on the RHVP was the first perpetual pavement constructed in Canada on a municipal roadway, a condition inspection of the pavement will be carried out. It will include a visual distress inspection, Falling Weight Deflectometer (FWD) testing and smoothness measurements using an inertial profiler.

This paper discusses the advanced material characterization tools that were used during the design phase to evaluate the quality of the asphalt mixes that were placed including dynamic modulus, rutting resistance using an Asphalt Pavement Analyzer (APA) and fatigue endurance using the four point bending beam test. The paper will briefly highlight the instrumentation that was installed within the pavement structure and how the instrumentation can be used to gauge and evaluate in-service performance. Finally, the paper will discuss the various field investigations carried out on the RHVP in its fifth year

¹⁵ [GOL0003395](#) attaching [GOL0003396](#)

of service and the detailed analysis carried out to evaluate its performance to date and to evaluate the impact of measured performance on its life cycle.¹⁶

19. On February 5, 2013, Mr. Moore responded to Dr. Uzarowski by email and said “I don’t see anything that is using the data gathered over the last five years, or the evaluation of the performance. Everything is just a rehash of the original design and previous work. I can’t really support this going forward as is.”¹⁷

20. Dr. Uzarowski accepted a calendar appointment for a one-hour meeting at Mr. Moore’s office for March 1, 2013. The title of the calendar appointment was “Red Hill Valley – 5 years later / Instrumentation / Phase 3 Technology Review”.¹⁸

2. February 27, 2013 - CIMA and Hamilton discuss project

21. On February 27, 2013, Mr. Gallo accepted a calendar invite sent by Brian Applebee (Project Manager, Transportation, CIMA), with the subject “Red Hill Safety Improvements”.¹⁹ He wrote in the reply:

Thank for setting up the meeting. Will you have sufficient time to submit a final proposal by the 15th? Can Steve and I provide you any info that will help to fast track? Let us know.

22. Mr. Applebee replied the same day, requesting more information regarding the City’s expected scope:

We shouldn’t have any trouble turning around a proposal for you guys by the 15th. It would help us to get a head start if you could provide even just a bullet point list in an email of your expected scope. We could then turn that into a paragraph, letter, etc. if we have somewhere to start.

I.e. it is a RSA type review only, or is it a larger safety review of geometrics, signing, lighting, etc., or larger still to include all of that and potential geometric design, etc. etc. Also, an

¹⁶ [GOL0003396](#)

¹⁷ [GOL0003394](#)

¹⁸ [GOL0003527](#)

¹⁹ [CIM0009208](#)

estimate of the type of data that we will be provided, i.e. collisions, volumes, drawings, do we need a site visit, etc. This type of input to start with would assist.

Also, I have spoken with Brian M and he is good to go with this timeline.

We look forward to your input and to providing some a quote to undertake this work.²⁰

23. On February 28, 2013, Mr. Cooper replied to Mr. Applebee, describing the City's requirements as follows:

As per below and as discussed, we will require the following:

The general study area will be RHVP- Dartnall ramp to Greenhill ramps, both directions as well as the Stone Church/Mud St. ramps.

This will be a larger safety review requiring a review of geometrics (potential changes), signing, lighting, pavement markings, alignment, Human factors assessment, and collisions. Also, we would like a review of any changes that we have made in recent years and their effectiveness (we will provide the history). Any gaps need to be identified along with suggested improvements. A cost/benefit analysis for the addition of lighting, if recommended. A cursory review for the entire length of the LINC/RHVP for the potential for an ITS system.

We will require full costs associated with ALL recommendations- implementation, operating and any on-going maintenance, along with impacts to current staffing levels.

We can provide collision history, volumes, and any necessary drawings. Site visits will most likely be required.

This should cover most of what we are looking for and any questions can be discussed via our telephone conference.

If you have any questions, please let me know.²¹

24. Mr. Applebee replied to the email from Mr. Cooper, asking what prompted the assignment:

Great, thanks Steve. I guess my most basic question, which I probably should have asked before, is what the impetus of this assignment is. Are there concerns with what is out there today/what is occurring? Collisions? Design issues?

Thanks and this gives us a good head start.²²

²⁰ [CIM0009208](#)

²¹ [CIM0009208](#)

²² [CIM0009208](#)

25. Mr. Cooper replied the same day, describing the City's rationale for the assignment as follows:

This is due to a motion put forward by a Councillor for an investigation. To include lighting upgrades on the RHVP in the area of Mud/Stone Church interchange, investigate better reflective signage and lane markings or "other" initiatives to assist motorists and that full costing of all options and alternatives be presented.

We are not aware of a significant collision issue on the mainline, but the ramp leading from Mud/Stone Church to RHVP WB/SB has many run off type, which we have attempted address using signing improvements, it is too early to tell if they've made an improvement.²³

3. March 1, 2013 - Golder submits proposals for work to Mr. Moore

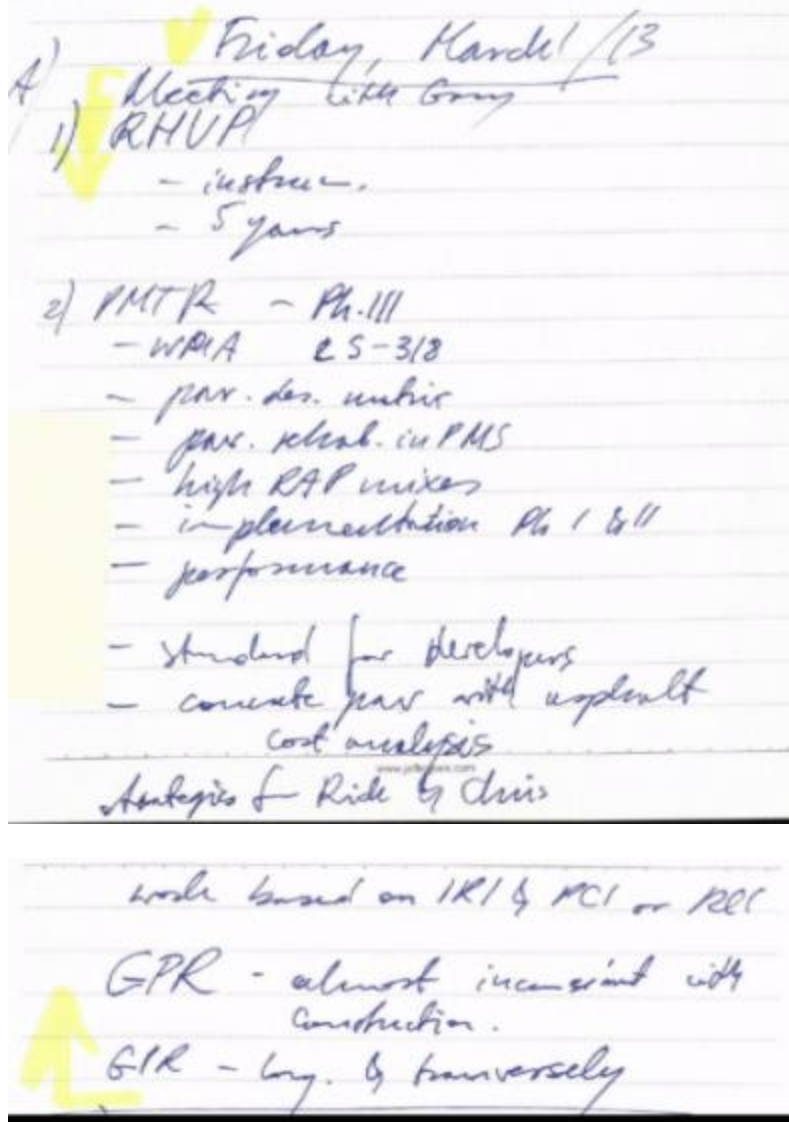
26. Dr. Uzarowski attended a meeting at Mr. Moore's office on March 1, 2013, at 9:00am. The subject of the meeting was "Red Hill Valley – 5 years later / Instrumentation / Phase 3 Technology Review".²⁴

27. Dr. Uzarowski's notebooks contain an entry dated March 1, 2013, which references a meeting with Mr. Moore:²⁵

²³ [CIM0009208](#)

²⁴ [GOL0003527](#)

²⁵ [GOL0007399](#) at image 8



28. On March 1, 2013, Dr. Uzarowski emailed Mr. Moore. He stated that “as discussed this morning” he was attaching an Authorization to Proceed and Consulting Services Agreement and three proposals for work:

- (a) activating the instrumentation on the RHVP,
- (b) Phase III of the pavement and materials technology review, and

(c) pavement condition evaluation on RHVP 5 years after construction.²⁶

29. The activating instrumentation proposal indicated that Hamilton requested that the pavement instrumentation collection system both for traffic monitoring and pavement response monitoring on the RHVP be reconnected for online downloading. Golder proposed to activate the existing traffic monitoring and pavement response monitoring systems at the RHVP, renew the internet service contract, ensure that the service functioned, regularly download and store all collected data and collect real time data for specific events on a monthly basis. The total budget for this project was \$35,000.²⁷

30. In the second proposal, Golder offered to carry out Phase III of the Pavement and Materials Technology Review. This work would include implementation of the Phase I and II recommendations, development of an updated pavement design matrix, review of the Pavement Management System and recommendations for maintenance and rehabilitation alternatives and their integration into the Pavement Management System, analysis of the feasibility of using high recycled asphalt pavement mixes, analysis and recommendations to current standards for developers, and analysis of feasibility of using concrete bases in pavement structures. The total budget for this project was \$98,000.²⁸

31. The third proposal was for Golder to estimate the condition of the pavement on RHVP in 2013, five years after it was constructed. The total budget for the work was \$23,500. Golder described the scope of work as follows:

²⁶ [GOL0003775](#) attaching [GOL0003776](#), [GOL0003777](#), [GOL0003778](#) and [GOL0003779](#)

²⁷ [GOL0003776](#)

²⁸ [GOL0003778](#)

- Field investigation:
 - Windshield visual condition inspection;
 - Inertial profiler testing to determine International Roughness Index (IRI);
 - Limited Falling Weight Deflectometer (FWD) testing; and
 - Rut depth measurement, if feasible.
- Analysis;
 - Compilation of collected data and evaluation of current condition;
 - Comparison of measured performance with performance anticipated for 400 series highway pavements; and
 - Setting a baseline for future comparisons.
- Reporting;
 - A report will be prepared discussing the results of the field investigation and analysis; and
 - Recommended maintenance activities will be presented in the report.²⁹

32. On March 8, 2013, Mr. Moore emailed Dr. Uzarowski and accepted the three proposals but deferred two items from the Phase III proposal. Mr. Moore requested that Dr. Uzarowski submit his proposed schedule for the work as soon as possible.³⁰

33. On March 11, 2013, Dr. Uzarowski emailed Mr. Moore and proposed the schedule of work for all three projects.³¹ For the evaluation of the RHVP pavement condition, Dr. Uzarowski wrote:

We will start organizing and carrying out the field work shortly. The [Falling Weight Deflectometer] testing will be the determining factor in terms of completing the field work as it can only be carried out once the ground is fully thawed. Assuming that the [Falling Weight Deflectometer] can be completed in May, the report will be provided by June 14, 2013.

²⁹ [GOL0003779](#)

³⁰ [GOL0002973](#)

³¹ [GOL0003773](#)

34. On March 12, 2013, Mr. Moore replied to Dr. Uzarowski, writing that the proposal timelines were acceptable and to please proceed. He indicated that purchase orders would be issued for the project.³²

4. March 12, 2013 CIMA submits response to Hamilton's request for quotation

35. CIMA and the City participated in a teleconference on March 11, 2013, to help finalize CIMA's proposal for the assignment.³³ Mr. Applebee advised Maurice Masliah (Project Manager, Transportation, CIMA):

We have a teleconference with the City on Monday the 11th @ 10:00 am to help finalize our proposal, with the proposal being due on Friday the 15th. This is a direct assignment off of the City's Roster for 2013. Proposal doesn't have to be fancy.

Looking at project completion in September – the City wants to take the report to Committee for review in November (preliminary timelines).

What I have told the city is that we would put together a few paragraphs for our understanding/metholdolgy to begin with and have them review that before our teleconference on Monday. Then hopefully Monday it would be to sort out any other details that we haven't captured and to agree on a timeline, etc. You should join if possible.³⁴

36. Mr. Malone's notebooks contain an entry dated March 11, 2013, referencing a discussion between representatives from CIMA and the City regarding the RHVP.³⁵

37. On March 12, 2013, CIMA sent a response to Hamilton's request for a quotation to undertake a safety review of the RHVP between Dartnall Road and Greenhill Avenue, including the Mud Street/Stone Church Road intersection.³⁶ CIMA described the purpose of the review as follows:

³² [GOL0004391](#)

³³ [CIM0009209](#); and [CIM0009177](#)

³⁴ [CIM0009209](#)

³⁵ [CIM0022409](#) at image 1

³⁶ [HAM0000426_0001](#)

The purposes of this review are to establish the existing safety performance of the study area, identify any potential or actual safety issues, and investigate possible solutions to improve the safety performance of the Red Hill Valley Parkway within the study area. The key aspects that will be examined include, but may not be limited to:

- Lighting;
- Signs and markings; and
- Geometry.

38. CIMA indicated that it expected the City to provide it with following required data for the project:

- Existing and historical (up to 5 years) traffic count data and classification for both directions on the mainline and for each ramp (ADT, AADT, TMC, etc.), as available;
- Complete electronic dump of the 5-year collision history for each direction on the mainline and for each ramp, geo-coded if available;
- Any lane utilization information that may have been collected;
- Vehicle speed data, either collected through tubes or spot speed;
- Design drawings for the mainline and each ramp in CAD format (Microstation);
- Initial design guidelines/standards and assumptions;
- Lighting (illumination) standards;
- Reconstruction/rehabilitation changes to corridor, including the start and end dates of construction for each project.
- History of past changes to signage, markings, ITS initiatives, etc. and dates when implemented;
- Documented complaints and known issues from either internal to the City or submitted by the public or other agencies;
- Costs for various elements (i.e. signs, markings, luminaires, guiderail, road widening, etc.) including typical installation, maintenance and man-hour costs; and
- Any other information that the City may deem relevant.³⁷

39. CIMA explained that in conjunction with the geocoding, it would review the collision history for the study area for the past 5 years. This information would allow CIMA to

³⁷ [HAM0000426_0001](#) at images 2-3

identify the types and number of collisions within the study area and provide CIMA with areas within the study area that should be targeted for further review during the field investigation. CIMA indicated that during its field review, three “key elements will be investigated throughout the corridor: driver tasks (control, guidance, and navigation), traffic operations, and road and roadside design.” CIMA stated that during the field investigation, “special consideration will be given to human factors issues including observing driver merging behaviour at entrance ramps, driver expectations at lane drops, driver information needs to select the appropriate lane, and driver behavioural trends based on exit ramp geometry.”³⁸

40. CIMA stated that it would combine the results of the collision, field, and design reviews into a determination of potential safety issues and would then develop a range of potential solutions, which would attempt to quantify the expected improvement from adopting that solution.³⁹

41. CIMA wrote that it would prepare a draft report, including recommendations, for review by the City. Following receipt of all comments from the City on the draft report, CIMA would then create a final report and a PowerPoint presentation. CIMA represented that it would complete the report by the first Friday in September 2013 for expected fees of \$75,530, including disbursements, plus HST.⁴⁰

42. The CIMA proposal was attached to a calendar appointment for a meeting on March 18, 2013, among Mr. Cooper, Mr. Gallo, Mr. White, Kim Wyskiel (Superintendent,

³⁸ [HAM0000426_0001](#) at images 3-4

³⁹ [HAM0000426_0001](#) at image 5

⁴⁰ [HAM0000426_0001](#) at images 6-7

Traffic Services, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), Mr. Consentino and Mr. Field.⁴¹

43. A purchase order dated April 17, 2013, was provided to CIMA for the assignment, which was described as “Roster Assignment: Safety Review of the Red Hill Valley Parkway from Dartnall Rd. to Greenhill Ave.” The total budget for the project was \$75,530.⁴²

D. April – May 2013

1. April 9, 2013 – City creates purchase order for Golder

44. On April 9, 2013, Hamilton created Purchase Order 0000069812 to Golder for the project, which was described as RHVP – 5 Years Condition Evaluation”. The purchase order was for a total of \$28,000, which included a \$4,500 contingency.⁴³ The City faxed this purchase order to Golder on May 7, 2013, which was forwarded to Dr. Uzarowski on May 8, 2013.⁴⁴

2. April 18 and 23 – Site visits to RHVP, data collection, and work

45. Staff from Golder travelled to the RHVP on April 18 and 23, 2013, to inspect visually the pavement condition. The staff observed some micro cracking, some longitudinal cracking, and some construction joints with third lane or ramp generally

⁴¹ [HAM0000425_0001](#) attaching [HAM0000426_0001](#) and [HAM0000427_0001](#)

⁴² [CIM0000010](#)

⁴³ [HAM0023225_0001](#)

⁴⁴ [GOL0006483](#) attaching [GOL0006484](#); and [HAM0000428_0001](#)

starting to open up.⁴⁵ Golder also made arrangements to conduct profiler and falling weight deflectometer testing in early May 2013.⁴⁶

46. CIMA held its internal kick-off meeting on April 24, 2013.⁴⁷ Mr. Masliah, Sheetal Thukral (Engineer, Transportation, CIMA), Ben Robertson (Transportation Technologist, CIMA), and Pedram Izadpanah (Associate Partner, Senior Project Manager, Transportation, CIMA) attended the meeting. CIMA staff reviewed the scope of work to be performed and the minutes, drafted by CIMA, note that Hamilton had “a concern that the highway has not been built according to MTO standards but the public are considering it similar to the 400 series highways.”

47. CIMA and the City met on April 26, 2013 for a project initiation meeting. Mr. Cooper, Mr. Gallo and Mr. Field attended from the City. Alireza Hadayeghi (Partner, Director, Transportation, CIMA), Mr. Masliah, Mr. Izadpanah and Stephen Keen (Director, Transportation, CIMA) represented CIMA. Mr. Masliah provided the City with minutes from this meeting on April 29, 2013, inviting any additions or changes. The minutes indicated that the following topics were discussed:⁴⁸

- 1) Welcome and Introductions
- 2) City of Hamilton Needs, Expectations, and Criteria for Success
- 3) CIMA Proposed Scope of Work
- 4) Data Request

⁴⁵ [GOL0004456](#)

⁴⁶ [GOL0004450](#)

⁴⁷ [CIM0000366](#)

⁴⁸ [CIM0009115](#) attaching [CIM0009115.0001](#); and [CIM0009110](#) attaching [CIM0009110.0001](#), [CIM0009110.0001.0001](#) and [CIM0009110.0002](#)

5) Budget and Schedule

6) Invoicing

7) Other Business

8) Next Meeting

48. The minutes listed the following safety concerns under “City of Hamilton Needs, Expectations, and Criteria for Success”:

- Safety concerns noted :Mud St westbound onramp, chevrons are being replaced on a weekly basis, along with collision history
- Kink in the alignment at southern most part of the parkway
- Lack of lighting at most locations
- Drivers inability to detect lanes under poor visibility conditions

Steve C. to follow up with Councilor Collins to ensure that his concerns will be addressed in the intended project scope.⁴⁹

49. Mr. Field’s notebooks contain an entry dated April 26, 2013 that read:⁵⁰

CIMA+ - Red Hill Creek Parkway
Audit Project

Apr. 26/13

Pedram Izadpanah
Ali Hadayeghi
Maurice Masliah
Steve Cooper
Ron Gallo
Steve

-
- Ali
1. [3 days → [text to be confirmed] to setting the scope of work
→ project plan including
a schedule with milestones.
 2. Two weeks – Engineering review
→ technology of lighting & LED
→ pilots and installations
 3. Two weeks – Operational review.
→ maintenance
→ energy

⁴⁹ [CIM0009115.0001](#) at images 1-2

⁵⁰ [HAM0062341_0001](#)

50. The City provided data to CIMA to permit it to begin its work. This included design guidelines, standards, and assumptions, lighting standards, the history of changes to signage and markings, complaints from members of the public, and 5-years of collision data.⁵¹ The City provided CIMA with traffic count data that was collected by Pyramid Traffic Inc.⁵² Hamilton was unable to provide CIMA with electronic as-built drawings of the RHVP.⁵³

3. CIMA analysis of RHVP collision data

51. According to minutes of an internal CIMA meeting held on May 10, 2013, CIMA was two weeks behind schedule due to late forwarding of data from Hamilton. The minutes also record that “Hamilton wants review to emphasize night-time (dark lighting) conditions during periods of rain (problem verified through cursory review of collisions).”⁵⁴

52. The study area of CIMA’s review, as described in its final report, “included the RHVP between Dartnall Road and Greenhill Avenue as well as the Mud Street/Stone Church Road intersection”. CIMA’s report identified that the study area was divided into various segments:

The identification of collision trends within the study area was performed through a collision data review which considered descriptive statistics of collision conditions and locations. To help summarize collision data and to facilitate the identification of collision patterns, each collision was mapped and assigned to a road element; either a ramp or a mainline segment. The data needed to be segmented into homogeneous sections. A homogeneous section is one where the key characteristics of traffic volume, key geometric design features, and traffic control are unchanged throughout the section. A simple and straightforward segmentation was used in that each ramp was treated separately while the mainline was

⁵¹ [CIM0009034](#); [HAM0023251_0001](#) attaching [HAM0023252_0001](#) and [HAM0023253_0001](#)

⁵² [CIM0008677](#); [CIM0008551](#) attaching [CIM0008551.0001](#); and [CIM0008536](#) attaching [CIM0008536.0002](#)

⁵³ [CIM0008426](#)

⁵⁴ [CIM0009020.0001](#)

divided by sections in between interchanges. The various road elements included in the study area are listed in Table 4 and illustrated in Figure 3.⁵⁵

53. Table 4 and Figure 3, which identified the various segments, have been reproduced below.⁵⁶

Ramp names	Mainline
Ramp #1: Dartnall Rd EB-SB off ramp	RHVP west of Dartnall Rd
Ramp #2: Dartnall Rd NB-EB on ramp	RHVP Dartnall Rd and Mud St
Ramp #3: Dartnall Rd NB-WB Loop on ramp	RHVP between Mud St. and 0.4 km South of Greenhill Ave
Ramp #4: Dartnall WB off ramp	RHVP North 0.4 km South of Greenhill Ave
Ramp #5: Mud NB-EB off ramp	
Ramp #6: Mud	
Ramp #7: Mud WB-NB on ramp	
Ramp #8: Mud SB-EB off ramp	
Ramp # 9: RHVP NB to Greenhill	
Ramp #10: Greenhill to RHVP SB	

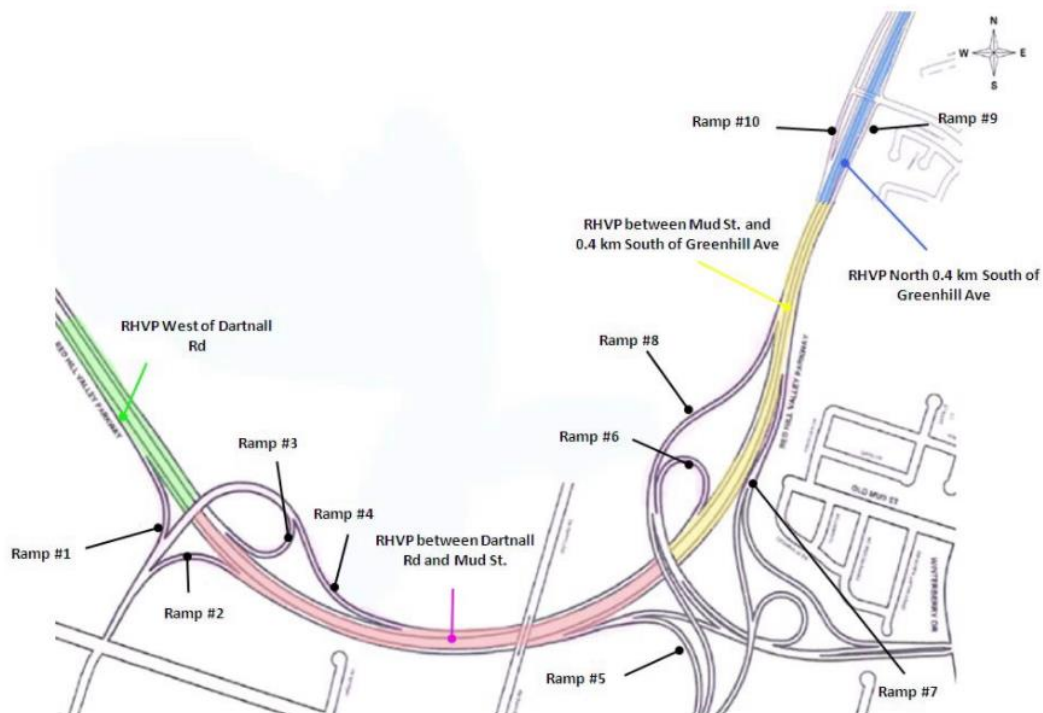


Figure 3 - Road Elements Included in the Study Area

⁵⁵ [HAM0041871_0001](#) at image 17

⁵⁶ [HAM0041871_0001](#) at images 17-18

54. On May 13, 2013, Alexandre Nolet (Project Engineer, CIMA) sent an email summarizing his analysis of the collision database to identify collision patterns.⁵⁷ He summarized the collisions on Ramp 6. For the purpose of its study, CIMA divided the study section of the RHVP (between Dartnall Road and Greenhill Road and the Mud Street/Stone Church Road intersection) into 4 mainline sections and 10 ramps.⁵⁸ Ramp 6 was identified by CIMA as the Mud Street on-ramp:

- 41 collisions occurred between 04/10/2008 and 04/09/2013
- 22% are non-fatal injury collisions
- **90% of the collisions are SMV collisions**
- 71% of the collisions do not occur during daylight conditions
- **59% of the collisions occurred during dark conditions**
- **68% of the collisions occurred on wet surface**
- **39% of the collisions occurred on a wet surface during dark conditions**
- 44% of the collisions are related to speeding [emphasis in original]⁵⁹

55. Throughout May 2013, CIMA conducted a field investigation and utilized the Enhanced Interchange Safety Analyst Tool (“ISATe”), an automated tool for assessing the safety effects of freeway mainlines and interchanges that assisted CIMA to evaluate the safety performance of the study area and to determine how countermeasures might affect safety levels.⁶⁰ CIMA noted issues of maintenance,⁶¹ lane alignment,⁶² and considered whether or not, in light of the MTO policy for highway illumination,

⁵⁷ [CIM0009003](#)

⁵⁸ [CIM0008061.0001](#) at images 15-18

⁵⁹ [CIM0009003](#)

⁶⁰ [CIM0008397.0001](#); and [HAM0051990_0001](#) at image 3

⁶¹ [HAM0041673_0001](#)

⁶² [CIM0008369](#) attaching [CIM0008369.0001](#)

improvements to the lighting on the RHVP were warranted.⁶³ The City had requested that CIMA review the road under dark and rainy conditions.⁶⁴ CIMA also intended to complete another field study under those conditions, but this additional study did not appear to have taken place.⁶⁵

4. May 2013 - Golder's Fieldwork

56. Golder conducted the falling weight deflectometer testing on May 9, 2013.⁶⁶ On May 17, 2013, Rabiah Rizvi (Pavement and Materials Engineering Analyst, Golder) sent the results of the falling weight deflectometer analysis to Dr. Uzarowski.⁶⁷ Her cover email read as follows:

There are a few spots that are maybe a little bit weaker but that might also be skewed due to existing cracking on the road.

With the exception of a few higher deflections the asphalt modulus, granular modulus and subgrade modulus look good to me. I really think they is a material problem with the cracking being limited to the surface. Do you think they should either perhaps consider milling the surface and resurfacing as it is five years old now. If they don't want to resurface do you think they should at least apply microsurfacing so that water doesn't penetrate into the structure? Are the cracks to wide for it to be a good candidate for microsurfacing?⁶⁸

E. June and July 2013

1. June 6, 2013– Progress Meeting #1 between CIMA and Hamilton

57. On June 6, 2013, at 9:00am, CIMA representatives (Brian Malone (Partner, Vice-President, Transportation, CIMA), Mr. Robertson, Mr. Masliah, Mr. Nolet, Mr. Applebee, and Mr. Hadayeghi) met with Hamilton representatives (Mr. Cooper, Mr. Field, Mr. Gallo,

⁶³ [CIM0008505](#) and [CIM0008507](#)

⁶⁴ [CIM0009022](#); and [CIM0009017](#)

⁶⁵ [CIM0009002](#); and [CIM0008990](#)

⁶⁶ [GOL0004438](#)

⁶⁷ [GOL0002625](#) attaching [GOL0002626](#), [GOL0002627](#), [GOL0002628](#), [GOL0002629](#), [GOL0002630](#), [GOL0002631](#), [GOL0002632](#), [GOL0002633](#) and [GOL0002634](#)

⁶⁸ [GOL0002625](#)

and Mr. Kirchknopf) for Progress Meeting #1.⁶⁹ The minutes record that Mr. Masliah introduced a PowerPoint presentation and that the floor was open for comments at any time. The minutes record that:

CIMA to use TAC illumination warrant as this is what the City utilized. CIMA to rely on outcome of TAC warrant in report, but recognize outcome of MTO warrant

...

CIMA to ensure that description of the need for transitional lighting is included in the report, especially in B/C analysis for lighting

City OK with CIMA examining high-friction pavements on ramps, however mainline has different new pavement that may not be recommended to be overlaid with high friction.

...

CIMA needs to be cautious with illumination, B/C is critical for this assignment due to political & other design & cost constraints, site specific locations are probably better than full illumination

CIMA to make sure that illumination, if recommended, would actually assist in reducing the types of crashes on this facility and/or improve conditions (i.e. geometric). If other treatments would similarly result, consider those before illumination if possible.⁷⁰

58. On June 6, 2013, Mr. Applebee internally circulated a draft version of the minutes using the word “would” in place of the word “may” in the quote about high-friction pavements.⁷¹ Later the same day, Mr. Robertson provided Mr. Applebee with his suggested revisions in tracked changes. Mr. Robertson’s revised draft included the change from “would” to “may” in the quote about high-friction pavements.⁷²

⁶⁹ [CIM0008453.0001](#) attached to [CIM0008453](#); and [CIM0008493](#) attaching [CIM0008493.0001](#)

⁷⁰ [CIM0008453.0001](#)

⁷¹ [CIM0008477](#) attaching [CIM0008477.0001](#)

⁷² [CIM0008475](#) attaching [CIM0008475.0001](#)

59. On June 17, 2013, Mr. Applebee sent the final version of the minutes from Progress Meeting #1, excerpted above, to Mr. Cooper, Mr. Gallo, Mr. Kirchknopf, and Mr. Field.⁷³

60. Mr. Malone's notebooks contain two entries dated June 6, 2013. The first relates to a meeting, noting:⁷⁴

MTG

Red Hill/Hamilton

- BA Alex Maurice Ben Ali Brian M } CIMA
HAM { Mike Field Gary Kirch Steve Cooper
Ron Gallo
- Reduce emphasis on signing issues
- * Motion from Councillor

61. The second entry references a discussion with Mr. Moore, which appears to have occurred at 10:00am:

Gary Moore 10:00

Status of Red Hill review

- reasons why design as is – lighting x thru Red Valley
- enviro constraints⁷⁵

62. Mr. Field's notebooks contain the following entry dated June 6, 2013:⁷⁶

Red Hill Safety Review

June 6/13

CIMA – Progress Meeting No 1

- Street lighting – how is it determined if it is "required"?
 - TAC warranting (interchange and mainline)
 - Countermeasure safety factors
 - ↳ based on an actual safety issue if one exists

⁷³ [CIM0008423](#) attaching [CIM0008423.0001](#)

⁷⁴ [CIM0022409](#) at image 5

⁷⁵ [CIM0022409](#) at image 5

⁷⁶ [HAM0062342_0001](#)

- Standards that would apply
 - IES RF-08
 - TAC Roadway (includes warrants)
- Construction exceptions
 - bridges have provision for lighting
 - no general provision for additional lighting
- → Cost analysis → needs to include
 - * [maintenance and energy.
 - ▶ City can provide info if Itg is standard for Linc/Red Hill.
- Capital construction costs for this application are not available
- Conducted MTO warrant
 - partial
 - continuous
] for both mainline and interchange
- Warrants scored such that continuous lighting score was met

→ CIMA to complete TAC warrants
 ▶ similar to MTO warrant

* Motion has been provided to CIMA?

Follow-up meeting – First week of July.

2. June 14, 2013, Golder prepares first draft of report

63. By June 14, 2013, Golder had started drafting its report on the 5-year review of the RHVP.⁷⁷ That early draft contained a description and results obtained from the field investigation conducted to date. This included visual condition inspection, asphalt coring, surface longitudinal profile, and falling weight deflectometer testing. The draft did not yet contain any analysis or recommendations.

⁷⁷ [GOL0001428](#)

3. July 3, 2013 – Progress Meeting #2 between CIMA and Hamilton

64. On June 27, 2013, Mr. Robertson sent Mr. Nolet an early draft of the PowerPoint presentation for Progress Meeting #2, which was scheduled for early July.⁷⁸ This draft, under text reading “Further investigation of collisions required to satisfy the following”, listed “pavement surface friction test” among other possible steps.⁷⁹

65. On July 3, 2013, CIMA representatives (Mr. Malone, Mr. Applebee, and Mr. Hadayeghi) met with Hamilton representatives (Mr. Cooper, Mr. Field, Mr. Gallo and Mr. Kirchknopf) for Progress Meeting #2.⁸⁰ The minutes record that Mr. Applebee introduced a PowerPoint presentation that summarized the updated CIMA findings and an assessment of the efficacy of certain countermeasures.⁸¹

66. The PowerPoint slides report that the CIMA collision analysis revealed a high proportion of single-motor vehicle collisions, collisions in non-daylight conditions, and collisions during wet road surface conditions. The slides explain CIMA’s use of the ISATe to generate the number of predicted and expected collisions in various segments of the RHVP, including fifteen freeway segments and eight ramps. CIMA then compared the total number of collisions observed to the predicted and expected numbers of collisions. The slides identified the following areas where the observed collisions exceeded the predicted and expected collisions: Freeway segment RHVP at Mud 4, and Ramps #5, #7b, #6 and #9.⁸²

⁷⁸ [CIM0008356](#); and [CIM0008356.0001](#)

⁷⁹ [CIM0008356.0001](#) at image 4

⁸⁰ [HAM0051991_0001](#)

⁸¹ [HAM0051991_0001](#); and [HAM0051990_0001](#)

⁸² [HAM0051990_0001](#) at images 4-5

67. The PowerPoint presentation noted that the collision review for the freeway segments at Mud 4-6 showed a high proportion of collisions involving single motor vehicles, non-daylight hours, and wet surface conditions. CIMA noted a number of potential countermeasures for various freeway segments, including “pavement surface friction testing / improve pavement friction through high friction pavement” for both Dartnall 3-5 and Mud 4-6. Other countermeasures recommended on either or both of these segments were roadside signage rationalization, install PRPMs, install warning signs for atypical geometry with vehicles entering ramp (NB) and for wet conditions, install wider pavement markings with resurfacing, enforcement for high travel speeds relative to run-off-road related collisions, drainage review, and extend speed change lane of various ramps.⁸³

68. The PowerPoint presentation noted that collisions on Ramp 6 represented 65% of all ramp collisions and that CIMA observed an “atypical high proportion and frequency of SMV, non-daylight collisions and collisions that occurred under wet road surface conditions.”⁸⁴ CIMA identified a number of potential countermeasures, including the installation of high friction pavement on Ramp 6.⁸⁵ High friction pavement was also identified as a potential countermeasure for Ramp 7a / 7b, among other potential countermeasures. Other countermeasures recommended for these ramps included installing progressively larger chevron signs, increase the curve radius by 5m, install PRPMs, illumination of Ramp 6, pavement marking symbols/text, dynamic/variable speed

⁸³ [HAM0051990_0001](#) at images 10 and 16

⁸⁴ [HAM0051990_0001](#) at image 19

⁸⁵ [HAM0051990_0001](#) at image 20

warning message sign display, transverse rumble strips, flashing amber beacons on curve warning signs / chevron signs, retroreflective strips on chevron sign posts, illuminated signs, and fill & guide rail with delineators.⁸⁶

69. On June 28, 2013, Mr. Robertson emailed a list of potential countermeasures to Mr. Nolet, which included the following regarding the mainline from “Dartnall to just South of Greenhill, & Ramp 6”:

- Pavement surface friction test (smv, wet)
- Improve pavement friction (if issue identified) – could do through high friction / grooved pavement (smv, wet pave)
- Drainage review (run-off-road, wet)
- “SLIPPERY WHEN WET” warning signs (run-off-road, wet) (not preferable due to signage / workload issues identified⁸⁷)

70. Mr. Robertson also sent the list of countermeasures to Mr. Applebee the same day.⁸⁸

71. The minutes from the July 3, 2013 Progress Meeting #2 record the following comment about friction:

Implementation of high friction pavement countermeasure should not be considered for the mainline (due to specialized nature of existing pavement and on-going monitoring), but can be recommended for ramps if required.⁸⁹

72. The minutes indicate that CIMA should include illumination recommendations in the report. Mr. Field stated that CIMA should use MTO costing information, rather than Hamilton costs due to the type of lighting to be recommended. CIMA indicated that the

⁸⁶ [HAM0051990_0001](#) at images 20-24

⁸⁷ [CIM0008341.0001](#) attached to [CIM0008341](#)

⁸⁸ [CIM0008338](#) attaching [CIM0008338.0001](#)

⁸⁹ [HAM0051991_0001](#)

draft report was due on July 26, 2013, but noted that CIMA was about two weeks behind schedule.⁹⁰

73. Regarding geometric changes, the minutes indicate that “CIMA should include text in the report describing the design philosophy; design choices made, challenges with respect to various constraints, etc., and not specifically examine design features in the report.”⁹¹

74. Mr. Malone’s notebooks contain the following two entries dated July 3, 2014:

Hamilton

Red Hill

Update

- Gary K

Ron Gallo

Steve Cooper

Mike Field

Ali

Brian A

- ISATE – 1002

- Summary

- Discuss – Ramps

Illumin⁹²

...

TT Martin White

⁹⁰ [HAM0051991_0001](#)

⁹¹ [HAM0051991_0001](#)

⁹² [CIM0022409](#) at image 6

Vac July 22nd

Msg⁹³

4. Follow-up from Progress Meeting #2

75. On July 4, 2013, Mr. Applebee sent a copy of the PowerPoint presentation and the minutes of the meeting to Mr. Cooper, Mr. Gallo, Mr. Field, Mr. Hadayeghi, and Mr. Kirchknopf. He invited review and comment on the documents.⁹⁴

76. Later that day, Mr. Kirchknopf responded to Mr. Applebee regarding mainline pavement treatment on the RHVP:

Regarding the Red Hill Valley Parkway mainline pavement treatment, please be advised that the City's Asset Management section has retained Golder Associates c/o Ludomir Uzarowski (905) 723-2727 to over see all testing and monitoring of this specialized surface material. Please contact Ludomir directly should you require any additional information regarding "weight in motion" or "friction testing" on the R.H.V.P. mainline.⁹⁵

77. Also that day, Mr. Field then forwarded Mr. Applebee's message, which attached the PowerPoint presentation and the minutes of the meeting to Mr. Moore, Mr. McGuire, and Mr. Kirchknopf.⁹⁶

78. On July 16, 2013, Mr. Applebee emailed Mr. Cooper to see if the City had any comments regarding the proposed countermeasures or the minutes of the meeting held on July 3, 2013. Mr. Applebee indicated that he needed a finalized list of countermeasures to do the calculations required in the report and, given the upcoming deadline, could not wait any longer for comment without risking further delay.⁹⁷ Mr. Applebee also requested

⁹³ [CIM0022409](#) at image 7

⁹⁴ [HAM0051989_0001](#)

⁹⁵ [CIM0008289](#)

⁹⁶ [HAM0051989_0001](#) attaching [HAM0051990_0001](#) and [HAM0051991_0001](#)

⁹⁷ [CIM0008266](#)

guidance on how to cost certain items in the report, except for costs associated with the geometric changes, which were “generally off the table.” Regarding geometric changes,

Mr. Applebee wrote:

On that subject, as we discussed previously, we think the best approach is to provide a good background of why the various design decisions were made - we have some good background info on this from the various studies completed – and why it’s not really feasible to go back and reconstruct because of this.⁹⁸

79. Mr. Applebee also emailed Mr. Masliah that day, copying Mr. Robertson, requesting that he complete a costing of the proposed countermeasures for which he was responsible. He provided Mr. Masliah with a copy of the July 3, 2013 meeting minutes, and noted the following in his email related to geometric changes and friction:

As a bit of background, at the last progress meeting it was decided that we will not be recommending any of the geometric changes to be implemented, therefore we don’t need to cost them. We will be writing them out via background text as to why those design decisions were made in the first place.

Also, they are not keen on any high friction pavement treatments on the mainline (but they are ok with it on ramps, i.e. Ramp 6), so we don’t have to cost the mainline high friction out either. If you could then work with Alex to provide a b/c ratio that would be great.⁹⁹

80. On July 17, 2013, Mr. Applebee emailed Mr. Masliah and instructed him to “go ahead without the City’s input. I don’t think they will say anything in contravention to what we have put forward (other than what they have already told us not to include).”¹⁰⁰

81. On July 22, 2013, Mr. Cooper responded to Mr. Applebee’s July 16, 2013 email regarding the proposed countermeasures:

Hi Brian, We have no further comments on the presentation or minutes, thanks. As for the costing, I believe Mike provided you with the illumination costs. Signing and marking costs I will get you ASAP.

⁹⁸ [CIM0008266](#)

⁹⁹ [CIM0008272](#) attaching [CIM0008272.0001](#)

¹⁰⁰ [CIM0008251](#) attaching [CIM0008251.0001](#)

Call me and we can discuss. As you can imagine I am up to my ears trying to catch up so a quick conversation may be better.¹⁰¹

5. July 29, 2013, CIMA sends first draft of 2013 CIMA Report to Hamilton

82. On July 26, 2013, Mr. Malone provided comments on the draft report to Mr. Applebee, Mr. Hadayeghi, and Mr. Masliah.¹⁰² He raised a question about whether or not to include recommendations on lighting. He wrote: “We need to discuss the lighting. Is it in scope or not? As written it’s a hand grenade that will go off in the City’s hands.”

83. Mr. Applebee responded:

I believe that it was in scope, but I don’t recall receiving anything from Mike that would act as an “out”. Apparently there was a report? Maurice did you receive this?

We could write it out similar to the geometry, given adequate background, if we think this is better. We received no comment from the City on our presentation that we sent over.

They will have a chance to comment on the draft as well - could be rectified afterwards if it scares them?¹⁰³

84. On the morning of July 29, 2013, Mr. Applebee emailed Mr. Nolet to ask him to break out the benefit/cost ratios for each ramp separately. He also stated that “we are going to remove the overall lighting from the report, but we need to do a [benefit/cost calculation] for each ramp separately to fit into the report format.” He also asked Mr. Nolet to prepare a benefit/cost for “high friction for ramps 7a and 7b”.¹⁰⁴ These changes were tracked on a draft version of the report that was revised that morning.¹⁰⁵

¹⁰¹ [CIM0008210](#)

¹⁰² [CIM0008130](#)

¹⁰³ [CIM0008129](#)

¹⁰⁴ [CIM0008124](#)

¹⁰⁵ [CIM0000371](#)

85. On the afternoon of July 29, 2013, Mr. Applebee sent the 62-page draft version of the report to Mr. Cooper.¹⁰⁶ Mr. Cooper then forwarded the message to Mr. Gallo and Mr. Field for their comments.¹⁰⁷

86. The report noted that 90% of the collisions on Ramp 6, and 63% of all collisions observed were single motor vehicle accidents, which was much higher than the provincial average:

The most common impact type observed within the study area is SMV, with an overall proportion of 63%. The proportion of SMV collisions is significantly higher than all other locations on Ramp 6, where more than 90% of collisions are SMVs. These findings are notable, especially when compared to the 2004-2011 Provincial average of SMV collisions occurring on ramps, which is 57%.¹⁰⁸

87. The report noted that that the area studied had an “atypically high proportion of non-daylight collisions”:

The study area experienced an atypically high proportion of non-daylight collisions. In fact, according to the 2010 Ontario Road Safety Annual Report (ORSAR), less than 30% of all collisions in Ontario occurred during non-daylight conditions. By comparison, the proportion of non-daylight collisions within the study area is 53% which is much higher than the provincial average. The road element within the study area that experienced the highest proportion of non-daylight collisions is Ramp 6, with a proportion of 71%.¹⁰⁹

88. The report noted that proportion of collisions that happened under wet road conditions was much higher than the provincial average:

The study area overall average of collisions that occurred under wet road surface condition is 45%. When compared to the Provincial average of 17.4%, the proportion of collisions under wet road surface is significantly higher. This difference is mainly attributable to Ramp 6 and the mainline segment of RHVP between Mud Street and 0.8 km South of Greenhill Avenue, where the proportions of collisions that occurred under wet road surface conditions are 68% and 49%, respectively.¹¹⁰

¹⁰⁶ [CIM0008118](#) attaching [CIM0008118.0001](#)

¹⁰⁷ [CIM0008113](#)

¹⁰⁸ [CIM0008118.0001](#) at image 16

¹⁰⁹ [CIM0008118.0001](#) at image 17

¹¹⁰ [CIM0008118.0001](#) at image 18

89. The report concluded that the number of observed collisions was less or equal to the number of predicted collisions for all segments, except for Freeway Segment Mud 4, and Ramps 5, 6, 7b, 9, and 10.¹¹¹

90. The report described the results of its illumination study as follows:

The full illumination justification was completed for three interchanges; Dartnall Road, Mud Street and Greenhill Avenue. The two factors included in the warrants with the highest weights are the proportion of night collisions and the presence of curves, followed by the night-time operational Level of Service.

The following was found:

- + Illumination at the Dartnall Road interchange was not warranted:
- + Illumination at the Mud Street interchange was warranted with a total point score of 62.35 (minimum score of 60.00 required for illumination); and
- + Illumination at the Greenhill Avenue interchange was not warranted.

Based on the [Transport Association of Canada] warrant, full interchange illumination is warranted for the Mud Street interchange.

However, it must be noted that the achievement of a warrant does not automatically mean that illumination must be installed. All illumination must be assessed in relation to the approval constraint which falls outside the scope of this study.¹¹²

91. The report summarized its conclusions as follows:

Overall, it was found that the RHVP is operating safely with the calculated expected number of collisions being lower than the predicted number of collisions for a roadway with similar characteristics in most segments. During the study period, no collisions were observed on Ramps 2, 3 and 4, and just two collisions were observed on Ramp 8 and one collision on Ramp 10. However, it is important to note that half of the ramps collisions were observed on Ramp 6 (from Mud Street westbound to the Linc westbound).

For mainline, the segment that experienced the highest proportion of collisions (43%) was between Mud Street and 0.8 km South of Greenhill Avenue, which also represents the longest segment with a total length of 1.5 kilometres. The next highest segment was between Dartnall Road and Mud Street which experienced 28% of the mainline collisions.

The output of the ISATe tool indicated that freeway segment Mud 4 and ramps 5, 6, 7b 9 and 10 have an excess number of collisions as indicated by a positive difference between the expected and predicted number of collisions. This is indicative of a potential for a safety

¹¹¹ [CIM0008118.0001](#) at image 24

¹¹² [CIM0008118.0001](#) at image 27

improvement (PSI), In other words, these locations stand out as performing worse than a typical location of the same facility type with similar traffic volume.

It is also noteworthy that the collisions that are occurring on the RHVP show an atypically high proportion of SMV, wet road surface and non-daylight collisions when compared to the Provincial average.

The TAC illumination warrants were examined as part of this study and it was determine that the the Mud Street interchange would meet the justification for interchange illumination. However, it must also be noted that just because a warrant has been achieved does not mean that illumination must or can be implemented. Environmental constraints and approvals must be considered before pursuing the recommendation to illuminate.¹¹³

92. CIMA developed a list of potential countermeasures “to address the issues that were found in the previous sections.” CIMA noted that “in keeping within the limitations of this study, the countermeasures that were developed do not propose to alter the geometry of the lanes and curves on the RHVP.”¹¹⁴

93. CIMA recommended the City implement seven measures throughout the RHVP: permanent raised pavement markings; wide pavement markings; perform friction testing; install Wc-105 “slippery when wet signs”; enforce travel speeds; rationalize trailblazer signs; and remove “lane exits” signs from ramps.¹¹⁵

94. With respect to friction testing, the report stated:

Pavement friction plays a vital role in keeping vehicles on the road by enabling the drivers to control/maneuver 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 of texture: 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

¹¹³ [CIM0008118.0001](#) at image 42

¹¹⁴ [CIM0008118.0001](#) at image 45

¹¹⁵ [CIM0008118.0001](#) at images 46 to 48

friction testing on the asphalt to get a baseline friction coefficient for which to compare to design specifications.

Cost-Benefit Ratio

There is no specific CMF for friction testing, however the costs to undertake these tests are not expected to exceed \$20,000. For this price, the City would receive valuable information regarding the dry friction values on the asphalt. Based on the results, the City may be in a better position to determine if further action is required.¹¹⁶

95. CIMA also performed a Benefit-Cost (B/C) analysis on a number of the proposed countermeasures. The report identified that a B/C ratio of great than 1.0 represents an economically efficient countermeasure. The resultant B/C ratios or costs are summarized in the table below:

Countermeasure	B/C Ratio [Cost]
PRPM	3.29
Wide Markings	3.39
Friction Testing	[\$10,000]
Slippery When Wet Signs	[\$5,000]
Enforcement of Travel Speeds	n/a
Trailblazer Signage	[\$2,000]
Remove Lane Exit Signs	[\$1,000]
Illumination of Mud St. Interchange	9.34
Illumination of Ramp #5	0.67
Illumination of Ramp #6	34.67
Illumination of Ramp #7a & 7b	1.78
Illumination of Ramp #8	7.79

¹¹⁶ [CIM0008118.0001](#) at image 47

96. The report identified installing high friction pavement on Ramp 6 as a possible countermeasure to address the fact that it was “the poorest performing segment of the RHVP,” which experienced “65% of all collisions occurring on ramps.” The report noted:

In locations where drivers may brake excessively; for example, when going around curves; the road surface can become prematurely polished, reducing the pavement friction and allowing vehicles to skid when drivers brake. Drivers may also be speeding or distracted, contributing to the high-collision rates in this location. Wet road surfaces can also reduce pavement friction and cause skidding or hydroplaning. High friction surface (HFS) treatment is an emerging technology that dramatically and immediately reduces crashes. With friction demands far exceeding conventional pavement friction, high-quality aggregate is applied to existing or potential high-crash areas to help motorists maintain better control in dry and wet driving conditions. While the initial costs are higher than conventional pavement, however, the long-lasting durability of HFS treatment and limited use in critical locations makes the product a low-cost option over its life cycle. The City could consider installed a HFS treatment on approach to and through the curve at the end of the ramp.

Cost-benefit ratio

The CMF used for this assessment was 0.76 and is related to all collision types. The calculated benefit would be a reduction of 8.9 collisions over a five-year period. The expected service life for this countermeasure is 5 years, for a total benefit of \$215,212. The costs associated with this countermeasure are expected to be \$92,900. The [benefit/cost] ratio is expected to be 2.32.¹¹⁷

97. The report also identified the following countermeasures on Ramp 6: installing progressively larger chevron signs (costs not expected to exceed \$4,000), installing retroreflective strips on chevron signs (costs not expected to exceed \$500), installing pavement marking text (costs not expected to exceed \$1,500), installing dynamic/variable warning signs (costs not expected to exceed \$7,000), installing flashing amber beacons on signs (costs not expected to exceed \$3,000), and relocating signs (costs no expected to exceed \$2,000).

¹¹⁷ [CIM0008118.0001](#) at images 53-54

F. August – September 2013

1. Hamilton staff provide comments on draft 2013 CIMA Report and Golder removes samples

98. On August 2, 2013, Mr. Field provided comments that focussed on the illumination points to Mr. Cooper. He wrote:

- The document does not contain an executive summary where the conclusions of the study can be easily found
- There are no direct recommendations in the document, only a summary of the findings. I cannot tell what action the City should be taking as a result of the study. I thought we had discussed, at a minimum, a list of improvements which is prioritized based on CIMA's expert opinion.
- The illumination of the mainline has been excluded (this is decision is based upon information that we provided to CIMA). The exclusion is not well explained. Considering that illumination of the mainline is the first request in the council motion to review I think that there should be far more explanation as to why it was excluded.
- The cost estimates for the installation of illumination being used for the benefit to cost ratio calculations are far too low - see pg 42. For example, the estimated cost to install illumination for the entire Mud/Stone Church interchange is \$150,000. I would estimate the costs would be 3 to 4 times greater. I provided CIMA with some unit cost numbers, but I think that how they calculated the install costs should be asked. Having the costs so low is causing an overrepresentation of the B/C ratios.¹¹⁸

99. On August 6, 2013, Mr. Gallo provided his comments on the draft report and requested that the report make clear the cost to implement each countermeasure and the total cost of all countermeasures.¹¹⁹

100. Also on August 6, 2013, representatives from Golder attended the RHVP and removed four asphalt core samples.¹²⁰

¹¹⁸ [CIM0008113](#)

¹¹⁹ [CIM0008113](#)

¹²⁰ [GOL0004442](#); and [GOL0004439](#)

101. On August 8, 2013, Mr. Cooper forwarded the comments provided by Mr. Field and Mr. Gallo to Mr. Applebee.¹²¹

102. Mr. Malone's notebooks contain an entry dated August 15, 2013, which notes:

Red Hill B325
 Ali
 Brian A
 ↗ Hard
 Gary – Status / Steve Recom
 Gary M - Re¹²²

103. Mr. Malone's notebooks contain an entry dated August 20, 2013, which notes:

Golf
 Gord McGuire
 + Gary Moore.¹²³

104. On August 22, 2013, the Traffic Engineering Services team had a meeting. The notes from the meeting identify attendees only by initials: DF, Ron G, RA, SR, SC, EZ, NM, AZ, BB; Absent: Rob G, SL. This may include David Ferguson (Superintendent, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) (DF), Mr. Gallo (Ron G) and Mr. Cooper (SC). The notes included the following regarding the safety review:¹²⁴

Red Hill Valley Safety review – comments have been provided to consultant, revision expected by end of week for final review. Once completed, will be presented to Council

¹²¹ [CIM0008113](#)

¹²² [CIM0022409](#) at image 8

¹²³ [CIM0022409](#) at image 9

¹²⁴ [HAM0023394_0001](#) at image 3

2. August 23, 2013 – CIMA delivers revised draft of 2013 CIMA Report

105. On August 23, 2013, Mr. Applebee sent an email to Mr. Cooper that attached a memo of the maintenance items that were removed from the safety review, a marked-up version of the revised draft that he references as the "FINAL DRAFT", and a clean copy of the revised draft that he references as the "FINAL DRAFT".¹²⁵ Mr. Applebee requested that Mr. Cooper review and circulate the files and provide any further comments, so that CIMA could finalize the document. The attached memo identified various items “found during the review of the RHVP that are of a maintenance nature, rather than a safety or operational nature”. Items noted included damage to guardrails and other roadside items, evidencing collision impact.¹²⁶

106. The revised draft added the following text to section 4.4.1, which explained with the methodology of the illumination review:

However, as noted, illumination of the mainline section of the RHVP was not examined for this study. This is because the illumination 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.”¹² 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.¹²⁷

107. The revised draft added the underlined text in the passage below to existing text in section 4.4.2 – Illumination Results:

¹²⁵ [CIM0008098](#) attaching [CIM0008098.0001](#), [CIM0008098.0002](#) and [CIM0008098.0003](#)

¹²⁶ [CIM0008098.0003](#)

¹²⁷ [CIM0008098.0001](#) at images 25-26

However, it must be noted that the achievement of a warrant does not automatically mean that illumination must be installed. All illumination must be assessed in relation to the environmental approval constraints which exist. 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.¹²⁸

108. The revised report proposed a new countermeasure – High Visibility Inverted Profile Markings.¹²⁹

109. For each of Ramps 5, 6, 7a, 7b, and 8 the revised report added the following text regarding illumination:

The outcome of the TAC illumination warrant indicated that illumination of the ramp is justified. Illumination increases a drivers' preview area and increases safety by providing drivers with improved nighttime visibility of roadway conditions and potential hazards. However, intermittent installation of illumination should be avoided as it creates dark spots that require drivers' eyes to readjust to the low-light levels, temporarily reducing their visibility even further, therefore installation of illumination on Ramp 5 should be considered in context with the surrounding roadway network.¹³⁰

Cost-benefit ratio (Ramp 5): The CMF used for this assessment was 0.6 and is related to all types of nighttime collisions. The expected service life for this countermeasure is 20 years. A total benefit of \$19,954 and costs of \$120,000 for a B/C ratio of 0.17 was calculated.¹³¹

...

Cost-benefit ratio (Ramp 6): The CMF used for this assessment was 0.6 and is related to all types of nighttime collisions. The expected service life for this countermeasure is 20 years. A total benefit of \$1,040,193 and costs of \$120,000 for a B/C ratio of 8.67 was calculated.¹³²

...

Cost-benefit ratio (Ramps 7a and 7b): The CMF used for this assessment was 0.6 and is related to all types of nighttime collisions. The expected service life for this countermeasure is 20 years. A total benefit of \$107,010 and costs of \$240,000 for a B/C ratio of 0.89 was calculated.¹³³

...

¹²⁸ [CIM0008098.0001](#) at images 27-28

¹²⁹ [CIM0008098.0001](#) at image 45

¹³⁰ [CIM0008098.0001](#) at images 50-51 and 55-56

¹³¹ [CIM0008098.0001](#) at image 51

¹³² [CIM0008098.0001](#) at image 51

¹³³ [CIM0008098.0001](#) at image 55

Cost-benefit ratio (Ramp 8): The CMF used for this assessment was 0.6 and is related to all types of nighttime collisions. The expected service life for this countermeasure is 20 years. A total benefit of \$233,663 and costs of \$120,000 for a B/C ratio of 1.95 was calculated.¹³⁴

110. The revised report also contained changes and additional detail to the costing of the potential countermeasures in section 6.4 and the tables contained in that section.¹³⁵

111. Later that day, Mr. Cooper forwarded the message and its attachments to Mr. Field, Mr. Gallo, Mr. White, Mr. Kirchknopf, and Mr. Ferguson.¹³⁶ He indicated that he was forwarding the final draft of the report, which had incorporated their previous comments. He asked for comments no later than August 28, 2013.

112. Mr. Malone's notebooks contain an entry dated August 23, 2013, that lists "Red Hill Review" and "B325".¹³⁷

113. On August 30, 2013, Diana Aquila (Administrative Secretary, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) scheduled a meeting between Mr. White, Mr. Ferguson, Mr. Cooper, Mr. Gallo, Mr. Field and Mr. Kirchknopf to discuss the safety review. The meeting was scheduled for September 4, 2013,¹³⁸

¹³⁴ [CIM0008098.0001](#) at image 56

¹³⁵ [CIM0008098.0001](#) at image 57 to 62

¹³⁶ [HAM0041674_0001](#), [HAM0041675_0001](#), [HAM0041676_0001](#) and [HAM0041677_0001](#)

¹³⁷ [CIM0022409](#) at image 10

¹³⁸ [HAM0023395_0001](#)

3. September 5 to 12, 2013 – Hamilton staff review “final draft” of 2013 CIMA Report with certain Councillors

114. On September 5, 2013, Mr. Ferguson forwarded a copy of the revised draft report (with markups) provided by CIMA on August 23, 2013 to Councillor Collins.¹³⁹ Mr. Ferguson copied his message to Mr. Cooper and Ms. Aquila and stated:

Staff are working on finalizing the Red Hill Safety report to be presented to Council shortly, I have attached a copy for your information. We are presently making some modifications to the report. If interested, Stephen and I would be willing to sit down and discuss the report with you and the information we intend on bringing forward in the Council report.

If you would like to set up a meeting, please feel free to contact me directly with an available time period.

115. Later that day, Mr. White responded to Mr. Ferguson’s message to Councillor Collins and advised them that Councillors Clark and Jackson also expressed interest in the results of the “traffic safety audit of the RHVP/Linc.” He stated that, if Councillor Collins agreed, Mr. Ferguson should share the findings with the other Councillors. Councillor Collins agreed with that approach.¹⁴⁰

116. On September 6, 2013, Mr. Ferguson sent a copy of the final draft of the report (with markups) to Councillors Clark and Jackson and offered to meet with them to review how staff would be presenting the report to City Council.¹⁴¹

117. Mr. Ferguson scheduled a meeting with Councillor Collins, Councillor Jackson, Councillor Clark, and Mr. Cooper for September 12, 2013.¹⁴²

¹³⁹ [HAM0004300_0001](#)

¹⁴⁰ [HAM0004300_0001](#)

¹⁴¹ [HAM0004301_0001](#); and [HAM0004302_0001](#) attaching [HAM0004303_0001](#)

¹⁴² [HAM0023398_0001](#)

118. On September 12, 2013, Robert Ribaric (Assistant to Councillor Brad Clark, Ward 9, Hamilton) emailed Mr. Ferguson regarding the meeting to discuss the 2013 CIMA Report. He noted that Councillor Clark was ill and would be unable to attend the meeting that day.¹⁴³

4. September 16, 2013, CIMA delivers “final” 2013 CIMA Report to Hamilton

119. On September 10, 2013, Mr. Applebee emailed Mr. Hadayeghi advising that he completed the updates to the report based on the “second round of review by the City as well as our internal discussions”, and requested Mr. Hadayeghi review the report before he finalized. He noted that the report needed to be provided by Thursday at the latest.¹⁴⁴

120. Mr. Hadayeghi responded, requesting that Mr. Applebee provide him with the City’s comments.¹⁴⁵ To date, the Inquiry has not received any documents from CIMA identifying the comments referred to by Mr. Hadayeghi. The City has advised the Inquiry that it has not identified any documents containing the comments referred to by Mr. Hadayeghi.

121. On September 16, 2013, Mr. Applebee emailed a copy of the final version of the 2013 CIMA Report, without appendices, to Mr. Cooper.¹⁴⁶

122. An executive summary was included in this version of the report. In the summary, CIMA wrote:

¹⁴³ [HAM0056599_0001](#)

¹⁴⁴ [CIM0008093](#)

¹⁴⁵ [CIM0008092](#)

¹⁴⁶ [CIM0008089](#) attaching [CIM0008089.0001](#)

The findings of the study indicated that, overall, the RHVP is operating safely when compared with other roads with similar characteristics. However, several locations were identified as performing worse than would be expected, and for those locations, various countermeasures were developed and scrutinized. This led to numerous recommendations for improvement as summarized in the following tables.¹⁴⁷

123. The findings outlined in the table were categorized as either short term (zero to five years), medium term (five to ten years) and long term (10 years or longer).¹⁴⁸

124. The updated version of the report also included changes to some of the collision data, reflected throughout the report.¹⁴⁹

5. September 17 to 19 – Internal feedback regarding the 2013 CIMA Report

125. On September 17 and 18, 2013, Geoff Lupton (Director, Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), Mr. White, and Mr. Ferguson exchanged emails about reporting to the Public Works Committee:

Mr. Lupton: Have we heard anything back from Cllr.'s Collin's, Clark or Jackson on the report?

The report is an interesting read and a long one. Is there any way for us to make it easier and summarize the findings and what our recommendations are for the work to be done... with \$'s and timing etc., We are more likely to get a response and buy in if we do that. I generally don't like sending councillor's thick technical reports, especially in draft, without our thoughts and recommendations. They can be open to misinterpretation and one never knows where these get sent after. Councillors don't like to read big technical reports.

Mr. Ferguson: Cooper and I met with Councillor Collins and Jackson last week to discuss and review. They were very supportive and appreciative to use taking the time to meet and discuss with them in simple terms what the report says and what is being done.

The Report to Council will be exactly what you are commenting on, it will be a summary of the findings and the things we will be implementing. Many of the recommendations are housekeeping signage updates and we have

¹⁴⁷ [CIM0008089.0001](#) at image 4

¹⁴⁸ [CIM0008089.0001](#) at image 4

¹⁴⁹ [CIM0008118.0001](#); and [CIM0008089.0001](#)

already issued work orders for some of this work to be completed. The whole plan will be outlined in the report.

Our plan is to get it to the Nov 18 PW Committee meeting, but we just told the Councillors it would be submitted before the end of the year which they were comfortable with.¹⁵⁰

126. On September 19, 2013, Mr. Cooper wrote to Mr. Ferguson and Mr. White regarding Mr. Moore's reaction to the 2013 CIMA Report.¹⁵¹ He wrote:

I was speaking to Mike Field this morning and he said that Gary Moore saw the report and was not pleased with the recommendations provided by CIMA.

Have either of you spoken to him about this? Are you aware of anything in particular that he does not like or agreed with?

127. Mr. White forwarded this message to Mr. Lupton and Mr. Ferguson.¹⁵² Mr. White stated as follows:

IN CONFIDENCE!

See below

Geoff, Gary has a vested interest in this from the beginning and has influenced it somewhat already. Off the record I think he even spoke to CIMA. I am asking if you can schedule a meeting with him for us to talk as we cannot afford staff issues as we report to Council. He was on the original team that built the roadway. There is nothing wrong with the review or recommendations from the Consultant. I deem this extremely sensitive as I don't need any nonsense related our actions on Councillor Collins motion.

Your thoughts Geoff?

128. Mr. Lupton responded to Mr. White and Mr. Ferguson and also copied Courtney Harbin (Administrative Assistant to the Director of Energy, Fleet & Traffic; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton).¹⁵³ Mr. Lupton

¹⁵⁰ [HAM0004306_0001](#)

¹⁵¹ [HAM0004307_0001](#)

¹⁵² [HAM0004307_0001](#)

¹⁵³ [HAM0004307_0001](#)

wrote “Agreed. Another example why we need to review internally first.” He then asked Ms. Harbin to see him about setting up a meeting.

129. Mr. Lupton then forwarded this email chain to Mr. Mater who responded and recommended that they “talk to Gary and bring in CIMA if needed.” Mr. Lupton responded that he would do so.¹⁵⁴

6. September 20, 2013 – Golder prepares second draft of Golder Report

130. A second draft of the report was dated September 20, 2013.¹⁵⁵ Among other additions, this draft contained new text in part 5.0 “Analysis and Recommendations”, which read:

The results of the testing and investigation carried out on the RHVP indicate that the pavement structure is in good condition and performing well. The observed cracking is anticipated to be a function of the material and not due to fatigue damage or the environment.¹⁵⁶

7. September 21, 2013 – concerns about slipperiness after heavy rainfall leads to request for friction testing

131. On Saturday September 21, 2013, Hamilton experienced very heavy rainfall. On Sunday September 22, 2013, Sam Capostagno (District Supervisor Roads, District North & After Hours, Roads & Maintenance, Operations, Public Works, Hamilton) emailed Terry McCleary (Superintendent – Roads, District North, Roads & Maintenance, Operations, Public Works, Hamilton), Tammy Blackburn (District Supervisor Roads, District North, Roads & Maintenance, Operations, Public Works, Hamilton), and others about his conversation with a police officer about conditions on the RHVP:

¹⁵⁴ [HAM0004307_0001](#)

¹⁵⁵ [GOL0001430](#)

¹⁵⁶ [GOL0001430](#) at image 10

Saturday due to heavy rain we had some issues with the red hill due to heavy rain. Police call us saying the ramps and the road is very slippery. There was quite a few accidents cars slipping.

We checked the ramps and road and it was very slippery there not much we can do. Every time it rains heavily this is an ongoing issue, I feel it's a pavement problem and speed problem

I told the officer it's a speed problem and when it rains it's the pavement and if we put sand down it washes away. This is an ongoing issue and it's frustrating the public gets upset with us and there

Is nothing I can do to prevent these road conditions. There was no flooding it was just the condition of the road.¹⁵⁷

132. Later that evening, Ms. Blackburn replied to all recipients and added Bryan Shynal (Director, Operations, Public Works, Hamilton). She wrote:

If I can add to Sam's e-mail. Due to the super pave product they used allowing the asphalt to last "20-30" years, with this mixture it contains more liquid asphalt and small glass shards with for obvious reasons makes it slippery when wet. If I could recommend that slippery when wet signs be placed throughout the Red Hill, especially on ramps to maybe help alleviate the City of some potential claims and accidents. This may bring a little more awareness to drivers, not all but some.¹⁵⁸

133. Mr. McCleary responded to Ms. Blackburn and advised that he would raise the issue of putting up signs on both the LINC and the RHVP.¹⁵⁹ On September 23, Mr. McCleary wrote to Mr. White to raise the issue of signage:

Roads has a big issue whenever it rains on these class roadways, ramps and along the driving portion. The pavement service has more tar and it then normal as they designed it to last 25-30 years. Now with that the water sits on top of the surface causing hydro plain of cars going high speeds on ramps and roadway,

Can we please take the risk out of this by getting traffic to add slippery when wet signs on every ramp and along the route. We are getting several collisions very time it rains and police are asking us to do something like add sand. By putting these signs it can talk the liability away from the City and on to the drivers that choose not to slow down.¹⁶⁰

¹⁵⁷ [GOL0002641](#)

¹⁵⁸ [GOL0002641](#)

¹⁵⁹ [HAM0008632_0001](#)

¹⁶⁰ [HAM0041728_0001](#)

134. That morning, Mr. White forwarded Mr. McCleary's email to Mr. Ferguson copying Kris Jacobson (Superintendent, Traffic Operations, Traffic Planning, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton). He wrote:

Dave this is an extra ordinary request and in my opinion should be substantiated by collisions history. Please review the collision history facility wide for a statistically significant time period and review for a percentage of collisions on wet pavement. Is there any other analysis that you recommend in this case also. When we are ready to respond please advise as I believe this is precedent setting and conceptually may not be substantiated by fact. It will therefore be sensitive to deal with with Roads staff and the police. Let's check some facts first. When can I suggest we will have a response and I will advise Terry what we are doing. Thanks Dave. Kris if you have any thoughts they would be appreciated also. Thanks guys.¹⁶¹

135. On Monday September 23, 2013, at 9:25 a.m., Mr. Shynal forwarded Ms. Blackburn's email to Mr. Moore, Mr. White, Mr. Mater and Mr. Lupton with an introductory note asking them to note staff's commentary on "vehicular safety concerns related to the RHVP ramps during the rain event on the weekend."¹⁶²

136. Twenty-five minutes later, Mr. Moore responded to Mr. Shynal's message:

I'm not sure where this information on Superpave is coming from but it is totally incorrect. There are no glass shards of any kind in the mix, the asphalt content in the surface is consistent with other mixes being used all over the City. It is the entire pavement that will last more than 50 years due to the depth of pavement and the design of the supporting layers at depth The surface course is meant to last 14 -17 years before a shave and pave. The surface course mix is called SMA (stone mastic asphalt) it is a gap graded premium asphalt surface course with premium aggregates to provide for long term skid resistance and grip. By putting sand down you reduce the ability of the pavement to provide this skid resistance in fact you are providing an intermediate layer between the tire and the road (not the same as sand on ice). There is no pavement that provides grip when the road is covered with water and the speeds are excessive (hydroplaning). These are high performance pavements that were tested when they were put down. They exceeded all MTO criteria (in fact better than any 400 series highway). Recent testing has shown little cracking, no rutting or load related deformation and there is no reason the surface course pavement should not last the full 15 years (it is only 6 years old now). Glad to answer any other questions you may have on this road.¹⁶³

¹⁶¹ [HAM0041728_0001](#)

¹⁶² [GOL0002641](#)

¹⁶³ [HAM0008636_0001](#)

137. Ms. Blackburn prepared a draft response to Mr. Moore, attaching two documents, titled "Uzarowski-2 Superpave RedHill.pdf" and "RED HILL.pdf". The Inquiry has not been able to identify these attachments in the documents produced. Ms. Blackburn wrote:

Gary

I was not trying to mis-inform on the product used on the Red Hill. I had attached two of the documents where they talk about the "Superpave 19 & 25" product used. It had stated using several applications of tack coat and they referenced yourself as the director so I believed they had received the information correctly. I was incorrect in the reference to glass shards it is glass fibres and do apologize for that. I do agree that the product is highly regarded to be more stable and have longevity and hopefully with the lower maintenance will in fact save money. Even with the SMA product due to the "quantity of high polished stone and high viscosity bituminous mastic" it causes "moisture seeping from the SMA surface for long periods after rain." Which is why a suggestion of signage was made.

Sorry for any confusion, with being a front person for many of the accident calls I was just hoping to try to find a solution. With today's motorists that may never be possible but it doesn't hurt to try.¹⁶⁴

138. The City produced a copy of this draft and unsent email with a handwritten note, which appears to have been written by Ms. Blackburn, which stated: "[w]as told by Terry McCleary not to respond even though have proof & documentation."¹⁶⁵

139. Mr. Shynal responded to Mr. Moore's message approximately ten minutes later:¹⁶⁶

Many thanks Gary for your response and clarification relative to the pavement material design and performance testing... which reduces potential mitigation actions to

- posted speed and
- driver warning signage...

Martin & Geoff for your further consideration.

¹⁶⁴ [HAM0058595_0001](#)

¹⁶⁵ [HAM0058596_0001](#)

¹⁶⁶ [HAM0000439_0001](#)

140. Mr. Mater replied to Mr. Shynal, Mr. Moore, Mr. White and Mr. Lupton later that morning, writing “[t]his should be a discussion at [Transportation Coordinating Committee].”¹⁶⁷

141. That afternoon, Mr. White forwarded Mr. Moore’s email to Mr. Ferguson, copying Mr. Lupton:¹⁶⁸

Dave, Additional info below...

As we agreed please complete the collision analysis and consult with John McLennan from Risk management regarding findings and the request. Thanks

142. The Hamilton Spectator published a story regarding the collisions on September 21, 2013, titled “Rain to blame for accident-filled day on Red Hill Valley Parkway”. That evening, Peggy Chapman (Chief of Staff to Mayor Bratina, Mayor’s Office, Hamilton) sent the article to Chris Murray (City Manager, City Manager’s Office, Hamilton):

[PC]: can we hand this road over to the province?! :)

[CM]: And it didn’t flood...

[PC]: nope! Just bad drivers... we should sell insurance billboards along the road!
HAHAHA¹⁶⁹

143. On September 23, 2013, the Hamilton Spectator published a story titled “Rain Blamed for Red Hill Accidents.”

A slew of accidents on a rain-soaked Red Hill Valley Parkway had police warning the public to avoid it on Saturday.

As of 4:30 p.m., Hamilton police were aware of at least 10 accidents on the parkway that occurred at various times through the day.

EMS platoon manager Hal Klassen said they attended a two-vehicle accident just before 1:30 p.m. heading toward the QEW near the King exit. That investigation backed up traffic

¹⁶⁷ [HAM0000439_0001](#)

¹⁶⁸ [HAM0000440_0001](#)

¹⁶⁹ [HAM0058594_0001](#)

and the King Street on-ramp heading southbound on the parkway was closed; it reopened shortly before 5 p.m.

Three patients were attended to and two pediatric patients, siblings, were taken to McMaster Children's Hospital.

The third, an adult in the same car, was taken to Hamilton General Hospital.

None of their injuries was considered life-threatening.

City officials were not aware of any reports of road or basement flooding, even though Hamilton had 26.9 millimetres of rain.

However, a warning for gardeners: cover your tender plants, as Environment Canada has forecast lows of 3 C and a risk of frost for Sunday and Monday nights.¹⁷⁰

144. The same day, Algis Gibson (MMS Inspector, Roads & Maintenance, Operations, Public Works, Hamilton) emailed Nello Violin (Superintendent, Technical Operations, Roads & Maintenance, Operations, Hamilton), also mentioning collisions that had occurred on the RHVP that weekend:

Good morning Nello, apparently there has been several incidents on the RHVP at the N/B King St. location over the weekend. Ive been told It's possible that Reinaldo has forwarded pictures and info to Paul McShane regarding the damages.

I have forwarded signage issues to Cindy in traffic and will follow up with Renaldo this afternoon to determine if further action is needed at this site.¹⁷¹

145. Hamilton's Transportation Coordinating Committee met on September 24, 2013. The minutes of this meeting were taken by Ms. Aquila and list Mr. White as the chair. Other attendees, absences, guests and persons copied listed in the minutes included:

Attendance: Martin White, Christine Lee-Morrison, Al Kirkpatrick, Sally Yong-Lee, Susan Jacob, Gary Kirchnopf, Diana Aquila

Regrets: Gord McGuire, Jim Dahms, John Murray

Guests: Geoff Lupton, Lorissa Skrypniak

¹⁷⁰ [RHV0000178](#)

¹⁷¹ [HAM0008633_0001](#)

Cc:John Mater, Geoff Lupton, Don Hull, Tony Sergi, Gary Kirchnopf¹⁷²

146. Item 6 of the minutes “New/Other Business” referenced LINC and RHVP safety under the heading “Martin”, noting “studies to be conducted on all on/off ramps”. The minutes were sent by Aquila to the individuals listed on September 27, 2013.¹⁷³

147. On September 25, 2013, Mr. White responded to Mr. Shynal, Mr. Moore, Mr. Mater, Mr. Lupton, Nancy Wunderlich (Administrative Assistant to the Director of Operations, Operations, Public Works, Hamilton), Mr. Ferguson, John McLennan (Manager, Risk Management, Legal & Risk Management Services, Corporate Services, Hamilton), Mr. McCleary, and Mr. Jacobson.¹⁷⁴ He attached two email chains on the topic, including the messages from Mr. Moore and Mr. McCleary from September 23, 2013, and stated:

Bryan thank you and your staff. I have not heard this concern expressed previous to this latest incident. Is this something that we are just finding out for the first time? In order to determine the severity and magnitude of the problem and to move this from subjective opinion to fact I have asked our Traffic Engineering section to analyze the collision history on the entire Linc/RHVP system to determine if there is a proven recorded collision history related to the impacts of the weather and road surface on the collision rate and to determine the higher incident locations. We will also confer with Risk management regarding the matter. As soon as we have this information available we will advise of our recommendations. I know Gary has commented on the asphalt performance earlier in another email stream which I have attached to keep all the commentary together.. I am concerned that placing sand on the asphalt will make the roadway less skid resistant but I am not an expert on asphalt. I suggest that when we have all the data available that we discuss a course of action. In my opinion, simply signing the entire freeway system “slippery when wet” will have virtually no impact on the situation and does not change the conditions and to the best of my knowledge has not been done “system wide” on any freeway anywhere in Ontario. Also installing the signs throughout the entire system may perhaps be construed as an admission that the roadway surface is systemically unacceptable. Roads staff have commented that erecting the signs will reduce our liability. I am not certain that is actually true and wonder if we actually have any claims relevant to the road conditions and will pass this information along to John McLellan for comment.

¹⁷² [HAM0041745_0001](#)

¹⁷³ [HAM0041743_0001](#) attaching [HAM0041745_0001](#)

¹⁷⁴ [GOL0002641](#)

I hope to get back to you in a couple of weeks with Traffic's recommendation Bryan. I trust you are comfortable with this course of action. Please advise if you or any others have other thoughts on the matter.

148. Five minutes later, Mr. Shynal thanked Mr. White for his message and said that he was looking forward to his recommendations.¹⁷⁵

149. On September 26, 2013, Mr. McLennan responded to Mr. Shynal, Mr. White, Mr. Moore, Mr. Mater, Mr. Lupton, Ms. Wunderlich, Mr. Ferguson, Mr. McCleary, and Mr. Jacobson. He stated:

Off the top of my head I would say that there is not a significant claims history for slippery conditions on the RHVP, certainly no more than any other mountain cut, if I can call it that. We can certainly run a location based report on Riskmaster however to review the claims history. By copy of this to Gavin Chamberlain, I will ask that he discuss this with me.

What we do have is a situation of which we, the City, are aware, and also the general public. In the event of a serious accident in future this experience will be cited and the allegation will be that "we knew of the problem and ought to have done something about it." Lawyers love to use the word "ought".

I think signs primarily serve a prevention purpose. People may read them and consequently slow down. As for defending liability, signs don't seem to count for much. The downside of not having them is always much harsher than the credit for having them.

The bottom line is of course that there are a lot of crappy drivers out there and regrettably municipalities are expected to protect them from themselves. As I always say, for every situation like this, where there was an "unusual" amount of accidents there were literally hundreds, if not thousands, of drivers who negotiated the conditions without problem. Again, that is an argument that never seems to count for much.

If the "super pave" product really does produce a slicker surface when wet, I would be curious to see what other municipalities are doing about it.

Martin - I will get back to you shortly with our claim findings.¹⁷⁶

150. On September 30, 2013, between 12:56 p.m. and 3:27 p.m., Mr. Moore and Dr. Uzarowski exchange emails about skid resistance testing:

¹⁷⁵ [GOL0002641](#)

¹⁷⁶ [GOL0002641](#)

GM: During the last couple of heavy rain events the Police have been attributing accidents to the “slipperiness of the pavement” . Did we do any “skid resistance” testing in our last outing? Can we do it ? on both?

LU: We did very limited (a few locations only) skid testing on the Red Hill Valley right after construction, i.e. in 2007 and got good numbers, better than MTO typically has. We haven't done any skid testing on the LINC.

We will organize the skid testing on both roads and let you know the details (price and schedule) soon.

GM Ok thanks¹⁷⁷

151. On September 30, 2013, at 3:36 p.m., Mr. Moore responded to Mr. McLennan, Mr. Shynal, Mr. White, Mr. Mater, and Mr. Lupton as follows:

As part of the ongoing pavement monitoring (traffic loading, pavement response, condition assessment) for Asset Management purposes, we will have skid resistance testing completed on both the LINC and Red Hill. There is standard by which we can report on the relative level of resistance and by which we can gauge the performance of each mix and road surface. This should be sufficient for any due diligence required, eliminating the “ought to have known’s” as well dealing with the “we think it was slippery” issues. I'll let you know when we get this.¹⁷⁸

152. Five minutes later, Mr. McLennan responded to Mr. Moore and stated that, further to his message of last week, “the claims history for slippery pavement on the Red Hill is basically non-existent - only one claim, although I suspect we'll get a few from the recent incident.”¹⁷⁹

G. October 2013

153. On October 1, 2013, Mr. Jacobson emailed Mr. Moore and stated that he was looking to retain a firm to test the skid resistance of some crosswalks that were being painted on some intersections in Hamilton. Mr. Jacobson asked whether or not the

¹⁷⁷ [GOL0002642](#)

¹⁷⁸ [GOL0002641](#)

¹⁷⁹ [GOL0002641](#)

crosswalk testing could be piggybacked on the friction testing on the LINC and RHVP that Mr. Moore had mentioned on September 30.¹⁸⁰

154. Mr. Moore forwarded Mr. Jacobson's email (which included a long chain of messages dating back to the heavy rains of September 21) to Dr. Uzarowski. Mr. Moore asked:

Our Traffic Section is installing new crosswalk markings (ladder type markings) and they are concerned the expansive amount of paint has an effect on the skid resistance through the intersection. (trade off on grip vs visibility of pedestrian crossing). Can this be included in your scope of work or is it different in town. (more of a comparative study of with and without new paint?? But it would need to be on the same pavement. ? call me to discuss if you have questions¹⁸¹

1. October 3, 2013 – CIMA sends revised final 2013 CIMA Report to Hamilton

155. On October 3, 2013, Mr. Applebee sent an "updated version of the report" to Mr. Cooper. Mr. Applebee stated that he had "changed the wording in all of the involved tables (executive summary, findings and summary at the end) as well as the text in the body."¹⁸² The Inquiry has not received documents from CIMA providing additional context for the October 3, 2013 update to the report. The City has advised the Inquiry that it has not identified any documents to provide additional context for the October 3, 2013 update to the report.

2. October 2013 - Golder attempts to retain MTO to conduct friction testing

156. On October 4, 2013, Dr. Henderson wrote to Stephen Lee (Head, Pavements & Foundations Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO) to ask if they could discuss the

¹⁸⁰ [GOL0002641](#)

¹⁸¹ [GOL0002641](#)

¹⁸² [CIM0008082](#) attaching [CIM0008082.0001](#)

City of Hamilton's request for some friction testing.¹⁸³ On October 7, 2013, Mr. Lee responded and asked for some details about scope and timing to see if the MTO could accommodate the request.

3. October 7, 2013 – Hamilton staff start drafting report to Public Works Committee

157. On October 7, 2013, Mr. Cooper sent a 10-page draft of the staff report to the Chair and Members of the Public Works Committee regarding the Red Hill Parkway Improvements to Mr. Field, noting that the report was due today.¹⁸⁴ Mr. Field then forwarded the report on to Mr. McGuire, Mr. Kirchknopf, and Peter Locs (Project Manager, Street Lighting Infrastructure Management, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton).

158. On October 8, 2013, Dr. Uzarowski has a notation in his notebook that read

1/ Hamilton

- PMTR LU + VH + RR

- friction LU¹⁸⁵

159. Between October 11 to 14, 2013, Mr. Lupton, Mr. White, and Mr. Ferguson exchanged a series of email messages about the 2013 CIMA Report and next steps.¹⁸⁶

They wrote as follows:

GL: Can you please summarize for me the actions we want to do on the RHVP from the safety report and how we propose to proceed? I'd like to get a sense of this before we arm wrestle Gary.

¹⁸³ [GOL0004467](#) and [GOL0006398](#)

¹⁸⁴ [HAM0041766_0001](#) attaching [HAM0041767_0001](#)

¹⁸⁵ [GOL0007407](#) at image 10

¹⁸⁶ [HAM0004311_0001](#)

DF: The report will be propose a phased approached, essentially easy items first with an evaluation to be completed after one year to determine if they worked. The easy items are essentially the addition or modification to signage and line markings. These items are already being processed and the costs associated will be covered under our general operations bylaw.

If we determine that the above items have had no effect, then we pursue the other items of that being lighting. This will be a more extensive process as we will require approvals from the Conservation groups.

The third items is for raised markings (ie. Cats eyes). This is proposed through future roadway works whenever that may take place.

Clr Collins would also like to see a review of the entire Linc and remaining portions of the RHVP. I was going to add it to the Traffic Safety report, but now looking at it, I'm thinking we should keep it separate and have him bring a Motion forward.

MW: Thanks Dave I would prefer we keep the next safety review separate, especially in light of the recent collision statistics we determined for wet conditions. We have to resolve that matter now too. let's chat early in week before the meeting with Gary Moore. Geoff basically there are a statistically significant number of collisions in wet conditions identified that tells me we may need to do something.

GL: Agreed... we act now or act after it hits the Spec. I'd prefer to lead than follow.

160. On October 22, 2013, Mr. Lupton wrote to Mr. White to ask when the report would be finalized.¹⁸⁷ Mr. White responded to Mr. Lupton and copied Mr. Ferguson and Ms. Aquila. He added a postscript to his email message four minutes later:

Geoff.... Diana is making editing changes to the report. Dave is going to rewrite the recommendations today. He will add an appendix or a section on technical recommendations and then adjust the report recommendations accordingly. STANDBY we are running with it. It will be on your desk by 4:30 (please folks) THX

Thanks

Ps Dave I don't want to send the Cima report at all just our report as highlites. We can say CIMA was contracted to review the safety etc etc.....

161. At 4:44 p.m. that day, Mr. Cooper sent a copy of the 10-page draft report to Mr. Ferguson who forwarded it to Mr. Lupton and Mr. White.¹⁸⁸

¹⁸⁷ [HAM0023453_0001](#)

¹⁸⁸ [HAM0000442_0001](#) attaching [HAM0000443_0001](#), [HAM0000444_0001](#) and [HAM0000445_0001](#)

162. On October 23, 2013, at 9:01 a.m. Mr. Ferguson sent a copy of the report to Mr. Lupton and Mr. White.¹⁸⁹ Mr. Lupton and Mr. Ferguson exchanged messages sorting out some minor details. Mr. White then advised that Mr. Ferguson, Mr. Lupton, Ms. Harbin, and Mr. Cooper that there would be a “Rush revision from John and Geoff for us to make today. The approach is changing to an info report not a recommendation report. We have to finish it today. Geoff will be sending directions shortly.”¹⁹⁰

163. Later that day, Mr. Lupton emailed the following message to Mr. Ferguson and Mr. White:

Gents – thanks – I would like to significantly shorten this and unless we need additional funding anywhere for the short term items, this should be an Information Report.

The report should follow with:

1. **Direction given** > motion approved by council (take out ward 5 Councillor)
2. **What we did** > hired Cima to do a report on...
3. **Results of the CIMA report**>
 - i. (Summary – lose the tables)
 - ii. In general, no major issues where found, staff has issued work orders to make minor improvements examples.
 - iii. The report did highlight that in area xyz that we should implement additional counter measures.
 - iv. The report also reviewed lighting... staff are not recommending changing lights at this time. Recall under the original RHVP design/ report (reference) that lighting was not implemented because of environmental reasons.
4. **Here what staff are doing/ proposing and next steps**>
 - i. Implementing all short term counter measures under existing budgets. The total cost est. are \$133 K.
 - ii. Need to give timing e.g. weather permitting, completion by Spring of 2014? We need to be actionable. If we are NOT repaving for a while we need to go ahead

¹⁸⁹ [HAM0000452_0001](#); and [HAM0041796_0001](#)

¹⁹⁰ [HAM0004317_0001](#)

and do the work anyways. Waiting will not be acceptable to these 3 councillors in an election year. Did Gary agree to the frictionless piece? If not take it out. If so, we should be clear that this implementation would be to their schedule.

iii. Staff proposes monitoring for a one-year period after completion of the short term counter measure and report back to council. Staff will work with Gary's group to determine if there are any other short term counter measures that can be implemented.

iv. Staff do not recommended lighting... (again why). But if council wanted to do so, it what cost about...

v. Add a new (easier to read) appendix "A" that lists the counter measures to be implemented in the short term or incorporate in the report (whatever is easiest to understand). Take out b/c's, individual costing etc.

vi. Remove the second paragraph of the exec. summary. Stick to facts at hand... take out stuff about Councillor calls etc., we are just responding to the motion.

This report needs to be short, concise, easy to understand and actionable. Should be 2 -3 pages at most. I need this done and into me tomorrow morning by 10:30. I have to submit (complete) to John tomorrow. I already have been spoken too about being late.

Any questions or concerns? ¹⁹¹

164. At 9:13 p.m. on October 23, 2013, Mr. Ferguson circulated a revised draft report to Mr. Lupton and Mr. White.¹⁹² The draft, forwarded by Mr. White to Mr. Lupton and Mr. Ferguson on October 24, 2013, involved a substantial revision to the version circulated by Mr. Ferguson on October 23, 2013 at 9:01am. The report was changed from a recommendation report to an information report, and was shortened from ten to three pages.¹⁹³ For the purpose of identifying the distinctions between the drafts of the report, they will be identified in the following 8 paragraphs as the "Recommendation Draft" and the "Information Draft".

165. The Recommendation Draft contained the following headings: recommendation, executive summary, financial/staffing/legal implications, historical background, policy

¹⁹¹ [HAM0041796_0001](#)

¹⁹² [HAM0000463_0001](#) attaching [HAM0000464_0001](#) and [HAM0000465_0001](#)

¹⁹³ [RHV0000666](#); [HAM0000454_0001](#); and [HAM0000464_0001](#)

implications/legislated requirements, relevant consultation, analysis/rationale for recommendation, alternatives for consideration, alignment to the 2012-2015 strategic plan and appendices/schedules.¹⁹⁴

166. The Information Draft, revised as an information report, included the following headings: Council direction and information. It provided less detail regarding the 2013 CIMA Report, including its scope and recommendations.¹⁹⁵

167. The Recommendation Draft provided information regarding the scope of the study, included an image of the RHVP, outlined the various sections of the 2013 CIMA Report, and noted:

- The scope of this study included the review, analysis, development and assessment of the following key aspects:
- Review and analysis of traffic volumes, speed and collisions;
- Review and analysis of signs and markings;
- Review of human factors (and road user security);
- Review of roadside safety and hardware;
- Review of illumination in specific areas only (i.e. not throughout study area);
- Development of a long-list of viable potential countermeasures;
- Assessment of countermeasures using collision modification factors where available;
- Assessment of cost-benefit of countermeasures; and
- Recommendation of viable countermeasures

The findings of the study indicated that, overall, the RHVP is operating safely when compared with other roads with similar characteristics. However, several locations were identified for improvements and various countermeasures were developed and scrutinized.¹⁹⁶

168. The Recommendation Draft recommended as follows:

- (a) That Appendix "A" to report PW13-001 respecting Red Hill Valley Parkway Improvements be received as a timeline for improvements.
- (b) That staff proceed with wide lane markings within the area of the Stone Church Road and Mud Street ramps.

¹⁹⁴ [HAM0000454_0001](#)

¹⁹⁵ [HAM0000464_0001](#)

¹⁹⁶ [HAM0000454_0001](#) at image 3

- (c) That staff continue to design and implement lane marking changes to the eastbound Mud Street off ramp.
- (d) That staff fabricate and erect a Diagrammatic sign for the southbound Red Hill Valley Parkway at the Mud Street and Stone Church Road off-ramp to better assist drivers.
- (e) That the subject matter be identified as completed and removed from the Outstanding Business List¹⁹⁷

169. The Recommendation Draft also included an “Alternatives for Consideration” section, which noted “An alternative is that Council could have staff complete all of the recommendations in the consultant report. This option will require a significant financial commitment without proven safety impacts.”¹⁹⁸

170. The Information Draft did not contain any recommendations. Information regarding the scope and recommendations from the 2013 CIMA Report were incorporated into the “Information” section.¹⁹⁹

171. The Recommendation Draft included a chronology of events in the “Historical Background” section of the report, including that “staff and City Councillors have received calls from concerned citizens about numerous traffic issues.” This section included the details regarding the motion which initiated the review, as well as a summary of the types of recommendations from the 2013 CIMA Report.²⁰⁰ The “Analysis / Rationale for Recommendation” section provided “a list of recommendations to improve driver comfort and/or to increase safety along the RHVP between Dartnall Rd. and Greenhill Ave.” This included various charts outlining CIMA’s recommendations. The first chart, which included friction testing, included countermeasures recommended for the study area in

¹⁹⁷ [HAM0000454_0001](#) at image 1

¹⁹⁸ [HAM0000454_0001](#) at image 9

¹⁹⁹ [HAM0000464_0001](#)

²⁰⁰ [HAM0000454_0001](#) at image 4

general, not limited to any particular section. This section of the Recommendation Draft also included a summary of countermeasures identified for road segments in the study area, which was removed in the Information Draft.²⁰¹

172. A paragraph regarding staff's decision not to recommend lighting was added to the Information Draft, along with details regarding the timing of the implementation of certain countermeasures:

The report also reviewed lighting considerations and while it is not recommended to install lighting along the entire road segment, the consultants report recommended lighting on the westbound Mud St. on-ramp. However as outlined under the original Red Hill Valley Report that was approved by Council prior to construction of the roadway, lighting was not recommended or implemented as a result of the environmental concerns. As a result, staff do not recommend lighting at this time as a result of multiple conditions

- Countermeasures have been implemented at this location prior to the commencement of the study and require additional time to determine if these measure have a positive effect
- As some residents raised concerns with light pollution and the concerns raised by the Conservation Authority as a result of environmental concerns, the city would need to undertake a open public consultation process before lighting could be implemented
- As a result of the costs to implement lighting at this location, estimated at \$275,000, staff believe consideration and time should be provided to evaluate the other countermeasures before beginning the process for the possible installation of lighting.

All of the sign changes outlined in the consultants report [will be completed by the end of 2013]. Pavement improvements will be completed by June 2014 during the regular scheduled re-painting of the Red Hill Valley Parkway to minimize costs.

Staff will continue to monitor the outlined study area for a one-year period, once all signage and pavement marking countermeasures are implemented, and report back to Council.²⁰²

173. On October 24, 2013, Mr. Lupton and Mr. Ferguson exchanged a series of emails between 7:53 a.m. and 8:31 a.m.²⁰³ A portion of those emails read as follows:

²⁰¹ [HAM0000454_0001](#) at images 5-8

²⁰² [HAM0000464_0001](#) at images 2-3

²⁰³ [HAM0004320_0001](#)

GL: Why do we have > • TAC illumination warrant justified • Install lighting on ramp
In the appendix? I thought we weren't doing lighting is this one of those solar things?

DF: That is the recommendation of the report, there is no way around that.

What we are saying is that we do not recommend the lighting at this time until the other countermeasures are implemented and evaluated.

GL: So I can remove then right.

DF: That is your call pal, that's why you make the big bucks.

My concern is that if we remove it, Collins will eat us alive as the motion speaks specifically to lighting.

I think if we acknowledge it and provide that we will further review after installation of countermeasures, he will let it slide.

GL: I'm taking it out... cuz we reference it in the report

174. On October 24, 2013, at 11:43 a.m., Mr. White sent a message to Mr. Lupton and Mr. Ferguson.²⁰⁴ The message forwarded Mr. Ferguson's email from the day prior, which attached a draft two-page report to Council. Mr. White asked if Mr. Lupton was "fundamentally comfortable with this rewrite?" Mr. White also suggested that they make changes to the CIMA charts that were included at the end of the report.

175. On October 25, 2013, Mr. Lupton emailed Mr. White and Mr. Ferguson and attached a copy of the report to the Public Works Committee meeting on November 18, 2013.²⁰⁵ Mr. Lupton indicated that "Gerry's signed off" and that the report had been "sent." Mr. Lupton also cautioned his colleagues to make sure that he did not receive late reports.

²⁰⁴ [HAM0000463_0001](#) attaching [HAM0000464_0001](#) and [HAM0000465_0001](#)

²⁰⁵ [HAM0041815_0001](#) attaching [HAM0041816_0001](#) and [HAM0041817_0001](#)

176. On October 25, 2013, Mr. Lupton sent Mr. White, Mr. Moore and Mr. Ferguson a calendar invite for October 28, 2013 with the subject line: “Canceled: RHVP Safety review - Internal Discussions”. The body of the invite noted: “Revised – location of meeting”. The City has advised the Inquiry that it has not identified any documents indicating whether this meeting ultimately took place.²⁰⁶

177. On October 28, 2013, at 9:37am, Mr. Lupton emailed Mr. White and Mr. Ferguson to update them on a conversation he had with “Gary”.²⁰⁷ Mr. Lupton wrote as follows:

I've reviewed with Gary... he's good, but suggests that we manage the final version of the report to reflect what we are saying. He said it's not uncommon to get an FOI to this type of thing. I'm not asking to change opinions, but to soften and stage the report similar to what we have done with our info. report. e.g. do this first and measure results, etc. Please sit down with CIMA and make this happen. Please ensure you manage this directly.

178. The same day, beginning at 10:00am, Mr. Ferguson exchanged emails with Mr. Cooper:

[DF]: Please set up a meeting with CIMA for next week to discuss the RHVP report.

[SC]: Sure, when and why?

[DF]: Set it up through outlook, you should be able to see my availability.

Modification to the report to reflect Council Info report.²⁰⁸

4. October 29, MTO declines to conduct friction testing on RHVP

179. On October 29, 2013, Dr. Henderson and Mr. Lee exchanged further messages, and Mr. Lee explained that the MTO would not be able to accommodate the request this season:

²⁰⁶ [HAM0041818_0001](#)

²⁰⁷ [HAM0004322_0001](#)

²⁰⁸ [HAM0058883_0001](#)

VH: City of Hamilton is looking to have the testing done as soon as possible they would like the Red Hill Parkway (RHVP) and Lincoln Alexander Parkway tested. The RHVP continues into the link there are two lanes each direction, each lane is 18 km in length. They will likely also ask for a few ramps to be tested. They have a couple new crosswalks in the city that they would like tested as well. Is this something that you would undertake or should they look at hiring a firm to do this given the amount of the testing? If they are alright with just having a few random locations tested on the RHVP and LINC as well as ramps a couple of random ramps and the crosswalks, would this be feasible for you to do? If you did do the testing on the RHVP and LINC would you need traffic control?

SL: We are behind in our friction network level work and performance based specification testing recommend you get quotation from ARA that has the same equipment or others that have different friction equipment. Sorry we will not be able to accommodate this for this season. Some friction testing machines are sensitive to ambient slash pavement surface temperature.²⁰⁹

H. November 2013

1. November 6 – Golder contacts Tradewind to conduct friction testing

180. On November 6, 2013, Dr. Henderson contacted Tradewind Scientific Ltd. through its website. She asked to speak to someone about Hamilton's request for friction testing to be conducted this year on its urban highways. Susan Ames (Office Manager, Tradewind Scientific) forwarded Dr. Henderson's request to Leonard Taylor (President & Chief Executive Officer, Tradewind Scientific).²¹⁰

2. CIMA sends further revisions to 2013 CIMA Report to Hamilton

181. On November 7, 2013, Mr. Applebee emailed Mr. Cooper regarding the 2013 CIMA Report.²¹¹ He wrote as follows:

I have attached a Word document to this email that has our suggested wording additions (the changes are highlighted in yellow) based on our meeting yesterday. We have avoided using too many actual dates as we feel that this could potentially put the City in a liability position if someone were to look back in retrospect and the City had not completed the work by that specific date, for whatever reason. This is why we have tried to use ranges, generally.

²⁰⁹ [GOL0004467](#) and [GOL0006398](#)

²¹⁰ [TRW0000036](#)

²¹¹ [HAM0004329_0001](#) attaching [HAM0004330_0001](#)

Please review the suggested changes at your convenience and pass them along up the line as you see fit. If you or anyone else has any suggestions on the changes, please let us know and we will evaluate them and go from there.

182. The document that Mr. Applebee sent extended the time for two countermeasures to be completed and included the following new text:

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 – early 2014.

+Pavement Marking and PRPM 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.²¹²

183. Mr. Cooper forwarded the message and its attachment to Mr. Ferguson, who then forwarded it to Mr. Lupton and Mr. White.²¹³

184. Mr. Malone's notebooks contain an entry dated November 12, 2013, which notes "Martin White Lunch"²¹⁴

3. November 8 to 17, 2013 – Golder and Tradewind discuss the friction testing

185. On November 8, 2013, Dr. Uzarowski has a notation in his notebook that read:

²¹² [HAM0004330_0001](#) at image 1

²¹³ [HAM0004329_0001](#) attaching [HAM0004330_0001](#)

²¹⁴ [CIM0022409](#) at image 11

1) Hamilton

- 5 years
- PMTR – Phase I
- Friction
- instrum.²¹⁵

186. On November 8, 2013, Dr. Henderson spoke with Mr. Taylor regarding the friction testing. A notation written on a printed email from October 2013 between Dr. Henderson and the City regarding the friction testing indicated that Dr. Henderson was to expect a response from Mr. Taylor on November 13, 2013.²¹⁶

187. On November 17, 2013, Mr. Taylor wrote to Dr. Henderson, with copies to Michael Hogarth (Field Testing Technician, Tradewind Scientific) and Ms. Ames.²¹⁷ Mr. Taylor said that he was writing to follow up on their recent communication. He said that Tradewind would be able to perform the requested friction tests, weather permitting, on November 19 to 21, 2013. He described the work to be done, the breakdown of the projected cost, and the need for an escort vehicle and water source as follows:

Based on testing in the outer wheel track of the four lanes of the urban highway section, with each test run 19 km in length (two lanes each direction), the cost for this work would be calculated as:

- 1) Fixed cost for provision of specialized GripTester equipment, tow vehicle, operator, data collection and analysis \$ 3210
- 2) Mobilization, preparation and calibration of test equipment, dedicated return Ottawa-Hamilton-Ottawa travel \$ 750
- 3) Standby/weather/access delay (if any) \$95/hr

²¹⁵ [GOL0007407](#) at image 13

²¹⁶ [GOL0004476](#)

²¹⁷ [GOL0001106](#); and [TRW0000041](#)

The standard GripTester Test Speed for Highway surveys (in order to allow direct comparison with established UK Highway Reference Levels) is 50 kph.

Therefore an escort vehicle will need to be arranged by your company to help ensure safe test conditions. Also, access to a water source to fill the 500 litre flexible water tank carried by our tow vehicle will be required.

188. Dr. Henderson replied on November 18, 2013, writing to Mr. Taylor that she would ensure “the client [was] aware of the costs” and that she would advise him whether he could proceed by the end of the day.²¹⁸

189. On November 19, 2013, Dr. Henderson emailed Mr. Taylor to ask some questions about the testing of the crosswalks:

As we discussed previously, the majority of the testing in on the urban highway but the City would also like a few crosswalks tested so they can get a handle on a new paint they are using. I understand that the crosswalk testing was not included in the price. Let me know what the additional cost will be when you have a chance. In the shorter term though, will it be possible to test the crosswalks with the information that is being sent. The OPSS for the material being used reference ASTM E 303 for skid testing which I understand is British Pendulum. Is there a conversion between the results we would get tomorrow and British Pendulum results? Please let me know your thoughts on this.

We have access to a British Pendulum. My thought is to test the crosswalks tomorrow with whatever equipment you suggest/are able to provide in order to get an appreciation for the friction characteristics of the crosswalks. If we still need to do British Pendulum testing then we will take care of this at a later date. If you have a British Pendulum or comparable device we would be very appreciative if that is used tomorrow on the crosswalks. I appreciate given the short notice that this may not be possible.²¹⁹

190. Mr. Taylor responded on November 19, 2013 and stated:

In order to test short-section surfaces such as crosswalks, we would need to re-configure the GripTester equipment for manual push-mode testing which requires additional special accessories that are not used for the standard highway/runway tow CFME (Continuous Friction Measurement Equipment) surveys. Our operator Mike Hogarth will assess the sites where you may need this type of testing and we can decide whether this additional testing may be possible at a later date in the fall or if it will need to be scheduled for next spring.

As part of our report, we will be providing comparative values with other friction measuring equipment including the British Pendulum and SCRIM.²²⁰

²¹⁸ [TRW0000054](#)

²¹⁹ [TRW0000057](#)

²²⁰ [GOL0003532](#)

191. On November 19, 2013, Dr. Uzarowski emailed Mr. Moore to advise him that the price of the friction testing and to “prepare a short memo report” would be \$8,000 + HST.²²¹ Mr. Moore approved the expense and directed City staff to issue the purchase order and assist with the logistical arrangements for the testing.²²²

4. November 18, 2013 – Public Works Committee Meeting re: PW 13081

192. On November 18, 2013, the Public Works Committee met with Councillors Ferguson, (Chair) Whitehead, (Vice Chair) McHattie, Merulla, Collins, Duvall, Jackson, and Pasuta present. The business of the Public Works Committee was recorded in Report 13-014, which it presented to City Council for approval at its next meeting.²²³ The Committee received Report PW13081 (Item 8.7) respecting Red Hill Valley Parkway Improvements. Report PW13081 did not attach the 2013 CIMA Report.²²⁴

193. The report was submitted to the Public Works Committee by Gerry Davis (General Manager, Public Works, Hamilton), and lists Mr. Cooper and Mr. Ferguson as having prepared the report.²²⁵

Council Direction:

At the January 23, 2013, Council meeting, the following Motion was approved and provided to staff:

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

Information:

²²¹ [GOL0006542](#)

²²² [GOL0002647](#)

²²³ [HAM0004335_0001](#)

²²⁴ [RHV0000668](#)

²²⁵ [RHV0000668](#)

As a result of the Motion, staff retained CIMA+ Consulting to complete an In-service 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 in these areas.

The report included a review of current lighting along with enhancements that could assist driver comfort while driving on the Red Hill Valley Parkway. It should be noted that as part of the original RHVP design and prior Council approval, the roadway lighting was not recommended or implemented as a result of the environmental concerns (light pollution).

The findings of the study indicated that the Red Hill Valley Parkway is operating safely. However, the report did suggest implementing several safety countermeasures that could further enhance or improve driver safety and security. Many of the recommendations identified involve relatively minor changes to various signs and pavement markings in the study area. Staff is in the process of implementing many of the identified signage countermeasures which should be completed by the end of 2013. Pavement marking will be completed in the spring of 2014 as weather permits. Existing maintenance accounts are being utilized to complete the identified short term countermeasure work at an estimated cost of \$133,000. A listing of short term countermeasures and locations identified in the report are listed in Appendix A.

The consultant's report also recommended the installation of Raised Permanent Pavement Marking (e.g. cat's eyes). The purpose of this recommendation was to provide additional markings to assist with positive guidance for motorists; Staff is supportive of this recommendation. Generally, installations of these types of marking work best when they are installed during repaving of the roadway. Staff from the Public Works, Traffic Engineering Section will work with Construction Engineering to determine the repaving schedule for this area and coordinate the installation of the permanent markings. In the interim, staff will ensure that temporary markings are installed in 2014, until the more permanent ones can be installed. Staff will also review further countermeasures such as friction testing with Construction Engineering.

The report also reviewed roadway lighting and while the report did not recommend the installation of lighting along the entire road segment, the consultant's did report recommended that lighting be installed on the westbound Mud St. on-ramp. The cost to install roadway lighting in this section is initially estimated at \$275,000. However as outlined under the original Red Hill Valley Report that was approved by Council prior to construction of the roadway, roadway lighting was not recommended or implemented as a result of the environmental concerns. Staff propose that the identified countermeasures should be implemented and monitored prior to any further consideration of the installation of new roadway lighting.

Staff will continue to monitor the outlined study area for a one-year period, once all signage and pavement marking countermeasures are implemented.

All of the sign changes outlined in the consultant's report will be completed by the end of 2013. Pavement improvements will be completed by June 2014 during the regular scheduled re-painting of the Red Hill Valley Parkway to minimize costs.²²⁶

²²⁶ [RHV0000668](#) at images 1-2

194. On November 19, 2013, Mr. Applebee followed up with Mr. Cooper to see if he had any comments on the suggested changes to the 2013 CIMA Report.²²⁷ Mr. Cooper responded that he had passed the suggested changes along but had not heard anything yet.²²⁸

5. November 20, 2013 - Tradewind performs friction testing

195. On November 19, 2013, Mr. Moore approved Golder's proposal for friction investigation and directed Marco Oddi (Senior Project Manager, Construction Management, Construction, Engineering Services, Public Works, Hamilton), Rich Shebib (Traffic Technologist, Corridor Management, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton), and Mr. White to assist with traffic control coordination for the friction testing.²²⁹

196. The friction testing took place on November 20, 2013. Dr. Henderson, Mr. Hogarth, Joe Guerretta (Traffic Services Foreman, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), Larry Stewart (Traffic Specialist, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), and Jason Medeiros (Signs/Marking Specialist, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) were present. Dr. Henderson took notes of the locations tested.²³⁰

²²⁷ [CIM0008068](#)

²²⁸ [CIM0008068](#)

²²⁹ [GOL0002647](#)

²³⁰ [GOL0004441](#)

197. The designated testing area was indicated on a map in Tradewind's final report as being approximately between Mohawk Road/Golf Links Road on the LINC and Barton Street on the RHVP. The report identifies that testing was also conducted on "short sections of certain access ramps (Greenhill and Stonechurch)".²³¹

198. On November 21, 2013, Mr. Taylor and Mr. Hogarth exchanged messages. Mr. Hogarth wrote:

Tested 17 Km of Lincoln Alexander Parkway and Red Hill Valley Parkway

Starting at the West end at the overpass of Golf Links Road and

Finishing at the East end at Barton St. exit.

Red Hill Valley Parkway is the pavement of concern, and has the lower friction values.

Tested 3 400 meter sections of off / on ramp

Tested 4 crosswalks @ 100 meters. Data very inconclusive as I could not tell you

Where the test wheel crossed the paint. and it is not obvious by the graph.

Those need to be tested properly, with the appropriate device.

The one conclusion is that the paint friction is not radically different from the asphalt.

The concern with the crosswalks is that a school crossing guard saw 2 kids slip and fall on a rainy day shortly after the crosswalks were painted, and registered a complaint.²³²

199. Mr. Taylor thanked him for the data and update and advised that he and Rowan Taylor (Engineering Manager, Tradewind Scientific) would work through the measurement results and let Mr. Hogarth know if they needed further information to put together the analysis and summary report.²³³

²³¹ [GOL0001113](#) at images 4 and 12

²³² [TRW0000071](#)

²³³ [TRW0000071](#)

6. November 27, 2013 – City Council approves PWC Report 13-014 and PW 13081

200. On November 27, 2013, City Council approved Public Works Committee Report 13-014 as presented. The 2013 CIMA Report was not placed before City Council.²³⁴

201. On November 29, 2013, the Office of the City Clerk sent a Council Follow-up for Public Works Report 13-014 to Mr. Davis.²³⁵ One of the items for staff action was from the Outstanding Business List - Item 11.1(a) – “Staff were directed to Report back respecting the lighting aspects of Outstanding Business list C respecting the Red Hill Parkway Improvements.” Mr. Davis’s office then distributed the follow-up report to the directors in the Public Works Department, including Mr. Moore.

202. On December 3, 2013, Dr. Henderson wrote to Mr. Taylor to express her appreciation for Tradewind fitting the project in to his schedule and to ask if he had an estimate as to when Golder would receive the results.²³⁶

I. December 2013

1. December 2013 - Mr. Moore's discussion with staff regarding lighting on RHVP

203. On December 5, 2013, Mr. Moore forwarded the follow-up report to Mr. Lupton, Mr. White, and Mr. Mater by email. He wrote:

What part of 1) the road was approved environmentally not only without lighting, but specifically not to have it; 2) the road geometrics were done with no lighting required ; 3) there are constraints that preclude the erection of lighting on several ramps; 4) it is not recommended in any way shape or form to erect lighting on partial basis and 5) we can't afford it; didn't committee get?. That doesn't even begin to address the fact we shouldn't be talking about potential improvements that will give any claimants more ammunition! I

²³⁴ [HAM0004335_0001](#)

²³⁵ [HAM0004334_0001](#) attaching [HAM0004335_0001](#)

²³⁶ [TRW0000042](#)

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.

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

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

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](#)

Administration, Risk Management, Legal & Risk Management Services, Corporate Services, Hamilton) and Terry Shillington (Partner, Shillingtons LLP) under the subject line “Hamilton Files – Red Hill Valley Parkway”, providing details relating to three collisions that occurred on the RHVP in 2011 and 2012. Ms. Crawford’s email also included:

The issues in the three law suits will deal with design, signage and guardrail installation. We would like to review with you who should be produced on behalf of the City in these three actions. We will require someone who will be able to testify to the design standards and signage requirements.²⁵¹

215. Mr. Kirchknopf replied to Ms. Crawford on January 8, 2014, writing:

I sent this to my director yesterday and I’ll advise you shortly who the best city representative should be for these 3 law suites requiring design, signage & barricading requirements.²⁵²

J. January 2014

216. On January 7, 2014, Dr. Henderson emailed Mr. Taylor again and asked him for his anticipated timeline for providing the Hamilton test results.²⁵³ Mr. Taylor responded that day and said that he expected “to have your data analyzed and report ready within about one week.”²⁵⁴ Dr. Henderson responded that she understood, but that “the client was starting to bug me!”²⁵⁵ She offered her assistance if Mr. Taylor needed any information from her to interpret the data. He responded that he would let her know if he needed any additional information.²⁵⁶

²⁵¹ [HAM0061930_0001](#)

²⁵² [HAM0061930_0001](#)

²⁵³ [TRW0000061](#)

²⁵⁴ [GOL0001111](#)

²⁵⁵ [TRW0000063](#)

²⁵⁶ [TRW0000065](#)

217. On January 7, 2014, Dr. Henderson emailed Dr. Uzarowski to tell him that Tradewind would provide the friction data by the end of next week so that they could finish the report.²⁵⁷ Dr. Uzarowski responded, “Vimy, please get it from them ASAP and give them hell on my behalf. I have to call Gary and am afraid he will ask me about it.”

218. Dr. Uzarowski’s notes contain an entry dated January 8, 2014, which lists the following:

4/ Hamilton

- (a) TAC paper
- (b) PMTR report
- (c) 5 years + friction
- (d) instrumentation
- (e) other involvements

5/ Municipalities

- (a) Hamilton²⁵⁸

219. On January 9, 2014, Dr. Uzarowski had a note to call Mr. Moore. The notes refer to PMTR, traffic sensors, and appear to read “friction on Tuesday, report Friday”.²⁵⁹

220. On January 14, 2014, just before 7:00 a.m., Dr. Henderson emailed Mr. Taylor and asked him how the analysis was coming along and if he anticipated that Golder would receive it that day.²⁶⁰

²⁵⁷ [GOL0003529](#)

²⁵⁸ [GOL0007407](#) at image 23

²⁵⁹ [GOL0007407](#) at image 24

²⁶⁰ [TRW0000065](#)

221. On Tuesday January 14, 2014, starting at 12:12 p.m., Dr. Uzarowski exchanged messages with Ms. Cameron and attempted to arrange a call with Mr. Moore for that day.²⁶¹ Ms. Cameron responded that Mr. Moore was not available as he was in back-to-back meetings. Dr. Uzarowski has a note in his notebook for that day, which reads:

1/

2/ Gary Moore

- \$12,000 – budget \$5,000 – HIR

- TAC paper – preventive

today? – friction, instrumentation²⁶²

222. On January 15, 2014, Mr. Taylor responded, “I am currently overseas (in Scandinavia) on some urgent business matters, and expect to be back in Ottawa on the weekend. I now anticipate that the final report will be with you early next week, sorry for the ongoing delays.”²⁶³

223. On January 14, 2014, Mr. Kirchknopf emailed Ms. Crawford, replying to his email from January 8, 2014. He wrote:

My director advised me today that due to the complex nature of these claims, which cross into 3 different divisions within the Public Works Department he would like you to set up a meeting with our City Legal / Risk Management section and include the following:

Gary Moore, Director of Engineering Services

John Mater, Director, Corporate Assets & Strategic Planning

Bryan Shynal, Director of Operations

From this meeting, a city point person for these claims will be determined.²⁶⁴

²⁶¹ [HAM0023632_0001](#)

²⁶² [GOL0007407](#) at image 25

²⁶³ [GOL0001112](#); and [GOL0001109](#)

²⁶⁴ [HAM0061930_0001](#)

1. January 2014 – Mr. Moore follows up with Councillor Collins regarding lighting

224. On January 15, 2014, Mr. Moore emailed Mr. Lupton, Mr. White, Mr. Locs, Mr. Field, Mr. McGuire, and Nancy Clark (Administrative Coordinator to the General Manager, Public Works, Hamilton) regarding a conversation he had with Councillor Collins. He wrote:

I talked to [Councillor Collins] after PW on Monday re his expectations regarding the outstanding lighting report for the Mud St. I/C. He is not expecting anything until the improvements suggested and approved in your last report have been implemented and have had a reasonable time to be able to comment on their effectiveness (or not). I would say he's not looking for anything in 2014 (or maybe beyond)!

[Ms. Clark] this is an OBL item that will have to go beyond this term of Council and cannot at this time be given date (at least not in certainty before Q4 2015).²⁶⁵

225. Mr. Lupton responded only to Mr. Moore. Mr. Lupton stated that “the deal with Chad was implement the items and monitor for at least a year and then see if anything further needed to be done. We will be implementing a number of our measures in the spring work schedule.”²⁶⁶

226. Mr. White forwarded Mr. Moore’s message (and a response from Ms. Clark) to Mr. Ferguson and Mr. Jacobson with this introduction:

Dave and Kris see below fyi. Please ensure all remedial works on the Linc are completed and then we will have to measure their effectiveness and we also have to follow up on the entire safety issue on the Linc also. What are we doing with the Roads request to sign slippery when wet signs everywhere? I forgot about that one. We need the asphalt skid tests to see what they determine also! Let's talk! Ty²⁶⁷

227. Mr. White then forwarded the entire chain to Mr. Lupton.²⁶⁸

²⁶⁵ [HAM0004355_0001](#)

²⁶⁶ [HAM0004357_0001](#)

²⁶⁷ [HAM0004355_0001](#)

²⁶⁸ [HAM0004355_0001](#)

228. On January 21, 2014, Mr. Rowan Taylor emailed Mr. Taylor a draft of the “Friction Testing Survey Summary Report” for the friction test of November 20, 2013.²⁶⁹ Mr.

Rowan Taylor’s covering email read:

Similar overall comments to the SDG one.

As I showed you a while back , the 17km is split between two graphs into approx 10/7km sections corresponding to the Lincoln Alexander & Red Hill Valley Parkways, respectively. I put an extra pin on the GMap to show this as well.

Also note that this is a "Dual Carriageway" so I changed the UK ref line to 48.

229. There is also a spreadsheet containing the friction test data with a date of January 21, 2014.²⁷⁰

230. On January 24, 2014, Dr. Uzarowski wrote to Mr. Taylor as follows:

Good morning, Leonard.

I received a message from my client this morning. He needs the friction testing results this morning. He has a meeting with the management to discuss the pavement issue.

I would appreciate if I could receive the report this morning. It cannot be delayed any more.²⁷¹

231. Dr. Uzarowski sent a second message a little over an hour later that read as follows:

My client needs a comparison of friction numbers on the Red Hill Valley Parkway in Hamilton from 2007 and 2013. I have summarized 2007 and need the numbers for 2013. He needs my summary before noon. Could you send 2013 numbers to me?²⁷²

232. On January 24, 2014, Dr. Uzarowski forwarded an email message and its two spreadsheets to Dr. Henderson.²⁷³ The message he forwarded was from Chris Raymond

²⁶⁹ [TRW0000043](#) attaching [TRW0000043.0001](#) and [TRW0000043.0001.0001](#)

²⁷⁰ [TRW0000092](#)

²⁷¹ [TRW0000038](#)

²⁷² [TRW0000052](#)

²⁷³ [GOL0001096](#) attaching [GOL0001097](#) and [GOL0001098](#)

(Acting Senior Pavement Design Engineer, Pavements & Foundations Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO) to Dr. Uzarowski, Andro Delos Reyes (Senior Pavement & Materials Geotechnical Technologist, Golder), and Frank Marciello (Pavement Evaluation Supervisor, Pavements & Foundations Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO) on October 18, 2007. That message read:

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.

233. On January 24, 2014, at 11:44 a.m., Dr. Uzarowski emailed Mr. Moore under the subject line “Friction Numbers on RHVP”. The 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. The 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 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.²⁷⁴

234. Golder appears to have received the summary numbers of the Tradewind friction testing from Mr. Rowan Taylor on January 24, 2014.²⁷⁵ To date, neither Golder nor Tradewind have provided the Inquiry with any documents that reflect the nature of Tradewind's communication of the test results to Dr. Uzarowski.

235. Fifteen minutes after receiving the message from Dr. Uzarowski, Mr. Moore emailed Thomas Dziedziejko (General Manager, AME, Aecon Materials Engineering Corp.).²⁷⁶ Mr. Dziedziejko was listed as an author of the paper attached to Dr. Uzarowski's email.²⁷⁷ Mr. Moore wrote:

Tom

Here are a few pictures of the Red Hill, unfortunately I can't put my hands on any photos of the SMA going down (but it just looks like any other paving job). I have attached a few general Red Hill photo's you can use.

In general the SMA surface course was used as part of the Red Hill perpetual pavement system. Given we have no utilities or municipal appurtances (manholes, catchbasins, vaults, etc..) in the road we felt the extra cost of the SMA and the benefits of the higher skid resistance, reduced water spray, lower noise generation, etc, was warranted and would perform to it intended service life. On most urban roads that would have a high enough traffic volume to warrant a premium asphalt, I would have to consider the condition of any underlying municipal services (watermains and sewers), the potential for utility cuts and the potential service life of the pavement before considering SMA for urban road application.

²⁷⁴ [GOL0002657](#) attaching [GOL0002658](#) and [GOL0002659](#)

²⁷⁵ [GOL0002656](#)

²⁷⁶ [HAM0052049_0001](#)

²⁷⁷ [GOL0002660](#)

Here's a summary of the skid resistance tests.

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 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

Hope this helps

Gary

Gary Moore, P.Eng
 Director Engineering Services
 Public Works Department
 Ext 2382

Ps thoroughly enjoyed event last night! Thanks again Tom.

Gary²⁷⁸

236. The City has advised the Inquiry that to date, it has not identified any documents indicating that Mr. Moore circulated this information to any other City staff.

237. On January 24, 2014, Benjamin Gesch (Operations Service Representative - Roads, Roads & Maintenance, Operations, Public Works, Hamilton) emailed Ms. Blackburn regarding a call the City received regarding the RHVP:²⁷⁹

²⁷⁸ [HAM0052049_0001](#)

²⁷⁹ [HAM0008673_0001](#)

[confidential information redacted] was the caller re: earlier slippery conditions on Red Hill including ramps.

238. Approximately fifteen minutes later, Ms. Blackburn forwarded the email to Doug Bogar (Superintendent, Miller Group):

We received a call from a [confidential information redacted] and she was concerned that it seems the Red Hill is always very slippery before events. She was wondering if you could be more pro-active on that roadway and monitor/dispatch trucks earlier to try to prevent incidents/accidents. She has included her number in case you require more clarification.²⁸⁰

239. Mr. Malone's notebooks contain an entry dated January 27, 2014 which references Mr. White.²⁸¹

2. January 26, 2014 - Tradewind sends its final report to Golder

240. On January 26, 2014, Mr. Taylor emailed Dr. Henderson and Dr. Uzarowski, providing the final Tradewind Report arising from the friction tests. Mr. Taylor wrote:

Please find attached a copy of our final report for the Hamilton Special Roads Friction Survey. The original printed copy follows by Express Post, along with the invoice for the work.

You will note that while the average GripNumber friction levels were generally uniform and comparable to or above the relevant reference levels on the Lincoln Valley Parkway, those from the Red Hill Valley Parkway were considerably below the reference levels and less consistent.

I apologize for the lengthy delay in our processing the data and finalizing the report, and trust that it did not cause you too much inconvenience. Please do not hesitate to contact us if you require further information or clarification.²⁸²

241. The Tradewind Report described the findings from the RHVP as follows (emphasis in original):

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

²⁸⁰ [HAM0008673_0001](#)

²⁸¹ [CIM0022407](#) at image 2

²⁸² [GOL0001112](#) attaching [GOL0001113](#)

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 in-between 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.²⁸³

242. The Tradewind Report's conclusions and recommendations read as follows:

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

²⁸³ [GOL0001113](#) at images 3-4

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.²⁸⁴

243. On January 26, 2014, Mr. Taylor sent a separate message to Dr. Uzarowski stating:

As you will have noted, the data analysis and report for this project has now been completed. I am sorry for the delays in getting this to you and trust that the summary numbers that were given to you by Rowan on Friday were sufficient for your meeting.²⁸⁵

244. A note from Dr. Uzarowski dated January 27, 2014 listed "1) Friction results". A subsequent entry, dated January 28, 2014 noted:

7/ VH – Hamilton

with LU – what described on the report,

√ HIR, instr., friction,

√²⁸⁶

245. On January 27, 2014, Dr. Uzarowski emailed Michael Maher (Principal, Pavement and Materials Engineering, Golder), Andrew Balasundaram (Principal, Pavements & Materials Engineering, Golder), Dr. Henderson and Ms. Rizvi regarding the Tradewind results:

I hope this will be of interest to you. We have just received a friction testing report for the Red Hill Valley Parkway and Lincoln Alexander Parkway, both in Hamilton. The FN values for the RHVP are generally about 35 to 40 while for the Linc between 50 and 60, so drastically better. There was a SMA mix with traprock from Quebec used on the RHVP and SP 12.5 FC2 with Ontario traprock and 10 RAP used on the Linc.

²⁸⁴ [GOL0001113](#) at image 13

²⁸⁵ [GOL0002656](#)

²⁸⁶ [GOL0007407](#) at image 26

The traprock used on the RHVP met all the specified requirements. We haven't tested Polished Stone Value (PSV) for any of the aggregates. There is also an interesting question: Are the SN numbers for the surface on the Linc so much better only because of better traprock or the fact that there was 10% RAP with much softer limestone aggregate added to the Linc mix, so a mixture of hard and soft rock, had a big impact on the frictional characteristics?

I think that the road authorities realize more and more the importance of the frictional characteristics of our pavements. I am, therefore, interested in buying PSV testing equipment as I discussed it with Michael.²⁸⁷

246. On January 27, 2014, Mr. Dzieziejko received an email from Anil Virani (Senior Bituminous Engineer, Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO), attaching a PowerPoint presentation titled "Improving Early Age Friction of Stone Mastic Asphalt Pavement in Ontario". Mr. Dzieziejko was one of the authors listed for the presentation, held at the 2009 CTAA conference.²⁸⁸

247. On January 29 and 30, 2014, Mr. Dzieziejko presented at the Municipal Roads Technologies Workshop. His presentation was titled "SMA For Municipalities There and Back Again". Mr. Moore and Mr. Virani, among others, are listed on a slide titled "acknowledgements". The PowerPoint provides an overview of SMA, including its benefits, past use by municipalities and the MTO pause on its use. The slides also include discussion of the use of SMA on the RHVP, including that the "City Rates Performance to Date as Excellent". The following slide included friction testing numbers from MTO testing in 2007 and Griptest testing in 2013. The numbers included are consistent with the information provided to Mr. Dzieziejko by Mr. Moore on January 24, 2014.²⁸⁹

²⁸⁷ [GOL0006487](#)

²⁸⁸ [MTO0016730](#) attaching [MTO0016731](#)

²⁸⁹ [MTO0015946](#); and [HAM0052049_0001](#)

248. Various individuals at the MTO were provided with a link to access presentations from the conference on March 19, 2014. On March 19, 2014, Hannah Schell (Head, Concrete Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO) sent Becca Lane (Manager, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO), Pamela Marks (Head, Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO), Seyed Tabib (Senior Bituminous Engineer, Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO), Stephen Senior (Head, Soils & Aggregates Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO) and Mr. Lee an email including this link, writing:

Don't know if you might be interested in seeing any of the presentations from this session, put on by OGRA.

Pamela, I had mentioned the one on SMA by Tom Dziedziejko to you previously I think. It was the speaker previous to him who was talking about using asphalt cements with low chloride content.

249. Mr. Tabib forwarded the email, attaching the slides from Mr. Dziedziejko's presentation to Mr. Virani and Imran Bashir (Acting Senior Bituminous Engineer, Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO) on March 21, 2014.²⁹⁰

250. On January 30, 2014, Dr. Uzarowski asked Mr. Taylor to provide the data from the crosswalk testing, even if it would not be useful.²⁹¹ Mr. Taylor responded that it was not

²⁹⁰ [MTO0015945](#)

²⁹¹ [GOL0003532](#)

possible to extract the values over such short distances using the test equipment as it was configured.²⁹²

3. January 31, 2014, Golder provides 6-year report, including Tradewind report to Mr. Moore

251. On January 31, 2014, Dr. Uzarowski emailed Mr. Moore an “updated draft report on the conditions of the pavement on the RVHP 6 years after construction.”²⁹³ He indicated that he had included the friction testing results in the updated report. Golder had marked every page of its attached report with a “Draft” watermark, including the Tradewind Report, which was labelled Exhibit E to draft report.²⁹⁴ Tradewind did not include a “Draft” watermark on the report it sent to Golder.²⁹⁵

252. Section 5 of the Golder Report contained the section on friction testing. It stated:

Friction testing was carried out on the RHVP in November 2013 by Tradewind Scientific using a GripTester. The testing was completed in both of the northbound and southbound thru lanes. Complete results of the friction testing are provided in Tradewind Scientific’s report in Appendix E. This report also covers the results of friction testing on the Lincoln M. Alexander Parkway. Table 6 provides a summary of the average testing results on the RHVP.

Table 6: Friction Testing Results

Section	Average Friction Number
Lane 1 Southbound	34
Lane 2 Southbound	35
Lane 1 Northbound	39
Lane 2 Northbound	36

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

²⁹² [GOL0003531](#)

²⁹³ [GOL0002980](#) attaching [GOL0002981](#)

²⁹⁴ [GOL0002981](#) at images 101-119

²⁹⁵ [GOL0001113](#)

low. Typically the FN values should be at least equal to or higher than 40 to be considered adequate. In the United Kingdom, for example, the FN values should be at least 48 for a motorway pavement.²⁹⁶

253. Section 6 of the Golder Report included recommendations on pavement treatment methods:

In order to remedy the longitudinal top down cracking, it is recommended that the surface course SMA be milled and a new surface course mix be placed at selected locations. At a minimum the milling and overlaying should be carried out on sections where the most frequent top down cracking is observed. Based on our pavement visual condition inspection, the minimum total length of the sections where mill and overlay is required would be about 2.5 km. The exact locations for the milling and overlaying should be determined on site. It is also recommended that if there is any debonding of the underlying SP 19.0 layer observed during the milling and overlaying operation, the debonded SP 19.0 layer should also be removed.

On the remaining portion of the RHVP, the existing cracks in the surface course should be routed and sealed to prevent the ingress of water and incompressible material into the pavement structure. Following the routing and sealing, it is recommended that a single layer of microsurfacing be applied. By carrying out the mill and overlay where required and applying microsurfacing, the issue of relatively low FN on the RHVP would also be addressed. The new surface course mix to be used on the RHVP Should incorporate aggregates that have good Polished Stone Value (PSV). It is recommended that the PSV of potential aggregate sources be tested in the laboratory.²⁹⁷

254. Hamilton has advised the Inquiry that it has not identified any documents that show Mr. Moore forwarding the Golder report to any other staff person at the City.

255. Golder received an invoice from Tradewind on January 30, 2014. The invoice identified the following in its description of fees:

- 1) Coordination with Golder Associates Staff, calibration of test equipment
- 2) Performance of late season 2013 friction test series on Hamilton Area Roads
- 3) Testing of outer wheel track of four lanes per Quote of 2013-11-17 (19 km X 4)
- 4) Site meetings by field technician, interim data reporting
- 5) Data abstraction, analysis, reporting & submission (Summary report attached)

²⁹⁶ [GOL0002981](#) at image 10

²⁹⁷ [GOL0002981](#) at image 11

...

Additional Friction Testing per on-site requests: Includes testing of centre-of-lane on full length of Lincoln Alexander and Red Hill Valley Parkways for reference purposes on untrafficked pavement (19 Km X 2) as well as Greenhill and Stonechurch access ramps.²⁹⁸

4. Continued Discussions Regarding RHVP Collision Claims

256. On January 31, 2014, Ms. Sabados emailed Amy Groleau (Administrative Secretary to the Manager of Construction, Construction, Engineering Services, Public Works, Hamilton) and Jerry Parisotto (Manager, Construction, Engineering Services, Public Works, Hamilton) under the subject line “Red Hill Expressway”. She wrote:

Hi Amy/Jerry, the City of Hamilton has been named in several law suits relating to car accidents that took place at various locations along the Expressway. As part of our defence, counsel has asked that I obtain the contract documents for this project. I believe it was awarded to Dufferin. We will need all the documents that form the part of the contract. Are you able to assist? Any information you can provide is appreciated.²⁹⁹

257. Ms. Groleau forwarded the email later on January 31, 2014, to Mr. Oddi to reply to Ms. Sabados’ request. Ms. Sabados replied, writing to Mr. Oddi:

Thanks for passing this request to Marco. Marco, I will be away next week, so it isn’t an immediate rush. We are meeting with Gary Moore, Bryan Shynal and John Mater on Feb 21. If we could get the documents some time the week of the 10th, that will give counsel sufficient time to go over them.³⁰⁰

258. Mr. Oddi replied to Ms. Sabados, copying Mr. Moore, in the evening on January 31, 2014. He appeared to provide links to documents stored on Hamilton network drives, and wrote:

The Red Hill Valley Parkway (RHVP) was constructed between the spring of 2003 and the fall of 2007 under 14 separate contracts. Dufferin Construction Company was the successful bidder on the last contract, PW-06-243 (RHV), which was awarded in July of 2006. The RHVP was opened to traffic on November 17, 2007 and the two year maintenance for the last contract expired on November 16, 2009.

²⁹⁸ [GOL0004370](#)

²⁹⁹ [HAM0061931_0001](#)

³⁰⁰ [HAM0061931_0001](#)

Drawing links to the RHVP mainline paving contract, PW-06-243 (RHV), are as follows:

\\mariner\vault\Engineering\06\06-H-47A.pdf - part A is the mainline paving contract from the Mud St. interchange to south of Greenhill Ave..

\\mariner\vault\Engineering\06\06-H-47B.pdf - part B is the mainline paving contract from south of Greenhill Ave. to north of Queenston Rd..

\\mariner\vault\Engineering\06\06-H-47C.pdf - part C is the mainline paving contract from north of Queenston Rd. to the Q.E.W..

\\mariner\vault\Engineering\06\06-H-47D.pdf - part D of the mainline paving contract contains the pavement markings, signing and landscaping drawings for the RHVP.

I do not have a signed copy of the awarded contract and would assume that it is with clerks or legal.

If you have any questions, please call me.³⁰¹

K. Follow up from the Golder Report and the 2013 CIMA Report

1. February 2014

(a) Interactions between Golder and City

259. Dr. Uzarowski's notebooks include an entry referencing Mr. Moore on February 3, 2014.³⁰² A subsequent note referenced a telephone call with Mr. Moore on February 4, 2014.

4/ Call Gary

5/

Gary: a/ pedestrian cross walks – BPN & STexture

b/ RHVP & Linc – friction

c/ instrumentation

d/ CTAA – 6 years after

e/ PMTR III

f/EOR

³⁰¹ [HAM0061931_0001](#)

³⁰² [GOL0007407](#) at images 28-29

262. On February 11, 2014, Richard Andoga (Senior Project Manager, Infrastructure Programming, Asset Management, Engineering Services, Public Works, Hamilton) wrote to Dr. Uzarowski to discuss the possibility of sole-sourcing the provision of hot-in-place recycling.³⁰⁶

263. On February 11, 2014, Dr. Henderson and Dr. Uzarowski sent a letter, dated February 7, 2014, to Mr. Moore, enclosing an invoice to the City for a pre-tax amount of \$4,000 for services “associated with compilation and analysis of the friction data gathered from the field investigation and report preparation.”³⁰⁷ The invoice was dated January 16, 2014, and reflected costs up to December 31, 2013.³⁰⁸ The City received this invoice on February 14, 2014.³⁰⁹

264. On February 12, 2014, Mr. Jacobson emailed Dr. Henderson, asking for an update regarding the crosswalk friction testing.³¹⁰

265. On February 19, 2014, Dr. Henderson and Dr. Uzarowski sent another letter to Mr. Moore, dated February 11, 2014. The letter attached an invoice for a pre-tax amount of \$2,000, for costs “associated with the preparation of the draft report 6 Year Review of the RHVP and analysis of friction results”, through January 31, 2014. The prebill for the invoice included the following handwritten notations: “Kishanne: Please prepare lump

³⁰⁶ [HAM0023664_0001](#)

³⁰⁷ [GOL0006402](#)

³⁰⁸ [GOL0006402](#)

³⁰⁹ [HAM0061665_0001](#)

³¹⁰ [GOL0006492](#)

sum invoice for \$2,000 under phase 4000. Return for cover letter + also put copy in my directory please. Thanks Julie 14.Feb.07” and “*Remove charges after billing please”.³¹¹

266. The City received this invoice on February 24, 2014. It was approved by Mr. McGuire, with a notation that he was Acting Director, on February 26, 2014. The invoice bears an additional stamp, which says: “Processing Feb 27 2014 Accounts Payable”.³¹²

(b) Contact between CIMA and Public Works Staff

267. Mr. Malone’s notebooks contain the following entry dated February 10, 2014:³¹³

Hamilton	1:00pm
G. Moore	
J. Parisoto	Tim
- Meeting + Greet	Ben
	Brian.

268. Another entry, dated February 18, 2014, references a proposal meeting with the City.³¹⁴

(c) Discussions and Public Contact Regarding Improvements to RHVP

269. On February 10, 2014, Deanna Levy (Communications/Community Relations Administrator, Mayor’s Office, Hamilton) emailed Ms. Clark requesting assistance in responding to a comment relating to the RHVP received from a member of the public. On February 9, 2014, the member of the public wrote :

I would like to bring your attention to a serious lack of lighting on the Red Hill Expressway as well as a stretch of Mud Street between Paramount and Winterberry. Does that fall

³¹¹ [GOL0004361](#) attaching [GOL0004362](#), [GOL0004363](#), and [GOL0004364](#)

³¹² [HAM0056546_0001](#)

³¹³ [CIM0022407](#) at image 2

³¹⁴ [CIM0022407](#) at image 4

under the city's jurisdiction. It poses a real danger when driving especially when weather conditions are bad.³¹⁵

270. Ms. Clark responded two minutes later, adding Mr. Moore and Ms. Cameron to the email:

We actually have lighting improvements on the RHVP on the Outstanding Business List for the Public Works Committee.

By copy to Gary Moore we will ask for an update to be shared with your office and Mrs. Fortuna.³¹⁶

271. Approximately 10 minutes later, Ms. Cameron forwarded this email to Mr. Field and Mr. McGuire, requesting that they “review below and provide an update to Gary that can be shared.”³¹⁷

272. Mr. Moore replied to the member of the public the following day, writing:

Thank you for forwarding your concern with regard to the level of illumination on both the Red Hill Valley Expressway and the section of Mud St. between Paramount to the LINC/Red Hill Interchange. Illumination in the City of Hamilton is provided predominantly on streets and roads that have pedestrian facilities. We have provided illumination at the decision points only on both the LINC and Red Hill as well as this section of Mud St. (That's is exit points and intersections.) This is a standard level of service adopted across the Province for similar Freeway facilities. (Highways 400, 401, and 403, etc., for the most part are not illuminated beyond decision points and carry much greater volumes of traffic.)

With regard to the Red Hill Valley Parkway, the approval that was received for its construction was based on the illumination currently provided, for environmental and social impact reasons. Staff are currently looking at improvements to signage, road markings and other non-illumination improvements to aid driver awareness and roadway definition and will be reporting back to Council in the future in that regard. Hope this addresses your questions.³¹⁸

273. The member of the public responded to Mr. Moore later that day, writing:

I appreciate your quick response but the issue remains, that is, we would like to be able to see the road. Do you have to wait for accidents with possible injuries or worse, fatalities in order for the city to act? It would be better if the city took a proactive stance to prevent

³¹⁵ [HAM0004363_0001](#)

³¹⁶ [HAM0004363_0001](#)

³¹⁷ [HAM0004363_0001](#)

³¹⁸ [HAM0000504_0001](#)

accidents from occurring. After all our population is aging and driving and you need to take that into consideration, not just do what is required by law.³¹⁹

274. On February 10, 2014, Ms. Harbin circulated an updated Corporate Assets & Strategic Planning report calendar, which included a “Red Hill Parkway Improvements” report with an April 2015 deadline.³²⁰

(d) Discussion of Collisions on the RHVP

275. On February 21, 2014, Mr. Jacobson emailed Mr. Mater regarding a meeting with “Risk” he had attended in Mr. Mater’s place earlier that day. He wrote:

The meeting with Risk today was fairly uneventful. We discussed three claims (two real, one potential) involving collisions on the Red Hill Valley Parkway (primarily ramps). Traffic control was not identified as an issue so we’re off the hook right now. The design of the ramps has been called into question so Gary Moore’s group will be the primary respondents to any Discovery or undertakings.³²¹

276. Mr. Mater replied the same day, thanking Mr. Jacobson for attending on his behalf.³²²

277. On February 25, 2014, Paul McShane (Project Manager, Road & Maintenance, Operations, Public Works, Hamilton) emailed Mr. Shynal regarding historical collisions on the RHVP “North Bound, at the King Street Exit”:

As requested, I have gone through our records of all Recoverable Roadside protection damages at the above location and wish to advise of the following:

The Redhill Expressway was opened to the Public in the Fall of 2007

Since that time there have been 5 accidents at this location on the Redhill

Police Report P09-139808 – Repaired March 30th 2009 - \$ 2,310.00

³¹⁹ [HAM0004367_0001](#)

³²⁰ [HAM0041933_0001](#) attaching [HAM0041934_0001](#)

³²¹ [HAM0010586_0001](#)

³²² [HAM0010586_0001](#)

Police Report P09-182437 – Repaired May 21st 2009 - \$ 2,450.00

Police Report P09-247377 – Repaired August 5th 2009 - \$ 2,905.27

Police Report P11-785367 – Repaired December 9th 2011 - \$ 3,241.76

Police Report P14-520244 – To be Repaired shortly – Quoted cost - \$ 2,015.49

In total the 5 MVA's, at this location, have a total repair cost of \$ 12, 922.52

Please also note that all repairs were completed, in the field, replacing like for like by Guide Rail Contractors

Hope this information is found satisfactory³²³

278. Mr. Shynal forwarded this message to Ms. Sabados and the original recipients.

He introduced the data, stating:

Many thanks for your response on this Paul!

Diana, the information below is provided as the Operations Division's follow up from our meeting on February 21st.³²⁴

2. March 2014 to May 2014

279. Dr. Uzarowski's notes contain an entry dated March 11, 2014, listing the following:

2/ VH

- Hamilton

- BP testing Call Nabil
- Instrumentation
- PMTR
- (-) report
- HIR³²⁵

280. His notebook also contains various notes referencing Mr. Moore on March 14, 2014, March 17, 2014 and March 20, 2014.³²⁶

³²³ [HAM0004368_0001](#)

³²⁴ [HAM0004368_0001](#)

³²⁵ [GOL0007407](#) at image 31

³²⁶ [GOL0007407](#) at images 32-36

281. On March 19, 2014, Dr. Uzarowski and Dr. Henderson prepared a letter to Mr. Moore, enclosing an invoice dated March 18, 2014. The invoice was for the pre-tax amount of \$2,000, which related to the “preparation of the draft report 6 Year Review of RHVP and analysis of friction results” through March 2, 2014.³²⁷

282. The prebill related to this invoice indicated that total charges outstanding for work conducted for the project were for the pre-tax amount of \$6,517.60. It also includes an entry under the heading Subcontractors/Subconsultants for Tradewind Scientific in the amount of \$5,417.50.³²⁸

283. The City received the invoice on March 25, 2014.³²⁹

284. On March 13, 2014, Ms. Clark circulated a copy of the PWC outstanding business list. Item N on the list was “Red Hill Parkway Improvements – Lighting”, listing Engineering Services as the lead division. The status column noted “Staff to monitor changes to signage in the area and report back respecting lighting” and the due date was listed as “Q2 2015”.³³⁰

285. On March 19, 2014, Mr. Lupton emailed Mr. White with the subject line “Red Hill VP Safety Items”, asking Mr. White if they had “a plan in place and ready to go once the weather improves. I’m sure a couple councilors will be looking for activity on this.”³³¹

³²⁷ [GOL0004358](#) attaching [GOL0004359](#) and [GOL0004360](#)

³²⁸ [GOL0004360](#) at image 3

³²⁹ [HAM0061670_0001](#)

³³⁰ [HAM0004375_0001](#) attaching [HAM0004376_0001](#)

³³¹ [HAM0004394_0001](#)

286. On March 24, 2014, Mr. Moore sent Chris McCafferty (Senior Project Manager, Design, Engineering Services, Public Works, Hamilton) attaching three documents relating to roster assignments, writing “Perhaps we can talk about future assignments at our meeting on Tuesday.”³³² One of the attachments included five Golder assignments under the “Scope Consultants” heading. Four of five of the assignments were marked complete. One assignment, “Pavement Skid resistance performance (friction testing)” was listed as “started” in the status column. A portion of the spreadsheet has been reproduced below.³³³

	Scope Consultants								
Golder									
	Red Hill Pavement condition investigation/report	\$ 28,000	Mar.25, 2013	complete	PW	ES	Gmoore	2382	
	Pavement response data collection and storage - 3 year term.	\$ 40,000	Mar.25, 2013	complete	PW	ES	Gmoore	2382	
	Phase 3 Pavement and material technology review	\$ 82,000	Mar.25, 2013	complete	PW	ES	Gmoore	2382	
	PSV testing of Limestone aggregate Phase 2	\$ 18,000	April 24, 2013	complete	PW	ES	Gmoore	2382	initial assignment lost, PO not set up.
	Pavement Skid resistance performance (friction testing)	\$ 8,000	Jan.3, 2014	started	PW	ES	Gmoore	2382	

287. Mr. Malone’s notebooks contain an entry dated April 1, 2014, which references Mr. Mater.³³⁴

³³² [HAM0023701_0001](#) attaching [HAM0023702_0001](#), [HAM0023703_0001](#) and [HAM0023704_0001](#)

³³³ [HAM0023702_0001](#)

³³⁴ [CIM0022407](#) at image 5

288. On April 2, 2014, Mr. Kirchknopf emailed Mr. Shebib regarding traffic data from the RHVP. Regarding the RHVP, he wrote:

RHVP count station: Get the most current data you can and forward this to CIMA at your earliest convenience. We need to ensure that this data is analysed and converted into the MS2 programming similar to the pyramid format data. This needs to be done ASAP in order to be part of the CIMA scope (Tanya there may be some extra \$\$\$ for this which may have to be taken from your count budget, if we can't include this as part of the existing scope – we'll see)?³³⁵

289. On April 4, 2014, Councillor Clark emailed Mr. Murray regarding the possibility of expanding the LINC, under the subject line "Thanks excellent meeting". Mr. Murray replied the same day, writing "Red Hill for sure but I'll check on the Linc."³³⁶

290. Later that day Mr. Oddi replied to Mr. Murray, writing:

The RHVP has been designed to accommodate another lane in each direction north of the viaduct. The LINC was never intended to be widened to three lanes in each direction. The overhead signs on the LINC were not positioned in the centre of the median and the Magnolia/Guildwood pedestrian overpasses (which cross under the parkway west of Upper Paradise Road) are two separate structures with a gap in the median.

I am not sure what your meeting was about; however, I feel that our parkway should not be used as a by-pass for MTO through traffic unless they are willing to assume and maintain it. The MTO should be addressing this issue in their Niagara to GTA Corridor Planning and Environmental Assessment Study.³³⁷

291. Mr. Murray replied approximately an hour later, writing "I'm Gary Marco said "NO". Which is it!"³³⁸

292. Mr. Moore replied, writing:

The Red Hill is just more ready. The Linc can be widened to the centre. That's what determined the median width. Yes the overhead signs would have to be changed and the median removed and a centre barrier erected. The bridges would be fine as is as well the

³³⁵ [HAM0042009_0001](#)

³³⁶ [HAM0004411_0001](#)

³³⁷ [HAM0004411_0001](#)

³³⁸ [HAM0004411_0001](#)

exit ramps and all the drainage. Sizing of all pipes are for the ultimate(same as Red Hill)!
So the Answer is "yes" it can be widened!³³⁹

293. Mr. Murray forwarded Mr. Moore's email to Councillor Clark, writing "See below. I would add this widening would not be cheap and easy."³⁴⁰

294. On April 8, 2014, Ms. Harbin emailed Mr. White, writing "Just a reminder from yesterday EFT meeting to follow up and implement the "cat's eyes" that were part of the recommendation of that one report."³⁴¹

295. Mr. Lupton replied to Ms. Harbin's email one minute later, writing "For the RHVP safety improvements..."

296. Dr. Uzarowski's notebook includes an entry dated April 10, 2014, which lists "Gary-Hamilton".³⁴²

297. In late March 2014, Cindy McMillan (Financial Assistant, Engineering Services, Public Works, Hamilton) contacted Ms. Cameron, having received an invoice from Golder, and asking to confirm the applicable purchase order. On April 17, 2014, Ms. Cameron replied to Ms. McMillan regarding the possible closure of purchase order 69812, which was dated April 9, 2013 and listed "RHVP- 5 Year Condition Evaluation" and contingency, and wrote that she "spoke with Gary and he does not want you to close PO 69812."³⁴³

³³⁹ [HAM0004411_0001](#)

³⁴⁰ [HAM0004411_0001](#)

³⁴¹ [HAM0004415_0001](#)

³⁴² [GOL0007407](#) at image 38

³⁴³ [HAM0023740_0001](#); and [HAM0023225_0001](#)

3. May 2014

298. On May 2, 2014, Tradewind received a payment from Golder for invoice number 1367840. The payment amount was for \$5,565.25.³⁴⁴

299. On May 8, 2014, Ms. Cameron emailed Melissa Ryan (Design and Construction Project Manager, City of Kitchener), writing: “Just wanted to let you know that the Red Hill Report Gary lent you was received back today.”³⁴⁵ The City has advised the Inquiry that it has not identified any documents identifying the report referenced by Ms. Cameron.

300. Dr. Uzarowski’s notebook includes an entry dated May 22, 2014, which lists the following:

8/ Vimy

- TAC paper

- Hamilton³⁴⁶

-

301. On May 30, 2014, Mr. Shebib replied to an email sent by Dr. Henderson on March 14, 2014, which attached traffic data up to March 11, 2014. Mr. Shebib advised that he was experiencing technical difficulties with the data sent, and assistance was required. He added that there was “urgency to this request as we are rolling out our newest traffic count database soon and need this data populated asap.”³⁴⁷

³⁴⁴ [TRW0000102](#)

³⁴⁵ [HAM0023748_0001](#)

³⁴⁶ [GOL0007407](#) at image 40

³⁴⁷ [GOL0002599](#)

4. June 2014

302. On June 11, 2014, Mr. Shebib emailed Dr. Henderson and Giovanni Bottesini (Engineering Trainee, Transportation, CIMA) regarding traffic data.³⁴⁸ In an email from June 24, 2014, Mr. Shebib advised Dr. Henderson and Dr. Uzarowski that CIMA was retained to set up Hamilton's new count database, MS2.³⁴⁹

303. On June 12, 2014, Ms. Clark emailed Charlene Hands-Lourie (Administrative Assistant to the Director of Corporate Assets & Strategic Planning, Corporate Assets & Strategic Planning, Public Works, Hamilton), Ms. Cameron and Ms. Wunderlich regarding items on the Outstanding Business List, writing:

Based on the Council approved 2015 meeting calendar and the document I've just shared with our 2015 meeting schedule, we now require you to provide a specific meeting date for OBL items that you have previously identified as Q1, Q2, Q3 or Q4 of 2015.

More specifically,

Charlene: B and P

Diana: C and V

Nancy: T³⁵⁰

304. Item C in the attachment was "Red Hill Parkway Improvements- Lighting", and was listed as Q2 2015.³⁵¹

305. Also on June 12, 2014, Mr. Lupton emailed Mr. White regarding LINC and RHVP safety initiatives, writing:

As discussed, for next week can you please provide me an update on the status of:

³⁴⁸ [GOL0002406](#)

³⁴⁹ [GOL0002411](#)

³⁵⁰ [HAM0004440_0001](#) attaching [HAM0004441_0001](#)

³⁵¹ [HAM0004441_0001](#) at image 1

1. EDR Routes

2. Safety initiative for the Linc at the Red Hill (Completion was to be this Spring).³⁵²

306. Mr. White forwarded the email the same day to Mr. Ferguson, Mr. Jacobson and Ms. Wyskiel.³⁵³

307. Mr. Ferguson replied the next day, writing the following regarding the RHVP safety report:

RHVP Safety report

All of the minor sign changes have been completed as recommended in the report.

The overhead sign at the SB RHVP off ramp to Stone Church/Mud - we installed the directional signs on the ramp. The overhead sign has been on hold as a result of the re-naming on Upper RHVP occurs. We will make this sign diagrammatic when the name change occurs in 2015.

The mainline re-striping/extension of the on-ramp Dartnall to NB RHVP - work orders have been completed and will be worked into our Pavement Marking program.

The re-striping on the EB RHVP off-ramp at Mud/Stone Church- location is currently in the design stage, goal is to have the restriping completed for the end of the Pavement Marking season

Raised Permanent Pavement Markings - Kris and I are investigating potential LED inlay products with contractors. If we are unable to identify a quality product, then we will have to proceed with the regular inlay raised markers. Goal is to have this completed by early Fall.³⁵⁴

308. Mr. White replied on June 16, 2014, requesting that Mr. Ferguson provide another update the first week of September.³⁵⁵

309. Mr. Lupton replied on June 17, 2014, writing:

Thanks for the update gents. Have we been keeping the ward councilors in the loop with the RHVP Safety improvements. They took a lot of heat last year on this and we committed to having this done in the Spring. Your words were "No Problem" in getting it done. I know

³⁵² [HAM0000511_0001](#)

³⁵³ [HAM0000511_0001](#)

³⁵⁴ [HAM0000511_0001](#); and [HAM0033217_0001](#)

³⁵⁵ [HAM0033217_0001](#)

we have had a few things added. I would default to action on the tiger eyes. Need to show visible action in advance of the election.

On the EDR. Please prepare an information update with a schedule of what happens when etc. And where we have advanced since our last report.

Remember these two projects are high on the political agenda³⁵⁶

310. On June 16, 2014, Mr. White emailed Mr. Lupton, copying Mr. Ferguson, with the subject line "Safety report financing". He wrote "Geoff here are the comments respecting the 2014 probable expenditure. Let me know if you need more info. Thanks". A later email included a description of the budget items:

2014 Projected Safety Budget

\$32,000 in Traffic Safety technical staff wages. 4 employees for 1 month

\$200,000 for Ladder crosswalks; install durable pavement marking ladder crosswalks to enhance pedestrian awareness to improve safety at locations determined by Traffic Engineering or requested by ward councillors.

\$25,000 School Zone Flasher and reduced speed zone on Mud Street in front of Tapleystown school as requested by Councillor Johnson.

\$20,000 for participation at conferences and safety meetings including participation and membership in the Ontario Municipal Road Safety Committee.

\$100,000 Consulting assignment to review the use of permissive vs prohibitive signing for the Truck Route signing system as directed by the Truck Route Sub Committee of Council.

\$150,000 Special Programs and or Individual Safety programs, in 2014 to be used to install the RHVP EDR design and EDR signing and to provide funding for the City to work with the MTO on signing EDR routes for Hwy 403.³⁵⁷

311. Mr. Ferguson replied, writing:

Should we layout the 2015 funds so that we are hitting the ground running in January? We will waste time if we are shelved having to write another report for 2015 funds, the minute we lose momentum we will be sitting ducks for criticism.³⁵⁸

312. Mr. Lupton replied the same day, writing:

³⁵⁶ [HAM0004456_0001](#)

³⁵⁷ [HAM0023811_0001](#)

³⁵⁸ [HAM0023811_0001](#)

Well I'm glad you asked. I would like us to go to council as needed to request funding for various Strategic Road Safety projects/ programs. It gives council and the opportunity to discuss and support all the great "PROACTIVE" idea Traffic will have and approve the financials. It also give as face time in the public. I think we should be selling and marketing the program and need to think about how we best do this and what are our measurables or KPI's. I never want to be in a position where we are accused of spending monies from the reserve like drunken sailors and without approval. I still have several year to work yet. I want council to buy in and sign off on all major initiatives in this area. We need to be prepared to provide details on what and why we are proposing various initiatives and what the ROI is for the community.

Martin and I have discussed and I would like to see Capital submissions for the major works or where this isn't feasible separate Recommendation Reports. We should plan on starting this well in advance of the budget cycle. Councillors will want to know what works we are doing in what wards... you can bet on that.³⁵⁹

313. Mr. Ferguson replied:

Agreed in being in front of Council. My plan would be that we are before Council Yearly to discuss program initiatives (what we have done) and to identify overall safety improvements (reductions in collisions etc, this part will be more relevant in 2016 once we have a full year under our belt).

Marketing and Education is really the number one Component in traffic Safety and for it to be successful. We have the Just Drive Draft (Traffic Safety Marketing), but I don't like the name, I was thinking the other night, we could implement a contest for the Colleges and Universities to rename the Program! All part of Marketing, and role it out with a big launch, press and council with a New Marketing Name and a City of Hamilton Traffic Safety Logo!

K, I need to stop now, I can talk about ideas and things to be done for days!!!!!!!³⁶⁰

314. On June 20, 2014, Ms. Clark sent Lauri Leduc (Legislative Coordinator, Office of the City Clerk, Corporate Services, Hamilton) an updated outstanding business list. "Red Hill Parkway Improvements – Lighting" was scheduled for June 15, 2015.³⁶¹

315. On June 23, 2014, Mr. Moore emailed Dr. Uzarowski, writing "Did we ever get the results of the pavement roughness through the intersections with the new paint".³⁶² The City has advised the Inquiry that it has not identified a response to Mr. Moore's email.

³⁵⁹ [HAM0023812_0001](#)

³⁶⁰ [HAM0023812_0001](#)

³⁶¹ [HAM0004467_0001](#) attaching [HAM0004468_0001](#)

³⁶² [GOL0002680](#)

316. Dr. Uzarowski's notebook contains an entry dated June 25, 2014, which lists:

D 11/ Hamilton – Gary price, Linc & RHVP, crosswalk
 when – July
 \$5,000
 Phase III
 HIR³⁶³

317. Dr. Uzarowski's notes include another entry, dated June 26, 2014, which notes "Gary Moore – not responding".³⁶⁴

318. On June 25, 2014, Mr. Moore sent Mr. McCafferty updated copies of documents relating to the geotechnical roster. Like the list sent in March 2014, one of the documents listed five Golder assignments, four of which were marked complete. "Pavement Skid resistance performance (friction testing)" remained listed as "started" in the status column.³⁶⁵ The status of the Golder projects remained unchanged in subsequent versions of the document dated in September, October, and November 2014.³⁶⁶

5. July to September 2014

319. On July 9, 2014, Mr. Lupton sent Mr. White a document with notes and follow-up from a meeting they had on July 8, 2014.³⁶⁷ The document included the following regarding the RHVP:

5) Safety RHVP – Tiger Eyes

³⁶³ [GOL0007407](#) at image 43

³⁶⁴ [GOL0007407](#) at images 43-44

³⁶⁵ [HAM0023817_0001](#) attaching [HAM0023818_0001](#)

³⁶⁶ [HAM0023869_0001](#) attaching [HAM0023870_0001](#); [HAM0000542_0001](#) attaching [HAM0000543_0001](#); [HAM0000556_0001](#) attaching [HAM0000557_0001](#); and [HAM0024030_0001](#) attaching [HAM0024031_0001](#)

³⁶⁷ [HAM0042181_0001](#) attaching [HAM0042182_0001](#)

- Don't wait for technology – just do it! We had committed to get this completed this spring.³⁶⁸

320. Dr. Uzarowski's notebook contains an entry dated July 17, 2014, which lists "3) Hamilton – friction".³⁶⁹ A subsequent note, dated August 6, 2014, notes "Hamilton – talk to Gary".³⁷⁰ Entries dated on August 15, 2014, August 18, 2014 and August 27, 2014 list "Gary Moore".³⁷¹

321. On August 25, 2014, Brian McMullen (Director, Financial Planning, Administration and Policy, Corporate Services, Hamilton) emailed Mr. Moore (copying Anna Apkarian (Manager, Finance and Administration, Corporate Services, Hamilton) and John Murray (Manager, Asset Management, Engineering Services, Public Works, Hamilton) regarding the RHVP and LINC:

Gary, I've received a request from councillor Clark for the following information regarding Redhill Expressway and the LINC:

1. Annual operations and maintenance (from 2014 operating budget or other analysis) 2. Projected capital expenses by year (from 2014 Capital Budget or updated summary and details) 3. Outstanding debt 4. Annual debt charges

Charlie Elliott has #3 & #4.

Can your staff send me #1 & #2?

Let me know of any problems³⁷²

³⁶⁸ [HAM0042182_0001](#)

³⁶⁹ [GOL0007405](#) at image 4

³⁷⁰ [GOL0007405](#) at image 6

³⁷¹ [GOL0007405](#) at images 8-9

³⁷² [HAM0008754_0001](#)

322. Mr. Moore replied the next day, writing: "We have no capital work proposed on the Linc or Red Hill. You'll have to talk Road Operations about the Operations and Maintenance."³⁷³

323. On August 26, 2014, Mr. Ferguson emailed Mr. Cooper (copying Mr. Jacobson) regarding the installation of durable pavement markings, writing:

Please prepare a work order for the RHVP for the placement of durable pavement markings for the area that was identified for the installation of cats-eyes. Please complete and submit to Kris asap.³⁷⁴

324. Mr. Cooper replied the following day, writing "Done".³⁷⁵

325. On August 26, 2014, Mr. Jacobson replied to Mr. Ferguson, stating:

Fyi. I may not have enough money to pay for this based on our existing contract if the intent is to do this work this year.

Our current liabilities are fast approaching the limit we had approved a few weeks ago. I'll know better by the end of September once Cannon Street, York Boulevard and other projects are out of the way.

Another route would be to tender the work as its own project. Do we have a budget in mind?³⁷⁶

326. Mr. Ferguson replied "Well, it will come from the RLC fund, I think initially we had \$30,000 for the cats eyes, but we can exceed that if need be."³⁷⁷

³⁷³ [HAM0008754_0001](#)

³⁷⁴ [HAM0042252_0001](#)

³⁷⁵ [HAM0033217_0001](#)

³⁷⁶ [HAM0042252_0001](#)

³⁷⁷ [HAM0042252_0001](#)

327. Mr. Jacobson replied later that evening, writing “Given the complexities of shutting down lanes on the RHVP to do this work, a separate tender/quote may be the way to go.”³⁷⁸

328. On August 27, 2014, Mr. Ferguson replied to Mr. Cooper, writing “I talked to Kris yesterday, we are going to have to do a Contract to complete the work, he will assist us, he is off this week, so we will discuss with him when he is back”.³⁷⁹

329. Mr. Jacobson replied the same day, writing “To get started, I need to know the limits of the work. We're about paint the RHVP and I want to hold off on this section.” Mr. Cooper replied “It’s on the w/o. the limits will be Dartnall overpass to merge for WB Mud/Stone Church to RHVP NB.”³⁸⁰

330. On August 27, 2014, Mr. Moore emailed Mayor Bob Bratina (Mayor of Hamilton) and City Councillors in response to an email from a member of the public regarding potholes on City roads. Mr. Moore’s response included the following:

The largest pot hole problem we currently have is with roads which have outlived their normal lives and which should have been repaved 10 -15 years ago. This problem is due to insufficient funds for the roads program not with the type of asphalt we use or the tests we conduct.³⁸¹

331. On August 28, 2014, Mr. Moore received an inquiry regarding the RHVP from Abigail Cukier (Communications Advisor to Councillor Brad Clark (Part-Time), Ward 9, Hamilton), who indicated she was working for Councillor Clark:

³⁷⁸ [HAM0042252_0001](#)

³⁷⁹ [HAM0042253_0001](#)

³⁸⁰ [HAM0042253_0001](#)

³⁸¹ [HAM0033234_0001](#)

You have helped me in the past when I was a reporter at the Stoney Creek News. I am now working for Brad Clark. I have a few questions. I am not sure if you can help me.

- 1) Is the RHVP at capacity at any time during the day, if so what time period specifically?
2. Is the LINC at capacity at any time during the day, if so what time period specifically?
3. When the RHVP was built did the city estimate a year that two additional lanes would need to be added to increase capacity?
4. What was/is the estimated cost to add two additional lanes to the RHVP?
5. When the LINC was built did they estimate a time period that two additional lanes would need to be added to increase capacity?
6. What was/is the estimated cost to add two additional lanes to the LINC?

I know this is short notice, but is it possible to get this info or some of it by end of tomorrow?³⁸²

332. Ms. Cameron wrote to Mr. Moore that she was not replying to Ms. Cukier, as she found it “odd that she is working for Brad Clark and sending the e-mail from a bell.net address”. Mr. Moore replied the same day that he would provide a response.³⁸³

6. October to December 2014

333. On October 3, 2014, Mr. Lupton emailed Mr. White requesting an update on RHVP projects, writing:

Please provide me an update and timing on the RHVP and AMD (Burlington Street) projects. With the RHVP we had two items remaining that I can recall. The first was the cats eyes in the roadway, the second was repainting (smoothing out) the turning lines into the curve. This was a high priority for 3 councillors and we had promised completion earlier this spring.

With the AMD project this was requested by the CMO. We need to stay on top of this and continue visible activity sooner than later. I don't want to be getting calls from the CMO about this project, except to say great work team. Short term items were the countdown PED's, ladder crossing all section of Ottawa/ Burlington and a no right hand turn sign. We should also look to enhance pedestrian signage.

³⁸² [HAM0004485_0001](#)

³⁸³ [HAM0004485_0001](#)

I know staff have been extremely busy with the bike lane project, but we also need to make sure we meet our other commitments. What is our timing for completion?³⁸⁴

334. The same day, Mr. White forwarded the email to Mr. Jacobson, Mr. Ferguson and Mr. Cooper, writing:

Gentlemen, please see below. Please advise status of these projects by Monday. Please follow through with implementation asap. Please advise the schedule for completion of the remaining pieces of both projects. The only item I have concern with is adjusting pavement marking alignment on the mainline RHVP. I am not sure this can be fixed with markings.... Can you check your notes and report from consultant? Did we say we would do this I forget. Please advise by Monday evening. Thank you Gentlemen³⁸⁵

335. Mr. White also replied to Mr. Lupton, stating “Fyi.... It is time these were wrapped up. I agree that they should be completed by now. Thanks for the reminder. I will get back to you”.³⁸⁶

336. Mr. Cooper replied to Mr. White’s email the same day, writing:

Martin:

Item 1- Permanent Raised Pavement Markings- We are in the process of getting specs for these and hope to have them by next week so we can order them. I understand Kris and Dave were looking into LED 's for this section, but have since decided on “Cat’s Eyes”. In the interim we will be using permanent markings to provide better guidance to drivers through the mainline section of the RHVP between Dartnall to S. of the Mud St. on ramp. Work orders have been issued (August)- Kris should be able to advise of the status.

Item 2- Smoothing out the curve- through discussions with Dave we will be holding off until the RHVP gets re-surfaced before implementing the required design changes. The report did not identify a collision pattern/history on the section of roadway between Dartnall and Mud SB that could be attributed to the short tangent section between to the 2 curves- it is a matter of driver comfort that will be helped with the implementation of Item 1 above. The “correction” will likely not be achievable with pavement markings alone and the work will require design changes, additional asphalt, removal and re-installation of the edge line rumble strips. A full SB closure for numerous days would likely be needed to complete the work.

Most of the sign changes have been completed as recommended in the report with the exception of the diagrammatic sign for RHVP SB Dartnall/Mud off ramp. As you know the

³⁸⁴ [HAM0004514_0001](#)

³⁸⁵ [HAM0004514_0001](#)

³⁸⁶ [HAM0004514_0001](#)

“extension” will result in a name change to Upper RHVP. We will wait until the name change to modify the overhead sign- 2015?

The re-striping on the EB RHVP off-ramp at Mud/Stone Church- needs to be designed prior to implementation and was sent to Traffic Design fall 2013.

I trust this helps.³⁸⁷

337. On October 6, 2014, Mr. White forwarded the response to Mr. Ferguson, writing “As discussed please tidy up and update T.E. comments and I will flip all info to Geoff. Thanks”.³⁸⁸

338. On October 8, 2014, Mr. White sent an email to Mr. Lupton, attaching an email sent five minutes prior from Mr. Ferguson providing an update regarding the RHVP. Mr. Ferguson wrote:

Martin, please see the following;

Item 1- Permanent Raised Pavement Markings

We are in the process of getting specs for these and hope to have them by next week so. Our plan is to create a Tender for the Supply and Installation of the markers, we would like to have it done this year if we can get things moving, however with the changing weather, this may be delayed to the Spring of 2015.

In addition we will be using permanent markings to provide better guidance to drivers through the mainline section of the RHVP between Dartnall to S. of the Mud St. on ramp. We will be working with Kris to create a Tender to retain a contractor to complete this work. With our current PO almost spent and the weather changing, I expect this work will be completed in Spring 2015.

Item 2- Smoothing out the curve

This section is on hold until the RHVP gets re-surfaced before implementing the required design changes. The report did not identify a collision pattern/history on the section of roadway between Dartnall and Mud SB that could be attributed to the short tangent section between to the 2 curves- it is a matter of driver comfort that will be helped with the implementation of Item 1 above. The “correction” will likely not be achievable with pavement markings alone and the work will require design changes, additional asphalt, removal and re-installation of the edge line rumble strips. A full SB closure for numerous days would likely be needed to complete the work and would be more efficient to tie this in with a construction re-surfacing of the roadway.

³⁸⁷ [HAM0042286_0001](#)

³⁸⁸ [HAM0042291_0001](#)

All the sign changes have been completed as recommended in the report with the exception of the diagrammatic sign for RHVP SB Dartnall/Mud off ramp. With the “extension” imminent, which will result in a name change to Upper RHVP, we will wait until the works are completed to modify the overhead signage.

The re-striping on the EB RHVP off-ramp at Mud/Stone Church is currently be designed for implementation.³⁸⁹

339. Mr. Lupton replied the same day, writing the following regarding the RHVP:

The RHVP tiger eyes need to get done. I don’t want it sliding till the spring. We said it would be done spring of 2014. You need to get this done. As for the lines, what is the timing that Dave is suggesting?³⁹⁰

340. Mr. White forwarded the email the same day to Mr. Ferguson and Mr. Jacobson (copying Mr. Guerretta), requesting that they respond to each item with an action and completion date.³⁹¹

341. Mr. Ferguson replied, writing:

Shelley and I are working on the tender for the cats eyes now, will hopefully be out in the next week.

As for the markings to be permanant, Kris and I discussed this as an alternative to the cats eyes, but since we are doing it, we really don’t need them right now, we should look at this for next year and retain a contractor specific to that work so we are tapping into other works.

I will follow up with Traffic Eng staff on the other signal related modifications, I thought they were done, but will find out.³⁹²

342. On October 9, 2014, Mr. White forwarded Mr. Ferguson’s response to Mr. Lupton. Mr. Lupton replied, writing “So what does this mean?”³⁹³

³⁸⁹ [HAM0000546_0001](#) attaching [HAM0000547_0001](#)

³⁹⁰ [HAM0042307_0001](#)

³⁹¹ [HAM0042307_0001](#)

³⁹² [HAM0042308_0001](#)

³⁹³ [HAM0042312_0001](#)

343. Mr. White replied, writing that the “Cats eyes have to go to tender”.³⁹⁴ He also forwarded Mr. Lupton’s reply to Mr. Ferguson, requesting that he explain the RHVP markings to him in person.³⁹⁵

344. Mr. Lupton replied: “How much are they? Can’t we do this as under \$10 K or a policy 11? I feel like I’m getting the no police again.”³⁹⁶

345. Mr. White responded:

Its an expensive process im told. I have never used this technology. , I don’t know the unit cost but we are writing a spec which we need regardless of whether it’s a quote or a tender. The road gets grooved out like a banana by a machine and the reflectors get installed in the groove. The problem is that we have to find a unit that can be snow ploughed over top so it can’t be raised. The MTO installed some a few years ago and they didn’t last two years. They put some others on Hwy 6 south just before they downloaded it to us. I had to paint over them because there was no retro reflection left in them and the prisms we shattered. We are sourcing some now. Penn DOT has just done some work in Pittsburgh. Dave checked them out when he was on holidays last weekend and they look good. There are a few other sources I have asked Dave to check out too.³⁹⁷

346. Mr. Lupton replied, writing “Ok – thanks.” Mr. White forwarded this response to Mr. Ferguson, writing: “Heads up bud just be aware and move in the same direction ok. Read the few emails below. Thanks....”³⁹⁸

347. On October 16, 2014, Ms. Chapman emailed Mr. Murray under the subject line “Clark and Red Hill.” She wrote:

He’s doing an announcement at 8:30 at Red Hill/Linc to show traffic and say he’ll push province to take them over and bring them up to provincial highway standards...³⁹⁹

³⁹⁴ [HAM0042313_0001](#)

³⁹⁵ [HAM0042312_0001](#)

³⁹⁶ [HAM0042313_0001](#)

³⁹⁷ [HAM0042313_0001](#)

³⁹⁸ [HAM0042313_0001](#)

³⁹⁹ [HAM0058616_0001](#)

348. The same day, Councillor Clark's mayoral campaign circulated a media release, which included:

HAMILTON – Ward 9 Councillor and Mayoral Candidate Brad Clark said today that Hamilton's new City Council must negotiate a new deal for Hamilton with the Ontario government.

A 'New Deal for Hamilton' should include:

- Integrating the Red Hill and Lincoln Alexander Parkway into the provincial highway system. Provincial ownership of these roadways will allow the province to address traffic gridlock on the QEW and 403.
- Funding local roads, sidewalks and public transit improvements with the money saved on annual maintenance and future capital costs to increase lane capacity on the Parkways.
- Expediting the addition of lanes to the Parkways to help resolve worsening traffic congestion caused by commercial traffic and other non-local traffic using the Parkways to avoid the congested 403/QEW link. This will help create jobs and strengthen both Hamilton and Ontario's economy.

QUOTES

"As congestion on the 403 and QEW corridor worsens, the Linc and Red Hill Valley Parkway are becoming an attractive shortcut between these provincial highways," said Clark.

"While the Red Hill Valley Parkway and the Linc help us retain, attract and create new jobs, local taxpayers should not be paying to maintain and operate regional roadways that are functioning like 400 series highways."⁴⁰⁰

349. On October 22, 2014, Ms. Harbin circulated an updated outstanding business list, which indicated that "Red Hill Parkway Improvements" was scheduled for an April 20, 2015 meeting date.⁴⁰¹

350. On October 24, 2014, a member of the public sent Councillors McHattie and Jason Farr (Ward 2, Hamilton) an email regarding a fatal collision that occurred on the LINC. He provided a link to a Spectator article regarding the collision, and wrote "How many more

⁴⁰⁰ [HAM0058617_0001](#)

⁴⁰¹ [HAM0042331_0001](#) attaching [HAM0042332_0001](#)

cross over events on the Linc and the Red Hill before we see the full and proper installation of median barriers?”⁴⁰²

351. On October 29, 2014, Linda Juchniewicz (Collision Analyst, Traffic Operations, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) emailed Mr. White and Mr. Ferguson regarding the fatal collision on the LINC. Mr. White replied, responding to Mr. Ferguson and copying Mr. Gallo, writing:

I have seen the preliminary Linc collision data and we may have a legitimate problem! Ron mentioned guide wire to me the other day! What other mitigation devices are available. What does TAC and other industry standards say. Dave please (assign someone) to start the research on mitigation devices as we finish the collision analysis. This may be our highest priority collision countermeasure (and most costly). Linda is completing analysis on the collisions but Dave I will want a techy to do some summary and analysis on the data after that. We will meet. Please decide who this will be assigned too and advise me.... Off the record, I am a bit disturbed as I was told this analysis has been run by Linda before apparently (several years ago) and the results were the same on the old data and yet nothing came of it. Anyway lets get the technical evaluation started properly and run to its conclusion. In house solution or roster assignment solution is perhaps another question Dave... Think about it. We can charge any/all of this to RLC as it is a safety issue.⁴⁰³

352. Mr. Lupton replied, writing “Once the facts are gathered, let's meet to review and discuss next steps. Thank you.” He also forwarded the email to Mr. Mater.⁴⁰⁴

353. On October 27, 2014, a member of the public had contacted Councillor Jackson regarding the fatal collision on the LINC, writing:

hello Tom,when I heard about that tragic accident on the Linc last week it made me wonder since I think this similar incident has happened several times over the years as to why there is no barrier of any kind separating the two sides.I travel the Linc and since there doesn't seem to be much police presence people drive well over the posted limit and that's when things can go bad.Simply put in my view a barrier would have kept them from crossing over to the other side possibly saving them and prevent a collision for the others going the

⁴⁰² [HAM0033252_0001](#)

⁴⁰³ [HAM0004529_0001](#)

⁴⁰⁴ [HAM0004529_0001](#)

opposite way. Has this concern ever come up since I've never heard and others I talk to ask the same thing.

Looking forward to hear back from you after your re-election, you have my vote tonight, thanks Tom.⁴⁰⁵

354. Councillor Jackson replied the same day, copying Mr. Davis.⁴⁰⁶

355. Michele Braun (Administrative Assistant to the Director of Hamilton Water, Hamilton Water, Public Works, Hamilton) forwarded the email to Mr. Mater on behalf of Ms. Clark, writing "Please see Councillor Jackson's e-mail below. Gerry is asking for your comments. Please provide them to Nancy so they can be co-ordinated for Gerry's review."⁴⁰⁷

356. On October 29, 2014, Mr. Mater forwarded the email to Mr. Moore, requesting a response.⁴⁰⁸

357. Mr. Moore responded to Mr. Mater, Ms. Clark, Al Dore (Manager of Special Projects, Public Works, Hamilton), Betty Matthews-Malone (Manager, Operations, Public Works, Hamilton) (with others copied) on October 30, 2014, writing:

In order for any barrier to be installed down the center, the existing curbs, median would need to be removed and replaced with a flat paved median (or additional lanes). This would also require the removal and placement of every overhead sign. A rough budget would be in the \$25 - \$30M range. The other option that has been suggested by the public is to install guide rail immediately behind the curb, however this is not an acceptable practise as the guide rail is meant to deflect but the curb does not. It also requires special end treatments at every overpass and would have a significant impact on the maintenance budget. The current design met all warrants for the speed limit. The problem is enforcement, not the design!⁴⁰⁹

⁴⁰⁵ [HAM0008775_0001](#)

⁴⁰⁶ [HAM0008775_0001](#)

⁴⁰⁷ [HAM0008775_0001](#)

⁴⁰⁸ [HAM0008775_0001](#)

⁴⁰⁹ [HAM0008775_0001](#)

358. The same day, Ms. Juchniewicz emailed Mr. White and Mr. Ferguson, providing reportable collision history for the LINC. Mr. White replied the same day, writing:

Dave please review and summarize and draw conclusions in anticipation of meeting with directors. Some sort of chart and graphic collision diagram may also help. Take a look and see where it takes us. Can u look at collision with wet road also as that is another question in my mind.⁴¹⁰

359. Dr. Uzarowski's notebook includes entries, dated October 30, 2014, and November 5, 2014, which reference Mr. Moore.⁴¹¹

360. On November 25, 2014, Ms. Harbin emailed Shelley Boylan (Traffic Operations Coordinator, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) copying Mr. Lupton and Mr. White), attaching two documents relating to Dufferin being awarded the contract to "Supply and install recessed reflective pavement markers along the Red Hill Valley Parkway, between Dartnall Road and Greenhill Avenue".⁴¹² The purchase order, dated December 23, 2014, indicated that the price of the contract was \$234,520.00.⁴¹³

361. On November 26, 2014, Mr. Mater emailed Mr. Davis (with others copied) with the subject line "Red Hill/Linc Safety review". He wrote:

As per our conversation, staff have been reviewing the collision history on the Red Hill/Linc. While I don't have the final picture yet, there is enough of a concern that I believe we need to do a more in depth review. As per your direction, I have instructed staff to begin the process by scoping out what we would like to have done in terms of a safety review and begin the process of selecting third party expertise to complete the work. I anticipate this being a roster assignment using RLC funding for the review. As you know, Councillor

⁴¹⁰ [HAM0042340_0001](#)

⁴¹¹ [GOL0007405](#) at images 16-17

⁴¹² [HAM0042380_0001](#), [HAM0042381_0001](#), [HAM0042382_0001](#)

⁴¹³ [HAM0024115_0001](#)

Jackson (and others) have raised concerns regarding this, and are likely to request a safety review. I believe we should be proactive in advancing this prior to them asking.⁴¹⁴

362. Mr. White emailed Mr. Ferguson regarding Mr. Mater's email, writing: "Ferg..... Did you and JM talk about this today? So we are going to a roster for a solution? Should we go to CIMA for the reasons I suggested? What about the cable idea?"⁴¹⁵

363. Mr. Ferguson replied the same day. He wrote:

Yes it came up, he mentioned that Gerry brought it up and told him to do something.

His thought is to have a review completed and a recommendation, not to tie it specifically to HTCs.

Ya we can use CIMA, they did the RHVP, so it makes sense.⁴¹⁶

364. Mr. White replied later that day "Ok when are we meeting and is that still on? I'd like to see our collision analysis first then we can get CIMA on board ok..."⁴¹⁷

365. On November 26, 2014, Mr. Butrym forwarded an email he received from Hayley Court-Znottka (Office Assistant for Councillor Brenda Johnson, Ward 11, Hamilton), writing:

I forgot to pass this on, Dave.....

(don't know if this ramp was also reviewed in the CIMA+ safety study of the Linc / RHV curve area last year)⁴¹⁸

366. The email from Ms. Court-Znotta forwarded an email from a member of the public expressing concern regarding lighting on a particular exit of the RHVP. He wrote, "When

⁴¹⁴ [HAM0008779_0001](#)

⁴¹⁵ [HAM0042386_0001](#)

⁴¹⁶ [HAM0042386_0001](#)

⁴¹⁷ [HAM0042386_0001](#)

⁴¹⁸ [HAM0042393_0001](#)

you come up the Red Hill and exit at Dartnall Road, there is no lighting on the exit and no chevron markers. It is the worst most dangerous exit on the Linc or the Red Hill."⁴¹⁹

367. On November 27, 2014, Mr. Ferguson forwarded the email to Mr. Cooper, requesting that he follow up and provide a response once completed.⁴²⁰

368. That evening, Mr. Cooper responded to Councillor Johnson (copying Ms. Court-Znottka, Mr. Ferguson and Mr. White), writing:

We recently hired a consultant to review this area of the Redhill to address safety concerns. This particular ramp was included in the review and it was determined that while it is operating safely (only 1 reported collision in the past 5 yrs), there was room for improvement. We have completed implementation of the recommendations from the consultant which included some minor sign changes to better direct drivers on the ramp i.e. curve warning signs and better street name signs. Also, we will be changing the overhead sign on the ramp to a diagrammatic one once the extension is built. Currently, there is some lighting on the ramp, but not the entire ramp.

Due to environmental concerns the Redhill was not lit at the time of construction. However, part of the recommendation was to include lighting on the Redhill in the area of Dartnall to the Mud St. on-ramp as you travel down the hill. At this time we are looking into other options to help guide drivers in lieu of adding lighting. We hope to have something in place next year which will assist drivers and provide better positive guidance.⁴²¹

369. Mr. White replied to Mr. Cooper the same day, writing:

What about the solar markers??

Mind as a pilot not sure we should put them on a major route like this.

Thoughts?⁴²²

⁴¹⁹ [HAM0042393_0001](#)

⁴²⁰ [HAM0042393_0001](#)

⁴²¹ [HAM0042394_0001](#)

⁴²² [HAM0042397_0001](#)

370. Mr. Cooper replied, “Somewhere to test where if they fail we won't get calls. A test deck first ok! Somewhere dark and rural and on our way home LOL Nebo and somewhere maybe!”⁴²³

371. Mr. Malone’s notebooks contain an entry dated November 28, 2014, which notes:

Martin White

- Met @ Mona’s fundraiser
- Potential work + update

① Signal system update \$650K

Await Council approval

② LINC safety issues W.R.T. crossover

Crashes

③

Schedule meeting/lunch⁴²⁴

372. On December 10, 2014, OHMPA posted a video to its YouTube channel, titled “OHMPA: Paving the way since 1974”. The video included an interview with Mr. Moore regarding the LINC and RHVP. The portion of the video related to the roadways has been transcribed below:

Narrator: Let's check out one example of how the research has benefited one of Ontario's fastest growing cities

GM: So, the Red Hill Valley Parkway and the Lincoln Alexander Parkway were two major projects for the city of Hamilton starting back in 91 and we started construction on them...

Narrator: this is Gary Moore he's the director of public works for the City of Hamilton and he was key to the development and construction of the Red Hill Valley and Lincoln Alexander Parkways. These projects were done the right way. An experienced planning team was assembled long before construction began. They researched to make key

⁴²³ [HAM0042397_0001](#)

⁴²⁴ [CIM0022407](#) at image 6

decisions which took full advantage of new techniques developed at the Centre for Pavement and Transportation Technology.

GM: Red Hill is a perpetual pavement. It's unique in that it comes down over the escarpment there's a lot of big cuts and a lot of big fills so we you know we assessed the various different pavement types and came up with the flexible pavement would be the best pavement use.

Narrator: it was estimated that between 80,000 and 90,000 vehicles would travel along the Red Hill Valley Parkway each day, so it was crucial to use paving materials that would be strong and durable yet would allow for simple and fast repairs when necessary.

GM: The perpetual pavement gave us that advantage to be able to do the resurfacings we could do those at night with very little impact on traffic to keep it serviced over a long period of time. We did use the superpave mixes on it which gave us a lot of choice on the various layers coming all the way up through and we ultimately chose to use the Stone Mastic Asphalt on the top layer. That technology was very helpful of us for the skid resistance and the noise and its ability to channel away the water and reduce the spray.

Narrator: it's been 9 years since the parkways have opened and how is the asphalt worked out Gary?

GM: it's working out very well.

Narrator: And it's worked out that well thanks to the hard work of researchers and innovators who received the funding they needed to make Ontario's roadways some of the safest most durable and cost effective in the world not to mention environmentally friendly.⁴²⁵

373. On December 16, 2014, Rob Merritt (Traffic Signal Technologist, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) emailed Mr. Jacobson, with a copy to Mr. Ferguson, regarding the installation of reflective delineators on the RHVP, writing that “the contractor is looking to mobilize this Thursday December 18th”.⁴²⁶

374. Mr. Mater replied in the email chain, requesting that Council be kept “in the loop. Use Kelly's messaging.”⁴²⁷

⁴²⁵ See <https://www.youtube.com/watch?v=48y1hQB9wSE> beginning at 7:39.

⁴²⁶ [HAM0004542_0001](#)

⁴²⁷ [HAM0004542_0001](#)

375. On December 16, 2014, Mr. Ferguson emailed Councillor Jackson and Councillor Collins regarding the reflective delineators, writing:

Just an FYI. As you may recall, we committed to install Raised Pavement Marker in the roadway on the RHVP from Greenhill to Dartnall as a result of the poor lighting conditions and in hopes to provide better guidance for motorists.

It looks like we are going to get started on the project before the end of the week.

Just in case you get some calls from residents you will know what is occurring.⁴²⁸

376. Mr. Ferguson replied to Mr. Mater, writing, “Will do, I already notified Collins and Jackson as they were supporters of adding streetlights”.⁴²⁹

377. On December 19, 2014, Mr. Merritt sent an email to Mr. McGuire, Bob Paul (District Superintendent, District West, Roads & Maintenance, Operations, Public Works, Hamilton), Mr. McCleary, and Mike Christian (Superintendent – Roads, District East, Roads & Maintenance, Operations, Public Works, Hamilton), (Mr. Ferguson and Mr. Jacobson copied), writing:

I just wanted to advise you of some improvements we are undertaking for lane demarcation along Red Hill Valley Parkway, by way of installing recessed reflective delineators (cat's eye's) from approximately the Greenhill Avenue interchange to Dartnall Road interchange.

These improvements have been brought forward to address concerns related to illumination and visibility through this section of the RHVP, and the installation of these devices will increase the conspicuity of the travel lanes to reduce vehicles from tracking outside of the travel lanes. The delineators will be recessed into the pavement, which will allow snow removal equipment to pass over seamlessly and will be installed through all skip lanes within this section.

Dufferin construction will be completing this work and the tentative start date will be Monday December 22nd, pending execution of the contract. There will be moving lane closures as the contractor completes this work, however they have been advised to keep all lanes open for the directional peak hour traffic and (northbound during AM till 9am, southbound during PM after 3pm). We anticipate this work to be completed over 4 days, weather permitting.⁴³⁰

⁴²⁸ [HAM0008784_0001](#)

⁴²⁹ [HAM0004542_0001](#)

⁴³⁰ [HAM0024063_0001](#)

378. On December 19, 2014, Mr. Merritt emailed Mr. Ferguson, replying to his email from earlier that day. Mr. Merritt wrote:

Hi Dave – I just spoke to the contractor, and they are still having some issues. Sounds like they cannot start Monday for sure.

They could start Tuesday, however they would prefer to push it off till January 5th as they would only have December 23rd to work since they are closed from Dec 24th to Jan 5th.

Just wondering how you want to proceed, as I know we made commitments to Council. I'm happy to tell them to get at least 1 day in just to provide the optics that the work has commenced, but it would likely be better to wait and just do it all at once with 4 days in a row. They really should have all these details ironed out from the start and we wouldn't be here now.

What do you think?⁴³¹

379. Mr. Ferguson replied, advising him to “leave it till the New Year” and to advise Kelly Anderson (Communications Officer, Communications, Public Works, Hamilton).⁴³²

380. On December 30, 2014, Ms. Clark circulated a revised outstanding business list, which indicated the “Red Hill Parkway Improvements – Lighting” was scheduled for June 15, 2015.⁴³³

381. Dr. Uzarowski's notebook includes an entry dated December 23, 2014, which references a call with Mr. Moore.⁴³⁴

7. January to May 2015

382. On January 2, 2015, the Spectator published an article which referenced ongoing public complaints regarding a lack of lighting on the RHVP. The article focussed on the installation of the raised pavement markers as a solution to the lighting issues. It also

⁴³¹ [HAM0042456_0001](#)

⁴³² [HAM0042456_0001](#)

⁴³³ [HAM0004543_0001](#) attaching [HAM0004544_0001](#)

⁴³⁴ [GOL0007405](#) at image 20

referenced the 2013 motion by Councillor Collins, who was quoted as saying the RHVP “is very dark and there are no lights. A safety audit confirmed the problems up there.” He also said that lights were not installed on the RHVP due to environmental conditions, but that lighting may be considered should the raised pavement markings fail to address motorists’ concerns.⁴³⁵

383. Mr. Malone’s notebooks contain an entry dated January 7, 2015, which notes the following:

BP14131

Martin White – City of Hamilton

- Chris Van Berkel

- Mentioned potential work

New Project

Al Kirkpatrick Roster Captain

- Confirm CIMA

cover collisions on LINC

- Collisions analysis

Error collisions need to do

- Jason Warren – Sr Proj Mgr

was w/ MTO

- Preparing scope of work

- Red Hill

- Putting in reflective markers

@Top Linc⁴³⁶

⁴³⁵ [RHV0000269](#)

⁴³⁶ [CIM0022410](#) at image 11

384. On January 9, 2015, a public service announcement from Ms. Anderson was circulated regarding intermittent closure on the RHVP beginning on January 12, 2015, for the installation of reflecting markings.⁴³⁷

385. Dr. Uzarowski's notebook includes an entry dated January 12, 2015, which notes: "VH g/ Hamilton – pavement evaluation".⁴³⁸

386. A subsequent note, dated January 21, 2015, listed the following:

- 3/ Municipal
 - 2. Gary Moore
 - C/ TAC Abstracts by other conferences
 - JR & GM
- 1. Pav. cracking – Gary Moore, send to⁴³⁹

387. On January 16, 2015, the Spectator published an article regarding the installation of pavement reflectors in the RHVP.⁴⁴⁰

388. On January 20, 2015, Mr. Ferguson emailed Mr. Merritt and Jason Worrone (Senior Project Manager, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Facilities; Corporate Assets & Strategic Planning, Public Works, Hamilton) regarding the pavement reflectors, writing:

And the fun continues,

Can you guys do me a favour and check the spec we are using for the length of the cut. Gary Moore is asking why its so long, I tried to explain based on my understanding of them, but he thinks its still to long. Can it be shortened for the northbound movement?⁴⁴¹

⁴³⁷ [HAM0000577_0001](#); [HAM0000578_0001](#); and [HAM0000579_0001](#)

⁴³⁸ [GOL0007405](#) at image 23

⁴³⁹ [GOL0007405](#) at image 24

⁴⁴⁰ [RHV0000273](#)

⁴⁴¹ [HAM0042506_0001](#)

389. Mr. Merritt replied the same day:

I just spoke to the contractor, and apparently it is as tight as it can go right now.

Apparently the MTO typically uses a 5 ft slot length, and we are already way under that.

I'm going to head out and see if I can have them make some changes.

I'll let you know.⁴⁴²

390. Mr. Ferguson replied later that day, writing:

Traffic Ops reviewed the location last night also and they are stating there is something defective on the markers between Lane 1 and 2.

We need to review and correct before we go further. It was suggested they might be in backwards.⁴⁴³

391. On January 21, 2015, Mr. Ferguson emailed Mr. Moore, copying Mr. White, Mr. Mater, Mr. Worrone and Mr. Merritt. He stated:

Further to our discussion yesterday, the following is provided.

We discussed the issue of marker lengths with the Manager of the MTO's program. His comment was that the length of the cuts should be 5 ft to allow for proper reflection of the markers. He advised us not to go below a length of 4 ft. Our current contract is for a 4 ft cut.⁴⁴⁴

392. Mr. Moore replied 45 minutes later, writing, "Ok (but when the pavement fails prematurely because of these cuts I'll be asking you to provide an explanation about this need for both the reflectors and the cuts.)"⁴⁴⁵

⁴⁴² [HAM0042506_0001](#)

⁴⁴³ [HAM0042506_0001](#)

⁴⁴⁴ [HAM0004554_0001](#)

⁴⁴⁵ [HAM0004554_0001](#)

393. Mr. Mater replied to the email at 9:03am, addressing it only to Mr. White and Mr. Ferguson, writing “Just let it go.” Two minutes later, Mr. White forwarded the response to Mr. Lupton.⁴⁴⁶

394. At 9:04am, Mr. White replied, addressing the email only to Mr. Lupton, stating “Really! Nice team play.”⁴⁴⁷

395. Mr. Lupton forwarded Mr. White’s email to Mr. Mater at 9:05am, advising him to note the email below.⁴⁴⁸

396. At 9:23am, Mr. White replied to Mr. Mater’s 9:03am email, writing:

Hi john. In confidence!

Has anybody told him we are doing the Linc collision crossover study with CIMA? He's going to react when he finds out. Traffic staff shouldn't have to put up with his reaction when he finds out. Malone even told me he is charging us a bit extra due to Gary. He wants to be sure his recommendations are totally defensible. He asked me what he should say when Gary calls him. I told Cima to do the best analysis they can and give us the best technical options and not to worry about what Gary says to them.

This is a consistent problem we face routinely with that section and related works. I'm not going to respond but I just had to have my bitch out to you! Thx for listening!⁴⁴⁹

397. Mr. Mater replied later that morning, stating “He knows, I told him”.⁴⁵⁰

398. On January 22, 2015, Mr. Moore left Dr. Uzarowski a voicemail. The message did not provide context regarding the intended purpose of the call.⁴⁵¹ Dr. Uzarowski’s

⁴⁴⁶ [HAM0004555_0001](#)

⁴⁴⁷ [HAM0004554_0001](#)

⁴⁴⁸ [HAM0004554_0001](#)

⁴⁴⁹ [HAM0024096_0001](#)

⁴⁵⁰ [HAM0024096_0001](#)

⁴⁵¹ [GOL0002993](#) attaching [GOL0002994](#)

notebook contains an entry for the same date, which lists “2) Gary Moore – RHVP 6 year later”.⁴⁵²

399. On January 27, 2015, Mr. Ferguson emailed a member of the public regarding the installation of the reflectors on the RHVP. Regarding the purpose of the installation, he wrote:

Further to your email with respect to the delays incurred as a result of the works to install Reflectors on the RHVP, the following is provided.

This project was completed as a result of a Traffic Safety review completed by a consultant retained by the City of Hamilton. As part of this review it determined that there were safety concerns with visibility through this section of the RHVP and as approved by council, staff recommended the installation of reflective markers, to be installed as soon as possible.⁴⁵³

400. The same day, Mr. Ferguson was forwarded an email addressed to Councillor Duvall from a member of the public regarding the pavement markers. The member of the public wrote:

About those fancy glowing lanemarkers just installed on the RHVP. Great idea...but I just drove the route Sunday evening(downbound) and more than half are already dislodged and missing. It is a very dangerous area of road. When wet it's almost impossible to see the painted lines. It strikes me that the real solution is to go back to painting the lines with proper reflective paint. I know a worm or two may die due to the harsh (sic) chemicals and the activists may get in a snit but i'd rather the worms die than me or any other driver. I think it's probably a lot less expensive. Please share with you colleagues.⁴⁵⁴

401. On February 11, 2015, Lara Henry (Editor, Asphalttopics) emailed Dr. Uzarowski, requesting pictures of the RHVP:

We really like some of these images for the front cover of Asphalttopics, particularly the two vertical images. Is there any way we can get these in higher resolution - 10 megs or higher? I wouldn't need it right away, but if I know we can get this then the designer can use one of these as a placeholder.⁴⁵⁵

⁴⁵² [GOL0007405](#) at image 25

⁴⁵³ [HAM0004557_0001](#); [HAM0024100_0001](#)

⁴⁵⁴ [HAM0033281_0001](#)

⁴⁵⁵ [GOL0003398](#)

402. Dr. Uzarowski forwarded the email to Mr. Moore the same day, attaching pictures received from Mr. Moore in 2007, requesting higher resolution pictures of the RHVP. Mr. Moore replied “No, this is it.”⁴⁵⁶

403. On February 13, 2015, Mr. Ferguson emailed Mr. Cooper, copying Mr. Worrone regarding the RHVP, writing:

Can you please prepare an update report for the RHVP based on the Action items we identified on our previous report and identify what has been completed along with action items that are still to be completed. It should be a short and sweet report and include in the recommendation that the item be removed from the PW OBL.

Report is Due March 2nd⁴⁵⁷

404. Mr. Murray set a calendar invite to Janice Atwood-Petkovski (City Solicitor, Legal & Risk Management Services, Corporate Services, Hamilton) under the subject line “IMPORTANT Telephone Call: Janice Atwood-Petkovski - Red Hill Update”. The call was scheduled for February 19, 2015.⁴⁵⁸

405. On February 27, 2015, Ms. Cameron emailed Mr. Field with the subject “Report: Red Hill Parkway Improvements – Lighting”. He wrote “Did you e-mail Dave Ferguson. If so, can you send me a copy.”⁴⁵⁹

406. Mr. Field replied the same day, writing:

Not yet. I will send an email over the weekend and copy you on it.

I briefly discussed it with Gordo today.⁴⁶⁰

⁴⁵⁶ [GOL0003397](#)

⁴⁵⁷ [HAM0042622_0001](#)

⁴⁵⁸ [HAM0061932_0001](#)

⁴⁵⁹ [HAM0004577_0001](#)

⁴⁶⁰ [HAM0004577_0001](#)

407. The same day, Mr. Cooper replied to Mr. Ferguson regarding the requested RHVP update report, attaching a draft.⁴⁶¹ The report was dated for the June 15, 2015, PWC meeting. It provided a summary of the Council direction resulting in CIMA's review of the RHVP, and the lighting related findings and recommendations for the study.

408. Mr. Worrton emailed Mr. Ferguson (copying Mr. Cooper) a revised draft on March 5, 2015. He wrote:

Steve took great responsibility to promptly correct and update this Information Report. I believe he has drafted a report that identifies what we have completed to date and what is still outstanding. He has added for greater value the reason why we installed and for the delays to implement.

He is currently updating Appendix A and will forward later today.

Please review.⁴⁶²

409. On March 9, 2015, Mr. Worrton emailed Mr. Ferguson, attaching a document titled "RHVP Tables Jason Version". The attachment included two tables with countermeasures, one for road segments and one for ramps. Mr. Worrton wrote in his email:

Tidied up. Please complete the last column on the second table. I don't want to bug SC again. Our messaging should be brief and consistent in a table like this.⁴⁶³

410. On March 9, 2015, Mr. Ferguson emailed Mr. Moore and Mr. Field (Mr. Lupton and Ms. Harbin copied), attaching a draft of the RHVP update report dated for the June 15, 2015 PWC meeting. He wrote:

As per our discussion last week, please find attached the Info Report we have done on the RHVP. Please feel free to add/modify the information with respect to the Lighting.

⁴⁶¹ [HAM0042622_0001](#) attaching [HAM0042623_0001](#)

⁴⁶² [HAM0056631_0001](#) attaching [HAM0056632_0001](#)

⁴⁶³ [HAM0056633_0001](#) attaching [HAM0056634_0001](#)

Report is due to Geoff on Friday.⁴⁶⁴

411. Mr. Moore replied on March 11, 2015, stating "Sorry guys, my only comment is this can't go to PW when I'm away in June. Please pick another day!"⁴⁶⁵

412. Mr. Ferguson replied the same day, writing "I would have thought you would prefer that. Lol".⁴⁶⁶

413. The same day, Mr. Field replied to Mr. Ferguson, writing:

We've reviewed it and are okay with the content.

When does this go to committee? I'm thinking that I may want to attend just in case there are any further questions related to the illumination.⁴⁶⁷

414. On March 12, 2015, Ms. Aquila emailed Ms. Harbin, attaching a draft of the update report and a report tracking form, writing: "Attached for Geoff's review/approval is the RHVP Improvements Information Report along with the tracking form. This is slated to go to June 15th PW Committee meeting."⁴⁶⁸

415. Mr. Lupton replied the same day, writing:

Diana – thank you!

David – is this the exact direction that was minuted in the council report.?⁴⁶⁹

416. Mr. Ferguson replied:

On the OBL list I have it says " Staff to monitor changes to signage in the area and report back respecting lighting".

⁴⁶⁴ [HAM0024141_0001](#) attaching [HAM0024142_0001](#)

⁴⁶⁵ [HAM0010687_0001](#)

⁴⁶⁶ [HAM0010687_0001](#)

⁴⁶⁷ [HAM0024143_0001](#)

⁴⁶⁸ [HAM0000586_0001](#) attaching [HAM0000587_0001](#) and [HAM0000588_0001](#)

⁴⁶⁹ [HAM0004583_0001](#)

I think that is what we have written? We added about it to be removed from the OBL, but that probably shouldn't be in that section?

I note that we have that comment and recommendation in the bottom of the report.⁴⁷⁰

417. On March 13, 2015, Ms. Cameron emailed with Ms. Clark (copying Ms. Hands-Lourie), regarding the schedule of the RHVP report to the PWC:

[Ms. Cameron]: Gary asked Dave Ferguson / Geoff Lupton (copied Charlene as an FYI & attached e-mail) that Item B be moved to a Committee date that he can attend.

We will also be moving Items H & I but, Gary has asked that I let him think about the date so if you could just leave those two dates the same for now that would be great. I will talk to Gary when he returns to see if I can't get a new date from him.

[Ms. Clark]: Is the Red Hill report joint between the two Divisions?

Charlene,

Could it maybe go on June 1st then if it's this close to being ready?

[Ms. Cameron]: No - it's not a joint report - was sent to Mike and Gary for comment only.

Gary will be there June 1st for his reports so I would be ok with that if Charlene is.

[Ms. Clark]: Well only my ten cents, but if it's not joint, who cares if Gary is there or not? Gary wouldn't move one of his reports for someone, he'd say ... and I quote ... "Boo Hoo" (he he he ... just sayin')

[Ms. Cameron]: I hear ya and don't disagree with your statement. He wants to be there because of his involvement with the Red Hill and I believe he was questioned when the initial report was submitted.

I've attached the draft received from Dave. Kudos on being creative. Took Information Update template and changed it to an Information Report.

[Ms. Clark]: Okey doke, we'll wait to see if Charlene can have her side agree to moving this report to June 1st and we'll then proceed.⁴⁷¹

418. On March 16, 2015, Ms. Hands-Lourie emailed Mr. Lupton regarding the report scheduling:

The Red Hill Improvement report is due in the Director's office next Monday. I have been asked by Engineering Services if this report can be moved to the June 1st Public Works

⁴⁷⁰ [HAM0004583_0001](#)

⁴⁷¹ [HAM0000589_0001](#); and [HAM0010691_0001](#)

Committee meeting. Gary Moore is unable to attend April 20th and he would like to be in attendance when the report goes to Committee.

Please let me know, as this is an OBL item and I need to advise Nancy.

Thanks.⁴⁷²

419. Mr. Lupton replied the same day, writing:

I have no problem moving it. Gary had said earlier that he wasn't around in June. I have the report and have asked Dave to make a couple minor changes. We'll get it into John next week anyway. Thanks!⁴⁷³

420. On March 18, 2015, Mr. Lupton emailed Ms. Aquila and Ms. Harbin, copying Mr, Ferguson, attached a version of the report with changes to implement. He wrote:

Diana - Please make the following changes to the report (attached).

Dave – please add the “CAT EYES” piece to the table and review the changes I made for completeness. Once completed forward to me for sign-off etc. please. Be prepared to speak to costing if asked at the PW committee.⁴⁷⁴

421. Dr. Uzarowski's notebook contains an entry dated March 31, 2015, which notes “! 17) Gary Moore LU”.⁴⁷⁵

422. On April 8, 2015, Mr. Ferguson emailed Ms. Harbin regarding the report, writing: “Please see attached, I believe all the changes were completed and the big guy signed it off”.⁴⁷⁶

423. Ms. Harbin replied the same day, asking whether he had received Ms. Aquila's revisions.⁴⁷⁷

⁴⁷² [HAM0004584_0001](#)

⁴⁷³ [HAM0024147_0001](#)

⁴⁷⁴ [HAM0004586_0001](#)

⁴⁷⁵ [GOL0007405](#) at image 30

⁴⁷⁶ [HAM0004599_0001](#)

⁴⁷⁷ [HAM0004599_0001](#)

424. On April 9, 2015, Ms. Aquila emailed Ms. Harbin (with Mr. Lupton and Mr. Ferguson copied), attaching the latest version of the report for Mr. Lupton's review and approval.⁴⁷⁸

425. Ms. Aquila emailed an updated draft to Mr. Ferguson on April 10, 2015, writing that she "added wording from committee report."⁴⁷⁹

426. Mr. Ferguson emailed Ms. Harbin in reply to Ms. Aquila's email, writing:

At the January 23, 2013 Council meeting, the following Motion was provided and directed to staff;

On a Motion staff were directed to investigate upgrading the lighting on the Red Hill Parkway in the vicinity of the Mud/Stone Church Rd interchanges; And

Staff were directed to investigate better reflective signage and lane markings or other initiatives to assist motorists in the same area; and

That a full costing of all options and alternatives be presented to committee for their consideration.

Further to this, after reporting back to the November 18, 2013 Public Works Committee meeting, Council received on November 27, 2013;

That Report PW13081 respecting Red Hill Valley Parkway Improvements, be received.

At the request of Public Works Committee and the specific area Councillors, it was requested that the item remain on the Outstanding Business List in order to continue to monitor and traffic the lighting deficiencies as identified in the original Motion of 2013.⁴⁸⁰

427. On April 13, 2015, Ms. Hands-Lourie emailed Ms. Cameron regarding the scheduling of the RHVP report to the PWC, writing:

The Red Hill report will not be going on June 1st now. Is Gary available to attend Public Works Committee on May 21st? We have the report ready to go.

Please let me know.⁴⁸¹

⁴⁷⁸ [HAM0000593_0001](#) attaching [HAM0000594_0001](#)

⁴⁷⁹ [HAM0042678_0001](#) attaching [HAM0042679_0001](#)

⁴⁸⁰ [HAM0042680_0001](#)

⁴⁸¹ [HAM0010705_0001](#)

428. Ms. Cameron replied the same day, confirming that Mr. Moore would be in attendance as he was the Acting General Manager for that meeting.⁴⁸²

429. On April 13, 2015, Ms. Harbin emailed Mr. Ferguson, writing “As per the below, the Red Hill report will be moved to May 21st.”⁴⁸³ The report, titled “Red Hill Valley Parkway Improvements (PW13081a)” was presented to the PWC on May 21, 2015, and included the following:

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

⁴⁸² [HAM0010705_0001](#)

⁴⁸³ [HAM0010706_0001](#)

motorists; staff completed the installation in January 2015 and has since received positive feedback from the public.⁴⁸⁴

430. Dr. Uzarowski's notebook contains an entry dated April 17, 2015, which notes the following:

4/ ✓ meeting

Becca, Pam, LU, VH, RR

Gary MacDonald, Gary Moore, Rob Burlie, Dan Waechter

Scott.....⁴⁸⁵

431. A subsequent note, dated April 20, 2015, referenced Mr. Moore.⁴⁸⁶

⁴⁸⁴ [RHV0000570](#)

⁴⁸⁵ [GOL0007405](#) at image 31

⁴⁸⁶ [GOL0007405](#) at image 32

L. Appendix A: Individuals Referenced in Overview Document #6

Last Name	First Name	Organization	Position(s)⁴⁸⁷
Ames	Susan	Tradewind Scientific	Office Manager
Anderson	Kelly	City of Hamilton	Communications Officer , Communications, Public Works
Andoga	Richard	City of Hamilton	Senior Project Manager , Infrastructure Programming, Asset Management, Engineering Services, Public Works
Apkarian	Anna	City of Hamilton	Manager , Finance and Administration, Corporate Services
Applebee	Brian	CIMA	Project Manager, Transportation
Aquila	Diana	City of Hamilton	Administrative Secretary , Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Atwood-Petkovski	Janice	City of Hamilton	City Solicitor , Legal & Risk Management Services, Corporate Services
Balasundaram	Andrew	Golder	Principal, Pavements & Materials Engineering
Bashir	Imran	MTO	Bituminous Engineer , Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division (2009-current) Acting Senior Bituminous Engineer , Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division (2014-2015)
Blackburn	Tammy	City of Hamilton	District Supervisor Roads , District North, Roads & Maintenance, Operations, Public Works (September 2013) District Supervisor Roads , District West, Roads & Maintenance, Operations, Public Works (January 2014)
Bogar	Doug	Miller Group	Superintendent
Bottesini	Giovani	CIMA	Engineering Trainee, Transportation
Boylan	Shelley	City of Hamilton	Traffic Operations Coordinator , Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Bratina	Bob	City of Hamilton	Mayor of Hamilton

⁴⁸⁷ Only positions held during the time covered by Overview Document #6 are included in Appendix A. Commission Counsel has created a separate document that includes the complete list of all positions held by all individuals referenced in Overview Documents #2 - #10, which is included in Overview Document #1 at Appendix A.

Braun	Michele	City of Hamilton	Administrative Assistant to the Director of Hamilton Water , Hamilton Water, Public Works
Cameron	Diana	City of Hamilton	Administrative Assistant to the Director of Engineering , Engineering Services, Public Works
Capostagno	Sam	City of Hamilton	District Supervisor Roads , District North & After Hours, Roads & Maintenance, Operations, Public Works
Castronovo	Lisa	City of Hamilton	Administrative Assistant , Asset Management, Engineering Services, Public Works
Chapman	Peggy	City of Hamilton	Chief of Staff to Mayor Bratina , Mayor's Office
Christian	Mike	City of Hamilton	Superintendent – Roads , District East, Roads & Maintenance, Operations, Public Works
Clark	Brad	City of Hamilton	Councillor, Ward 9
Clark	Nancy	City of Hamilton	Administrative Coordinator to the General Manager , Public Works
Collins	Chad	City of Hamilton	Councillor, Ward 5
Cooper	Stephen	City of Hamilton	Project Manager , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Cosentino	Mike	City of Hamilton	Superintendent , Traffic Operations, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Court-Znottka	Hayley	City of Hamilton	Office Assistant for Councillor Brenda Johnson , Ward 11
Crawford	Colleen	Shillingtons LLP	Senior Law Clerk
Cukier	Abigail	City of Hamilton	Communications Advisor to Councillor Brad Clark (Part-Time), Ward 9
Davis	Gerry	City of Hamilton	General Manager , Public Works
Delos Reyes	Andro	Golder	Senior Pavement & Materials Geotechnical Technologist
Dore	Al	City of Hamilton	Manager of Special Projects , Public Works
Duvall	Scott	City of Hamilton	Councillor, Ward 7
Dziedziejko	Thomas (Tom)	Aecon Materials Engineering Corp.	Director, Quality, Infrastructure, Aecon Group Inc., AME General Manager, AME (in 2014)
Farr	Jason	City of Hamilton	Councillor, Ward 2
Ferguson	Lloyd	City of Hamilton	Councillor, Ward 12

Ferguson	David	City of Hamilton	Superintendent , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Field	Mike	City of Hamilton	Project Manager , Street Lighting & Electrical Engineering, Geomatics & Corridor Management, Engineering Services, Public Works
Gallo	Ron	City of Hamilton	Senior Project Manager , Signals and Systems, Traffic Operations & Engineering; Energy, Fleet and Traffic; Corporate Assets and Strategic Planning, Public Works
Gesch	Benjamin	City of Hamilton	Operations Service Representative - Roads , Roads & Maintenance, Operations, Public Works
Gibson	Algis	City of Hamilton	MMS Inspector , Roads & Maintenance, Operations, Public Works
Groleau	Amy	City of Hamilton	Administrative Secretary to the Manager of Construction , Construction, Engineering Services, Public Works
Guerretta	Joe	City of Hamilton	Traffic Services Foreman , Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Hadayeghi	Alireza	CIMA	Partner, Director, Transportation
Hands-Lourie	Charlene	City of Hamilton	Administrative Assistant to the Director of Corporate Assets & Strategic Planning , Corporate Assets & Strategic Planning, Public Works
Harbin	Courtney	City of Hamilton	Administrative Assistant to the Director of Energy, Fleet & Traffic ; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Henderson	Dr. Vimy	Golder	Pavement and Materials Engineer
Henry	Lara	Asphalttopics	Editor
Hogarth	Michael	Tradewind Scientific	Field Testing Technician
Izadpanah	Pedram	CIMA	Associate Partner, Senior Project Manager, Transportation
Jackson	Tom	City of Hamilton	Councillor, Ward 6
Jacobson	Kris	City of Hamilton	Superintendent , Traffic Operations, Traffic Planning, Geomatics & Corridor Management, Engineering Services, Public Works
Johnson	Brenda	City of Hamilton	Councillor, Ward 11
Juchniewicz	Linda	City of Hamilton	Collision Analyst , Traffic Operations, Traffic Operations & Engineering; Energy, Fleet & Traffic;

			Corporate Assets & Strategic Planning, Public Works
Keen	Stephen	CIMA	Director, Transportation
Kirchknopf	Gary	City of Hamilton	Senior Project Manager , Traffic Planning, Geomatics & Corridor Management, Engineering Services, Public Works
Lane	Becca	MTO	Manager , Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
Leduc	Lauri	City of Hamilton	Legislative Coordinator , Office of the City Clerk, Corporate Services
Lee	Stephen	MTO	Head , Pavements & Foundations Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
Levy	Deanna	City of Hamilton	Communications/Community Relations Administrator , Mayor's Office
Lloyd	Stewart	City of Hamilton	Administrative Secretary (Temporary) , Traffic Operations & Engineering; Energy, Fleet, Facilities & Traffic; Transportation, Energy & Facilities; Public Works
Locs	Peter	City of Hamilton	Project Manager , Street Lighting Infrastructure Management, Geomatics & Corridor Management, Engineering Services, Public Works
Lupton	Geoff	City of Hamilton	Director , Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Maher	Dr. Michael	Golder	Principal, Pavement and Materials Engineering
Malone	Brian	CIMA	Partner, Vice-President, Transportation
Marciello	Frank	MTO	Pavement Evaluation Supervisor , Pavements & Foundations Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
Marks	Pamela	MTO	Head , Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
Masliah	Maurice	CIMA	Project Manager, Transportation
Mater	John	City of Hamilton	Director , Corporate Assets & Strategic Planning, Public Works
Matthews-Malone	Betty	City of Hamilton	Director , Operations, Public Works
McCafferty	Chris	City of Hamilton	Senior Project Manager , Design, Engineering Services, Public Works
McCleary	Terry	City of Hamilton	Superintendent - Roads , District North, Roads & Maintenance, Operations, Public Works
McGuire	Gord	City of Hamilton	Manager , Geomatics & Corridor Management, Engineering Services, Public Works

McHattie	Brian	City of Hamilton	Councillor, Ward 1
McLennan	John	City of Hamilton	Manager , Risk Management, Legal & Risk Management Services, Corporate Services
McMillan	Cindy	City of Hamilton	Financial Assistant , Engineering Services, Public Works
McMullen	Brian	City of Hamilton	Director , Financial Planning, Administration and Policy, Corporate Services
McShane	Paul	City of Hamilton	Project Manager , Roads & Maintenance, Operations, Public Works
Medeiros	Jason	City of Hamilton	Signs/Markings Specialist , Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Merritt	Rob	City of Hamilton	Traffic Signal Technologist , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Merulla	Sam	City of Hamilton	Councillor, Ward 4
Moore	Gary	City of Hamilton	Director , Engineering Services, Public Works
Moore	Trevor	Miller Group	Corporate Technical Director, Miller Paving Ltd.
Murray	Chris	City of Hamilton	City Manager , City Manager's Office
Murray	John	City of Hamilton	Manager , Asset Management, Engineering Services, Public Works
Nolet	Alexandre	CIMA	Project Engineer
Oddi	Marco	City of Hamilton	Senior Project Manager , Construction Management, Construction, Engineering Services, Public Works
Parisotto	Jerry	City of Hamilton	Manager , Construction, Engineering Services, Public Works
Pasuta	Robert	City of Hamilton	Councillor, Ward 14
Paul	Bob	City of Hamilton	District Superintendent , District West, Roads & Maintenance, Operations, Public Works
Pearson	Maria	City of Hamilton	Councillor, Ward 10
Powers	Russ	City of Hamilton	Councillor, Ward 13
Raymond	Chris	MTO	Acting Senior Pavement Design Engineer , Pavements & Foundations Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
Ribaric	Robert	City of Hamilton	Assistant to Councillor Brad Clark , Ward 9
Rizvi	Rabiah	Golder	Pavement and Materials Engineering Analyst
Robertson	Ben	CIMA	Transportation Technologist

Ryan	Melissa	City of Kitchener	Design and Construction Project Manager
Sabados	Diana	City of Hamilton	Supervisor , Claims Administration, Risk Management, Legal & Risk Management Services, Corporate Services
Schell	Hannah	MTO	Head , Concrete Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
Senior	Stephen	MTO	Head , Soils & Aggregates Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
Shebib	Rich	City of Hamilton	Traffic Technologist , Corridor Management, Geomatics & Corridor Management, Engineering Services, Public Works
Shillington	Terry	Shillingtons LLP	Partner
Shynal	Bryan	City of Hamilton	Director , Operations, Public Works
Stewart	Larry	City of Hamilton	Traffic Specialist , Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Tabib	Seyed	MTO	Senior Bituminous Engineer , Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
Taylor	Leonard	Tradewind Scientific	President & Chief Executive Officer
Taylor	Rowan	Tradewind Scientific	Engineering Manager
Thukral	Sheetal	CIMA	Engineer, Transportation
Uzarowski	Dr. Ludomir	Golder	Principal, Pavement and Materials Engineering
Violin	Nello	City of Hamilton	Superintendent , Technical Operations, Roads & Maintenance, Operations, Public Works
Virani	Anil	MTO	Senior Bituminous Engineer , Bituminous Section, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division
White	Martin	City of Hamilton	Manager , Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works
Whitehead	Terry	City of Hamilton	Councillor, Ward 8
Wiley	Patrick	Ecopave Asphalt Recycling Inc.	President
Worron	Jason	City of Hamilton	Senior Project Manager , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Facilities; Corporate Assets & Strategic Planning, Public Works

Wunderlich	Nancy	City of Hamilton	Administrative Assistant to the Director of Operations , Operations, Public Works
Wyskiel	Kim	City of Hamilton	Superintendent , Traffic Services, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works