

**OVERVIEW DOCUMENT #7:
THE 2015 CIMA REPORT**

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A. Introduction

1. In 2015, Hamilton retained CIMA to prepare a safety review of the RHVP. Overview Document #7 will address the circumstances surrounding the 2015 CIMA Report, its preparation, and the events following its completion. Overview Document #7 will largely be organized in chronological order, but some events will be grouped together, slightly out of chronological order, where doing so promotes clarity and ease of understanding.

2. Commission Counsel has endeavoured to confirm the names, organization, and position(s) held by the individuals referenced in this Overview Document. This information is provided in the body text where each individual is first referenced.¹ A complete list of the individuals and their respective information can be found at Appendix A of Overview Document #7.

3. The facts contained in Overview Document #7 have not been tested for their truth. Commission Counsel and the participants may call evidence from witnesses at the Inquiry that casts doubt on the truthfulness or accuracy of the content of the documents underlying this Overview Document. The participants will also be able to make submissions regarding what, if any, weight should be given to any of these documents.

B. Fatal Collision May 2015

4. On May 5, 2015, a collision on the RHVP resulted in the deaths of Olivia Smosarski and Jordan Hastings. A Spectator article published on May 7, 2015, described the collision as follows:

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

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

...

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

5. On May 6, 2015, John Durant (District Supervisor Roads, District North, Roads & Maintenance, Operations, Public Works, Hamilton), emailed City staff, copying Terry McCleary (Superintendent - Roads, District North, Roads & Maintenance, Operations, Public Works, Hamilton). He wrote: "WE HAD A TWO VEHICLE M.V.A. ON THE R.H.V.P., AS OF 7:AM THE SOUTH BOUND LANES ARE STILL CLOSED, ALL BARRICADES AND ARROW BOARD HAVE BEEN RETURNED TO DIST. NORTH. ACCORDING TO POLICE IT WAS A TWO PERSON FATALITY. (PO15-596-572)".³

6. Mr. McCleary forwarded this email to Bob Paul (Manager, Winter Control, Operations, Public Works, Hamilton), Betty Matthews-Malone (Director, Operations, Public Works, Hamilton), and Jennifer Atkinson (Road Operations & Maintenance Coordinator, Roads & Maintenance, Operations, Public Works, Hamilton). Later that day, Ms. Matthews-Malone responded to this email chain, writing: "Terry, do we have good records identified for road condition? I haven't heard the cause of the accident but likely we could find ourselves part of a future legal discussion regardless of cause. We should make sure we have our road patrol/condition assessment paperwork flagged."⁴

² [RHV0000289](#)

³ [HAM0033384_0001](#)

⁴ [HAM0033384_0001](#)

7. After the deaths of Ms. Smosarski and Ms. Hastings, members of the public contacted various City Councillors expressing concern regarding collisions on the RHVP.

8. On May 6, 2015, a member of the public emailed Councillor Doug Conley (Ward 9, Hamilton) that he had “witnessed many more vehicles sliding into, or through the medians on my daily trips up and down the Red Hill” over the past year, and that the problem was “exacerbated every time it rains, snows, or there is frost on the road.”⁵

9. On the same day, another member of the public emailed Councillor Scott Duvall (Ward 7, Hamilton):

Hi Scott, so another two people have died on the Red Hill after crossing the grass median. They would have lived if there had been a concrete barrier down the center instead of a small ditch. I have written to you before about this problem, on any given day you can drive along this stretch of road and count about a dozen skid marks across the grass median going into oncoming lanes. I'm surprised there aren't more fatalities. How many more will it take before someone decides to build this barrier. I'll bet that you don't ever want the police knocking on your door bearing bad news. I hope that this will finally get the wheels in motion and something is done to prevent further tragedies.⁶

10. Councillor Duvall replied to the email, writing that he had “raised this at Council and several Council further commented on the issues and staff explained barriers are not required. I will bring this issue up again to Council. I have also included Gary Moore from Public Works to comment on both issues.”⁷

11. On May 7, 2015, Gary Moore (Director, Engineering Services, Public Works, Hamilton) replied to Councillor Duvall’s email (with others copied but the member of the public removed) writing:⁸

⁵ [HAM0033385_0001](#)

⁶ [HAM0004628_0001](#)

⁷ [HAM0004628_0001](#)

⁸ [HAM0004628_0001](#)

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

12. David Ferguson (Superintendent, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning; Public Works, Hamilton), who was copied on Mr. Moore's email, replied to Mr. Moore and Councillor Duvall (with others copied). He wrote that "[s]taff have already begun to gather this information with respect to the RHVP. We should have the information by the May 21st PWC meeting."⁹

13. Geoff Lupton (Director, Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) replied in the email thread, adding that an update regarding the "LINC project" would also be appreciated.¹⁰

14. On May 6, 2015, Mr. McCleary emailed Mr. Durant regarding the collision, asking him to "put together all the paperwork, reports weather road conditions etc. I have to supply to Management."¹¹

15. On May 6, 2015, Mr. Ferguson emailed Stephen Cooper (Project Manager, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), and Jason Worrone (Senior Project Manager, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic;

⁹ [HAM0004628_0001](#)

¹⁰ [HAM0004628_0001](#)

¹¹ [HAM0024188_0001](#)

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

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

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

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

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

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

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

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

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

18. Mr. Moore replied:¹⁵

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

¹² [HAM0042751_0001](#)

¹³ [HAM0010716_0001](#)

¹⁴ [HAM0010716_0001](#)

¹⁵ [HAM0010716_0001](#)

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

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

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

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

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

20. Mr. Ferguson forwarded the email the same day to Mr. Lupton, John Mater (Director, Corporate Assets & Strategic Planning, Public Works, Hamilton) and Martin White (Manager, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), writing: "Fyi. Was waiting for this." Mr. Lupton replied: "Surprise."¹⁷

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

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

I will put something together for you.¹⁸

22. On May 13, 2015, Mr. Ferguson provided Councillor Conley with draft language for a motion.¹⁹

23. On May 11, 2015, Michael Kirkopoulos (Director, Communications, Corporate Communications & Intergovernmental Affairs, Hamilton) emailed Chris Murray (City

¹⁶ [HAM0004637_0001](#)

¹⁷ [HAM0004637_0001](#)

¹⁸ [HAM0056641_0001](#)

¹⁹ [HAM0056642_0001](#)

Manager, City Manager's Office, Hamilton), writing: "Sam messaged me, says he wanted us to have the heads up, that we need to reassess safety concerns of Red Hill and Linc. He wants some help in preparing wording without creating liability issues."²⁰

24. On May 11, 2015, Mr. Ferguson emailed Brian Malone (Partner, Vice-President, Transportation, CIMA), asking what the cost would be "to complete a review of the RHVP for possible barriers?"²¹

25. Mr. Malone circulated this email internally to Pedram Izadpanah (Senior Project Manager, Transportation, CIMA), Brian Applebee (Project Manager, Transportation, CIMA), and Alireza Hadayeghi (Partner, Director, Transportation):²²

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

Can we convene and answer ASAP?

26. Mr. Applebee replied to Mr. Malone, advising that he had spoken to Mr. Cooper regarding the matter earlier that afternoon.²³

27. Mr. Malone replied to Mr. Ferguson that he would call him the following day with an overview.²⁴

28. In response to a question from Mr. Applebee regarding the type of review requested by the City, Mr. Malone wrote:²⁵

²⁰ [HAM0058625_0001](#)

²¹ [CIM0010200](#)

²² [CIM0010200](#)

²³ [CIM0010200](#)

²⁴ [CIM0010197](#)

²⁵ [CIM0010195](#)

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

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

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

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

THEREFORE BE IT RESOLVED:

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

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

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

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

31. Mr. Ferguson replied:²⁹

²⁶ [HAM0000600_0001](#)

²⁷ [HAM0000601_0001](#)

²⁸ [HAM0004638_0001](#)

²⁹ [HAM0000602_0001](#)

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

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

32. Mr. Moore replied later that day:³⁰

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

33. On May 13, 2015, the Hamilton Spectator published an article titled "Red Hill safety concerns revisited after fatal crash: Council still receiving complaints about lack of lighting in the upper part of the parkway".³¹ This article referenced past safety reviews and public comments received by Council regarding the RHVP. The article read:

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

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

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

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

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

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

³⁰ [HAM0004638_0001](#)

³¹ [RHV0000292](#)

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

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

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

The last audit determined the parkway is safe to drive.

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

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

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

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

Dave Ferguson

- Detailed Analysis of RHVP as LINC
- Also [text to be confirmed] in Lighting
- May 21st mtg³²

35. On May 13, 2015, Mr. Malone emailed Mr. Applebee and Mr. Izadpanah (with other internal CIMA staff copied), summarizing a discussion he had earlier that day with Mr. Ferguson.³³

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

³² [CIM0022410](#) at image 6

³³ [CIM0010192](#)

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

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

This should get a new BP # for the proposal.

36. On May 14, 2015, after being advised that he was to be the Acting Director at the Public Works Committee the following week, Mr. Lupton emailed Mr. Ferguson, asking to review Councillor Sam Merulla's (Ward 4, Hamilton) motion.³⁴ Mr. Ferguson replied, writing "[a]lready started on. Chatted with Brian Malone to get a quote to complete the work."³⁵

37. Mr. Ferguson forwarded the email, attaching Councillor Merulla's notice of motion, to Mr. Malone the same day.³⁶

38. The PWC met on May 21, 2015. During this meeting, Councillor Conley asked for a timeline for future repaving of the RHVP. Mr. Moore informed the PWC that staff expected the first "wholesale resurfacing" of the RHVP would occur in 2021. Mr. Moore also advised that the wholesale resurfacing of the RHVP was a significant project that was not included in the capital budget at that time.³⁷

39. At this meeting, the PWC recommended:

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

³⁴ [HAM0004644_0001](#)

³⁵ [HAM0004644_0001](#)

³⁶ [CIM0010187](#)

³⁷ <https://pub-hamilton.escribemeetings.com/Meeting.aspx?Id=cf3759f1-cf6f-45a1-a19f-3f74b9176a78&Agenda=Agenda&lang=English#> at 3:42 minutes

lane markings or other means to help prevent further fatalities and serious injuries; and, report to the Public Works Committee with recommendations by December 7, 2015.³⁸

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

Council Direction:

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

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

Information:

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

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

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

[Tables omitted]

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

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

³⁸ [HAM0042848_0001](#) at image 4

³⁹ [HAM0042848_0001](#) at image 3

⁴⁰ [RHV0000570](#)

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

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

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

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

Oct 1997 to Sept 2014

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

624 total collisions of which 131 were CMC's
Of the total, there have been a total of 6 collisions that resulted in fatalities.
Of total CMCs, 3 collisions resulted in fatalities.

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

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

45 collisions resulted in vehicle crossing over
67 resulted in vehicle in the median
19 hit the curb.
60 percent of all CMCs resulted in injuries, 3 collisions resulted in fatalities.

67 CMCs occurred during daylight hours
24 CMCs occurred in freezing rain/drifted snow or snow conditions

70 percent of CMCs occurred with dry pavement conditions
I have also attached a pic of the segment breakdown for collisions.

⁴¹ [HAM0024236_0001](#)

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

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

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

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

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

"Just puts lights and a guardrail up."

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

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

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

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

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

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

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

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

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

⁴² [RHV0000297](#)

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

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

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

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

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

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

Most of the remaining suggested changes are coming in 2015.

C. Assignment proposal, scope and data requests

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

The following items need to be reviewed and recommendations provided.

1. Need for some type of Barrier and recommendation on type and expected cost.
2. Is there a need for lighting and expected cost.
3. An analyses of the types of collisions that are occurring and what is causing them (i.e. Weather conditions, speeding, distracted driving, etc)
4. Report needs to be completed for September.

44. On May 22, 2015, Mr. Malone replied to Mr. Ferguson, Mr. Worrton, and Mr. Cooper. Mr. Malone attached a preliminary work plan to his email, which identified the background, purpose and scope of the study as follows:⁴⁴

⁴³ [HAM0004659_0001](#)

⁴⁴ [HAM0004659_0001](#) attaching [HAM0004660_0001](#)

1. Background

The City of Hamilton has identified safety concerns along the Red Hill Valley Parkway (RHVP), which serves as a major north/south urban freeway connecting the RHVP to the QEW. In 2013 CIMA undertook a detailed safety review of the southerly section of the RHVP from the Greenhill interchange to the connection with the RHVP.

High operating vehicle speeds on the RHVP are often seen, especially in the northbound (downhill) direction. The existing horizontal alignment is curvilinear and may be a factor contributing to collisions or to the outcome of collisions. It was found during CIMA's detailed analysis of the southern section that many of the collisions occur during dark hours and/or in wet weather.

As a continuation of the detailed safety review of the RHVP, the City wishes to investigate the northerly section of the roadway and would like to determine whether the installation of a median barrier, illumination or other devices may be beneficial in reducing the frequency of collisions, including cross-median crashes (CMCs).

2. Scope of Work

The study area for this assignment consists of a 5 km road section along the RHVP, from approximately 1 km south of the Greenhill interchange to the rail overpass north of the Barton interchange. This area represents the northerly section of road where no continuous centre median barrier is currently present. The general area is illustrated in Figure 1.



The review will be restricted to the mainline sections and acceleration and deceleration lanes at the interchanges, with a focus on run-off-road collisions occurring on the towards the median and any factors that may lead to these collisions, such as speed, weather, lighting conditions, unsafe merging or lane changing maneuvers, etc. Interchange on- and off-ramps are not included in the scope of work. Additionally, the review does not include the RHVP/QEW interchange as it is under the jurisdiction of the Province (MTO)

45. The document also included a list of data required to complete the assignment:⁴⁵

+ Full collision summary report, in Excel format, including all collisions in the study area during the study period (opening day 2007 – latest date in file) and containing as many fields as possible (for example, driver action, sequence of events, etc.);

⁴⁵ [HAM0004660_0001](#) at image 3

- + Collision diagrams indicating location of each collision, if available;
- + Motor Vehicle Accident Reports;
- + All current and historical traffic volume data available for the study area, including mainline and ramp volumes;
- + Design drawings or at a minimum high resolution aerial photography; and
- + Information related to any planned work at the study area.

46. The work plan also called for a collision review, review of “basic roadside design elements” and illumination, as well as the need for and type of median barrier system.⁴⁶

47. On May 22, 2015, Mr. Malone emailed himself a link to a news article published by CBC News, titled “Could the Red Hill Valley Parkway be safer?” This article referenced the May 6, 2015 collision and Councillor Merulla’s motion requesting a safety review of the RHVP at the PWC meeting on May 21, 2015.⁴⁷ The article also indicated:⁴⁸

But the city has fielded concerns from residents about the Red Hill and the Lincoln Alexander Parkway for years, said Gary Moore, director of engineering services. That's why, even before Merulla's motion, city staff have been reviewing the safety of a portion of the Linc.

Staff will come back with a report on Red Hill in the fall, Moore said. It will look at number of accidents, when they happen, weather conditions, hot spots and potential design considerations that could reduce collisions. Those could include reflectors, paint, lighting and guardrails, Moore said.

D. Initial receipt of data and preliminary work conducted

48. On May 22, 2015, the Spectator published an article titled “Red Hill safety is an urgent issue: Hamilton reviewing safety of its highways; Crashes involving medians a concern”.⁴⁹ This article included the following statement by its author:

I would like to thank city council for being so very concerned about safety on the Red Hill Valley Parkway. I recall that during the many years of debate about the parkway, city

⁴⁶ [HAM0004660_0001](#) at images 3-5

⁴⁷ [CIM0010182](#)

⁴⁸ [RHV0000670](#)

⁴⁹ [RHV0000302](#)

council kept eliminating various safety protocols due to the costs involved. It is a pity that council is now very concerned about safety when the time to ensure that safety was atop issue was before the road was built.

Since many of the same councillors are still on council, I am wondering why they did not raise their concerns even more loudly at that time, and insist that the province make our roads safe. Why did this tragedy bring the issue forward, when there are many accidents on the road and the council chooses to ignore these?

49. On May 25, 2015, Mr. Lupton emailed Mr. Mater, Alan Kirkpatrick (Manager, Transportation Management, Corporate Assets & Strategic Planning, Public Works, Hamilton), Mr. Ferguson, Kris Jacobson (Superintendent, Traffic Operations, Traffic Planning, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton) and Kim Wyskiel (Superintendent, Traffic Services, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) a link to an article published by the Spectator, titled “City of Hamilton studies widening Red Hill”.⁵⁰ The article indicated that the City was considering widening the LINC and RHVP as “part of the ongoing review of the city's transportation master plan, which is expected to be finished in the next 12 months.” The article also referenced potential costs for the widening, as well as statistics regarding road use.⁵¹

City engineering director Gary Moore figures widening both highways would cost \$80-\$100 million, a significant challenge given that the city is currently spending about \$48 million a year on road work when it should be spending \$180 million to meet its needs.

Still, there's no question the \$245 million Red Hill expressway, built under a cloud of environmental and fiscal criticisms, has proven a roaring success.

When the highway opened in 2007, the city expected it to be used by 40,000 to 45,000 vehicles a day.

Shortly after the opening, those numbers were closer to 65,000 vehicles. It now handles about 80,000 vehicles day.

⁵⁰ [HAM0024240_0001](#)

⁵¹ [RHV0000669](#)

50. On May 29, 2015, a Council Follow-Up Notice was circulated, advising that Council passed, as amended, the report presented by the PWC following its May 21, 2015 meeting.⁵²

51. On June 3, 2015, Mr. Ferguson emailed Mr. Malone and Mr. Cooper (with Mr. Worrton, Mr. Applebee and Mr. Hadayeghi copied):⁵³

I was chatting with John Mater the other day. Apparently the City Manager has made a comment that the TMP will be reviewing the idea of widening both roadways. John wanted me to make you aware of this as we are concerned that any recommendation you are currently considering may change if the roadways were widened.

52. Mr. Malone replied the following day, thanking Mr. Ferguson for the information and indicating that CIMA would consider the potential widening of the roadways in making its recommendations.⁵⁴

53. Linda Juchniewicz (Collision Analyst, Traffic Operations, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) prepared a spreadsheet dated June 9, 2015, which provided statistics regarding RHVP collisions between November 17, 2007, and May 21, 2015. This included statistics regarding weather, collision class, day of the week, lighting, impact type, time period, road surface condition, and year.⁵⁵

54. On June 10, 2015, Mr. Ferguson emailed Joanne Starr (Traffic Technologist, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) and Aneta Zaskowska

⁵² [HAM0042847_0001](#) attaching [HAM0042848_0001](#)

⁵³ [CIM0010171](#)

⁵⁴ [CIM0010170](#)

⁵⁵ [HAM0042870_0001](#)

(Transportation Technologist, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) (with Mr. Worrone, Mr. White and Mr. Mater copied) regarding correspondence with the HPS.⁵⁶

Just a pass a long message. I've been working with the police dealing with the Linc and RHVP, Chief was looking for collision info for both roads. I sent them the analyses you did for the Linc and they were over the moon with the information and how it was presented and they were very thankful.

55. On June 10, 2015, Mr. Ferguson emailed Ms. Juchniewicz, writing “[n]ot sure if you have had a chance to review the RHVP collision info, can you provide “us with a timeline for completion just so the police know.”⁵⁷

56. Ms. Juchniewicz replied to Mr. Ferguson the following day, advising that she had discussed the matter with Walter Johnston (Police Constable, Support Services Division (Traffic), HPS) and that he would have the collision statistics that Friday.⁵⁸

57. On June 12, 2015, Mr. Applebee sent Mr. Cooper (copying others) a draft of the safety review for the LINC.⁵⁹

58. On June 15, 2015, Mr. Ferguson forwarded Mr. Malone an email from a member of the public to Councillor Chad Collins (Ward 5, Hamilton) expressing concerns about the safety of the RHVP.⁶⁰

⁵⁶ [HAM0024254_0001](#)

⁵⁷ [HAM0042872_0001](#)

⁵⁸ [HAM0042872_0001](#)

⁵⁹ [HAM0042877_0001](#) attaching [HAM0042878_0001](#)

⁶⁰ [CIM0010140](#)

59. On June 24, 2015, Mr. Ferguson emailed Mr. Malone: “[a]s part of your review, can you identify how many collisions have occurred that resulted in impacts to the existing guardrail.”⁶¹ Mr. Malone replied to Mr. Ferguson the same day.⁶²

Yes Dave, we could identify those so that they can be separated. Of course that would dependent upon the collision being reported and the report providing the detail w.r.t. the barrier being hit.

It's an important consideration in the assessment since provision of barrier tends to increase the number of reported collisions (the damage is greater than just entering the median) but they reduce the most severe collision events (cross-over fatalities), so it becomes a trade-off. Looking at the hits of the existing barrier installations will provide good input for making decisions going forward.

At this moment we don't have a confirmation to proceed, at least not formally. Is that coming shortly? We're anxious to begin working on the assignment.

60. Mr. Ferguson forwarded this email to Mr. Worrone: “Please follow up on this asap, I thought this was all completed and CIMA could proceed. Please talk to Shelley.”⁶³

61. Mr. Worrone replied to Mr. Ferguson the same day, writing “[w]ill do. I thought it was all completed and Coop told us that.”⁶⁴

62. On June 25, 2015, Shelley Boylan (Traffic Operations Coordinator, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) emailed Mr. Worrone, advising him that “[the requisition] was held up in Procurement, it should clear tomorrow and the Purchase order will be faxed to CIMA”.⁶⁵

⁶¹ [HAM0042885_0001](#)

⁶² [HAM0042885_0001](#)

⁶³ [HAM0042885_0001](#)

⁶⁴ [HAM0042885_0001](#)

⁶⁵ [HAM0042891_0001](#)

63. On June 28, 2015, Mr. Ferguson emailed Mr. White, Mr. Mater and Mr. Malone, regarding a collision on the RHVP, writing “Gents. FYI. Looks like another crossover on RHVP, south of King. Just drove by.”⁶⁶

64. On July 7, 2015, Mr. Ferguson sent another email to Mr. Mater, Mr. White and Mr. Malone, writing “[h]ate to ruin your vacation, but looks like we have another collision, same location as last week.”⁶⁷ Mr. Malone replied to this email the following day. He asked to review the most current collision data.⁶⁸

65. Mr. White replied to Mr. Ferguson the same day (copying Diana Aquila (Administrative Secretary, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), Mr. Mater and Mr. Lupton):⁶⁹

Dave as soon as I get back Let's meet me you Jay and cooper to Go over report and pick a path ok! We will have to decide what we need to do and how. Then we will advise Geoff and John and we will go from there. If the press asks anything go thru Kelly and just say we are working on analysis now and don't have the final report yet (which we dont). Let me know if any further incidents occur. We need to action this as quickly as we can. Please have your review of report and recommendation ready for me next week.

Di please set a 60 min meeting asap. Thx

66. On July 8, 2015, Ms. Aquila sent Mr. White, Mr. Ferguson, Mr. Worrone and Mr. Cooper a calendar invite for a meeting titled “RHVP – Collisions”. This meeting was scheduled for July 13, 2015.⁷⁰

⁶⁶ [HAM0024259_0001](#)

⁶⁷ [HAM0024262_0001](#)

⁶⁸ [HAM0024262_0001](#)

⁶⁹ [HAM0008823_0001](#)

⁷⁰ [HAM0004706_0001](#)

67. On July 8, 2015, Mr. Malone emailed Mr. Worrone, advising that CIMA required confirmation from the City prior to proceeding with its assignment:⁷¹

We're anxious to proceed with the review, but have not been given a green light by the City to go forward with work. I don't believe we had any actual response to our work plan submission back in May. We don't have a PO yet. I'm OK with initiating work with the PO to follow, but would appreciate any sort of confirmation via email that we're good-to-go. I've attached a copy of the May email for your information.

With that done, we can initiate effort immediately. We are seeking the collision data first, as comprehensively as possible as that's the first significant task. This includes the actual reports, as we found on the LINC that there was much needed detail in the hand-written part of the reports, beyond the coding. Based on Dave's comments there have been collisions recently too and we'll take as much as we can get, right up to the most current info.

It was also suggested to me that we should speak with the Public Works Roads Maintenance staff as they have some insight about collision history that has involved infrastructure (guiderail damages) which may also assist in the review. I suspect that most of what they can provide will be mirrored in the collision reports, but we would be pleased to meet with them and see if any additional info can be gleaned. If you could point us to the right contact there it would be appreciated.

Brian A. will also have a longer list of needs, and I'll let him chime in too.

68. Mr. Applebee replied the same day.⁷² He wrote:

In addition to what Brian has indicated below, we have a detailed list of data the we'd like to get our hands on that was provided in the proposal. Summarized here, we'd be looking for:

- Full collision summary report, in Excel format, including all collisions in the study area during the study period (opening day 2007 – latest date in file) and containing as many fields as possible (for example, driver action, sequence of events, etc.);
- Collision diagrams indicating location of each collision, if available;
- Motor Vehicle Accident Reports;
- All current and historical traffic volume data available for the study area, including mainline and ramp volumes;
- Design drawings or at a minimum high resolution aerial photography; and
- Information related to any planned work at the study area.

⁷¹ [CIM0010134](#)

⁷² [CIM0010154](#)

We'd be happy to come and meet with you and David for a start-up meeting as soon as you're available to kick this off.

69. On July 8, 2015, Mr. Worrone sent Mr. Malone the purchase order for the 2015

CIMA Report:⁷³

I was able to track down the PO (see attached), you are good to go. I have a few comments in relation to the work plan submission:

- Will you still be able to meet the proposed draft submission date of July 13?
- I'd like to see this review be an extension of the Linc review study limits. The two reviews should "touch" at the top of the hill. This will eliminate any gaps.
- Including the portion of RHVP with median barrier might help us compare operations against areas without
- Is there merit to comparing the Linc/RHVP safety performance against other similar facilities in the area? At the very least in may put into perspective where our facilities rank.
 - Hwy 403 hill, within City limits
 - Hwy 406, curvilinear with reduced speed in an urban setting
 - DVP, municipal parkway with tightly spaced interchanges
 - Hwy 7/85 – Conestoga Parkway, urban high speed facility

As for your requested items:

1. We will get started ASAP on gathering collision and other data requirements
2. As for infrastructure repairs, what we are requesting is to review "Roads" log sheets to see where the crews have been to repair guiderail or hit signs, ect. From my experience at MTO in both Traffic and Maintenance it was common for collision reports to be less than the number of guiderail hits. Typically the field workers had an appreciation of hot spot locations. I'll put you in touch with the Roads crews.

Please proceed with this study as it's a top priority for the City.

70. Mr. Applebee (who was copied on Mr. Worrone's email) replied to Mr. Malone, expressing concern regarding their ability to complete the review by July 13, 2015.⁷⁴

71. Mr. Malone replied to Mr. Worrone the same day.⁷⁵

Regarding completion dates, July 13th will be problematic. As of this moment we don't have any data in hand and it's July 8th today, so realistically the 13th is not possible. That said, we recognize the critical priority of this matter to the City and are ready to apply significant resources to accelerate the work. It should be possible to shorten the timeline

⁷³ [CIM0010132](#)

⁷⁴ [CIM0010153](#)

⁷⁵ [CIM0010150](#)

and we will work to provide you an updated schedule. We have already started to get in contact with your staff for some of the data, so that will help us to pin a delivery date.

Regarding the study limits, we scoped the effort to be starting 1km south of Greenhill. We were planning on dovetailing the assignment with the previous assignment done at the Linc/RHVP interchange, which included assessment north towards Greenhill. To achieve the “touching” of the two assignments (The LINC and the RHVP) we would need updated data for the collisions in the area from the LINC/RHVP Interchange to Greenhill. So to answer the question we could complete the “touching” the 2 studies; the LINC cross median collision and the RHVP cross median collision, but I would need to make a small scope adjustment to bring collision data up to date.

It is our intent to assess, as best we can, the variations in collision history in the sections that do and don't have median barrier. Per the above comment, we will separate out the collision data for the areas, assuming the detail is sufficient.

The comparison to performance of other facilities is more challenging. We attempted this in the LINC study, but were not able to source adequate comparisons readily. We tried by could not find publicly available data on the comparators you suggested. We could dig deeper, but it will mean communicating with other jurisdictions and possibly getting data from them so we can use to build statistics ourselves. That can be a significant exercise. We did not account for that in our scope or costs. Do you want me to work a costing for that effort?

Regarding Maintenance, I agree the actual maintenance is likely more than the reported collisions. That's usually always the case. We won't fudge the actual data based on their input, but they might be able to add some good observations that can only help. We appreciate the contact.

72. On July 10, 2015, Ms. Matthews-Malone emailed Mr. Malone and Sam Capostagno (District Supervisor Roads, District North & After Hours, Roads & Maintenance, Operations, Public Works, Hamilton) under the subject line “Redhill Safety Review”:

Sam, Brian is the consultant that will be undertaking the safety review of the Redhill expressway and I asked him to make sure that he touches base with you as part of their review. His company is being retained by the Traffic gang to do the study and your (and your staffs insight) would be great input into the review as you are often the first responders and almost always at the scene of incidents.

Just wanted to put the two of you in touch.....thanks.⁷⁶

⁷⁶ [HAM0004710_0001](#)

73. Mr. Malone replied, asking Mr. Capostagno for his availability the following Monday to arrange a time to meet. Mr. Capostagno replied on July 13, 2015, advising he was available for a discussion on July 16 or 17, 2015.⁷⁷

74. On July 10, 2015, Ms. Zaskowska emailed Mr. Worrton, attaching various documents in response to CIMA's data requests.⁷⁸ Regarding the RHVP design drawings, she wrote:

Design Drawings: Attached, and please note these 2004 drawing are the only ones available to me/us and I cannot vouch validity to the as-built road. I did confirm with Rodney that there are no other drawing that he is aware of.

75. Mr. Worrton forwarded this email and its attachments to Mr. Malone the same day.⁷⁹

76. On July 13, 2015, Mr. Worrton replied to Mr. Malone's July 8, 2015 email, asking "After you receive the collision data how long will it take to deliver the DRAFT report?"⁸⁰

77. On July 14, 2015 at 9:25am, Mr. White forwarded an email notification advising of a "multi-vehicle collision on the southbound RHVP at Barton Street involving a rolled over tractor trailer."⁸¹ Mr. McCleary emailed Ms. Matthews-Malone, Mr. Paul and Ms. Atkinson advising that the collision resulted in approximately 100 feet of guardrail damage and fuel leaking into the pond.⁸²

⁷⁷ [CIM0010093](#)

⁷⁸ [HAM0042906_0001](#)

⁷⁹ [HAM0042919_0001](#)

⁸⁰ [CIM0010095](#)

⁸¹ [HAM0004725_0001](#)

⁸² [HAM0033446_0001](#)

78. The same day at 11:22 a.m., Mr. White forwarded another email notification regarding a collision: “We have been advised through Fire that we now have a single vehicle roll-over collision on the NB RHVP at King Street. Possible trapped victim.”⁸³

79. On July 14, 2015, Mr. Malone replied to Mr. Worrone’s email regarding the anticipated timeline for receipt of a draft report.⁸⁴ He wrote:

Let me give you an update where we are now:

- Volume data now in hand
- Reviewing collision data we have on file for “southern” end, as was previously provided in the LINC / RHVP Interchange study
- Awaiting updated collision data for that southern end of RHVP
- Awaiting collision data for “northern” end of RHVP.
- Preparing mapping for collision plotting
- Completing field review of site
- Collecting photo and other relevant field data including spot speed data
- Have contacted PW Operations supervisors and are coordinating meeting for later this week or early next week.

We are reallocating resources to this assignment in order to expedite the review.

Our anticipation for provision of a draft report is 4 weeks, August 7th, but that remains contingent on receipt of collision data which, obviously, is critical in the process. We will of course accelerate things as quickly as we can, recognizing the urgency of the request.

80. Mr. Worrone replied to thank Mr. Malone for making the 2015 CIMA Report a priority.⁸⁵ Mr. Malone replied to Mr. Worrone the same day, writing “I fully understand the importance of this issue for the City and are working as quickly as we can to provide our input.”⁸⁶

⁸³ [HAM0024277_0001](#)

⁸⁴ [CIM0010092](#)

⁸⁵ [CIM0010090](#)

⁸⁶ [CIM0010087](#)

81. Mr. White replied to this email, attaching four emails regarding the collisions that occurred that day:⁸⁷

Thanks Brian(s). Appreciate it. After two separate additional serious collisions today (one at King ramp and one at Barton) (see attached reports and links to photos) I anticipate some greater pressure for us to respond to the need to “do something”. The draft report for the Linc and the soon to be completed RHVP safety review will be essential to this process. Thanks again for recognizing the urgency.

BM if your free in two weeks call me (I'm off next week)... It's my turn to buy lunch!

82. Mr. Malone replied to Mr. White's email, writing that CIMA was aware of the collisions, and “the additional pressure that those add to the situation.”⁸⁸

83. Also on July 14, 2015, Mr. Malone emailed Mr. Applebee, attaching a news article about the tractor trailer collision. He wrote: “[p]lease record to the file. It was cross-over collision from what I read.”⁸⁹

84. On July 16, 2015, Mr. Malone wrote to Mr. Capostagno to arrange a call for that day to discuss the 2015 CIMA Report.⁹⁰

85. Mr. Malone emailed Mr. Applebee the following day regarding his call with Mr. Capostagno, informing him that a meeting was scheduled for July 22, 2015 at Wentworth Yard.⁹¹ Giovanni Bottesini (Engineering Trainee, Transportation, CIMA) and Mr. Khaled Hawash (Traffic Engineering, Transportation, CIMA) were to attend this meeting, which was later rescheduled for July 29, 2015.⁹²

⁸⁷ [CIM0010077](#)

⁸⁸ [CIM0010076](#)

⁸⁹ [CIM0010088](#)

⁹⁰ [CIM0010074](#)

⁹¹ [CIM0010072](#)

⁹² [CIM0010049](#)

86. On July 17, 2015, Mr. Cooper sent Mr. Applebee a spreadsheet, titled “rhvp2007-2015”, writing:⁹³

Attached is the EXCEL summary of the collision reports I will be dropping off to you today.

See you at 1:30!

87. On July 24, 2015, Mr. McCleary emailed Mr. Paul and Ms. Matthews-Malone about a collision on the RHVP on July 23, 2015:

Afterhours received a call for a serious accident involving a motorcycle and a car on the N/B RHVP just south of Greenhill. The driver of the motorcycle is in serious condition. Just after police arrived a second accident occurred but not a serious. The RHVP was shut down by police from the Mud St. / Stonechurch exit to Greenhill bridge at 11pm and reopened at 6am. Police stated the accident occurred when the motorcycle approached the car at a high rate of speed and struck the car trying to maneuver around it. During the police reconstruction a car crossed over the median from the south bound lane striking a cruiser. The driver of the car had been involved in a stabbing and was rushed to the hospital with stab wounds in his back. No action was required for the two minor incidents. Quantum was called for fluid cleanup⁹⁴

88. The same day, Mr. Applebee emailed Mr. Cooper about updated collision data for the RHVP:

I see that there was another collision on the RHVP last night involving a motorcycle. Sad to hear, apparently he's critical.

Just wanted to take a second to check on the status of the next set of collisions, if you know.⁹⁵

89. On July 31, 2015, the Spectator published an article advising that the motorcyclist died from injuries sustained in the collision. The article noted that “[s]peed is believed to be a possible factor in the crash, and alcohol has not been ruled out, police said. The investigation is ongoing.”⁹⁶

⁹³ [HAM0024285_0001](#) attaching [HAM0024286_0001](#)

⁹⁴ [HAM0004730_0001](#)

⁹⁵ [HAM0024288_0001](#)

⁹⁶ [RHV0000317](#)

90. Mr. Cooper replied to Mr. Applebee's request for updated collision data on July 24, 2015, attaching a spreadsheet titled "rhvpsouth2007-2015".⁹⁷

91. On July 27, 2015, Mr. Cooper emailed Mr. White (copying Mr. Ferguson and Mr. Worrton).⁹⁸ He provided an update regarding the two ongoing CIMA projects:

I just wanted to give you a quick update on the 2 projects CIMA is currently working on for us.

LINC- Friday July 17th, we met and discussed all the comments we collectively had and they were receptive to those comments. They are re-working the report and will provide an updated version once complete- within a week or 2.

RHVP- all the required data has been provided to CIMA for analysis. We still need to provide them with the recent collisions (3 in total) once we have them from Linda- she is keeping an eye for them and I will have them sent to CIMA once received. These should not hold up the report.

We expect the DRAFT report from them in a couple of weeks, at which time I'll pass along to Dave, Jason and yourself for comments.

Please let me know if you need any further info.

92. Mr. White forwarded this email to Mr. Lupton and Mr. Mater the next day.⁹⁹

93. On July 28, 2015, Mr. Malone made the following note in his notebook:

Brain Hughes

Problem on Red Hill? – Location Needed

Police – Noting Grass High

Along Red Hill¹⁰⁰

⁹⁷ [HAM0024288_0001](#) attaching [HAM0024289_0001](#)

⁹⁸ [HAM0042971_0001](#)

⁹⁹ [HAM0004732_0001](#)

¹⁰⁰ [CIM0022410](#) at image 13

94. On July 28, 2015, Mr. Malone emailed Mr. Applebee regarding comments received from City staff regarding RHVP safety issues:¹⁰¹

Two discussions today with City of Hamilton staff about Red Hill safety issues that might be useful:

- 1) Rafael Sandoval, Bridge/ Structural maintenance project manager
 - a. Comment that there are areas of the Red Hill that have rutting due to truck traffic. This is his observation since he was on site when the truck crashed into the creek last week. He suggests that we review that since it might be important w.r.t. hydroplaning
- 2) Brian Hughes, Manager Cap Rehab and Tech Operations
 - a. Comment that the police complain that grass is too long and it hinders them in collision investigation as they search for parts of cars. Not sure of the value of this information, but he asked that I pass it along.

95. Mr. Hawash advised Mr. Applebee on July 29, 2015, that the items raised would be reviewed during the site visit and meeting with Mr. Capostagno.¹⁰²

96. The same day, Mr. Applebee provided Mr. Cooper with a list of collision reports CIMA wished to review. Mr. Cooper replied that they would provide the reports as soon as possible, along with more recent collision reports.¹⁰³

97. Mr. Cooper sent Mr. Applebee a document containing recent collision reports later that day, writing “[w]e are still working on the list and hope to have them back to you by end of day tomorrow.”¹⁰⁴

98. Mr. Bottesini and Mr. Hawash attended the City for a site visit on July 29, 2015. Videos dated July 30, 2015, which appear to have been captured during this site visit, included comments regarding a section of the roadway having the highest number of wet

¹⁰¹ [CIM0010038](#)

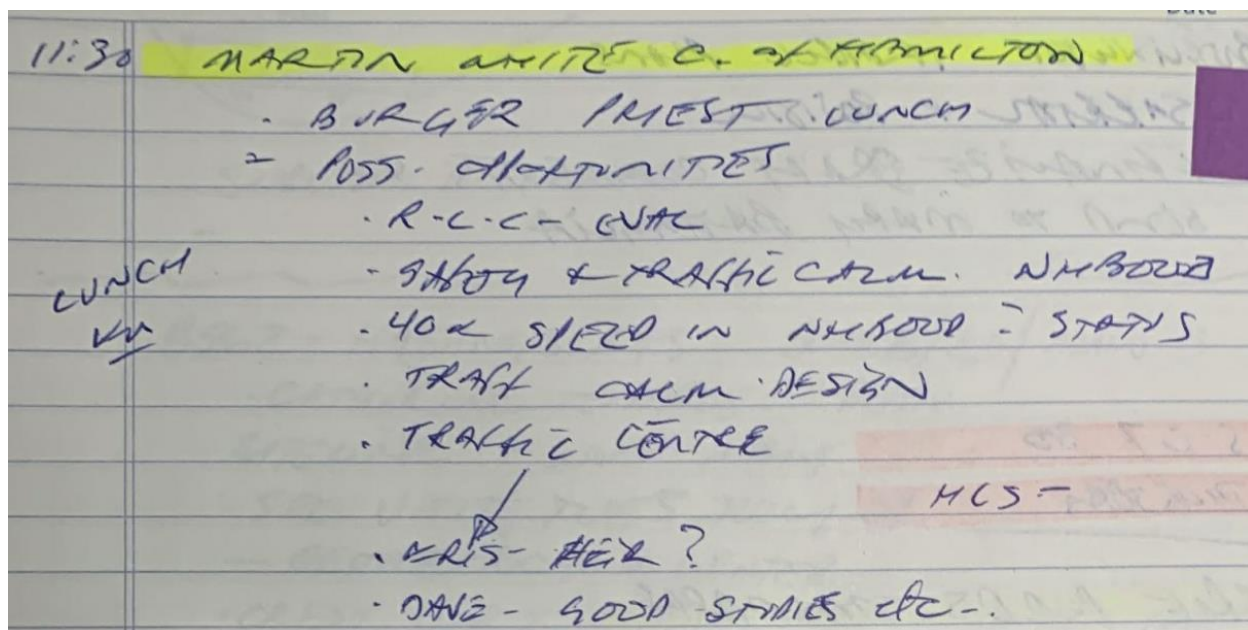
¹⁰² [CIM0010036](#)

¹⁰³ [CIM0010035](#)

¹⁰⁴ [HAM0024290_0001](#) attaching [HAM0024291_0001](#)

weather collisions, a reference to a King Street ramp as being the “most lethal” and that a particular location did not have a “slippery when wet” sign.¹⁰⁵

99. On July 29, 2015, Mr. Malone made the following note in his notebook:¹⁰⁶



100. On July 30, 2015, Rob Merritt (Traffic Signal Technologist, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton) emailed Mr. Ferguson under the subject line “RHVP Safety Report”:¹⁰⁷

Hey pal – Can you forward me that report when you get a chance, and I will just use the same societal costs.

101. Mr. Ferguson forwarded this email to Mr. Worrone, asking him to send Mr. Merritt “a copy of the Linc Report that we are currently looking at.”¹⁰⁸

¹⁰⁵ [CIM0009409](#); and [CIM0009401](#)

¹⁰⁶ [CIM0022410](#) at image 14

¹⁰⁷ [HAM0042977_0001](#)

¹⁰⁸ [HAM0042977_0001](#)

102. Mr. Worrone directed Mr. Merritt to a hard copy of the 2015 CIMA LINC Report ¹⁰⁹

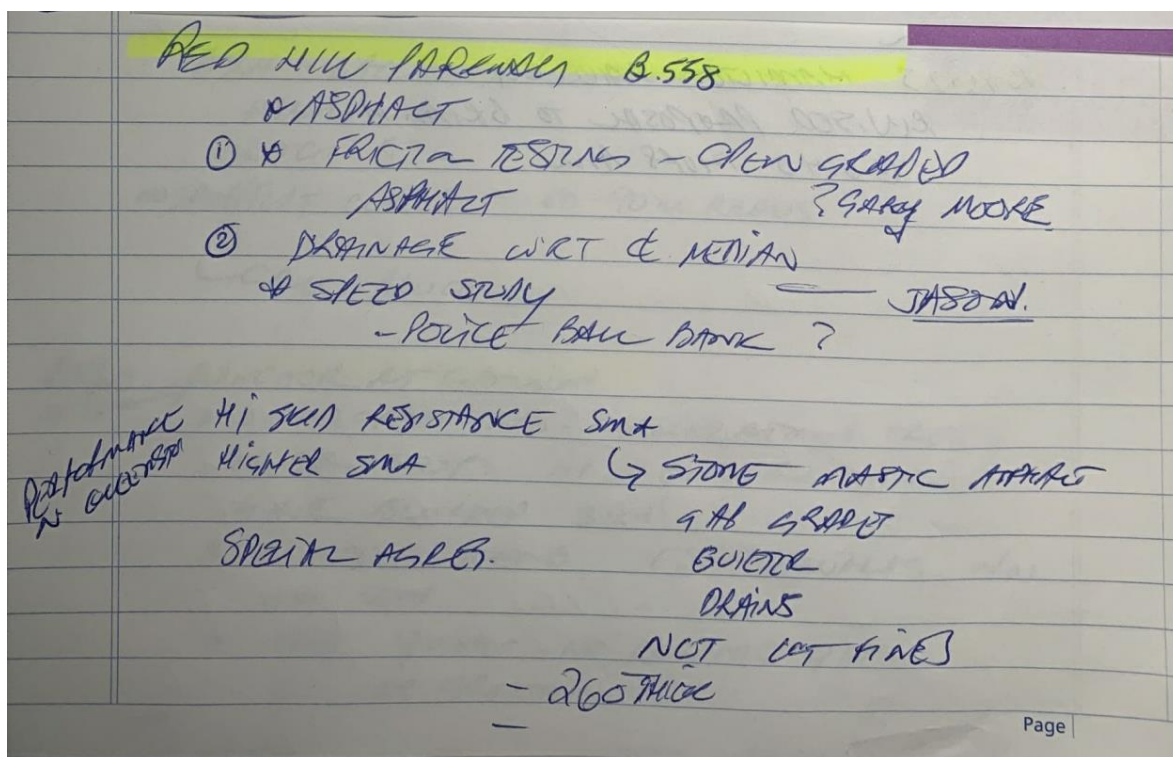
103. Mr. Hawash emailed Mr. Capostagno on July 31, 2015, writing:¹¹⁰

Thank you very much for your help during our site visit to the RHVP. Firsthand inputs from you and Carl will add great value to our analysis and review.

We greatly appreciate your help, and the time you and your crew spent with us for this site visit.

E. August to September 2015

104. On August 5, 2015, Mr. Malone made the following note in his notebook:¹¹¹



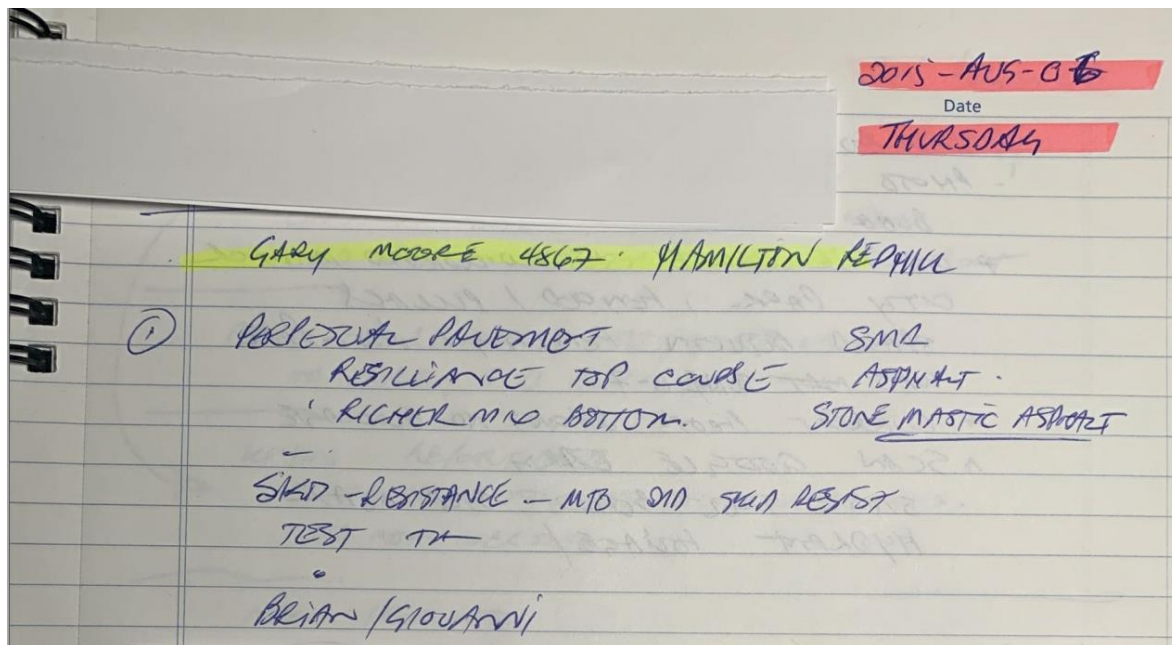
105. On August 6, 2015, Mr. Malone made the following note in his notebook:¹¹²

¹⁰⁹ [HAM0042977_0001](#)

¹¹⁰ [CIM0010026](#)

¹¹¹ [CIM0022410](#) at image 15

¹¹² [CIM0022410](#) at image 16



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

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

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

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

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

¹¹³ [CIM0010018](#) attaching [CIM0010018.0001](#), [CIM0010018.0002](#) and [CIM0010018.0003](#)

¹¹⁴ [CIM0010018](#) attaching [CIM0010018.0001](#), [CIM0010018.0002](#) and [CIM0010018.0003](#)

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

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

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

SB Right Lane 35

SB Left Lane 34

NB Right Lane 36

NB Left Lane 39

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

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

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

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

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

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

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

¹¹⁵ [CIM0010013](#)

¹¹⁶ [CIM0010017](#)

110. On August 7, 2015, at 3:27 p.m., Mr. Malone forwarded his email to Mr. Applebee and Mr. Bottesini.¹¹⁷

111. On August 7, 2015, at 3:34 p.m., Mr. Applebee responded to Mr. Malone's 3:27 p.m. email to Mr. Applebee and Mr. Bottesini and stated that they would mark the information as sensitive.¹¹⁸

112. On August 7, 2015, at 3:50 p.m., Mr. Bottesini responded to Mr. Applebee by email to Mr. Applebee and Mr. Malone:¹¹⁹

... according to the paper the FN improves within a couple of months, and it's been 8 years since the test. May be time for a new test...

113. On August 7, 2015, at 3:52 p.m., Mr. Applebee responded to Mr. Bottesini by email to Mr. Bottesini and Mr. Malone and confirmed that the spreadsheet data appeared to be from 2007.¹²⁰

114. On August 7, 2015, at 7:31 p.m., Mr. Malone responded to Mr. Bottesini by email to Mr. Applebee and Mr. Bottesini:¹²¹

Note that the email mentions testing the city in 2013. Those numbers are higher = better. But that's why I asked if the test is the same.

115. Mr. Malone sent another email, a minute later, indicating that the 2013 friction numbers were in the body of Dr. Uzarowski's email.¹²²

¹¹⁷ [CIM0010012](#)

¹¹⁸ [CIM0010011](#)

¹¹⁹ [CIM0010011](#)

¹²⁰ [CIM0010010](#)

¹²¹ [CIM0010008](#)

¹²² [CIM0010002](#)

116. On August 10, 2015, at 8:12 a.m., Mr. Moore responded to Mr. Malone's questions about the friction testing on the RHVP by email. Mr. Moore marked his comments in red in Mr. Malone's original email:¹²³

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

To make sure I'm understanding correctly, this is the data from the MTO testing in 2007, as well as the MTO report on the subject. Am I correct that FN numbers of less than 30 are below a desired level? **Only MTO could tell you that. They keep this info very close to the vest so it can't be used against them in an action or suit. But that seems to be the case.** Figure 1 of the MTO report shows 30 as what appears to be a threshold. I have also read that FN numbers greater 35 (or higher) in a zone that would suggest skid resistance is not an issue on the pavement. Is that correct? **Don't know.**

Do you have a performance specification for the FN value you strive for? **No, it is not a city specification. The SMA traditionally satisfied all the criteria we were looking for ; lower noise profile, high performance pavement in terms of rut resistance and friction (skid resistance).**

The 2013 testing values certainly look higher. Are they done using the same methodology and tool as the MTO work, and thus could be directly compared? **The testing was done by MTO both times so I would say they are comparable.**

117. On August 10, 2015, at 8:13 a.m., Mr. Malone responded to Mr. Moore by email:

"Thanks very much."¹²⁴

118. On August 10, 2015, at 8:16 a.m., Mr. Malone forwarded Mr. Moore's email to Mr. Applebee, Mr. Bottesini, and Mr. Hawash, copying Mr. Izadpanah:¹²⁵

For your information. Not for public release.

It does not help very much since it appears that the City abdicates responsibility for assessing friction on the pavement surface to the MTO for some reason. We'll need to decide how to deal with this in the report.

¹²³ [CIM0010001](#)

¹²⁴ [CIM0010000](#)

¹²⁵ [CIM0009999](#)

119. On August 27, 2015, Mr. Cooper emailed Mr. Bottesini requesting an estimated date for receipt of the draft 2015 CIMA Report.¹²⁶

120. Mr. Ferguson replied to this email the same day, writing to Mr. Bottesini:¹²⁷

Giovani

Please note, we are required to submit a Public Works Committee report to Sr Management on both the Linc and RHVP by Sept 14th.

I have asked staff to start preparing this report based on the Draft Reports and the recommendations that we would be in agreement with. Any general changes within the report and finalization of the two reports can be done for Oct.

121. Mr. Bottesini replied approximately ten minutes later, advising Mr. Ferguson, Mr. Cooper and Mr. Worrton that they could expect the draft report by September 8, 2015.¹²⁸

122. On September 6, 2015, Mr. Bottesini sent the draft report to Mr. Ferguson, Mr. Cooper and Mr. Worrton, writing:¹²⁹

You can find the RHVP draft report attached.

Please note that Brian Malone would like to discuss the report; if you could please let us know your availability for a phone call, we would appreciate it.

123. On September 11, 2015, Mr. Ferguson emailed Mr. Bottesini and Mr. Cooper regarding the draft report (copying Mr. Worrton, Mr. Malone, Mr. Izadpanah and Mr. Hawash). He wrote:¹³⁰

I had a chance to review the RHVP, a very interesting report in its findings.

A couple of questions, in the report it talks about Lighting and that lighting is actually warranted, talks about the Environmental issues, etc. However I would like to see it included in the recommended Countermeasures. I feel it should be added as a Long Term

¹²⁶ [CIM0009941](#)

¹²⁷ [CIM0009941](#)

¹²⁸ [CIM0009940](#)

¹²⁹ [CIM0010146](#) attaching [CIM0010146.0001](#)

¹³⁰ [HAM0043007_0001](#)

measure and maybe be worded in the sense that the City should undertake discussions with the appropriate Environmental Org to arrange for lighting to be implemented. Something along those lines.

Can you please adjust the PRPMs cost, to put in perspective, the cost for us to complete the section from Greenhill to Dartnall was \$250,000. Granted the time of year, etc had something to do with it, but I would be more comfortable with a higher number than what is proposed. Also the Speed Feedback signs, if you could increase that number to \$100,000.

In the Linc report you mentioned the need for Changeable Message Board Signs, I'm thinking we should also include this for the RHVP. I really see this as our overall Traffic Management Program, but the support outlined in this report is going to help us move that forward quicker. Can you please also include this in the report and recommended measures.

124. Mr. Izadapanah replied to Mr. Ferguson the same day, writing:¹³¹

Please find attached a summary of your comments and our responses for both the Linc and RHVP safety reviews. We greatly appreciate it if you can review the responses to ensure that they are consistent with your expectations before we revise the reports.

125. Mr. Izadpanah's email attached two documents with City comments received regarding the 2015 CIMA Report and 2015 CIMA LINC Report. The document related to the 2015 CIMA Report listed the comments made in Mr. Ferguson's email earlier that day in the "City's Comments" column. That document also provided CIMA's response to these comments. Regarding illumination, CIMA provided the following response:¹³²

A recommendation has been added to the report as following:

9.1.5 Install Continuous Illumination

The collision review found that the proportion of non-daylight collisions is higher than provincial and municipal averages, and a review of MTO's policy and warrant indicated that continuous illumination is warranted in the study area. Therefore, the City could consider installing illumination within the study area. However, the illumination should be installed in consultation with the appropriate environmental organization. The estimated installation cost for providing continuous illumination is \$810,000, providing a B/C of 2.77.

¹³¹ [HAM0043007_0001](#) attaching [HAM0043008_0001](#) and [HAM0043009_0001](#)

¹³² [HAM0043009_0001](#)

126. On September 15, 2015, Ms. Aquila circulated a calendar invitation scheduled for September 22, 2015, with the title “RHVP/LINC - Draft CIMA Report Discussion”.¹³³

127. The same day, Mr. Malone emailed Ms. Aquila, Mr. White and Mr. Ferguson regarding the meeting, writing:¹³⁴

Thanks for the meeting invite for next week. Can I ask if you would be seeking a formal presentation from CIMA at the meeting, or will this be a roundtable discussion of comments and input to the draft reports?

128. On September 16, 2015, Mr. Ferguson replied to Mr. Malone, writing that the “purpose of the meeting is to discuss the report and to provide comments to finalize the reports, I don't believe a formal presentation is required.”¹³⁵

2. Mr. Moore's comments on the CIMA recommendations

129. On September 19, 2015, at 5:05 p.m., Mr. Ferguson emailed Mr. White, copying Mr. Cooper, Mr. Worrone, and Ms. Aquila. Mr. Ferguson attached a draft staff report to the PWC summarizing the 2015 CIMA Report and 2015 CIMA LINC Report to his email:¹³⁶

Please see the attached report that Stephen has completed and I have reviewed and made some changes, I'm sure there will be more to come. 😊 A couple of other items for you to consider

1. We tried to make the report short and concise, we were worried there were so many tentacles to this thing, that the report could have become too big.
2. I have identified in the recommendations that specific Depts that would be responsible for action, however I have not yet circulated to the various departments as I wanted you to review first in case you felt this would cause some issue.
3. Should we make this a City Wide report as the roadway really has impact to all of our residents

¹³³ [HAM0024326_0001](#)

¹³⁴ [CIM0009926](#)

¹³⁵ [CIM0009926](#)

¹³⁶ [HAM0043022_0001](#) attaching [HAM0043023_0001](#)

130. The staff report contained the following recommendations:¹³⁷

- (a) That the subject report be received, and
- (b) That Engineering Services be directed to investigate the High Tension Steel Cable Median Barrier installation and Shield Rock Cuts on the LINC and RHVP and report back to Public Works Committee with a proposed implementation and budget plan.
- (c) That Engineering Services be directed to complete Pavement Friction testing on the RHVP in its entirety at an estimated cost of \$40,000 to be funded from the 2016 Engineering Operating Budget, and
- (d) The Engineering Services be directed to complete the installation of Shoulder Rumble Strips along the LINC at an estimated cost of \$105,000 to be funded from the 2016 Engineering Operating Budget, and
- (e) That Engineering Services be directed to investigate the installation of Illumination on the RHVP and report back to Public Works Committee with a proposed implementation and budget plan, and
- (f) The Forestry be directed to complete the Vegetation Trimming at identified locations in the estimated amount of \$6,500 to be funded from the 2016 Forestry Operating Budget, and
- (g) That Forestry be directed to undertake a yearly review of the LINC and RHVP to commence in the Spring and take appropriate action to ensure all Vegetation is removed, and
- (h) That Roads be directed to undertake the upgrade of guiderail end treatments at identified locations in the estimated amount of \$70,000 to be funded from the 2015/2016 Roads Operating Budget, and
- (i) That Hamilton Police Services be directed to undertake regular speed and aggressive driving enforcement on the LINC and RHVP, and
- (j) That the speed limit on Mud Street between Winterberry Drive and the RHVP mainline, be reduced from 90km/h to 70km/h to align with the designated speed limit on Mud Street, and
- (k) That Traffic Operations and Engineering be directed to complete and implement all other identified Countermeasures in the estimated amount of \$575,000 to be funded from the existing Red Light Camera Reserve account # 112203.

131. On September 22, 2015, Mr. White, Mr. Ferguson, Mr. Worrone, and Mr. Cooper attended a meeting with Mr. Malone, Mr. Bottesini, and Mr. Hawash. Mr. Bottesini prepared notes, which summarized the points discussed at this meeting as follows:

¹³⁷ [HAM0043023_0001](#) at images 1-2

- CIMA summarized findings and recommendations from both reports, outlining the different nature of the issues encountered on each road
- City requested inclusion of discussion, in both reports, related to variable message boards consistent with overall Traffic Management Program
- City indicated Hamilton Police has plans for 24-hour speed enforcement on RHVP
- City asked for clarification on effectiveness of various countermeasures for RHVP, as well as alternatives such as lane line rumble strips, winding road signs, flashing chevron alignment signs, etc. CIMA indicated that rumble strips are likely to create noise issues and may not necessarily address the existing issues. CIMA will look into guidelines for alternative/complementary signage and add to the report as applicable.
- CIMA to provide revised, final report by October 6, 2010.¹³⁸

132. On September 22, 2015, at 8:45 p.m., Mr. Ferguson emailed Mr. Moore under the subject line “RHVP/LINC Report”:¹³⁹

As you are aware, I am just finalizing the RHVP/LINC report and I have included the following recommendations that impact Engineering Services;

- (b) That Engineering Services be directed to investigate the High Tension Steel Cable Median Barrier installation and Shield Rock Cuts on the LINC and RHVP and report back to Public Works Committee with a proposed implementation and budget plan.
- (c) That Engineering Services be directed to identify a funding source to complete Pavement Friction testing on the RHVP in its entirety at an estimated cost of \$40,000, and
- (d) The Engineering Services be directed to identify a funding source to complete the installation of Shoulder Rumble Strips along the LINC at an estimated cost of \$105,000, and
- (e) That Engineering Services be directed to investigate the installation of Illumination on the RHVP and report back to Public Works Committee with a proposed implementation and budget plan, and

C and D I see as works to take place, B and E I believe will be long term possibilities.

Are you ok with the recommendations or is there other wording you would like?

¹³⁸ [CIM0009288](#)

¹³⁹ [HAM0000649_0001](#)

133. On September 22, 2015, Mr. Ferguson emailed the recommendations in the 2015 CIMA Report and 2015 CIMA LINC Report that would involve other Public Works Departments to their respective Directors.¹⁴⁰

134. On September 23, 2015, at 8:23 a.m., Mr. Moore responded by email to Mr. Ferguson, copying Mr. Mater and Jennifer DiDomenico (Manager, Corporate Service Delivery Review, Financial Planning & Policy, Corporate Services, Hamilton):¹⁴¹

Dave, sorry I wasn't aware! I need to see it and it needs to be discussed at DMT or at least with John, Gerry and myself before it goes, but in any event here's my comments.

1. You can take Engineering Services off every line. We don't do investigations we do programming, design and tender and construction supervision

2. What is friction testing going to tell you if, you don't have anything to compare it to. There's no provincial data base or guideline. The MTO will never discuss this with you because it opens up an entire line of liability on every road.

3. With regard to rumble strips. Our previous information from industry was that you really need to put these in fresh asphalt not old asphalt. The shoulder is the original pavement from 1997, if you start milling you could do damage to the shoulder integrity. We discussed this when we were doing the LINC overlay in 2012, it would have required and additional 0.6m of shave and pave along the entire length of the LINC in both directions. Not affordable or required. Milling of existing pavement should be investigated further but I think your number is off by about \$500K. If it is possible, then if you want rumble strips, say so, and direct the GM of PW to identify possible funding in up-coming budget submissions.

4. We have said over and over, illumination of the Red Hill or Linc is never going to happen so stop asking. The approval was based on no illumination for environmental reasons, it is unaffordable, un-sustainable and un-necessary. It would be a \$8-12M project plus protection(barriers, guide rail) and then the maintenance costs.

135. On September 23, 2015, at 8:32 a.m., Mr. Ferguson responded by email to Mr. Moore, copying Mr. Mater and Ms. DiDomenico:¹⁴²

Thanks Gary,

Once I have the reports finalized we will make sure they are circulated.

¹⁴⁰ [HAM0000659_0001](#); and [HAM0000658_0001](#)

¹⁴¹ [HAM0024337_0001](#)

¹⁴² [HAM0024337_0001](#)

136. On September 23, 2015, at 8:40 a.m., Mr. Mater responded to Mr. Ferguson by email, copying Charlene Hands-Lourie (Administrative Assistant to the Director of Corporate Assets & Strategic Planning, Corporate Assets & Strategic Planning, Public Works, Hamilton):¹⁴³

Fegy, we should sit down to review these please. Char please find some time for Dave, Martin Geoff and I to review.

137. On September 23, 2015, at 9:02 a.m., Mr. Ferguson responded by email to Mr. Mater, copying Ms. Hands-Lourie:¹⁴⁴

Yes. Diana is actually arranging for this to review and discuss.

138. On October 7, 2015, Mr. Izadpanah emailed Mr. Worrone, Mr. Ferguson, and Mr. Cooper, attaching copies of the 2015 CIMA Report and 2015 CIMA LINC Report.¹⁴⁵ He wrote:

Please find attached the final reports for the Linc and RHVP review projects.

It was a pleasure working with all of you on these projects.

If you have any questions or comments, please do not hesitate to contact me.¹⁴⁶

F. October 2015

139. On October 20, 2015, Mr. Malone, Mr. Bottesini, and Mr. Hawash from CIMA met with Mr. Moore, Mr. Ferguson, and Mr. White from the City to discuss the 2015 CIMA Report and 2015 CIMA LINC Report. Mr. Bottesini prepared a Meeting Summary, which included the following:

¹⁴³ [HAM0024337_0001](#)

¹⁴⁴ [HAM0024337_0001](#)

¹⁴⁵ [HAM0000670_0001](#) attaching [HAM0000671_0001](#) and [HAM0000672_0001](#)

¹⁴⁶ [HAM0000670_0001](#)

- BM summarized findings and recommendations from RHVP report
- Mr. Moore stated that friction testing was conducted recently following standards and resulted satisfactory
- CIMA+ clarified that actual weather conditions occurring on the RHVP may exceed typical testing conditions and more rigorous testing could be undertaken in order to rule out pavement friction as a problem. Speeding is definitely a contributing factor but the contribution of pavement should be ruled out.
- Issues with illumination discussed (cost + environmental restrictions)
- Address speed and wet surface first and re-evaluate benefit of median barrier (overview provided on short term measures)¹⁴⁷

140. On October 20, 2015, at 3:59 p.m., Mr. Bottesini emailed Mr. Ferguson, copying Mr. Cooper, Mr. Worrone, Mr. White, Mr. Malone, Mr. Hawash, and Mr. Izadpanah. The email included two attachments: “Final Draft” versions of 2015 CIMA Report and 2015 CIMA LINC Report. The email stated:¹⁴⁸

As discussed in our meeting today, please find attached the “Final Draft” for internal circulation.

Please let us know the next steps at your earliest convenience.

141. On October 20, 2015, at 4:55 p.m., Mr. White forwarded Mr. Bottesini’s email, including the attachments, to Mr. Mater, Mr. Lupton, and Mr. Moore:¹⁴⁹

Gents the latest rev of the final draft. Thanks

142. On October 21, 2015, Dr. Uzarowski wrote the following note in his notebook: “d) Hamilton – meet.”¹⁵⁰ On October 23, 2015, Dr. Uzarowski made a note in his notebook: “Gary Moore.”¹⁵¹

¹⁴⁷ [CIM0009287](#)

¹⁴⁸ [HAM0000683_0001](#) attaching [HAM0000684_0001](#) and [HAM0000685_0001](#)

¹⁴⁹ [HAM0000683_0001](#)

¹⁵⁰ [GOL0007409](#) at 3

¹⁵¹ [GOL0007409](#) at 4

G. Reports of accidents in wet weather conditions (September to October 2015)

143. On September 29, 2015, at 3:10 p.m., Mr. Ferguson emailed Mr. White, Mr. Cooper, and Mr. Worrton under the subject line “RHVP”, copying Mr. Lupton:¹⁵²

Truck crash on RHVP. NB

144. On September 29, 2015, at 3:20 p.m., Mr. White responded to Mr. Ferguson, Mr. Cooper, and Mr. Worrton, copying Mr. Lupton:¹⁵³

Wet conditions.... again....

145. On September 29, 2015, at 3:24 p.m., Mr. Ferguson responded to Mr. White, Mr. Cooper, and Mr. Worrton, copying Mr. Lupton:¹⁵⁴

Yes and same area. King St

146. On October 3, 2015, Mr. Capostagno emailed Mr. McCleary under the subject line “Red Hill”:¹⁵⁵

Just wanted to give you the heads up. We’ve had a number of accidents on the expressway today. I also received a call about black ice on the Queenston ramp and the

Temp is plus 10 C road was just wet and slippery and there was no oil or anything. This is an on going issue in bad weather conditions the police are asking for City supervisors Name on occasion recently.

147. On October 13, 2015, Mr. McCleary replied to Mr. Capostagno by email, copying Ms. Matthews-Malone and Robert Del Conte (District Supervisor - Roads, District North, Roads & Maintenance, Operations, Public Works, Hamilton):¹⁵⁶

Thanks Sam,

¹⁵² [HAM0004761_0001](#)

¹⁵³ [HAM0004761_0001](#)

¹⁵⁴ [HAM0004761_0001](#)

¹⁵⁵ [HAM0024412_0001](#)

¹⁵⁶ [HAM0024412_0001](#)

Police can ask for the name of attending Supervisor, we document issues and road temperatures in our route inspections. They are just covering the bases of their reports

148. On October 24, 2015, at 7:17 p.m., Mr. Capostagno emailed Mr. McCleary under the subject line "RED HILL EXPRESSWAY".¹⁵⁷ He wrote:

Just to give you the heads up we had a number accidents on the red hill today because of the road conditions a number of them were pretty serious.

We used the sweeper and the whole crew for a good part of the afternoon its almost 730pm and there are still issues on the Red hill. Not much we can do

Except clean it up they have to do something this happens every time it rains the police and everyone else responding is getting really fed up with this it is a major concern for police and anyone that responds and they are starting to voice their frustrations and they are starting to blame the city and I'm getting blamed for it and there is nothing I can do.

149. On October 26, 2015, at 6:34 a.m., Mr. McCleary forwarded Mr. Capostagno's email to Ms. Matthews-Malone:¹⁵⁸

Once again Roads is getting blamed by Police for RHVP heavy rain and SPEED a factor this roadyway should be reduced from 90km per hour to 80km and Police enforced. When crews were on scene cars were going past crews and police at an estimated 120km per hour and Police were not getting after those cars but blaming roads staff!!

H. Mr. Moore's comments on the 2015 CIMA Report

150. On October 27, 2015, at 9:10 a.m., Mr. Moore emailed Mr. Ferguson his comments on the 2015 CIMA LINC Report.¹⁵⁹ At 10:04 a.m., Mr. Ferguson forwarded Mr. Moore's email to Mr. Mater, Mr. Lupton, and Mr. White.¹⁶⁰

151. On October 28, 2015, at 11:00 a.m., Mr. Lupton responded to Mr. Ferguson, Mr. Mater, and Mr. White by email:¹⁶¹

Thanks David.

¹⁵⁷ [HAM0008847_0001](#)

¹⁵⁸ [HAM0008847_0001](#)

¹⁵⁹ [HAM0004770_0001](#) attaching [HAM0004771_0001](#)

¹⁶⁰ [HAM0024505_0001](#)

¹⁶¹ [HAM0024505_0001](#)

Let's ensure we provide Gary responses to his questions or comments.

Taking from one of Gary's comments from the meeting, it's sometimes how we say it, helps put things into the right context. We need to consider liability risk to the City with what we say and how we say it. For the report (if we don't have it already) we will need to comment on what we have already done as far as enhancements to the RHVP and Linc the last few years.

Any concerns?

152. On October 28, 2015, at 12:18 p.m., Mr. Ferguson responded to Mr. Moore by email:¹⁶²

Do you have any comments on the RHVP report? Or are they general and similar in nature to the Linc comments?

153. On October 29, 2015, at 4:39 p.m., Mr. Moore responded to Mr. Ferguson by email, attaching his comments on the 2015 CIMA Report:¹⁶³

Generally the same. Especially in the calculation of costs and benefits. But's there's more. Here it is.

154. Mr. Moore's proposed revisions to the 2015 CIMA Report included the deletion of the following sentence from subsection 5.4.1 'Slippery When Wet' Signs under subsection 5.4 Signage, in section 5. Field Investigation:¹⁶⁴

Given the existing proportion of wet pavement collisions (50%), oversize SLIPPERY WHEN WET signs (Wc-105) should be used in the study area.

155. Mr. Moore included a comment box in relation to this proposed revision, in which he stated:¹⁶⁵

absolutely not. The sign should say drive according to road conditions. The road is not slipperier when wet any more than any other road. the geometrics and the increased speed profile make it seem like it is slippery when wet. I can't increase the skid resistance!

¹⁶² [HAM0000689_0001](#)

¹⁶³ [HAM0000689_0001](#)

¹⁶⁴ [HAM0000690_0001](#) at image 34

¹⁶⁵ [HAM0000690_0001](#) at image 34

156. Mr. Moore commented as follows with respect to the section of the 2015 CIMA Report titled 6. Illumination Review:¹⁶⁶

There is no sense at looking at the warrant for something that can't and won't be considered.

157. Mr. Moore commented on subsection 7.1.2.1 Perform Friction Testing, under section 7. Determination of Potential Countermeasures, as follows:¹⁶⁷

7.1.2 Pavement Friction

7.1.2.1 Perform Friction Testing

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

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

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

gmoore Oct 29 Reply X

There is no basis, nothing to compare to and no other agency in Ontario including the MTO doing this! It means absolutely nothing, except proving potential exposure to legal actions and confusion!

158. The text of subsection 7.1.2.1 Perform Friction Testing stated:¹⁶⁸

7.1.2.1 Perform Friction Testing

Pavement friction plays a vital role in keeping vehicles on the road by enabling the drivers to control/manoeuvre the vehicle in a safe manner (in both the longitudinal and lateral directions). Several methods and devices are available for measuring pavement frictional characteristics. Pavement surface texture is influenced by many factors, including aggregate type and size, mixture proportions, and texture orientation and details. Texture is defined by two levels: microtexture and macrotexture. Currently, there are no direct

¹⁶⁶ [HAM0000690_0001](#) at image 37

¹⁶⁷ [HAM0000690_0001](#) at image 41

¹⁶⁸ [HAM0000690_0001](#) at image 41

means for measuring microtexture in the field. However because microtexture is related to low slip speed friction, it can be estimated using a surrogate device. Macrotexture is characterized by the mean texture depth and the mean profile depth; several types of equipment are available for measuring these indices.

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

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

159. Mr. Moore included a comment box in relation to this proposed revision, in which he stated:¹⁶⁹

There is no basis, nothing to compare to and no other agency in Ontario including the MTO doing this! It means absolutely nothing, except proving potential exposure to legal actions and confusion!

160. Mr. Moore commented on subsection 9.1.4 of the 2015 CIMA Report in section 9. Recommendations, writing: "I don't have any frame of reference to pass or fail this against":¹⁷⁰

¹⁶⁹ [HAM0000690_0001](#) at image 41

¹⁷⁰ [HAM0000690_0001](#) at image 54

9.1.4 Conduct Pavement Friction Testing

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

I don't have any frame of reference to pass or fail this against.

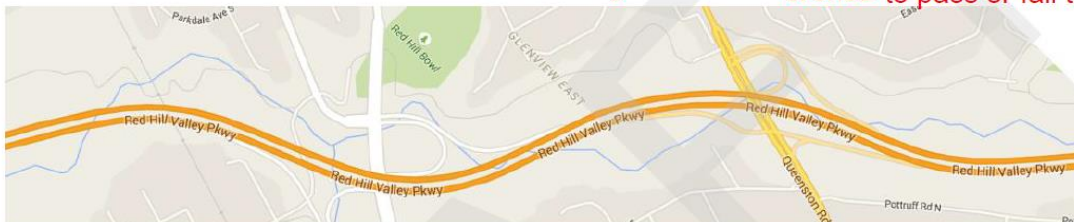


Figure 33: Critical RHVP section for friction testing

161. Subsection 9.1.4 of the 2015 CIMA Report stated:

9.1.4 Conduct Pavement Friction Testing

In order to determine whether low pavement friction may be contributing to collisions (especially wet surface), the City should consider conducting pavement friction tests under normal conditions as well as under typical wet pavement conditions encountered on the RHVP. Special focus should be given to the curves near the King Street and Queenston Road interchanges (Figure 33). The estimated cost to conduct friction testing is \$40,000. Depending on the test results, the City will be able to determine if further action is required.¹⁷¹

162. Mr. Moore commented on the following paragraph in subsection 7.1.4.1 'Slippery When Wet' and 'Bridge Ices' Signs in section 7. Determination of Potential Countermeasures as follows:¹⁷²

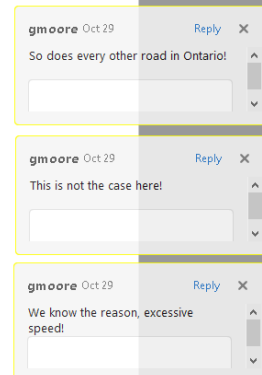
¹⁷¹ [HAM0000690_0001](#) at image 54

¹⁷² [HAM0000690_0001](#) at image 42

7.1.4 Signs and Delineation

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

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



163. The text of this paragraph in subsection 7.1.4.1 stated:¹⁷³

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

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

164. Mr. Moore's three comments on this section of the 2015 CIMA Report were as follows:¹⁷⁴

So does every other road in Ontario!

This is not the case here!

¹⁷³ [HAM0000690_0001](#) at image 42

¹⁷⁴ [HAM0000690_0001](#) at image 42

We know the reason, excessive speed!

165. On October 29, 2015, at 5:36 p.m., Mr. Ferguson forwarded Mr. Moore's email, with Mr. Moore's proposed revisions to the 2015 CIMA Report attached, to Mr. White, Mr. Lupton, and Mr. Mater.¹⁷⁵

166. On October 30, 2015, at 9:58 a.m., a member of the public forwarded Mr. Murray an exchange among herself, Mr. Ferguson, and Mr. Worrton under the subject line "Collisions on The Lincoln Alexander Parkway and The Red Hill Valley Parkway".¹⁷⁶ She wrote:

We have communicated a couple of times on City issues.

My husband and I have deep roots in the City. We have been in Hamilton, longer than anyone on Council. I remember back in the 1950's when the Red Hill Parkway was first discussed. Once built, we would drive the Parkway frequently. Now that has changed, we only use the Parkway and LINC when absolutely necessary. Yes, we have had a few misses, because of careless drivers and drivers who exceed the speed limit. So, I have taken a great interest in the safety of the Parkway and the LINC.

What happened on October 25 with the rain and the Parkway closing is just another example that something needs to be done sooner than later. I understand that reviews and studies must take place and these take time. The City must do its due diligence and a study by CIMA+ a very reputable firm in road safety is underway.

As you can see from the emails below starting in May 2015 from Scott Duvall's office to Jason Worrton and David Ferguson a report is coming. At first, "safety reports will be presented to Public Works Committee with recommendations, by December 7, 2015" reported from Scott Duvall's office. Now "we expect the report will be sent to Public Works Committee early in 2016" as per the email from David Ferguson, October 29th, 2015. This timeline is very vague and unclear.

Of course, it was conveyed to me that without the Report nothing can be done and I understand you need a plan, prior to implementation. Chris, by the time the Report is presented to Public Works then goes through the usual process, it could be several more months or a year. But, of course you know all of this, you work in this environment every day! As I stated below, "More accidents will happen and more people could be injured or worse".

So, why am I writing! When I operated my business, my clients would never accept, "Early 2016", from me; they expected firm deadlines. In fact, I produced a business plan of deliverables including dates. I find it hard to believe that the City does not have this type of

¹⁷⁵ [HAM0000689_0001](#)

¹⁷⁶ [HAM0004779_0001](#)

document. Therefore, when does Public Works realistically expect to hear from CIMA+, then what is the procedure and timelines after Public Works has complete their review?

If you could help me achieve these answers, I would be very grateful. Many thanks,

167. On October 30, 2015, at 12:11 p.m., Mr. Murray responded to the member of the public by email, copying Mr. Ferguson:¹⁷⁷

I understand your comment and will see if Dave can put a finer point on the report deadlines.

168. On October 30, 2015, at 1:43 p.m., Mr. Ferguson relied to Mr. Murray alone:

I will discuss with our Sr Team, we had a meeting last week with John Mater and Gary Moore, the resident is correct, the report was to be December, but has been held up based on some concerns from Gary in the way the report is written.

I suspect it would be safe to say February 2016, but I will discuss with Martin, John and Geoff.¹⁷⁸

169. On October 30, 2015, at 1:44 p.m., Mr. Ferguson forwarded Mr. Murray's email to Mr. Mater, Mr. White, and Mr. Lupton.¹⁷⁹

170. On October 30, 2015, at 2:04 p.m., Mr. Mater responded to this email, copying Mr. Moore and Ms. Hands-Lourie:¹⁸⁰

In order to meet a December timeframe, the report needs to be to me by the 9th and to Gerry by the 16th, Charlene is working to arrange a meeting for Gary and I with Gerry. I know you gents are working on the draft cover report for Gary and I to review with Gerry. Let's but a fire under this so we can hit the Dec 7th meeting.

I believe Char has asked that we have the report in draft for next week.

171. On October 30, 2015, at 2:14 p.m., Mr. White forwarded Mr. Mater's email to Mr. Ferguson and Mr. Lupton:¹⁸¹

¹⁷⁷ [HAM0004779_0001](#)

¹⁷⁸ [HAM0058637_0001](#)

¹⁷⁹ [HAM0004779_0001](#)

¹⁸⁰ [HAM0004779_0001](#)

¹⁸¹ [HAM0004779_0001](#)

Dave make those minor changes in the rec section to read the actions are by the GM PW then send it to me again Cc Geoff.

Geoff we had a draft already written. It's in the binder I gave John right in the front. I emailed it to you also. Dave is making some changes in the recs and we will resend it to you. After that I'm not sure what to say. It recs the guiderail and lighting review and asphalt testing. All the things Gary argues against. Despite that I believe them to be prudent and required that we do this ethically and technically responsibly. We can talk after Dave sends it to us. Thanks.

Frankly I think Chris Murray should be in on the discussions. He built the roadways. We can prevent some of these accidents from occurring and we should take action. Thanks.

I. Staff summary of 2015 CIMA Report

172. On November 2, 2015, at 8:48 p.m., Mr. Ferguson emailed Mr. Mater, Mr. Lupton, and Mr. White under the subject line "Revised RHVP/LINC report". Mr. Ferguson attached a draft copy of the staff report summarizing the 2015 CIMA Report and 2015 CIMA LINC Report to his email:¹⁸²

Further to our discussion today, I have modified the report to make it a little more general, but have identified the short to long range game plan, with a brief explanation of holding off on the Long Term (barrier/lighting), based on the implementation of the short-term counter measures and what their potential positive impact could be.

173. On November 4, 2015, at 12:36 p.m., Mr. Ferguson responded by email to Mr. Murray and the member of the public under the subject line "Re: Collisions on The Lincoln Alexander Parkway and The Red Hill Valley Parkway", copying Mr. Mater, Mr. Lupton, and Mr. White:¹⁸³

I have reviewed the report with our Sr Management Team and it has been determined that the report will be going to the December 7th Public Works Committee meeting.

174. On November 4, 2015, at 1:55 p.m., the member of the public responded to Mr. Ferguson:¹⁸⁴

¹⁸² [HAM0024538_0001](#) attaching [HAM0024539_0001](#)

¹⁸³ [HAM0043147_0001](#)

¹⁸⁴ [HAM0043147_0001](#)

Thank you David very much for your timely reply.

Once Public Works receives the report, what is the process going forward, such as when the Councillors will receive the document. Thank you, I will wait for your reply.

175. On November 4, 2015, at 2:16 p.m., Mr. Ferguson responded to the member of the public by email:¹⁸⁵

The report will outline recommended Options as per the Consultant's report, pending approval from Public Works Committee, it will then proceed to City Council for final approval which I believe is on December 9th. Once approved, staff will then prepare a work plan for the implementation of the recommended options. I would estimate that the first of the recommended options would begin to be installed in April of 2016 and carry through until the end of the year and possibly into early 2017.

The Councillors receive the report prior to the meeting as part of their Agenda package, which I believe is approximately one week before the meeting date.

176. On November 4, 2015, at 2:19 p.m., Mr. White responded to Mr. Ferguson alone by email:¹⁸⁶

Did Gerry John and Gary approve the last draft of the report Dave?

177. On November 4, 2015, at 7:19 p.m., Mr. Ferguson responded to Mr. White by email:¹⁸⁷

Yes and No, lets say I have some work to do tonight and tomorrow, I will send to you once I update it again, lol

178. On November 10, 2015, Ms. Aquila emailed Courtney Harbin (Administrative Assistant to the Director of Energy, Fleet and Traffic; Energy, Fleet and Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), copying Mr. Lupton, Mr. White, and Mr. Ferguson. Under the subject line "LINC & RHVP Safety Review Report", she wrote:¹⁸⁸

¹⁸⁵ [HAM0043147_0001](#)

¹⁸⁶ [HAM0043147_0001](#)

¹⁸⁷ [HAM0043147_0001](#)

¹⁸⁸ [HAM0052371_0001](#)

Martin has reviewed the report and is in agreement. Please have Geoff review/approve. Note: Section under legal implications – Geoff to comment after discussion with Legal.

Also attached are two appendices (A& B) along with tracking form.

179. Mr. Lupton replied later that day, writing:¹⁸⁹

David – please make the following changes to the Appendices... need this asap please.

App. A.

- Title > Short-Term Safety Options for Consideration and Estimated Costing for the LINC & RHVP
- Remove medium term options and combine the table into one
- Remove the Conduct Speed Enforcement (we have a separate recommendation for that)
- Add total
- Add total with 25% Contingency.

App. B

- Title > Medium and Long Term Safety Options for Consideration and Estimated Costing for the LINC & RHVP
- Add totals
- Add totals with 25% Contingency.

180. At 3:29 p.m. that day, Mr. Ferguson responded, writing: “Please see attached.” Mr. Ferguson attached revised versions of the appendices to the staff report to his email.¹⁹⁰

181. On November 11, 2015, Mr. Lupton emailed Debbie Edwards (Assistant City Solicitor, Legal Services, Legal & Risk Management Services, Corporate Services,

¹⁸⁹ [HAM0033603_0001](#)

¹⁹⁰ [HAM0033603_0001](#) attaching [HAM0033604_0001](#) and [HAM0033605_0001](#)

Hamilton), copying Mr. Mater. He wrote: “Hi Debbie... as discussed. Can you please have a look at the report and advise if you see any red flags.”¹⁹¹

182. Ms. Edwards replied later that day, adding Lindsay Picone (Solicitor, Legal Services, Legal & Risk Management Services, Corporate Services, Hamilton) to the email chain. She wrote: “I am going to be out of the office until Tuesday so in my absence, I have asked Lindsay Picone to take a look at the draft report. I am expecting that you need to get this report to Gerry Davis for Monday. If I am wrong regarding timing, please let us know.”¹⁹²

183. On November 12, 2015, at 10:12 p.m., Mr. Ferguson emailed Mr. Malone.¹⁹³ Mr. Ferguson attached a revised version of the staff report summarizing the 2015 CIMA Report and 2015 CIMA LINC Report to his email:

So further to my call, attached is the report we have compiled for PWC.

With respect to the reports, we are asking that the wording that states Recommendations, be changed to Option for Consideration.

Also, could you add a blurb that talks about how the short term options may address the overall collision patterns that are occurring and therefore potentially reducing the overall cost benefit ratio for the need of barriers and lighting.

You will also see in the attachment I have identified short term options and long term options. Could the reports have a similar layout?

I think that is it. I'm in the office tomorrow if you want to discuss further.

184. The staff report attached to Mr. Ferguson’s email contained the following recommendations:

(a) That the General Manager of Public Works be directed to implement the short-term safety options for consideration identified in Appendix A and that these options be

¹⁹¹ [HAM0061946_0001](#)

¹⁹² [HAM0061946_0001](#)

¹⁹³ [CIM0009879](#) attaching [CIM0009879.0001](#)

funded from the Red Light Camera Reserve (112203) and that staff be directed to report back to Public Works Committee on the results;

(b) That the design with request to the medium and long term items in Appendix B be deferred pending the outcome of the Transportation Master Plan (TMP) update;

(c) That Hamilton Police Services be requested to undertake regular speed and aggressive driving enforcement on the Lincoln M. Alexander Parkway (LINC) and the Red Hill Valley Parkway (RHVP) and that \$250,000 per annum be allocated to partially fund or offset the cost of this initiative from the Red Light Camera Reserve (112203) for a period of three years and that the Police be directed to report back to Council annually on the results;

(d) That a copy of PW15XXX report be provided to the Joint Stewardship Board of the Red Hill Valley for information.¹⁹⁴

185. On November 13, 2015, at 3:48 p.m., Mr. Malone responded to Mr. Ferguson and requested the appendices referenced in the staff report.¹⁹⁵

186. On November 13, 2015, at 4:30 p.m., Mr. Ferguson emailed Mr. Malone the two appendices referenced in the staff report.¹⁹⁶

187. Appendix A was titled “Short-Term Safety Options for Consideration and Estimated Costing for the LINC & RHVP”.¹⁹⁷ Appendix A included “Install Oversized Speed Limit Signs”, “Install “Slippery When Wet” Signs”, and “Conduct Study to Install Queue End Warning Systems” as short term options (0-2 years).

188. Appendix B was titled “Medium and Long Term Safety Options for Consideration and Estimated Costing for the LINC & RHVP”.¹⁹⁸ Appendix B included “Conduct Pavement Friction Testing” as a medium term option (2-5 years). The estimated costs of the pavement friction testing was listed at \$40,000.

¹⁹⁴ [CIM0009879.0001](#) at image 1

¹⁹⁵ [CIM0009878](#)

¹⁹⁶ [CIM0009875](#) attaching [CIM0009875.0001](#) and [CIM0009875.0002](#)

¹⁹⁷ [CIM0009875.0001](#)

¹⁹⁸ [CIM0009875.0002](#)

189. On November 13, 2015, Ms. Hands-Lourie emailed Ms. Picone and Mr. Lupton under the subject line “LINC/RHVP Report”. She wrote: “Attached is the latest version of the LINC/RHVP report. If you require any changes, please mark-up the attached document and scan and return to me.”¹⁹⁹

190. On November 16, 2015, Ms. Picone replied, writing:²⁰⁰

Hi Geoff,

We took a quick look at the report and didn't see any major red flags. Below are a few minor suggestions/comments:

- Recommendation (a):
(a) That the General Manager of Public Works be directed to implement the short-term safety options for consideration identified in Appendix A and that these options be funded from the Red Light Camera Reserve (112203) and that staff be directed to report back to Public Works Committee on the results;
- Recommendation (c):
(c) That a request be made to the Hamilton Chief of Police and the Hamilton Police Services Board Hamilton Police Services be requested to undertake regular speed and aggressive driving enforcement on the Lincoln M. Alexander Parkway (LINC) and the Red Hill Valley Parkway (RHVP) and that they be requested to report back to Council annually on the results;
- Page 2 & 3 Executive Summary: The criteria for “median related collisions” for the LINC and RHVP seem to differ - “involved vehicles striking, mounting or crossing the centre median” for the LINC and “involved vehicles hitting guide rails/concrete barriers, resting on the grass median, or crossing over to the opposite direction” for the RHVP). Not sure if design or timing of the studies is the reason for this but you may want to consider providing an explanation.
- Page 3: The last bullet under proposed options for potential improvements: “Eastbound and Westbound along entire length of the LINC” does not identify a specific improvement.
- Page 3-4: Illumination for the RHVP – the report refers to the study or “warrant analyses [should be analysis] which concluded that lighting would be warranted for this type of roadway”. I think end to end illumination is identified as a potential long term option. However, given that the study found that lighting is warranted for this type of roadway, perhaps you should give a more comprehensive explanation as to why nothing is being done in the short term and why it is being deferred as a long term option.

Regarding the CIMA reports – would suggest that you share with Risk Management a copy of these reports.

191. Mr. Lupton replied later that day, adding Mr. Ferguson to the email chain. He wrote: “David. Please review Lindsay comments and forward the appropriate changes to Char”.²⁰¹

192. On November 20, 2015, at 9:37 a.m., Mr. Hawash emailed Mr. Malone, copying Mr. Bottesini and Mr. Izadpanah. Mr. Hawash attached revised copies of the 2015 CIMA Report and 2015 CIMA LINC Report to his email.²⁰²

¹⁹⁹ [HAM0061955_0001](#)

²⁰⁰ [HAM0061955_0001](#)

²⁰¹ [HAM0061955_0001](#)

²⁰² [CIM0009867](#) attaching [CIM0009867.0001](#) and [CIM0009867.0002](#)

Attached are the two reports for the City of Hamilton. I highlighted the sections we changed with yellow.

Please let us discuss after your review.

193. On November 20, 2015, at 10:31 a.m., Mr. Malone responded to Mr. Hawash copying Mr. Bottesini and Mr. Izadpanah. Mr. Malone attached further revised copies of the 2015 CIMA Report and 2015 CIMA LINC Report to his email:²⁰³

Overall good. Just a few comments

Call me if we need to discuss. I'd like to get this to Dave F today.

194. Mr. Hawash commented on the section of the revised 2015 CIMA Report titled "9.2 Summary Table" in which he had changed the timeline for "Conduct Pavement Friction Testing" from a "Short Term" to "Medium" term countermeasure:²⁰⁴

I don't agree with the City, let us discuss

195. On November 20, 2015, at 3:41 p.m., Mr. Hawash emailed Mr. Ferguson, copying Mr. Malone. This email attached copies of the 2015 CIMA Report and 2015 CIMA LINC Report marked "Final":²⁰⁵

I'm sending you this e-mail on behalf of Brian Malone. He is not in office today.

We have updated both reports based on your comments. Brian has already reviewed the final reports and has directed me to forward the reports to you. The final reports are attached with this e-mail.

If you have any questions on the reports, please feel free to call and discuss with Brian on Monday.

²⁰³ [CIM0009859](#) attaching [CIM0009859.0001](#) and [CIM0009859.0002](#)

²⁰⁴ [CIM0009859.0002](#) at image 59

²⁰⁵ [HAM0000700_0001](#) attaching [HAM0000701_0001](#) and [HAM0000702_0001](#)

196. The “Final” 2015 CIMA Report listed “Conduct Pavement Friction Testing” as a short term countermeasure on the section “9.2 Summary Table”.²⁰⁶

197. On November 22, 2015, at 12:48 p.m., Mr. Capostagno emailed Mr. McCleary under the subject line “Red Hill”:²⁰⁷

Last night between 9pm and 12am there were 4 separate accidents on the Red Hill. Stone Church to King street exits both North and Southbound ramps were closed. Northbound at Greenhill was a 5 car pileup and 3 people were sent to the hospital. Police, Fire and Ambulance all expressed their frustration and wanted to know when something was going to be done about this road. Every time it rains, even just a little, the Red Hill turns into a demolition derby. Just wanted to pass along their comments and the frustrations of me and my crew who worked very hard last night to clear up the mess. I called IMOS to give them an update on the 10:15pm.

198. On November 22, 2015, at 12:59 p.m., Mr. McCleary forwarded Mr. Capostagno’s email to Ms. Matthews-Malone and Mr. Paul:²⁰⁸

FYI,

I know the roads last night got a bit slick due to temperatures IMOS has patrol on duty as stated in their contract I imagine speed is the major factor. Again our staff takes the brunt of the Police!!

199. On November 22, 2015, at 4:38 p.m., Ms. Matthews-Malone responded to Mr. McCleary and Mr. Paul by email:²⁰⁹

There is a report going to council the first week of December - should be interesting.

200. On November 23, 2015, at 8:52 a.m., Mr. Malone emailed Mr. Ferguson under the subject line “LINC Report”, copying Mr. Hawash and Mr. Bottesini:²¹⁰

Thanks for sending the materials while I was away from the office on Friday Khaled.

²⁰⁶ [HAM0000702_0001](#) at image 57

²⁰⁷ [HAM0004799_0001](#)

²⁰⁸ [HAM0004799_0001](#)

²⁰⁹ [HAM0004799_0001](#)

²¹⁰ [HAM0024665_0001](#)

Dave you had indicated that you would like me to be available for the committee meeting on December 7th. I have it in my calendar, but I'm just confirming that it still the case? I assume I'm there for back-up, or is there something more formal you would like me to do?

201. On November 23, 2015, at 8:54 a.m., Mr. Ferguson forwarded Mr. Malone's email to Mr. Mater:²¹¹

Can you see the message below, what role do you want Brian to play at the meeting?

202. On November 23, 2015, at 9:21 a.m., Mr. Mater responded to Mr. Ferguson by email:²¹²

I would say to please be there in case of questions. We are not doing a presentation are we?

203. On November 23, 2015, at 9:37 a.m., Mr. Ferguson responded to Mr. Mater by email:²¹³

I wasn't planning on a presentation, I would think that would just turn it into a bigger issue.

I will let Brian know

204. On November 23, 2015, at 9:38 a.m., Mr. Mater responded to Mr. Ferguson by email:²¹⁴

My thoughts exactly

205. On November 23, 2015, at 10:40 a.m., Mr. Ferguson responded to Mr. Malone, copying Mr. Hawash and Mr. Bottesini:²¹⁵

I discussed with John and he is asking for your attendance as support, no formal presentation.

²¹¹ [HAM0024665_0001](#)

²¹² [HAM0024665_0001](#)

²¹³ [HAM0024665_0001](#)

²¹⁴ [HAM0024665_0001](#)

²¹⁵ [CIM0009851](#)

206. On November 26, 2015, at 3:42 p.m., Mr. Ferguson forwarded Mr. Hawash's email attaching the 2015 CIMA Report and 2015 CIMA LINC Report to Mr. White, Mr. Mater, Mr. Lupton, and Ms. Anderson under the subject line "Confidential LINC/RHVP Report". Mr. Ferguson copied Mr. Cooper and Mr. Worrone on this email:²¹⁶

Please see attached, final version of reports, all changes have been made.

207. The 2015 CIMA Report attached to Mr. Ferguson's email included slippery when wet signs and pavement friction testing as short term recommendations. The installation of continuous illumination was included as a long term recommendation.²¹⁷

208. On November 30, 2015, at 9:05 a.m., Mr. Mater emailed Mr. Moore, under the subject line "FW: Confidential LINC/RHVP Report", and copied Ms. Hands-Lourie. Mr. Mater's email included the 2015 CIMA Report and 2015 CIMA LINC Report as attachments:²¹⁸

Fyi

Report goes to committee on the 7th

Char, can you please send Gary a copy of the staff report

209. On November 30, 2015, at 10:13 a.m., Ms. Harbin emailed Mr. Moore on Ms. Hands-Lourie's behalf under the subject line "FW: Confidential LINC/RHVP Report". Her email attached the staff report summarizing the 2015 CIMA Report and 2015 CIMA LINC

²¹⁶ [HAM0000700_0001](#) attaching [HAM0000701_0001](#) and [HAM0000702_0001](#)

²¹⁷ [HAM0000702_0001](#) at image 57

²¹⁸ [HAM0024696_0001](#) attaching [HAM0024697_0001](#) and [HAM0024698_0001](#)

Report, Appendix A, and Appendix B, which were scheduled to go to the PWC on December 7, 2015.²¹⁹

210. The staff report summarizing the 2015 CIMA Report and 2015 CIMA LINC Report made the following recommendations:

(a) That the General Manager of Public Works be directed to implement the short-term safety options identified in Report PW15091 as Appendix A and that these options be funded from the Red Light Camera Reserve (112203) and that staff be directed to report back to Public Works Committee on the results;

(b) That the design with request to the medium and long term items in Report PW15091 as Appendix B be deferred pending the outcome of the Transportation Master Plan (TMP) update;

(c) That a request be made to the Hamilton Chief of Police and the Hamilton Police Services Board to undertake regular speed and aggressive driving enforcement on the Lincoln M. Alexander Parkway (LINC) and the Red Hill Valley Parkway (RHVP) and that they be requested to report back to Council annually on the results;

(d) That a copy of Report PW15091 be provided to the Joint Stewardship Board of the Red Hill Valley for information.²²⁰

211. This staff report commented on the collisions on the RHVP as follows:

Between January 1, 2008 and July 23, 2015 the RHVP has experienced 474 collisions in total, averaging 63 collisions per year. Of the total number of collisions that occurred, 131 (28%) were median related collisions which involved vehicles hitting guide rails/concrete barriers, resting on the grass median, or crossing over to the opposite direction (17 total collisions, 13%).

A detailed review of the collision incidents identified that there is a higher number of collisions than would be expected as a result of high vehicle speeds in combination with wet weather conditions. The majority of collision incidents that are occurring are a direct relation to poor driving behaviour.

A detailed review of vehicle speed data identified approximately an average of more than 500 vehicles per day travelling in excess of 140 km/h and an 85th percentile speed of 115 km/h. These speeds are further confirmation of poor driving behaviour that is occurring on the RHVP and in many instances are behaviours that under the Highway Traffic Act would be considered 'stunt driving' and would result in the immediate loss of vehicle and licence. Furthermore, it is apparent, that motorists are treating and operating as if the Parkway was

²¹⁹ [HAM0024699_0001](#) attaching [HAM0024700_0001](#), [HAM0024701_0001](#) and [HAM0024702_0001](#)

²²⁰ [HAM0024700_0001](#) at image 1

a Provincial Highway. The design of both roadways is appropriate for a Parkway designation and constructed with a design speed of 110 km/h.²²¹

J. Legal Claims Related to the RHVP

212. On November 12, 2015, Colleen Crawford (Senior Law Clerk, Shillingtons LLP) emailed Mr. White under the subject line “Hamilton ats Hastings”. Ms. Crawford copied Ms. Wyskiel and Mr. Cooper on this email. She wrote:

We have been retained on behalf of the City of Hamilton with respect to an accident. The accident occurred on the Red Hill Valley Parkway near the Greenhill Avenue overpass. The accident was a double fatality and occurred May 5, 2015.

We would appreciate receiving copies of all the documentation with respect to this roadway, including

1. traffic studies and any backup documentation;
2. council reports and recommendations;
3. traffic counts;
4. accident/collision history (5 years);
5. complaints;
6. signage history, line painting and sign relocations;
7. work orders for this section from Mud to King (5 years);
8. any photographs.

We appreciate that it may take some time to gather the requested documentation, and would ask that you provide us with it by the end of January. Should you have any questions, please do not hesitate to contact our office.²²²

213. Mr. White replied later that day, adding Mr. Lupton and Mr. Mater to the email chain. He wrote:

Thanks Colleen. Dave Ferguson Superintendent Traffic Engineering will be Traffics expert on this Red Hill Valley Parkway double fatality May 5 2015, file.

Dave can you take lead on this please and ensure your staff prepare/provide all required data from Traffic Eng through Kim. Kim will collect the work orders etc from TOC and

²²¹ [HAM0024700_0001](#) at image 3

²²² [HAM0061947_0001](#)

coordinate the file as usual. Copies of everything should be kept by Kim before transmittal. Given the upcoming PW report I suggest once PW Committee receives the RHVP report on Dec 7, we also provide that and the various CIMA RHVP documents to Colleen. The work orders for the embedded reflectors should be included with this along with the remedial works we did last few years.²²³

214. On November 12, 2015, at 8:47 p.m., Mr. Mater replied to Mr. White and Mr. Ferguson, writing: "Please check with internal legal before we supply anything, We should have some details."²²⁴ On November 13, 2015, Mr. Lupton responded to Mr. White's email, writing to Mr. White and Mr. Ferguson: "Please confirm with legal or risk that they are working on our behalf."²²⁵

215. On November 12, 2015, Mr. White replied to Mr. Mater's email, writing: "Ok John. Colleen and Shillington works on behalf of our Legal dept and has been assigned the file through them. She is lead on most city claim files and we deal with her on a regular basis. We will confirm with Legal also."²²⁶

216. Mr. Ferguson replied to Mr. Mater's email, adding Mr. Cooper, Ms. Wyskiel, and Mr. Worrone to the email chain. He wrote:

As per below, please arrange to collect and put together all the information requested below and please provide to me by the end of December.

I have been asked to be the City representative for this one, so I just need you to collect the information requested.²²⁷

217. On December 18, 2015, Mr. Cooper replied to Mr. Ferguson, writing:

As requested, the required info is in the folder in the link- there's quite a bit to sift through and it didn't fit in an email- but I'm pretty sure it's all relevant.

²²³ [HAM0061947_0001](#)

²²⁴ [HAM0061954_0001](#)

²²⁵ [HAM0061949_0001](#)

²²⁶ [HAM0061952_0001](#)

²²⁷ [HAM0061954_0001](#)

The final report that went to PWC/Council recently is NOT included in the attached and should be included.

Z:\TRAFFIC ENGINEERING\David Ferguson\RHVP- Litigation²²⁸

K. Safety Plan

218. On November 12, 2015, at 1:39 p.m., Dave Calvert (Superintendent, Support Services Division, HPS) emailed Mr. Ferguson under the subject line “Expressway Officer report”. Superintendent Calvert attached a copy of a report titled “Expressway Safety Plan: Hamilton Strategic Road Safety Plan (Expressway Patrol Officers)” to his email.²²⁹

219. The Expressway Safety Plan: Hamilton Strategic Road Safety Plan (Expressway Patrol Officers) contained the following statistics in respect of collisions on the RHVP between 2007 and 2015:²³⁰

3. Road Surface Condition:

| | | |
|---------------------|-----------|--------------------|
| • Wet | 214 MVC's | 53.2% of the Total |
| • Dry | 166 MVC's | 41.3% of the Total |
| • Ice | 7 MVC's | 1.7% of the Total |
| • Loose snow | 6 MVC's | 1.5% of the Total |
| • Packed snow | 4 MVC's | 1.0% of the Total |
| • Slush | 2 MVC's | 0.5% of the Total |
| • Loose sand gravel | 1 MVC's | 0.2% of the Total |
| • Other road surf | 1 MVC's | 0.2% of the Total |
| • Spilled liquid | 1 MVC | 0.2% of the Total |

²²⁸ [HAM0061958_0001](#)

²²⁹ [HAM0024599_0001](#) attaching [HAM0024600_0001](#).

²³⁰ [HAM0024600_0001](#) at image 7

220. The Expressway Safety Plan: Hamilton Strategic Road Safety Plan (Expressway Patrol Officers) made the following recommendations with respect to the RHVP and LINC:²³¹

1. The City of Hamilton through the Strategic Road Safety Plan initiative fund six (6) new Hamilton Police Officers (Expressway Patrol Officers) who would be assigned to the Hamilton Police Service Support Services Division and work out of the Traffic Section.
2. The City of Hamilton through the Strategic Road Safety Plan initiative funds the necessary equipment for the 6 police officers (i.e. cars, radar equipment, etc.)

**** The proposed 6 Expressway Patrol Officers would be responsible for patrolling the expressways within the City of Hamilton specifically the Red Hill Valley Expressway and the Lincoln Alexander Parkway. Expressway trained officers, operating vehicles equipped with early warning roof signs, push bumpers and speed measuring devices, providing twenty-four hour coverage on the expressways. ****

L. Distribution of the 2015 CIMA Report to the PWC and Council

221. On December 1, 2015, at 8:41 p.m., Mr. Lupton emailed Mr. Ferguson, copying Mr. White, Lauri Leduc (Legislative Coordinator, Office of the City Clerk, Corporate Services, Hamilton), and Ms. Harbin, under the subject line "Linc/RHVP Report":²³²

As discussed this morning can you please connect with Lauri to coordinate distribution of the two consultant reports for the PW Committee members, after the staff report has been released by clerks.

222. On December 1, 2015, at 6:32 p.m., Mr. Ferguson emailed Ms. Leduc, copying Mr. White, Mr. Lupton, and Mr. Mater. Mr. Ferguson's email attached the 2015 CIMA Report and 2015 CIMA LINC Report :²³³

Once the Dec 7 reports have been sent to the Committee members, can you please circulate the attached to the Councillors.

²³¹ [HAM0024600_0001](#) at image 9

²³² [HAM0043341_0001](#)

²³³ [HAM0024707_0001](#) attaching [HAM0024708_0001](#) and [HAM0024709_0001](#)

223. On December 1, 2015, at 8:14 p.m., Mr. Mater responded to Mr. Ferguson and Ms. Leduc by email:²³⁴

Dave, I had another thought on this today, sorry I didn't get back to you yet. Lauri can we please hold until I reconnect with Dave.

224. On December 2, 2015, at 8:41 a.m., Ms. Leduc responded to Mr. Mater and Mr. Ferguson by email:²³⁵

Sure thing... I'll wait until I hear from you

225. On December 3, 2015, at 8:54 a.m., Ms. Leduc responded to Mr. Mater and Mr. Ferguson by email again, copying Mr. White, Mr. Lupton, and Nancy Wunderlich (Administrative Assistant to the Director of Operations, Operations, Public Works, Hamilton):²³⁶

Any decision on how to proceed on this?

226. On December 3, 2015, at 8:56 a.m., Mr. Ferguson responded to Ms. Leduc and Mr. Mater by email, copying Mr. White, Mr. Lupton, Ms. Wunderlich, and Ms. Anderson:²³⁷

In talking with John, we have decided to hold off on issuing to Committee, instead we will offer the Consultant Reports to those Councillors that are interested at the meeting on Monday.

227. On December 3, 2015, at 10:54 a.m., Ms. Leduc responded to Mr. Ferguson and Mr. Mater by email, copying Mr. White, Mr. Lupton, Ms. Wunderlich, and Ms. Anderson:²³⁸

As noted on page 2 of the report it was indicated that a copy was available so I feel it's best to send this to the Councillors in advance.

²³⁴ [HAM0024711_0001](#)

²³⁵ [HAM0024711_0001](#)

²³⁶ [HAM0024720_0001](#)

²³⁷ [HAM0024720_0001](#)

²³⁸ [HAM0024720_0001](#)

I really think having them see it now instead of at the meeting won't "get their backs up" so to speak.

I'm going to offer them a hard copy if they wish. I'll get our print shop to make the copies if we need them.

I'll also upload it to the City's website.

228. On December 3, 2015, at 4:08 p.m., Mr. White forwarded Ms. Leduc's email to Mr. Ferguson.²³⁹

Ferg: She is right! John is cautious but I would rather they had access now. Between me and u as its done now. thx

229. On December 3, 2015, at 4:09 p.m., Mr. Ferguson responded to Mr. White by email.²⁴⁰

As you know, I agree.

230. Ms. Leduc had emailed copies of the 2015 CIMA Report and 2015 CIMA LINC Report to members of City Council earlier that day.²⁴¹

1. PWC Meeting on December 7, 2015

231. On December 7, 2015, at 9:30 a.m., Mr. Ferguson and Mr. Cooper presented the staff report summarizing the 2015 CIMA Report and 2015 CIMA LINC Report to the PWC for consideration.²⁴²

232. A video recording of the meeting indicates that Councillor Merulla asked Mr. Ferguson, who presented the 2015 CIMA Report and 2015 CIMA LINC Report to the PWC, to reply to public comments questioning the quality of the asphalt used in the

²³⁹ [HAM0043346_0001](#)

²⁴⁰ [HAM0043347_0001](#)

²⁴¹ [HAM0056682_0001](#) attaching [HAM0056683_0001](#) and [HAM0056684_0001](#)

²⁴² [HAM0042816_0001](#) at image 6

construction of the RHVP. Mr. Ferguson replied to the question, citing the statistics in the 2015 CIMA Report regarding speeding, and noted that to his knowledge the pavement itself was not causing any issues.²⁴³

233. Councillor Merulla asked Mr. Moore, who was also present at the meeting, to elaborate on the quality of the asphalt used, asking whether the City used “low grade asphalt” in comparison to that used by the MTO in constructing the RHVP. Mr. Moore replied that the City had used SMA in the construction of the RHVP, which was the MTO’s top mix for “high speed, freeway-type” roadways.

234. Mr. Moore informed the PWC that the MTO had performed the initial friction testing and received results at or above what the MTO typically expected from high grade friction mixes. He also informed the PWC that they had performed subsequent testing five years after, in approximately 2012-2013, finding that the road was holding up exceptionally well. He stated, “We have no concerns about the surface mix.”

235. When asked by Councillor Merulla whether the quality of the RHVP was no different than any 400 series highway, Mr. Moore replied that the RHVP was above that grade.

236. On December 7, 2015, at 2:45 p.m., Mr. Mater emailed Mr. Ferguson and Mr. Cooper, copying Mr. Lupton and Mr. White:²⁴⁴

Thanks very much for all your efforts on the RHVP/Linc report at committee this morning. The report was very well received and well written, Committee, while they had lots of

²⁴³ <https://pub-hamilton.escribemeetings.com/Meeting.aspx?Id=a0511623-f6f9-4916-943e-4807e728745e&Agenda=Agenda&lang=English#10071>

²⁴⁴ [HAM0024731_0001](#)

thoughts, seemed to me to be very supportive. A difficult subject handled very well and in a timely manner.

Dave, nice work handling the questions and the media aspect of this. Very much appreciated.

237. On December 8, 2015, Ms. Leduc emailed Mayor Eisenberger, Council, and their staff under the subject line “December 7 PW Report”. Ms. Leduc’s email attached PWC Report 15-016 from December 7, 2015:²⁴⁵

Mr. Mayor, Councillors and Staff,

Please find attached PW Report 15-016 listed as Item 6.6 on tomorrow night’s Council Agenda.

Hard copies will be available at the meeting.

238. In PWC Report 15-016, the PWC made the following recommendation about the RHVP and LINC:²⁴⁶

10. The Lincoln M. Alexander Parkway (LINC) & Red Hill Valley Parkway (RHVP) Safety Review (PW15091) (City Wide) (Outstanding Business List Item) (Item 8.2)

(a) That the General Manager of Public Works be directed to implement the short-term safety options identified in Appendix C to PW Report 15-016 and that these options be funded from the Red Light Camera Reserve (112203) and that staff be directed to report back to Public Works Committee on the results;

(b) That the design with request to the medium and long term items in PW Report 15-016 as Appendix D be deferred pending the outcome of the Transportation Master Plan (TMP) update;

(c) That a request be made to the Hamilton Chief of Police and the Hamilton Police Services Board to undertake regular speed and aggressive driving enforcement on the Lincoln M. Alexander Parkway (LINC) and the Red Hill Valley Parkway (RHVP) and that they be requested to report back to Council annually on the results;

(d) That a copy of Report PW15091 be provided to the Joint Stewardship Board of the Red Hill Valley for information;

(e) That staff be directed to install signs stating the penalties and costs associated with speeding at appropriate locations on the Lincoln M. Alexander Parkway and the Red Hill Valley Parkway.

²⁴⁵ [HAM0043364_0001](#) attaching [HAM0043365_0001](#)

²⁴⁶ [HAM0043365_0001](#) at image 6

239. On December 8, 2015, the Hamilton Spectator published an article titled “Councillors call for photo radar on Red Hill parkway”.²⁴⁷ This article commented on the RHVP and LINC Safety Reports as follows:

The public works committee's call to have staff study the feasibility of bringing back photo radar comes after a consultant's report concluded poor driving is the cause of most crashes on the Red Hill Valley Parkway.

The study found an average of more than 500 vehicles a day drive faster than 140 kilometres an hour on the highway. The speed limit is 90 km/h. But of 641 collisions on the Lincoln M. Alexander Parkway since 1997, 128, or 20 per cent, were median-related. Half of those, however, were caused by rear-ending or side-swiping.

On Monday, councillors backed \$815,000 in short-term fixes such as oversized speed limit signs, speed feedback signs, vegetation trimming and upgraded guide rail treatments. Longer-term safety measures, including median barriers on both parkways, are ball-parked at about \$11.3 million over six years. But councillors also asked whether police were able to step up patrols on city highways to crack down on dangerous drivers.

Hamilton Insp. Will Mason said staffing limitations make it impossible to dedicate officers solely to the Red Hill.

For 2016, police are seeking a 2.79 per cent budget bump, but none of that is for full-time highway patrols, noted police board chair Lloyd Ferguson.

Driving behaviour has to change, but a dedicated parkway police unit would come with a "fairly significant cost," said Coun. Terry Whitehead.

2. Council Meeting on December 9, 2015

240. On December 9, 2015, at 2:26 p.m., Councillor Lloyd Ferguson (Ward 12, Hamilton) emailed Mr. Ferguson under the subject line “Report 15.016”:

Can you tell me how you measured that 500 vehicles a day are traveling the Red Hill and Linc at speeds greater than 140k.²⁴⁸

241. On December 9, 2015, at 4:04 p.m., Mr. Malone emailed Mr. Ferguson under the subject line “RE: LINC Report”, copying Mr. Hawash and Mr. Bottesini:

²⁴⁷ [RHV0000339](#)

²⁴⁸ [HAM0004819_0001](#)

I stand corrected, somewhat. Giovanni highlighted that the previous studies were ones conducted for the Linc/RHVP Interchange Study. CIMA did the report, of course, and the City engaged the count contractor to collect the data that was gathered.²⁴⁹

242. On December 9, 2015, at 4:05 p.m., Mr. Ferguson responded to Councillor Ferguson by email under the subject line “Re: Report 15.016”, copying Mr. White:

The data was taken from traffic speed and volume studies that were completed as part of the City of Hamilton count program.²⁵⁰

243. On December 9, 2015, at 4:25 p.m., Mr. White forwarded this email chain to Ms. Wunderlich:

Nancy you may wish to advise Dan (he’s Gerry at Council tonight right?) that Lloyd will be speaking to the RHVP and Linc Safety report at council tonight.²⁵¹

244. On December 9, 2015, at 4:51 p.m., Ms. Wunderlich responded to Mr. White by email, copying Dan McKinnon (Director, Hamilton Water, Public Works, Hamilton):

Thanks Martin, I have copied in Dan as he is at Council tonight for Gerry.²⁵²

245. On December 9, 2015, Council passed PW Report 15-016 as presented.²⁵³

M. LBCC Correspondence

246. On December 9, 2015, at 9:19 a.m., the Lakewood Beach Community Council (“LBCC”) emailed Mayor Eisenberger and Council under the subject line “RHVP Improvements – Ratification tonight”.²⁵⁴ The LBCC wrote:

We’re too late to have this added as an agenda item and are therefore writing to you directly requesting that you considering adding one recommendation from the Consultant’s review to the list of improvements.

²⁴⁹ [CIM0009846](#)

²⁵⁰ [HAM0004819_0001](#)

²⁵¹ [HAM0004819_0001](#)

²⁵² [HAM0004819_0001](#)

²⁵³ [HAM0043376_0001](#)

²⁵⁴ [HAM0043374_0001](#)

Based on the RHVP Safety review, the consultants are recommending a Pavement Friction Test be conducted at a cost of \$40,000. This was not on the short term list of recommendations from Staff, however we feel the cost/benefit of conducting this test would be money well spent and is warranted based on the RHVP Safety Review study results:

- * The majority of the collisions are in the daylight (Page 4 = 36%)
- * The majority of the collisions occurred in clear weather (Page 5 = 38%)
- * The majority of the collisions occurred when the surface was wet (50%)
- * Single motor vehicles accidents were most prevalent (44%)
- * 35% of the drivers involved in the collisions stated they "lost control" (way above average), with 30% attributed to speeding, following too close and improper lane changes combined.

In addition, when speaking to the public most state the road feels slippery on the Red Hill (we have not heard this about the LINC). This is backed by the fact that the majority of comments during online media articles following collisions, state that the public feels the pavement might be a contributing factor to those collisions. (in addition to speed obviously)

Since the majority of the collisions are single car occurring in the daylight, in clear weather, but with wet road surfaces we are respectfully requesting you consider adding this Friction Test to the short term recommendations

247. On December 10, 2015, Councillor Tom Jackson (Ward 6, Hamilton) responded to the LBCC. Councillor Jackson copied Samantha Bates (Assistant to Councillor Tom Jackson, Ward 6, Hamilton), Nancy Bates (Administrative Assistant to Councillor Tom Jackson, Ward 6, Hamilton), Mr. Ferguson, Mr. Moore, Mr. White, and Ms. Leduc on this email:²⁵⁵

Thanks for your timely suggestions and facts regarding the unfortunate occurrences, primarily through careless, reckless, irresponsible behaviour along the Red Hill and Lincoln Parkways. Last night at City Council, I moved your correspondence be referred to the next Public Works Committee meeting, where recent reports on both short-term and long-term recommendations were debated. I'm a voting member of that Committee. Hope this helps AND Council's desire for "photo radar" equipment could be another "tool" for safer usage of the two roadways IF the Province approves that request. Tom (Councillor Jackson).....P.S....City Staff listed...Please note the email below for your records and files.

²⁵⁵ [HAM0043374_0001](#)

248. On December 11, 2015, the LBCC responded to Councillor Jackson by email (adding Councillor Merulla to the copied recipients):²⁵⁶

Thank you!

We were hoping that this would have been approved at Council, but we're appreciative that it has been referred to Committee for consideration. Based on the study results, it really does appear to us that a Pavement Friction test is warranted in the short term, and we're hopeful that a greater police presence can be made, without an increase in budget, until photo radar equipment is approved.

In addition to that, we were wondering if there are any traffic counts for the vehicles exiting the RHVP at Barton St? One of the constituents at the Transportation Master Plan PIC at Valley Park this week seemed to believe that the "bottleneck" at the QEW/RHVP could be substantially alleviated, if just that small section until Barton St is widened. While we're not proponents for widening the whole RHVP/LINC, that suggestion seemed to have merit if the traffic counts support her suggestion. She felt that a large volume of southbound trucks are exiting at Barton, but due to the traffic volume there are taking up car capacity and resulting in the bottleneck for that relatively short distance. It might be a quick fix/baby step that will end any short term discussions on widening the whole length of the road; although we're not truly convinced.

We look forward to your thoughts. We've also copied Councillor Merulla in this email since that section of the RHVP is in his ward.

249. On December 11, 2015, Councillor Jackson responded to LBCC (adding Councillor Collins to the copied recipients):²⁵⁷

Not a bad suggestion of slightly widening the Barton Exit Ramp. I've also copied Councillor Collins since the RHVP is basically the "divider" between their respective Wards (with Councillor Merulla). City staff listed above may wish to take a preliminary look into that idea too, pending the counsel/opinions of Councillor Merulla and Collins. Overall, though, there is agreement on more lighting; greater police presence (NO budgetary increase needed); and, eventually photo radar.

250. On December 11, 2015, at 7:50 p.m., Jasmine Vorkapic (Legislative Secretary, Office of the City Clerk, Corporate Services, Hamilton) emailed Gerry Davis (General Manager, Public Works), copying Ms. Leduc, Mr. White, Mr. Ferguson, and Ms.

²⁵⁶ [HAM0043377_0001](#)

²⁵⁷ [HAM0043378_0001](#)

Wunderlich.²⁵⁸ Ms. Vorkapic's email attached a Council Follow-Up Notice to the December 9, 2015 Council Meeting.²⁵⁹ It stated:

A. RESOLUTIONS:

At the December 9, 2015 meeting of City Council, the following item was approved as part of communications:

5.10 Correspondence from Lakewood Beach Community Council respecting the Red Hill Valley Parkway Safety Review

Recommendation: Be received and referred to the Public Works Committee for further discussion.

251. On December 13, 2015, Ms. Wunderlich forwarded Ms. Vorkapic's email, including the Council Follow-Up Notice, to Mr. Mater. On December 14, 2015, Mr. Mater forwarded this email to Mr. Lupton and Mr. White, copying Mr. Ferguson. He wrote: "Please coordinate with Gary so we can send a response on this to the group".²⁶⁰

252. On December 15, 2015, Mr. Ferguson replied to Mr. White alone, writing: "Do we answer them? Im confused?"²⁶¹

N. *Dr. Uzarowski sends Mr. Moore the Tradewind Report*

253. On November 19, 2015, Dr. Uzarowski wrote in his notebook: "- talk to Gary Moore."²⁶² Dr. Uzarowski wrote "Hamilton" in his notebook on November 20, 27, and 30 and again on December 7, 2015.²⁶³

²⁵⁸ [HAM0043427_0001](#)

²⁵⁹ [HAM0043428_0001](#)

²⁶⁰ [HAM0043431_0001](#) attaching [HAM0043432_0001](#)

²⁶¹ [HAM0043438_0001](#)

²⁶² [GOL0007409](#) at image 8

²⁶³ [GOL0007409](#) at images 9-12

254. On December 17, 2015, Dr. Uzarowski wrote the following note in his notebook:²⁶⁴

1. Gary Moore

- AC
- A survey by Sandy, 64-28
- Specification
- Results review
- LINC RHVP Red Hill Valley
- Gerd – look at test results
- Dips there

255. On December 17, 2015, at 8:47 a.m., Mr. Moore emailed Dr. Uzarowski, under the subject line “FW: Red Hill SMA”.²⁶⁵

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.

| 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

²⁶⁴ [GOL0007409](#) at image 13

²⁶⁵ [GOL0002681](#)

256. On December 17, 2015, at 12:14 p.m., Dr. Uzarowski responded to Mr. Moore by email, attaching the Tradewind Report:

Please find attached the November 2013 report from Tradewind Scientific on friction testing on Red Hill Valley Parkway and Lincoln Alexander Parkway. I will look at some standards or anticipated values and call you.²⁶⁶

O. *Dr. Uzarowski writes to Mr. Taylor about friction standards*

257. On December 17, 2015, at 2:57 p.m., Dr. Uzarowski responded to an email from Leonard Taylor (President & Chief Executive Officer, Tradewind Scientific) titled “Re: Hamilton Friction Testing Results”.²⁶⁷ Mr. Taylor’s original email was the one he sent to provide the Tradewind Report to Dr. Uzarowski and Golder on January 26, 2014. Dr. Uzarowski wrote:

You have followed the ASTM 1844 standard in the friction testing you carried out on the Red Hill Valley and Lincoln Alexander Parkways in the City of Hamilton in 2013. Your determined the Griptester Numbers. MTO did some Friction Number (FN) testing on the Red Hill Valley Parkway in 2007 but they followed ASTM 501. Do you know if there is any correlation between GTN and FN? The GTN limits you gave in the report are from the UK. Do you know what limits are typically used in the US or in Canada?

P. *Inertial profiler scan of the RHVP*

258. On December 23, 2015, Dr. Uzarowski emailed Steven Jagdat (Project Manager, Pavements and Materials Engineer, Golder) under the subject line “Inertial profiler scan on the Red Hill Valley in Hamilton”.²⁶⁸ Dr. Uzarowski copied Vimy Henderson (Pavements and Materials Engineer, Golder), Rabiah Rizvi (Pavement and Materials Engineering Analyst, Golder), and Joe Lin (Pavement & Geotechnical Technician, Geotechnical Group (East), Engineering Services Division, Golder) on his email:

²⁶⁶ [GOL0003546](#) attaching [GOL0003547](#)

²⁶⁷ [TRW0000030](#)

²⁶⁸ [GOL0002679](#)

I had a phone call from Gary Moore from the City of Hamilton. Please go ahead with the inertial profiler scan on the RHVP. It would be great if we could do it between Christmas and the New Year. I will then need localized roughness analysis. I have to tell them where to do the repairs and what repairs would be the best. We would definitely need the GPS coordinates.

259. The same day, Dr. Henderson responded to Dr. Uzarowski by email:

I will meet Joe on site for the inertial profiler and will have the limits, health and safety plan and so on. Please let me know what day he has in mind.²⁶⁹

260. On January 4, 2016, Mr. Moore emailed Dr. Uzarowski under the subject line “Red Hill profile work”:

Please send me a formal request (just 1 or 2 pages) so I can get the PO set up before you send me the invoice.²⁷⁰

261. On January 25, 2016, Dr. Uzarowski emailed Mr. Lin under the subject line “Hamilton”, copying Mr. Jagdat and Dr. Henderson:

I will have a meeting with the City of Hamilton and need the profile of the Red Hill Valley ASAP. What is the soonest time I can get it?²⁷¹

262. On January 28, 2016, Sherrie Charter (Project Coordinator & Division Administrator, Golder) emailed Mr. Moore, copying Dr. Henderson. Ms. Charter attached Golder Invoice 738926 for Pavement Engineering services rendered through December 31, 2015 (under Project No. 12-1184-0088).²⁷²

263. Golder’s invoice included a chart detailing the charges. This chart included an entry for disbursements to Tradewind:²⁷³

²⁶⁹ [GOL0002679](#)

²⁷⁰ [HAM0000730_0001](#)

²⁷¹ [GOL0003545](#)

²⁷² [HAM0061680_0001](#) attaching [HAM0061679_0001](#)

²⁷³ [HAM0061679_0001](#) at image 2

| Detail of Current Charges | | | |
|--------------------------------------|--------------------|-------------|-------------------------------|
| PAVEMENTS | | | |
| Labour | Hours / Qty | Rate | Billable |
| ASSOCIATE | 2.00 | 165.00 | 330.00 |
| JUNIOR ADMINISTRATION | 0.25 | 65.00 | 16.25 |
| PRINCIPAL | 40.00 | 240.00 | 9,600.00 |
| PROJECT ENGINEER | 12.50 | 95.00 | 1,187.50 |
| PROJECT ENGINEER | 7.50 | 120.00 | 900.00 |
| PROJECT MANAGER | 1.00 | 120.00 | 120.00 |
| SENIOR TECHNICIAN/TECHNOLOGIST | 16.75 | 85.00 | 1,423.75 |
| | | | Total Labor |
| | | | 13,677.60 |
| Disbursements | Hours / Qty | Rate | Billable |
| SUBCONTRACTORS/SUBCONSULTANTS | | | |
| TRADEWIND SCIENTIFIC | 4,925.00 | 1.10 | 5,417.50 |
| EMPLOYEE EXPENSE REPORTS | | | |
| Ludomir Uzarowski | 325.73 | 1.10 | 358.31 |
| | | | Total Expenses |
| | | | 5,775.81 |
| | | | Total Phase: |
| | | | \$19,353.31 |
| | | | Total Current Charges: |
| | | | \$19,353.31 |

264. On February 2, 2016, Dr. Uzarowski emailed Mr. Moore under the subject line “Roughness on RHVP”:

We have done the profile survey on the Red Hill Valley Parkway and also the initial roughness analysis. We have done three inertial profiler runs for each wheel path so we have excellent pavement roughness information. I have attached the initial quick plots of IRI values in NB Lanes 1 and 2 and SB Lanes 1 and 2 just for comparison how the roughness has changed over the last 3 years. I realize we have to fix the format of the plots. For your information, I have also included a copy of a page from the TAC Pavement Design and Management Guide that shows typical IRI ranges. Although the average IRI's (represented by horizontal lines) have not increased significantly the individual picks have increased in some cases by almost 1 mm/m. In these individual plots I have assumed 0.0 Station in NB direction at the border with the Linc and in the SB direction at the end of the intersection with QEW.

The shown IRI is for 100 m long sections. In our initial analysis we have also determined Medium Roughness Index (MRI) which shows individual short section IRI. We also identified the locations of deeps and bumps. Could we meet and discuss the repair strategy we initially recommend? We can then define the scope of work and how to finalize the analysis.²⁷⁴

265. On February 3, 2016, Mr. Moore responded to Dr. Uzarowski:

This does nothing really for me. We do IRI for our entire roads and our Asset Management group has an entire pavement management program and process for dealing with this type of input. I am only interested in dealing with the settlements along the Red Hill. Where are

²⁷⁴ [GOL0002684](#) attaching [GOL0002685](#)

they? Are they related to any buried infrastructure, trench, excavation, duct??? That's what I want to fix.²⁷⁵

266. On February 4, 2016, Dr. Uzarowski responded to Mr. Moore:

I got your message. Sorry I missed your call. We are fine tuning the analysis now. We have the locations of the deeps and bumps but we have to precisely correlate the stations in both directions to check if a particular deep or bump is in one direction or both.²⁷⁶

267. On February 22, 2016, Dr. Uzarowski made the following note in his notebook: "6)

Gary Moore RR-LU-VH."²⁷⁷

268. On February 24, 2016, Mr. Moore emailed Dr. Uzarowski in response to Ms.

Charter's email circulating Golder Invoice No. 738926. He wrote:

I have asked twice now but have not seen any proposal for this work. (I did approve in principal for you to proceed with the work as it was time sensitive) . However without a formal proposal I can't write a PO to cover the payment of the invoice. This cannot be charged to the existing PO for Red Hill Monitoring.²⁷⁸

269. On March 1, 2016, Dr. Uzarowski emailed Mr. Moore under the subject line

"RHVP":

We have the profiles for the Red Hill Valley Parkway and other information almost ready. Could we meet on Friday? If you are busy, could you please let me know when you are available next week?²⁷⁹

270. This meeting was arranged for Friday, March 4, 2016 at 8:00 am. On March 2,

2016, Dr. Uzarowski emailed Mr. Moore: "I will be in your office on Friday at 8:00 am with

plans, profiles and other materials."²⁸⁰

²⁷⁵ [GOL0002705](#)

²⁷⁶ [GOL0002682](#)

²⁷⁷ [GOL0007409](#) at image 22

²⁷⁸ [GOL0002996](#)

²⁷⁹ [GOL0003544](#)

²⁸⁰ [GOL0003544](#)

271. On March 4, 2016, Dr. Uzarowski made the following entry in his notebook:

1. Hamilton

- spec
- profile
- results
- blasting and micro

Steve@skidabridger.com²⁸¹

272. On March 4, 2016, Dr. Uzarowski emailed Mr. Moore under the subject line “Red Hill Valley Parkway Dip/Bump Analysis”.²⁸² Dr. Uzarowski attached an excel spreadsheet containing the bump and dip analysis tables for the RHVP to his email:

Please find attached the Excel spreadsheet with the bump and dip analysis tables. The drawings are too large so I have saved them on the Golder ftp site below.

273. On March 14, 2016, Dr. Uzarowski made the following note in his notebook: “2) Gary Moore – spec, friction, proposals.”²⁸³

274. On March 17, 2016, Dr. Uzarowski emailed Mr. Moore the proposal for profile testing on the RHVP.²⁸⁴

275. On March 18, 2016, Diana Cameron (Administrative Assistant to the Director of Engineering, Engineering Services, Public Works, Hamilton) emailed Ms. Charter in response to the email chain about Golder Invoice No. 738926. She wrote:

Two things.

²⁸¹ [GOL0007409](#) at image 25

²⁸² [GOL0003552](#) attaching [GOL0003553](#)

²⁸³ [GOL0007409](#) at image 26

²⁸⁴ [HAM0000751_0001](#) attaching [HAM0000752_0001](#)

1. Please issue a credit memo for invoice 738926 to cancel it.
2. I now have the proposal to create the new requisition for \$25,000. Once you receive the PO number please issue a new invoice making sure you don't reference the above noted invoice cancelled as that may delay payment.²⁸⁵

276. On March 22, 2016, Ms. Charter emailed Ms. Cameron, writing: "Please find attached a credit memo to cancel our invoice 738926. If you'll forward the new PO once it's ready we'll get the new invoice generated."²⁸⁶ Ms. Charter attached a credit memorandum for Golder invoice 738926 in the amount of -\$21,869.01.²⁸⁷

277. On April 28, 2016, Mr. Moore forwarded the bump and dip analysis tables for the RHVP to Marco Oddi (Manager, Construction, Engineering Services, Public Works, Hamilton).²⁸⁸

278. On April 27, 2017, Richard Andoga (Senior Project Manager, Infrastructure Programming, Asset Management, Engineering Services, Public Works, Hamilton) emailed Dr. Uzarowski to request "the drawings that accompany the Bump-dip analysis", copying Michael Becke (Senior Project Manager, Design, Engineering Services, Public Works, Hamilton), Robert Marques (Project Manager, Capital Rehabilitation & Technical Operations, Operations, Public Works, Hamilton) and Brian Hughes (Manager, Capital Rehabilitation & Technical Operations, Operations, Public Works, Hamilton). That same day, Dr. Uzarowski replied: "The file is big (42 Mb) and I have sent you a secured file with the drawing."²⁸⁹

²⁸⁵ [GOL0003001](#)

²⁸⁶ [HAM0000755_0001](#) attaching [HAM0000756_0001](#)

²⁸⁷ [HAM0000756_0001](#)

²⁸⁸ [HAM0000764_0001](#) attaching [HAM0000765_0001](#)

²⁸⁹ [HAM0034823_0001](#)

279. On May 19, 2016, Ms. Charter emailed “Engineering Invoices”, copying Mr. Moore and Dr. Henderson. Ms. Charter attached Golder Invoice 763637.²⁹⁰ This invoice was for \$28,250 associated with profile testing on the RHVP through May 13, 2016.²⁹¹

Q. Events following from Council approving the 2015 CIMA Report

1. Implementation of short term safety options under the 2015 CIMA Report

280. On January 5, 2016, Mr. Cooper emailed Mr. Jacobson, attaching an annotated copy of Appendix A to the staff report summarizing the 2015 CIMA Report and 2015 CIMA LINC Report :

Please see the attach which outlines the short term improvements that have been approved by Council late in 2015- not included on the list are signs indicating fines for certain speed infractions- MTO style. Red font will be done in house, Green I will work with the MTO to complete.

I'd like to get started on this soon and would like to know which foreman will be assigned to this- please advise so I can set something up with them.

FYI....I was working with Johnny D. for the signing on the Upper RHVP, perhaps it should/could stay with John as there are some signs which will be quite large for this and we could order at the same time?²⁹²

281. The annotated Appendix A was as follows:

²⁹⁰ [HAM0000768_0001](#) attaching [HAM0000769_0001](#)

²⁹¹ [HAM0000769_0001](#); and [HAM0061690_0001](#)

²⁹² [HAM0033693_0001](#) attaching [HAM0033694_0001](#)

Appendix A
To Report PW15xxx

Short-Term Safety Options and Estimated Costing for the LINC & RHVP

| Short Term Options (0-2 Years) | Est. Cost (\$) |
|---|------------------|
| Trim Vegetation on on-ramps, Queenston Rd. and Barton St. | 3,000 |
| Install Oversized Speed Limit Signs | 7,000 |
| Install "Slippery When Wet" Signs | 8,000 |
| Install "Merge" and "Bridge Ices" Signs | 3,000 |
| Upgrade Guiderail end treatments | 70,000 |
| Install, replace or trim vegetation obscuring signs at Guiderail End Treatments | 3,500 |
| Install Speed Feedback Signs | 100,000 |
| Install Permanent Raised Pavement Markings from Greenhill to QEW | 247,000 |
| Install Object Marker signs on Guiderail End Treatments | 3,500 |
| Install Advance Diagrammatic Sign on Rousseaux on-ramp west of Mohawk Road | 3,000 |
| Conduct Speed Study and Consideration of Variable Speed Limit system | 40,000 |
| Supplement "Slippery When Wet" signs with Rain Activated Flashing Beacons (Four signs near King St. and Queenston Rd. Interchanges) | 120,000 |
| Install Advance sign with Advance Right Lane Exits, Next Lane Exit or Through sign between Hwy 403 and Mohawk Rd. | 4,000 |
| Conduct Study to Install Queue End Warning Systems | 40,000 |
| Total Cost | \$652,000 |
| Total Cost with 25% Contingency | \$815,000 |

282. Public Works staff work to implement the listed short-term safety options over the course of 2016.²⁹³

²⁹³ See for example, [HAM0043669_0001](#); [HAM0043682_0001](#); [HAM0025034_0001](#); and [HAM0043752_0001](#)

2. Meeting between HPS and City staff

283. On January 22, 2016, at 4:09 p.m., Will Mason (Inspector, Support Services Division, HPS) emailed Mr. Ferguson, copying Deputy Chief Kenneth A. Weatherhill (Deputy Chief of Police, Office of the Chief of Police, HPS):

I am hoping to set up a meeting with you and my Deputy to discuss the Linc/RedHill consultant's report in a bit more detail, and explore some of the other things we could do to address some of the concerns.

If there is anyone else from your staff that you feel would be useful to have there that would be great.

Hoping to set something up in the next 2 weeks if possible, if you could let me know what your calendar looks like we could go from there.²⁹⁴

284. This meeting was scheduled for January 28, 2016.²⁹⁵

285. On January 29, 2016, at 10:39 a.m., Mr. Lupton emailed Mr. Mater under the subject line "Traffic Meeting with Police Services", copying Mr. White and Mr. Ferguson:

Martin, Dave and I had an excellent meeting yesterday with Deputy Chief Ken Weatherill and Inspector Will Mason on the RHVP & Linc Report and the Strategic Road Safety Program. Overall a very productive meeting, with a senior commitment to work closer together and tackle the three E's. Will Mason will become our point contact and will become more active with the Strategic Road Safety Program, and working together on joint campaigns.

We will follow-up in a few weeks with another meeting to provide an overview of the 2016 HSRSP to senior mgt. from Police, PH and PW. You will be invited. The police are also interested in the new TMC. The Deputy Chief asked if the traffic camera could monitor speed. If so this could be used as an enforcement tool to dispatch officers to the areas that are having a high incidence. Not photo radar, but maybe better. The Police will be doing an active Twitter campaign. Dave has Kelly working on this and we may look at retweeting some of this information. I was impressed with the Deputy Chiefs interest. He was aware of the old HSRSP from Hart's days. He wasn't aware that the police are active with the current framework. He seem very keen on community profile, actionable campaigns and reporting on the metrics.

²⁹⁴ [HAM0043521_0001](#)

²⁹⁵ [HAM0043521_0001](#)

We did provide them with the stats on the speed on the RHVP and discussed how they were obtained. Dave is to get back to them on the +/- of the accuracy of the stats from Gary K's group.²⁹⁶

3. Questions about speeding data in the 2015 CIMA Report and focus on driver behaviour

286. On December 9, 2015, at 2:26 p.m., Councillor Ferguson emailed Mr. Ferguson under the subject line "Report 15.016":

Can you tell me how you measured that 500 vehicles a day are traveling the Red Hill and Linc at speeds greater than 140k.²⁹⁷

287. On December 9, 2015, at 4:04 p.m., Mr. Malone emailed Mr. Ferguson under the subject line "RE: LINC Report", copying Mr. Hawash and Mr. Bottesini:

I stand corrected, somewhat. Giovanni highlighted that the previous studies were ones conducted for the Linc/RHVP Interchange Study. CIMA did the report, of course, and the City engaged the count contractor to collect the data that was gathered.²⁹⁸

288. On December 9, 2015, at 4:05 p.m., Mr. Ferguson responded to Councillor Ferguson by email under the subject line "Re: Report 15.016", copying Mr. White:

The data was taken from traffic speed and volume studies that were completed as part of the City of Hamilton count program.²⁹⁹

289. On December 10, 2015, at 3:59 p.m., Councillor Ferguson replied to Mr. Ferguson under the subject line "RE: Report 15.016":

So did police measure the 500 cars per day doing more than 140km? IF it was a consultant did they use radar equipment?³⁰⁰

²⁹⁶ [HAM0024894_0001](#)

²⁹⁷ [HAM0004819_0001](#)

²⁹⁸ [CIM0009846](#)

²⁹⁹ [HAM0004819_0001](#)

³⁰⁰ [HAM0033626_0001](#)

290. On December 10, 2015, at 5:40 p.m., Mr. Ferguson responded to Councillor Ferguson by email:

No its not the police. Its done through traffic counters that are in the roadway. The city hires a contractor to undertake traffic counts like this throughout the city.³⁰¹

291. On December 10, 2015, at 7:26 p.m., Mr. Ferguson emailed Gord Bowes (Reporter, Hamilton Community News) under the subject line "Speed Data":

Further to your request through the City Managers office, I understand that Kelly Anderson sent you the data after lunch today?

Do you require additional info?³⁰²

292. On December 10, 2015, at 7:32 p.m., Mr. Bowes responded to Mr. Ferguson by email:

Yes, Kelly sent the 2013 RHVP safety report, but it does not contain the "speed studies" referenced in the latest report.

The latest study, presented to the committee Monday, mentions speed studies done for the 2013 report, but there is nothing like that in the actual report.

I'm looking for the supporting data for the "500 a day doing 140km/h or more" claim. I'd also like to know when they did this study and how.³⁰³

293. On December 10, 2015, at 7:36 p.m., Mr. Ferguson forwarded Mr. Bowes' email to Mr. Malone:

Can you assist me and have the guys send me the speed data from the 2013 report. I'm out of the office all day tomorrow and can't access it.³⁰⁴

294. On December 11, 2015, at 8:21 a.m., Mr. Malone responded to Mr. Ferguson by email, copying Mr. Bottesini, Mr. Hawash, and Mr. Izadpanah:

³⁰¹ [HAM0033626_0001](#)

³⁰² [HAM0043380_0001](#)

³⁰³ [HAM0043380_0001](#)

³⁰⁴ [HAM0004824_0001](#)

Yes, we'll send you the data. I assume you want the raw information so it can be reviewed? We might need to provide some brief explanation of the file content, or will you do that Dave?³⁰⁵

295. On December 11, 2015, at 8:34 a.m., Mr. Ferguson responded to Mr. Malone by email:

I can do that, I just need the data and want to make sure it is the same data as used in the report.³⁰⁶

296. On December 11, 2015, at 8:45 a.m., Mr. Bottesini responded to Mr. Ferguson and Mr. Malone by email. Mr. Bottesini's email attached a zip folder titled "RHVP Speed & Class Studied (2013)":

Please find the data in the zip file attached.

For your reference:

- In the main folder you'll find the study summaries for each count location
- In the "Raw" folder you'll find details for each count location. The Word files indicate the exact location of the counts.
- The data used in the study correspond to Location 5 (5 NB MAINLINE - summary.pdf, 5 SB MAINLINE - summary.pdf, Detail 5).

Please don't hesitate to contact me should you need any additional clarification.³⁰⁷

297. On December 11, 2015, at 11:26 a.m., Mr. Ferguson emailed Councillor Ferguson, copying Mr. White. Mr. Ferguson attached nine documents containing speeding data to his email:

Further to our discussion, the attached documents are provided with respect to the speed data.

Overall there are no specific pattern identified as the issues of vehicles travelling in excess of 120km/h happen throughout the day.

³⁰⁵ [HAM0004824_0001](#)

³⁰⁶ [HAM0004824_0001](#)

³⁰⁷ [HAM0004824_0001](#)

In trying to look at it in fine detail, it appears the highest numbers are occurring between 5/6 am to noon and then from 2/3pm to 9pm.³⁰⁸

298. On December 11, 2015, at 4:30 p.m., Mr. Ferguson emailed Mr. Bowes, attaching raw speeding data.³⁰⁹

299. On December 11, 2015, at 4:45 p.m., Councillor Ferguson forwarded his emails with Mr. Ferguson, with attachments, to Chief Glenn De Caire (Chief of Police, Office of the Chief of Police, HPS):³¹⁰

Attached is all the data and David's comments.

300. On December 14, 2015, the Spectator published an article titled "DRESCHER: Police boosting presence on Red Hill and Linc".³¹¹ This article contained the following content on the RHVP Safety Report:

In response to growing public concerns about excessive speeding and dangerous driving, Hamilton police are boosting enforcement on the Red Hill and Lincoln Alexander parkways.

"We do not have the capacity to dedicate resources to it, but we will put in place a project with special attention, prioritizing enforcement," Chief Glenn De Caire told police board members.

According to De Caire, police average about 700 service calls and issue between 1,500 to 1,700 tickets annually on the Red Hill and Linc.

He was responding to concerns raised by the board over a recent consultant's safety report to city council claiming that about 500 vehicles per day travel faster than 140 km/h on the Red Hill, which has a 90 km/h speed limit.

Though police are improvising more enforcement in the short term, the board directed De Caire to report back in January with a detailed review and plan for dealing with the issue long-term.

But that didn't prevent some members from expressing skepticism about the statistics.

³⁰⁸[HAM0033626_0001](#) attaching [HAM0033627_0001](#), [HAM0033628_0001](#), [HAM0033629_0001](#), [HAM0033630_0001](#), [HAM0033631_0001](#), [HAM0033632_0001](#), [HAM0033633_0001](#), [HAM0033634_0001](#), and [HAM0033635_0001](#)

³⁰⁹ [HAM0043380_0001](#)

³¹⁰ [HAM0033626_0001](#)

³¹¹ [RHV0000671](#)

Board chair and Ancaster Coun. Lloyd Ferguson doesn't believe the consultant's speed findings.

"I really want to personally drill down into those numbers that there's 500 vehicles travelling over 140 kilometres each and every day out there," Ferguson said after Friday's board meeting.

"I drove it yesterday at noon and the highest I could get to was 109 because you simply catch up to the people in front of you."

Ferguson has relayed "reams of data" from the consultant's report to police for analysis.

He says he was "surprised" to discover the bulk of the alleged speeding happens between 6 a.m. and noon and 3 p.m. and 9 p.m.

"The highway is plugged during that period of time. I just want to make sure that we're getting the right information. I don't want to fly by the seat of my pants. I want it to be based on science."

Ferguson also raised questions about the technology the consultant used to measure speeds.

"Apparently it was not radar. It was a device they lay on the pavement. How accurate is that?"

Fellow board member Coun. Terry Whitehead also expressed skepticism about the data, but noted the public expects police to respond to these kinds of safety concerns.

301. On December 14, 2015, at 8:41 a.m., Mr. Lupton emailed Mr. Mater, Mr. White, Mr. Ferguson, and Mr. Kirkpatrick and commented on this article as follows:

Try not to get to frustrated with the article... it was a good report and good work. Have we prepared anything that speaks to the speed issue and how it was determined. Looks like we will be getting questions, if we haven't already. Thanks! ³¹²

302. On December 14, 2015, at 8:43 a.m., Mr. Mater responded to Mr. Lupton, Mr. White, Mr. Ferguson, and Mr. Kirkpatrick:

I agree with Geoff, don't get all wound up over this. Lloyd is playing to his audience. ³¹³

³¹² [HAM0024771_0001](#)

³¹³ [HAM0024771_0001](#)

303. On December 14, 2015, at 1:53 p.m., Cameron Gordon (Group Managing Editor, Hamilton Community News) emailed Mr. Ferguson under the subject line "Red Hill Speed data error". Mr. Gordon copied Mr. Bowes on this email:

In looking over the raw data you sent Gord Bowes last week it seems to indicate that instead of there being 500 cars a day going 140 km/h or more there were almost 500 cars going over 140 km/h for the entire study period (May 7, 2013 at 4 a.m. to May 10, 2013 at 4 a.m.). Am I reading the data right (5 mainline - nb speed) or is there something I'm missing? The If I am right, do you have any insight as to how the phrase "An average of more than 500 vehicles per day were recorded exceeding 140 km/h." (pg. 23 "Red Hill Valley Parkway Detailed Safety Analysis") was included by CIMA+ in its report?³¹⁴

304. On December 14, 2015, at 2:00 p.m., Mr. Ferguson forwarded Mr. Cameron's email to Mr. Malone, copying Mr. Cooper and Mr. Worrton.³¹⁵

305. On December 14, 2015, at 3:04 p.m., Mr. Malone responded to Mr. Ferguson, copying Mr. Cooper, Mr. Worrton, Mr. Bottesini, Mr. Hawash, and Mr. Izadpanah. Mr. Malone attached excel sheets containing speeding data from 2013 to his email:³¹⁶

It looks like they are not reading the complete data set. It is necessary to add the data for both the NB and for SB traffic.

We did an average of both directions in our reporting, but it could be parsed separately for each direction if desired.

Dates of Data Collection: Start: 2013-05-07 - 04:00

End: 2013-05-10 - 04:00

Duration = 72 hours = 3 Days

Speed exceeding 140km/h Total Northbound = 497

Total Southbound = 1112

Total for 3 days = 1609

Average per day, both directions = 536.33

³¹⁴ [HAM0052391_0001](#)

³¹⁵ [HAM0052391_0001](#)

³¹⁶ [HAM0052391_0001](#) attaching [HAM0052392_0001](#) and [HAM0052393_0001](#)

CIMA report rounds down to "more than 500 per day"

To comment on some other issues that have come up:

It was suggested that the data must be inaccurate because "The highway is plugged during that period of time". This is not correct. Certainly the road is congested at times, but you can see in the counts very distinct drops in the highest speeds during AM or PM rush hours. Truly congested periods which impact vehicle speeds are much shorter than implied in the comment.

Regarding the comment, "Apparently it was not radar. It was a device they lay on the pavement. How accurate is that?", I note that Nu-Metric (Hi Star) devices are the tool of choice for speed studies in the industry. The tool allows for continuous collection of 24-hour + simultaneous data collection on roads with more than one lane. Total data collection is not subject to human operator fatigue. As an example, they are utilized by the US Department of Transportation (FHWA) for the United States National Traffic Speed Survey, specifically chosen over several options such as road tubes, LIDAR and RADAR.

The raw data files are in Excel attached

The Nu-Metrics summary tables that get printed are below.

306. On December 17, 2015, at 9:46 a.m., Rich Shebib (Traffic Technologist, Corridor Management, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton) forwarded this email chain to Mr. Moore, with the excel sheets attached.³¹⁷

307. On January 22, 2016, the Hamilton Spectator published an article titled "Red Hill and Linc speed stats questioned". The content of the article was as follows:³¹⁸

As Coun. Lloyd Ferguson sees it, someone has some explaining to do about a consultant's statistics on excessive speeding on the Red Hill and Lincoln Alexander parkways.

Ferguson, while chairing the Hamilton Police Services Board meeting Thursday, expressed concerns about a consultant's safety report to city council claiming that about 500 vehicles per day travel faster than 140 km/h on the Red Hill, which has a 90 km/h speed limit.

"It blew everyone away," Ferguson said after the board meeting. "Based on it (the consultant's information), the city decided to spend \$800,000 in safety improvements."

The improvements include new markings and warning signs, and asking the province for permission to use photo radar.

Ferguson had raised similar concerns after a December board meeting.

³¹⁷ [HAM0052391_0001](#) attaching [HAM0052392_0001](#) and [HAM0052393_0001](#)

³¹⁸ [RHV0000674](#)

But a presentation to the meeting by Insp. Will Mason revealed police haven't found anyone going that speed during an enforcement project currently underway on the expressways.

"How could the consultant get that if you haven't found it?" Ferguson asked.

Mason could only reply: "We haven't seen them (those speeds)."

But Mason did make clear that the finding support the consultant's findings that speed is an issue.

Mason said drivers are endangering lives by their speeding on the expressways, often at speeds that are 30 km/h over the speed limit. The average speeding done on the expressways is at 120 km/h, he said.

"The message that we are receiving (from our statistics) is there is a significant number of individuals travelling at excessive speed, putting themselves and others at risk."

Mason said the top three types of collision on the expressways from 2008 to 2015 were rear-ends from following too close, single motor vehicle accidents from losing control, and side swipes from improper lane changes.

Ferguson said he's going to be asking questions about the consultant's report at council's next public works committee meeting

308. On January 22, 2016, at 7:31 a.m., Craig Murdoch (Director, Environmental Services, Public Works, Hamilton) emailed Mr. Lupton, copying Ms. Wunderlich.³¹⁹ He wrote:

Hey Geoff,

See the attached link. The last sentence says questions will be asked at the next PW meeting.

Please have staff present to answer them.

Thanks.

<http://www.thespec.com/news-story/6244144-red-hill-and-linc-speed-stats-questioned/>

309. On January 22, 2016, at 7:58 a.m., Mr. Malone emailed Mr. Izadpanah, Mr. Hawash, and Mr. Bottesini as follows:³²⁰

Just FYI. One of the councillors (who sits on the police commission) continues to challenge the speed data, because the police did not find anyone doing those speeds.

³¹⁹ [HAM0024875_0001](#)

³²⁰ [CIM0009755](#)

Brian Malone

CIMA+

Burlington, Ontario

Tel: 289-288-0287 x 6802

Cell: 905-466-0421

You have been sent the following link : <http://www.thespec.com/news-story/6244144-red-hill-and-linc-speed-stats-questioned/>

310. On January 22, 2016, at 8:10 a.m., Mr. Lupton forwarded Mr. Murdoch's email to Mr. White and Mr. Ferguson, copying Mr. Mater, Ms. Harbin, and Ms. Hands-Lourie:

Please see below. Be prepared to speak to this issue at the next PWC. I would like you both in attendance. You may want to have Brian Malone available to address these stats.

In the interim, and in advance of the next PW Committee please provide me with the background on the stats and how we got them.³²¹

311. On January 22, 2016, at 8:51 a.m., Mr. Lupton forwarded Mr. Murdoch's email to Mr. Malone:

Heads up. I've asked the guys to contact you to put together a strategy. I understand the facts... it unfortunate that it was taken out of context.³²²

312. On January 22, 2016, at 8:54 a.m., Mr. Ferguson forwarded Mr. Lupton's email to Mr. Malone.³²³

313. On January 22, 2016, at 10:12 a.m., Mr. Malone responded to Mr. Ferguson by email, attaching a document from the U.S. Department of Transportation titled "Speed Enforcement Program Guidelines".³²⁴ He wrote:

³²¹ [CIM0009748.0001](#)

³²² [CIM0009748](#)

³²³ [CIM0009748.0001](#)

³²⁴ [CIM0009748.0001](#) attaching [CIM0009748.0001.0001](#)

I had seen the article in the Spec this morning. The article is somewhat contradictory, in that Insp Mason from the police is quoted as saying their results "...did make it clear that findings support the consultants findings."

As you know, the data is from the study commissioned by the City and we did the interpretation and reporting of it, but I understand the difficulty when the report findings are being challenged.

For what it's worth here are a few things paraphrased from the attached FHWA publication about speed studies that might assist in responding.

- Manual methods (of speed data collection) may be useful to conduct a preliminary assessment but are the least desirable for evaluation of program effectiveness because their results may be biased due to several factors:
 - Persons operating radar or laser are likely to be conspicuous and thus may have a lowering influence on speeds.
 - Even when enforcement is 'hidden' the presence of enforcement is relatively easily detected and relayed through crowdsourcing apps such as Waze, which are highly effective in providing public notification of enforcement presence.
 - Personnel need to be trained to systematically measure a random sample of vehicles from the traffic stream in each lane and direction. Bias occurs without a random sample.
 - It would be difficult to deploy officers for the length of time needed to collect an adequate number of measurements over the full measurement period (24-hour minimum). If the sample period is too short it may result in a biased estimate of speeds.

The Waze radar detection issue is relatively well documented, as noted here:

<http://globalnews.ca/news/1800136/police-expand-concerns-about-waze-app-say-it-interferes-with-speeding-tickets/>

314. On January 22, 2016, Mr. Malone responded to Mr. Lupton by email:

Thanks Geoff. Dave had send a note at just about the same time you did. I had also read the article in the Spec this morning.

I have responded to him, and copied that note to you above.

I'll work with Dave to assist in any way we can. ³²⁵

³²⁵ [CIM0009748](#)

315. On January 22, 2016, Mr. Mater emailed Mr. Lupton, Ms. Harbin, Mr. Ferguson, and Mr. White by email, copying Ms. Hands-Lourie.³²⁶

Dave, let's not wait until committee. Set up a meeting with Ferguson and Malone this week. We want to put this to bed before the meeting.

316. On January 25, 2016, at 8:49 a.m., Mr. Ferguson emailed Councillor Ferguson under the subject line "Linc/RHVP data discussion", copying Mr. Malone, Mr. Mater, and Mr. White.³²⁷

We would like to meet with you on Thursday to discuss concerns with the data from the Linc/RHVP reports.

Is there a time on Thursday that you would be available to meet.

317. On January 25, 2016, at 4:25 p.m., Councillor Ferguson responded to Mr. Ferguson by email, copying Mr. Malone, Mr. Mater, Councillor Terry Whitehead (Ward 8, Hamilton), and Kathy Bishop (Assistant to Councillor Lloyd Ferguson, Ward 12, Hamilton).³²⁸

I would love to have a conversation with you about the Consultant's report. Councillor Whitehead as Chair of PW would like to join us.

Kathy please set up a time with David for us to meet.

318. The "Linc/RHVP Data Discussion" was scheduled for February 10, 2016. Councillor Ferguson organized this meeting. Mr. Ferguson and Councillor Whitehead were required attendees.³²⁹

³²⁶ [CIM0009740](#)

³²⁷ [HAM0024882_0001](#)

³²⁸ [HAM0024882_0001](#)

³²⁹ [HAM0004956_0001](#)

319. On January 26, 2016, at 9:43 a.m., Mr. Shebib emailed Mr. Bottesini, under the subject line “RHVP Speeds”.³³⁰

Long time no talk.

Quick question, reading your RHVP report and you refer to 500 veh a day exceeding 140km/hr? Where did you get this from? I am going through my permanent station reports and not finding anything like that??

320. On January 29, 2016, at 9:52 a.m., Mr. Bottesini responded to Mr. Shebib by email, attaching the email by which he provided Mr. Ferguson with the zip file titled “RHVP Speed & Class Studies (2013)” on December 11, 2015.³³¹

How's it going?

Yeah, it seems these speeds became a huge controversy.

These speeds were collected by (I think) Pyramid in the 2013 RHVP Safety review (when we were looking at ramps as well).

Brian Malone and David Ferguson have been exchanging emails to clarify this data.

You can find the full set of data in the attached email.

321. On January 29, 2016, at 11:00 a.m., Mr. Shebib emailed Mr. Ferguson under the subject line “FW: Speeding on the RHVP?”³³² He copied Mr. Worrone and wrote:

I'm not sure who this study sits with, but I thought I would mention that I was in the process of adding new data to MS2 that I receive regularly from the RHVP permanent station. With all the talk about speeding on the RHVP in the media, I expanded the bins to display up to 190k (pdfs attached, and screen capture below). I am not seeing ANYTHING even remotely like the study Pyramid did for CIMA's report. I have a strong feeling the equipment must of not been calibrated, the bins are incorrectly labelled, or it just malfunctioned.

In either case, why didn't CIMA ask us for more recent data from us as they know of our permanent station? See attached and the screenshots of nb and sb on a Wednesday in October 2015 below.

RHVP Safety Analysis

³³⁰ [CIM0009650](#)

³³¹ [CIM0009650](#) and [CIM0009650.0001](#)

³³² [CIM0009649](#)

<http://hamilton.siretechnologies.com/sirepub/cache/2/1cmgdyjaasvozuhupgaulhik/10605401292016095343281.PDF>

322. On January 29, 2016, at 11:07 a.m., Mr. Ferguson responded to Mr. Shebib:

Thank you Rich

I was of the understanding that the data came from the City. I didn't think CIMA hired the contractor?

Can you please confirm.³³³

323. On January 29, 2016, at 11:11 a.m., Mr. Shebib responded to Mr. Ferguson:

I'd have to check with Tanya, but in either case she would of just been the middle person providing the info to CIMA based on their request. I don't have the data in the Traffic Studies folder which means it was never sent to us for filing, so must of went directly to CIMA.

In either case, we have a permanent count station that has been there since the RHVP was built. Although there have been gaps due to some computer issues, we have data if they need it.³³⁴

324. On January 29, 2016, at 11:14 a.m., Mr. Ferguson responded to Mr. Worrone alone:

"Do we not provide QC on the data?"³³⁵

325. On January 29, 2016, at 11:14 a.m., Mr. Ferguson forwarded his discussion with Mr. Shebib to Mr. Worrone, Mr. Cooper, and Mr. Malone:

Can I receive confirmation on this. Was the data provided by the City or did CIMA arrange for the counts.

Unfortunately this has become a big issue and political, so it must be addressed.³³⁶

326. On January 26, 2016, at 11:24 a.m., Mr. Cooper responded to Mr. Ferguson, Mr. Worrone, and Mr. Malone by email:

³³³ [CIM0009649](#)

³³⁴ [CIM0009649](#)

³³⁵ [HAM0056691_0001](#)

³³⁶ [CIM0009649](#)

I have no record of providing this data to CIMA³³⁷

327. On January 29, 2016, at 11:31 a.m., Mr. Ferguson forwarded Mr. Cooper's email to Mr. Malone:

Brian. Can you please provide confirmation. ³³⁸

328. On January 29, 2016, at 1:15 p.m., Mr. Malone forwarded this email chain to Mr. Bottesini:

Can we clarify. I thought the city have us the data? ³³⁹

329. On January 29, 2016, at 1:21 p.m., Mr. Bottesini responded to Mr. Malone by email. Mr. Bottesini's email attached an email exchange between Mr. Cooper, Mr. Applebee, and Maurice Masliah (Project Manager, Transportation, CIMA), under the subject line "FW: Summary Reports for Red Hill Express-way with posted speed 90km/h".³⁴⁰ As part of that email exchange, Mr. Cooper forwarded a zip file titled "Summary with posted speed 90" that he had received from Pyramid to Mr. Masliah and Mr. Applebee:

I found the attached email from Stephen Cooper.

It seems Pyramid collected the data and the City forwarded them to us.

330. On January 29, 2016, at 6:23 p.m., Mr. Malone responded to Mr. Ferguson, copying Mr. Bottesini, Mr. Hawash, and Mr. Izadpanah.³⁴¹ Mr. Malone attached the email chain titled "FW: Summary Reports for Red Hill Express-way with posted speed 90km/h" to his email:

³³⁷ [CIM0009647](#)

³³⁸ [CIM0009647](#)

³³⁹ [CIM0009646](#)

³⁴⁰ [CIM0009626](#) attaching [CIM0009626.0001](#)

³⁴¹ [CIM0009606](#) attaching [CIM0009606.0001](#)

Attached is the email from which we first received the data. The data was collected by Pyramid, under direction from the City. This was originally done when the Red Hill / Linc study (the first one at the interchange) was done. I can't answer whether the PCS data was available or why it was not used.

We did not have any reason to dispute the Pyramid data, and frankly we still don't. Pyramid is generally reputable in their efforts. If we had collected the data we would likely have used them as the subcontractor without concern.

I see Rich's comments about the PCS and the Pyramid data. I have some observations too. The 85th% values are relatively close. The conclusion that about 90% exceed the posted speed of 90k also looks to match. But data also diverge. As Rich notes, the large quantity of high speed (+140k) values are not present in the PCS data. But the total volumes also seem quite different. For example, the PCS shows NB total volumes for 24 hrs of 21,000, but the Pyramid data indicates over 41,000 in a 24hr period. That range difference is huge. My point is that we might need caution as to determining which data is "wrong". You could attempt to resolve the data conflict with some direct studies (perhaps commission new Pyramid counts right at the PCS location to achieve direct comparison) but I suspect that might just open up a new front in the data war. Probably not a wise thing at the moment.

Playing this statistical data argument out in front of the councillor won't get us much traction. I suggest we steer the discussion to the higher level concern. There does seem to be agreement with the police, albeit with variation on the exact magnitudes, that speeding is an issue. Also agreed by all is that large numbers of users exceed the posted speed limit – 90% of the traffic. It is also clear that there are at least some vehicles with very high, excessive, speeds, on a daily basis. That particular behaviour, given the geometric limitations of the highway, is a recipe for disaster.

We concluded that some drivers are unaware of the potential consequences of their behaviours since they likely perceive the road as just another 400 series highway. It is not, particularly on the Red Hill section, and the speed + geometry combination can quickly result in collisions in the right circumstances. Enhanced enforcement on Red Hill remains the best tool to address these driver behaviour problems linked to speed. If we can start the conversation with the councillor from that place, as opposed to battling over who's data is better, it might be a way to move forward. We all have the same goal, making travel on the road more safe.

331. On February 1, 2016, at 8:40 a.m., Mr. Bottesini responded to Mr. Shebib's email under the subject line "Re RHVP Speeds", copying Mr. Malone:

We actually looked at that station (Queenston) in MS2 and the bins only go to 85+ (i.e. that data would be completely inconclusive). We weren't aware you would have been able to change the bins.

Also, the Queenston Station location would not be the best representation considering the main collision concerns (NB between King and Queenston). The count conducted near Greenhill would give us a better idea of speeds entering this section, while the Queenston station is already downstream of this area and drivers could potentially have already slowed down after the series of tight curves.

Finally, as Brian mentioned to David, we did not have any reason to dispute the 2013 Pyramid data.

Anyway, Brian proposed to David to steer the discussion from the 140 km/h issue to the general speeding, which the Police seems to agree is occurring.

We noted in the report that those curves around King Street are close to a 110 km/h design speed, and whatever date we use, there are several drivers exceeding it – and the collision concentration in that area shows the consequences.³⁴²

332. On February 1, 2016, at 10:19 a.m., Mr. Ferguson responded to Mr. Malone’s email, copying Mr. Bottesini, Mr. Hawash, and Mr. Izadpanah:

Thanks Brian, I agree with everything you said.³⁴³

333. On April 5, 2017, as part of a discussion about the permanent count station on the RHVP, Mr. Shebib emailed Mr. Worrone. He wrote: “If the 85th percentile you are referring to is via the study submitted by CIMA, I would question that study before the permanent station data. The numbers made no sense.”³⁴⁴

334. Mr. Worrone responded later that same day: “I’m confused – what is the reference to CIMA?”³⁴⁵

335. Mr. Shebib responded, writing:

There was a report that was written by CIMA that measured the speeds on the RHVP that had a ridiculously high amount of vehicles travelling 150+.

I think I realize the issue. The data in MS2 is correct, but it is displaying the final speed bin at 85+ (rather than 90, 100, 110, etc). So this would result in a low 85th. Please refer to the Traffic Studies folder for more detailed reports (i.e. see attached).³⁴⁶

336. On August 18, 2017, the PWC made the following recommendation to Council:

12. Speed Limit Reduction Feasibility Study on the Lincoln Alexander Expressway (LINC) and the Red Hill Valley Parkway (RHVP) (Item 9.3)

³⁴² [CIM0009605](#)

³⁴³ [CIM0009604](#)

³⁴⁴ [HAM0056970_0001](#)

³⁴⁵ [HAM0056970_0001](#)

³⁴⁶ [HAM0056970_0001](#)

WHEREAS, speeding is an ongoing concern on the Lincoln Alexander Expressway (LINC) and the Red Hill Valley Parkway (RHVP); and,

WHEREAS, speed -related accidents have lead to serious injuries and fatalities; and,

WHEREAS, reducing the speed limit on the LINC and RHVP may alleviate accidents and improve safety,

THEREFORE BE IT RESOLVED:

That staff from Traffic Operations and Engineering be directed to study the feasibility and safety benefits of reducing the speed limit on the Lincoln Alexander Expressway (LINC) and the Red Hill Valley Parkway (RHVP) from 90 km/h to 80 km/h and report the finding back to the Public Works Committee in one year's time.³⁴⁷

4. Media requests to MTO about RHVP

337. On January 22, 2016, at 2:13 p.m., Matthew Van Dongen (Reporter, Hamilton Spectator) emailed Astrid Poesi (Communications Coordinator, Communications Branch, MTO). He wrote:

So, here's an odd question: has the MTO ever conducted friction testing on the Red Hill Valley Parkway? I know it is owned by the City of Hamilton.

But I was contacted recently by a self-identified retired engineer who suggested the ministry has always been interested in the parkway's performance; he believed the MTO has conducted friction tests periodically over the years.³⁴⁸

338. On January 25, 2016, Ajay Woozageer (Senior Media Liaison Officer, Communications Branch, MTO) forwarded this email to Patrick Searle (Press Secretary & Senior Advisor, Digital Communications, Office of the Minister, MTO), copying a number of other MTO employees. He wrote:

P.

Fyi.. Will provide to Hamilton Spec on friction testing.

Thanks

Ajay

³⁴⁷ [HAM0058706_0001](#) at image 7

³⁴⁸ [MTO0038342](#)

Has the MTO ever conducted friction testing on the Red Hill Valley Parkway?

MTO has conducted friction testing on the pavement surface of Red Hill Valley Parkway in order to evaluate the long term performance of the stone used in the asphalt pavement. The Ministry maintains a list of stone suppliers used in asphalt pavements, and this information is use in determining this list of acceptable suppliers.³⁴⁹

339. On January 22, 2016, at 10:55 p.m., Becca Lane (Manager, Materials Engineering & Research Office, Highway Standards Branch, Provincial Highways Management Division, MTO) emailed Dr. Uzarowski under the subject line “Red Hill Valley Parkway”.³⁵⁰

She wrote:

I received a strange media request about performance of the Red Hill Valley Parkway. Do you keep in touch with Hamilton on that project? Are you aware of any performance issues? Perhaps there is an asphalt cement cracking issue? I am in the dark on this one.

340. On January 25, 2016, at 12:26 p.m., Dr. Uzarowski forwarded Ms. Lane’s email to Mr. Moore.³⁵¹ He stated:

I have received the email below from Becca on Friday afternoon. I was on site and was not able to pass it to you immediately. Obviously, she does not know anything about any issues.

The profile surveys are done and I should have the results on Wednesday.

Please call me if you want to discuss.

5. Discussions about lighting on the RHVP

341. On or around September 19, 2016, Mr. Moore submitted a report, prepared by Gord McGuire (Manager, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton) and Mike Field (Project Manager, Street Lighting & Electrical Engineering, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton), titled “Lincoln M. Alexander Parkway and Red Hill Valley Parkway Lighting

³⁴⁹ [MTO0038342](#)

³⁵⁰ [GOL0002916](#)

³⁵¹ [GOL0002916](#)

(PW16077)” to the PWC. This report commented on the 2015 CIMA Report and 2015 CIMA LINC Report as follows:

The Lincoln M. Alexander Parkway (LINC) & Red Hill Valley Parkway (RHVP) Safety Review report PW15091 briefly discussed the safety benefits associated with continuously lighting the LINC and RHVP. The consultant review included a high-level discussion related to lighting. The high-level review is not comprehensive enough to guide any staff recommendations and in order to fully understand the benefits, risks and challenges of adding continuous lighting, a more fulsome review and business analysis would be required to be undertaken. The approximate cost of such a study would be approximately \$100k.³⁵²

342. The PWC recommended the following to Council in respect of this report:

9. Lincoln M. Alexander Parkway and Red Hill Valley Parkway Lighting PW16077) (City Wide) (Item 8.2)

(a) That Report PW 16077 respecting the Lincoln M. Alexander Parkway and Red Hill Valley Parkway Lighting be received;

(b) That staff be directed to undertake a comprehensive study of lighting opportunities on the Red Hill Valley Parkway at an estimated cost of \$100,000; and,

(c) That the matter be referred to the 2017 Capital Budget process for consideration.³⁵³

R. Consideration of friction testing

1. Response to LBCC correspondence asking for friction testing

343. On January 28, 2016, Councillor Jackson emailed Mr. Ferguson about the agenda for the PWC meeting on February 1, 2016. He copied Mr. Moore and Ms. Leduc on this email, writing:

Dear Supt. Ferguson...Have you had a chance to look over and review Item #5.2?? I had suggested to this group that when I referred this correspondence from a past City Council meeting to this PWs Committee meeting, that even though a number of their suggestions were already being considered by your Department and on your Council approved "to do" list (with the approx. \$800,000.), I would still consult with you to determine if their correspondence had any "new" suggestions that were worthy of your review and a possible report back to Committee in the future. Thoughts for what I should do Monday?? For example...Refer it to you?? Other recommendations??³⁵⁴

³⁵² [HAM0058680_0001](#) at image 3

³⁵³ [HAM0058682_0001](#) at images 6-7

³⁵⁴ [HAM0058661_0001](#)

344. Item 5.2 on the Agenda said: “Correspondence from the Lakewood Beach Community Council respecting the Red Hill Valley Parkway Safety Review (referred from the December 9, 2015 Council meeting).”³⁵⁵

345. Mr. Ferguson replied later that same day, adding Mr. White, Ms. Hands-Lourie, and Ms. Harbin to the email chain. He wrote: “I believe as part of the overall works this is already being covered off (road friction testing). I have copied Director Moore for clarification.”³⁵⁶

346. Councillor Jackson replied:

Dear Supt. Ferguson....Thanks for the prompt reply and explanation. If Director Moore concurs, then I will move "receiving the correspondence only" with the caveat that staff provide a written response to the Lakewood Group outlining and commenting on their suggestions and how staff are already (or will be) implementing these measures accordingly. Thoughts?? Please confirm if this procedure is in order.³⁵⁷

347. Mr. Ferguson replied, writing: “I would concur with that direction.”³⁵⁸

348. Ms. Hands-Lourie forwarded this email chain to Mr. Mater later the same day.³⁵⁹

349. On February 1, 2016, the PWC received the LBCC’s correspondence requesting that the City perform friction testing on the RHVP as a short term safety option following the 2015 CIMA Report.³⁶⁰

³⁵⁵ [HAM0043528_0001](#) attaching [HAM0043529_0001](#)

³⁵⁶ [HAM0058661_0001](#)

³⁵⁷ [HAM0058661_0001](#)

³⁵⁸ [HAM0058661_0001](#)

³⁵⁹ [HAM0058661_0001](#)

³⁶⁰ [HAM0043583_0001](#) at image 2; and [RHV0000672](#) at images 2-3

350. On February 16, 2016, at 11:56 a.m., Mr. Ferguson emailed the LBCC under the subject line “RHVP Improvements”.³⁶¹ He copied the Office of the Mayor, the PWC, Mr. White, Mr. Lupton, Mr. Mater, Janet Pilon (Manager Legislative Services/Deputy Clerk, Office of the City Clerk, Corporate Services, Hamilton), and Mr. Moore:

The following information is provided with respect to your email dated December 9, 2015, to the Mayor’s Office and Members of the Public Works Committee.

Your email was requesting that the identified Friction Test for the Red Hill Valley Parkway be considered for Short Term Testing. Through support from Public Works Committee, I am pleased to inform you that this testing will be completed by Engineering Services in 2016. We are confident that this testing along with implementation of the other Short Term recommendations as outlined in the report, will assist in raising awareness and educating motorists as we work to change driver behaviour along the Red Hill Valley Parkway and Lincoln Alexander Parkway with the ultimate goal to make both roadways safer for motorists.

If you have any questions, please feel free to contact me directly.

351. On February 16, 2016, at 11:57 a.m., Mr. Moore replied to Mr. Ferguson alone by email, saying “perfect.”³⁶²

352. On February 18, 2016, Ms. Leduc emailed Ms. Wunderlich under the subject line “Lakewood Beach Letter”.³⁶³ Ms. Leduc’s email attached the report from the PWC meeting on February 1, 2016:

No wonder you can’t find it... I just remembered that I didn’t do my Council follow-up from the Feb 10 meeting. It likely got buried in a pile on my desk. Sorry about that. I will send the formal notice this afternoon.

In the meantime, he is the Report from the Feb 1 PW meeting that was approved by Council.

The letter from Lakewood Beach is on page 2, Item (d)(i). Basically they just received it. Kind of like “thanks for the letter, got it, read it, end of story.” 😊

³⁶¹ [HAM0043575_0001](#)

³⁶² [HAM0043575_0001](#)

³⁶³ [HAM0043582_0001](#) attaching [HAM0043583_0001](#)

353. On February 23, 2016, at 9:33 a.m., Ms. Leduc emailed Ms. Wunderlich, attaching a delegation request from the LBCC:

The attached delegation request will be added to the Feb 29th agenda. It is for a future meeting. This is the group that Vivian Saunders organizes.³⁶⁴

354. On February 23, 2016, Ms. Cameron forwarded this email to David Dixon (Director, Transit, Public Works, Hamilton), Mr. Mater, Ms. Matthews-Malone, Mr. McKinnon, Mr. Moore, and Mr. Murdoch on behalf of Ms. Wunderlich.³⁶⁵ Mr. Mater then forwarded this email chain to Mr. White, Mr. Lupton, and Mr. Ferguson.³⁶⁶ Mr. Lupton responded "Guys – let's make sure we attend... I think we have some history on this one."³⁶⁷

355. Later that day, Mr. White responded to Mr. Lupton, Mr. Mater, and Mr. Ferguson, copying Ms. Aquila.³⁶⁸

Without looking at it, it's the RHVP safety stuff. Dave provided this group and Council an email update last week at clr Jackson's request. The issue is mostly the asphalt friction test which Gary says is done, we have asked for a copy of the results but haven't seen it yet. We will be in attendance.

356. On February 25, 2016, Mr. Moore forwarded Ms. Cameron's email to Mr. Ferguson, copying Mr. Lupton. He wrote:

FYI – Some roughness/skid resistance/friction testing has been done. However I'm still trying to get the analysis for it and to put it into context (like how does this compare to other highways of similar type.) MTO is very guarded of this information and does not share numbers due to liability and concerns they will form part of a legal action. We should be similarly wary!³⁶⁹

³⁶⁴ [HAM0058666_0001](#) attaching [HAM0058667_0001](#)

³⁶⁵ [HAM0024951_0001](#)

³⁶⁶ [HAM0024951_0001](#)

³⁶⁷ [HAM0024951_0001](#)

³⁶⁸ [HAM0024951_0001](#)

³⁶⁹ [HAM0058666_0001](#)

357. Mr. Lupton forwarded this email to Mr. White and Mr. Mater later the same day.³⁷⁰

358. Mr. Mater responded, writing “Is there a way staff could reach out in the interim to try and get an idea of what it is they are looking for. It may be something simple.”³⁷¹

359. Mr. White responded, copying Mr. Ferguson. He wrote:

Dave you have the contact info correct? Give her a call or email and see where she is going and guide her help her... Let us know. Last time it was primarily the skid testing they wanted and some assurances we were doing our recommended measures...Did she respond to your email at all? Thanks³⁷²

360. On February 29, 2016, the LBCC advised Mr. Ferguson that its delegation request was not related to the RHVP improvements.³⁷³

2. Communication between Dr. Uzarowski and Mr. Taylor

361. On February 19, 2016, at 4:15 p.m., Dr. Uzarowski emailed Mr. Taylor under the subject line “Re: contact information”:³⁷⁴

I would very much appreciate if you could send me some information about the correlation between the locked wheel tester numbers and the grip tester. My contact information is given below.

362. On February 20, 2016, Mr. Taylor responded to Dr. Uzarowski by email.³⁷⁵ Mr. Taylor attached a document titled “A White Paper on Correlation of the GripTester Trailer to the ASTM E 274 Skid Trailer” to his email, and wrote:

As requested, please find attached a document comparing the GripTester CFME (Continuous Friction Measurement Equipment) with the ASTM E274 Locked-Wheel friction measurement trailer.

³⁷⁰ [HAM0058666_0001](#)

³⁷¹ [HAM0058668_0001](#)

³⁷² [HAM0058668_0001](#)

³⁷³ [HAM0058669_0001](#)

³⁷⁴ [TRW0000009](#)

³⁷⁵ [GOL0002686](#) attaching [GOL0002687](#)

You will note that quite good consistency was achieved under controlled comparative testing.

Per our discussion, I would strongly recommend using the GripTester CFME methodology over the ASTM E274 approach for roads (and runways) due to several factors including:

- 1) Continuous fixed-slip data measurements along the whole length of the surface achieving at least 1m resolution compared to 100m+ with the ASTM method
- 2) Better representation of current vehicle braking technologies with CFME compared to Locked-Wheel as all modern vehicles are ABS Equipped
- 3) Availability of accepted Highway/Road reference levels for the GripTester (U.K) for different road classifications (single-lane, dual-lane, intersections etc.)

363. On February 22, 2016, Dr. Uzarowski responded to Mr. Taylor by email:³⁷⁶

Thank you for the paper and the response. Are there any values for the GIPTester used for highway evaluation in Canada or US?

364. On February 22, 2016, at 11:36 a.m., Mr. Taylor responded to Dr. Uzarowski by email:³⁷⁷

I am not aware of any 'official' recognized highway GT reference levels in the Canada or the US. The best approach is probably to use cross-correlation with values from other established devices (such as the ASTM 274 Standard).

365. On February 22, 2016, Dr. Uzarowski made the following note in his notebook: "6)

Gary Moore RR-LU-VH."³⁷⁸

3. Dr. Uzarowski investigates skidabrading and shotblasting

366. On March 4, 2016, Dr. Uzarowski made the following entry in his notebook:

4. Hamilton

- spec
- profile
- results

³⁷⁶ [GOL0002708](#)

³⁷⁷ [GOL0002708](#)

³⁷⁸ [GOL0007409](#) at image 22

– blasting and micro

Steve@skidabrider.com³⁷⁹

367. On March 4, 2016, Garry Krampien (Sales Manager, Eastern Canada, Blastrac/Diamatic) emailed Dr. Uzarowski under the subject line “RP Shot Blasting Quebec”:³⁸⁰

It was very nice to speak with you and discuss your shot blasting project here in Toronto.
Please contact

Contacts

Alex Baudin
Commercial Representative
RP Shotblasting Inc
7, rue HP Monsarrat
Riviere-du-Loup, QC G5R 0C9
Phone: 418-714-3832
Fax: 418-860-2277
Cellular: 418-860-2277
Email:rp.shotblasting@hotmail.com

368. On March 4, 2016, at 1:32 p.m., Dr. Uzarowski emailed Alex Baudin (Commercial Representative, RP Shotblasting Inc.) under the subject line “shotblasting in Toronto”:³⁸¹

We are interested in shotblasting about 120,000 m2 of asphalt pavement on a highway near Toronto. Could you please let me know how much you would charge for this? A ballpark number will do.

369. On March 4, 2016, at 1:42 p.m., Dr. Uzarowski responded to Mr. Krampien by email:³⁸²

Alex Baudin’s contact information does not work. Do you know any other person I can contact?

³⁷⁹ [GOL0007409](#) at image 25

³⁸⁰ [GOL0002691](#)

³⁸¹ [GOL0003549](#)

³⁸² [GOL0002689](#)

370. On March 4, 2016, at 1:51 p.m., Mr. Krampien responded to Dr. Uzarowski by email, attaching a document titled “Shot Blasting Systems AIRPORT, ROAD & BRIDGE”:³⁸³

I would try contacting Groupe Lefebvre in Quebec. They have the Blastrac 2-4800DHMKV

<http://www.groupe-lefebvre.com/contactez-nous/>

371. On March 4, 2016, Dr. Uzarowski emailed steve@skidabrader.com under the subject line “skidabrading highway near Toronto”:³⁸⁴

We are interested in skidabrading about 120,000 m² (1,300,000 sqft) of an asphalt pavement on a highway near Toronto in Ontario, Canada.

I have a few questions:

1. Do you offer this service here,
2. How much would it cost us? Ballpark number will do.

372. On March 10, 2016, Alexandre Lefebvre (Project Manager, Groupe Lefebvre) emailed Dr. Uzarowski under the subject line “High Asphalt Treatment – Toronto.”³⁸⁵ He wrote:

There are two common methods for creating skid resistant surfaces in North America that can resist to our cold environment High Friction Treatment (HFST) and Shotblasting. High Friction Surface Treatment (HFST) is most common method currently. Shot Blast texturing is much less expensive but also shorter-lived.

Common HFST spec calls for sweep and blow of asphalt roadway followed by 1-coat application (approx 60 mils) of epoxy resin with bauxite aggregate. Shot-blast prep of asphalt prior to application is becoming more common and is a good idea.

In other words, there are two option we can suggest:

Option 1 (High Friction Surface Treatment):

³⁸³ [GOL0002689](#) attaching [GOL0002690](#)

³⁸⁴ [GOL0003551](#)

³⁸⁵ [GOL0002699](#) attaching [GOL0002700](#)

- HFST application only (Traffic Control not included) which goes for \$3.25- \$4.25 per square foot without shot blast prep.

Option 2 (Shotblasting)

- Shotblasting will cost around \$0.35 - 0.40\$ per square foot

I've attached a good model spec from our project with New Jersey DOT for option 1.

In these types of projects, speed and experience are often key factors for a successful project. Groupe Lefebvre works all over North America on major projects with the biggest equipment available to minimize downtime for our clients.

We thank you for the opportunity and we are looking forward to further discuss this project.

373. On March 10, 2016, Dr. Uzarowski emailed Jon Swain (Owner & Chief Executive Officer, Skidabrader) under the subject line "skidabrading an asphalt pavement":³⁸⁶

I have attached a photo of the surface after construction.

374. On March 11, 2016, Mr. Swain responded to Dr. Uzarowski, attaching a document titled "Quote to Golder Associates Toronto Canada". The skidabrading quote attached to Mr. Swain's email was for "\$301,888".³⁸⁷

4. Mr. Moore and Dr. Uzarowski discuss skid testing and skidabrading

375. On March 14, 2016, Dr. Uzarowski made the following entry in his notebook:

2) Gary Moore – spec, friction, proposals³⁸⁸

376. On March 15, 2016, Mr. Moore emailed Dr. Uzarowski under the subject line "Skid testing."³⁸⁹ Mr. Moore wrote:

No, \$300,000 is just a ridiculous amount. I don't need the whole road tested. And I don't need every wheel path of lane. 4 to 6 spots that would be representative or worst case is all I need at the most. But I suspect that is still too expensive.

³⁸⁶ [GOL0003538](#) attaching [GOL0003539](#)

³⁸⁷ [GOL0002703](#) attaching [GOL0002704](#)

³⁸⁸ [GOL0007409](#) at image 26

³⁸⁹ [GOL0002697](#)

377. On March 15, 2016, Dr. Uzarowski responded to Mr. Moore by email:

I have asked for the price for the entire surface. For this a big Skidabrader would be required, the one that would have to come from Louisiana. The big one can do 3,000 square yards per hour. This machine restores the texture and brings the skid numbers high. The cost is about \$2.0 per square yard.

For smaller quantities a smaller machine can be used, such as the one they have in Quebec, for instance. The smaller one would be much cheaper but is slower.

I know a local company (in Cambridge) who bought the NAC machine to measure skid resistance at the airports. If you are interested I can get them to run it on the Red Hill Valley and determine the worst locations. And then it can be done with the small machine. Would you like me to check the cost? ³⁹⁰

378. Mr. Moore responded later that morning to Dr. Uzarowski by email.

Sorry I thought you were talking about more testing. I have never heard of this technology or what it does. Besides it doesn't address the cracking and need to address the surface distresses and deformations (humps and sumps), so I don't think we are interested. Thanks³⁹¹

S. *April 2016 announcement of planned rehabilitation of RHVP in 2017*

379. Nicholas Cifelli (Technical Services Manager, Miller Paving Limited, Miller Group) circulated an invitation for a lunch and learn on March 21, 2016 to City staff. The agenda for this lunch and learn was as follows:

AGENDA:

Asset management basics

Microsurfacing

Slurry seal

Surface treatment

Cold recycled mixes

Hot mix asphalt³⁹²

³⁹⁰ [GOL0003536](#)

³⁹¹ [GOL0002698](#)

³⁹² [HAM0024920_0001](#)

380. On March 22, 2016, Derek Nunn (Division Manager, Asphalt Emulsions, Norjohn Contracting, Walker Industries), emailed Mr. Becke under the subject line “Scrub Seal.”

He wrote:³⁹³

Just wanted to touch base and let you know that our emulsion group has done their homework and is formulating an asphalt emulsion appropriate for scrub seals.

The contracting arm has sourced a manufacturer for the equipment and will require 2 months lead time.

We have an independent engineering firm on board to help assess the existing, and post conditions of any trial or comparative work.

Hoping we can meet face to face soon to discuss how such a project may come together.

Please let me know if you and your team are available in the next week or two.

381. On March 23, 2016, Mr. Becke replied, copying Mr. Andoga, Sam Sidawi (Manager, Asset Management, Engineering Services, Public Works, Hamilton), Nick Piedigrossi (Infrastructure Programming Technologist, Infrastructure Programming, Asset Management, Engineering Services, Public Works, Hamilton), and Alan Jazvac (Project Manager (Surface Infrastructure), Infrastructure Programming, Asset Management, Engineering Services, Public Works, Hamilton). He wrote: “I am forwarding this information over to our Asset Management group so they can be involved with seeing this type of pavement preservation technology as well as scoping. Sam / Rick: please keep me in the loop with this as I am very interested in its application.” Mr. Jazvac arranged this meeting for April 27, 2016.³⁹⁴

382. On April 15, 2016, Mr. Andoga emailed Mr. Nunn under the subject line “LINC - Red Hill Rehabilitation.”³⁹⁵ Mr. Andoga copied Mr. Moore, Mr. Sidawi, Mr. Hughes, and

³⁹³ [HAM0043684_0001](#)

³⁹⁴ [HAM0043684_0001](#)

³⁹⁵ [HAM0033919_0001](#)

Paul McShane (Project Manager, Technical Operations & Infrastructure Rehabilitation, Roads & Maintenance, Operations, Public Works, Hamilton) on this email:

Next year the City of Hamilton is proposing to address the pavement rehabilitation needs of both Lincoln Alexander Parkway (LINC) and the Redhill Valley Expressway (RHVE). The objective is to improve skid resistance of the RHVE, seal the existing pavement for the ramps of the LINC, and extend pavement life, as well as increase the service levels the roadway provides. We would like to invite Walker Industries to submit a proposal that recommends a rehabilitation strategy that would meet these objectives, in addition to completing a 500m test section this year.

Our intent is to complete base repairs at settlement areas along the RHVE, in addition the rehabilitation of the LINC ramps that are also in need of repair due to stress and joint pavement cracking. These areas would then be surface treated.

The test sections would be located on the Dartnall Road interchange, north side of the LINC for the on or off ramp.

<https://www.google.ca/maps/place/Dartnall+Rd,+Hamilton,+ON/@43.1993922,-79.8258854,17z/data=!4m2!3m1!1s0x882c9a023f52a5d9:0x3640ea7c68ccf809>

If you should have any questions in this regard, please feel free to contact this office.

383. On April 15, 2016, Mr. Andoga emailed Mr. Becke and Ms. Jacob copying Mr. Jazvac, Chris McCafferty (Senior Project Manager, Design, Engineering Services, Public Works, Hamilton), Mr. Oddi, and Mr. Sidawi:³⁹⁶

Please be advised, Asset Management has programmed both the LINC and RHVE for rehabilitation in 2017. The objective is to improve skid resistance of the RHVE, repair settlement areas as well as repair the ramps of the LINC. Both the Miller Group and Norjohn have been invited to provide a proposal for a rehabilitation strategy to meet these objectives, in addition to completing 500m test section along the Dartnall Road interchange. The test sections are to be completed this year.

If you should have any questions in this regard, please feel free to contact this office.

384. On April 15, 2016, Mr. Becke responded to Mr. Andoga alone, and asked “Interesting! Are we thinking micro-surfacing?”. Mr. Andoga responded “yes sir” to Mr. Becke.³⁹⁷

³⁹⁶ [HAM0000760_0001](#)

³⁹⁷ [HAM0000761_0001](#)

385. On April 15, 2016, Mr. Nunn responded to Mr. Andoga's email under:

Norjohn is definitely interested. I have a meeting scheduled with the city of Hamilton on April 27th (Al Jazvac is setting it up). Hope you can attend.

I don't plan to have a formal presentation. Just some open discussion. I am thinking the Ultra-Thin Bonded Wearing Course would be a possible solution.³⁹⁸

386. On April 25, 2016, Mr. Nunn responded to Mr. Andoga's email.³⁹⁹ Mr. Nunn attached three documents, including a proposal for the use of Ultra-Thin Bonded Wearing Course on the LINC and RHVP to his email and wrote:

Norjohn is pleased to submit a proposal for Ultra-Thin Bonded Wearing Course (BWC).

The attached documents include a cover letter, outline the process and provide a local specification that we have had success with.

Please let me know if there is anything else you need.

Looking forward to our discussion on Wednesday.

387. On April 25, 2016, Mr. Andoga forwarded Mr. Nunn's email, with attachments, to Mr. Moore, Mr. Sidawi, Mr. Hughes, Mr. McShane, Mr. Becke, Dennis Perusin (Senior Project Manager, Construction, Engineering Services, Public Works, Hamilton), Mr. Oddi, and Mr. Jazvac. He wrote "FYI. For discussion at our meeting with Norjohn on Wednesday."⁴⁰⁰

388. On April 25, 2016, Mr. Moore responded only to Mr. Andoga, copying Ms. Cameron and said "I don't have any meeting in my calendar?"⁴⁰¹ Mr. Andoga responded, writing "That's ok, you don't need to be there."⁴⁰²

³⁹⁸ [HAM0025036_0001](#)

³⁹⁹ [HAM0033919_0001](#) attaching [HAM0033920_0001](#), [HAM0033921_0001](#) and [HAM0033922_0001](#)

⁴⁰⁰ [HAM0033919_0001](#)

⁴⁰¹ [HAM0000762_0001](#)

⁴⁰² [HAM0000763_0001](#)

389. The calendar invitation for the meeting between Norjohn Contracting and City staff on April 27, 2016, is titled “Discussion with Norjohn re: Scrub Seal application”.⁴⁰³

390. On May 2, 2016, Mr. Andoga emailed Mr. Cifelli under the subject line “FW: Dartnall Road Ramp Drawings (1 of 2 emails).” He wrote:⁴⁰⁴

Please find the Dartnall Ramp drawings attached for your use. Upon further discussion we may extend the work to performed to include an additional 500 linear meters. The proposal should be based on both 500m and 1000m.

There are some issues that we can discuss at our meeting later this month.

If you should have any questions in this regard, please feel free to contact this office.

391. Mr. Cifelli replied to Mr. Andoga that day, copying Brad Fulton (Project Manager, MSO Construction Ltd.). He wrote:⁴⁰⁵

Hello Richard – We drove the LINC & Red Hill last week and took some notes & photos. We drove a loop, starting at Dartnall, along the RHV to QEW, turnaround at Fruitland, then along RHV from QEW to the LINC, continuing to Rousseau, turnaround, and back to Dartnall. To summarize...

- Bad paver joints in general, in various states of cracked, open, potholes, blowouts.
- May need to repair areas (crack seal, cold mix, hot mix) before Micro
- Wheel path cracking suggests the road has reached or exceeded its design ESALs and is now failing in fatigue. Likely not high-RAP / REOB-related b/c surface still has black colour. Could also be poor base, inadequate structural number. Can you send us some recent traffic data?
- Ramps seem either black and in decent shape for preservation, or light grey with rust streaks in borderline too-bad shape for preservation.
- We’re concerned about the bad cold joint from RHV North to QEW East

Brad feels that Micro is a good option, however we need to allow for some pre-construction repairs (potholes, crack sealing, base, etc.), and perhaps some crack sealing the year after the Micro in case some cracks return.

⁴⁰³ [HAM0033918_0001](#); See also [RHV0000887](#)

⁴⁰⁴ [HAM0025065_0001](#)

⁴⁰⁵ [HAM0025065_0001](#)

In terms of a proposal, were you thinking something formal including prices, or is a simple quote format ok? What allowances would you like us to make for any pre-work? Thank you & have a great day!

392. Mr. Andoga replied, copying Mr. Fulton, Mr. McShane, Mr. Becke, Mr. Hughes, Mr. Moore, and Mr. Sidawi. He wrote: "We can discuss further details at our meeting and try to get you some addition information, such as traffic counts requested. All maintenance repair areas (base repairs etc.) will be completed by others prior to the completion of any application."⁴⁰⁶

393. On November 28, 2016, Mr. Andoga emailed Mr. Nunn. He wrote:

Hope all is well. We are currently looking at the possibility of using a bonded wearing coarse application on two (2) local residential roadways in the City of Hamilton. The roads in question are listed below:

- Buckingham Drive and Sandringham Avenue (409 lm)

https://www.google.ca/maps/@43.2336571,-79.9152132,3a,75y,0.53h,77.19t/data=!3m6!1e1!3m4!1slbQKOYMzRUCd_tOA0ZWV7A!2e0!7i13312!8i6656

- West 19th Street from Mohawk Road to Sanatorium Road (252 lm)

<https://www.google.ca/maps/@43.2312402,-79.9007266,3a,75y,23.1h,75.75t/data=!3m6!1e1!3m4!1skr0xPEltOx6ksaaR622b6g!2e0!7i13312!8i6656>

Can you please provide you professional recommendations as to the feasibility of the use of the product and if so the overall value of work. The total quantity is approximately 661 lm of 8.5m wide local road.⁴⁰⁷

394. On November 29, 2016, Mr. Nunn replied, writing:

Took a quick look at these streets this morning.

Buckingham and Sandringham are suitable candidates. I might suggest crack filling the centreline, then the BWC overlay.

Any iron that requires adjustment, could be done after, but I think these are suitable to leave as they are and perform handwork around them.

⁴⁰⁶ [HAM0025065_0001](#)

⁴⁰⁷ [HAM0025569_0001](#)

West 19th is likely too far gone to provide any top down solution. I would recommend a shave and pave. If the cracking is still evident after milling 40mm, FiberMat as a SAMI will help it last a bit longer.

We can price these roads out as a separate project if you like, however, I am optimistic that there will be larger quantities of BWC on the annual surface treatment contract that we could roll these streets into, to provide more attractive pricing.

Also have to ask about the Dartnall ramps, LINC, Redhill and Strachan.

Norjohn is poised to make an investment in the equipment to do more BWC, and it makes it easier to justify if we know the City of Hamilton plans to continue using the product (with a rough idea on annual quantities).

We should get together soon for some holiday cheer to discuss.⁴⁰⁸

T. Mr. Moore comments on pavement work prior to rehabilitation

395. On May 13, 2016, Mr. White emailed Mr. Lupton, Mr. Moore, and Ms. Matthews-Malone.⁴⁰⁹ He attached a draft staff report titled “LINC and RHVP Safety Improvements Info Update.May13.2016-kj”:

John has asked that an Info Update be provided to Council to advise them of the timing of the safety improvements that will be made on the Linc/RHVP. As this Update involves works by Operations and refers to follow up reports by Engineering I want to be certain that Betty and Gary are comfortable with the wording prior to release. Gary and Betty please advise if you wish me to make changes to the attached document. Thanks

Kris and Bob have been discussing closing the facility to conduct the various works in a co-ordinated fashion. They will be making a decision shortly and then work schedules will need to be confirmed in order to complete the tasks in a timely fashion.

Let me know if there are any concerns.

396. The staff report attached to Mr. White’s email contained the following anticipated timeline for short term safety options on the RHVP and LINC:⁴¹⁰

⁴⁰⁸ [HAM0025569_0001](#)

⁴⁰⁹ [HAM0005101_0001](#) attaching [HAM0005102_0001](#)

⁴¹⁰ [HAM0005102_0001](#) at image 2

| Improvement/Safety Enhancements | Completion Date |
|---|---------------------|
| Trim Vegetation on on-ramps, Queenston Rd. and Barton St. | June - July |
| Install Oversized Speed Limit Signs | June - July |
| Install "Slippery When Wet" Signs | June - July |
| Install "Merge" and "Bridge Ices" Signs | June - July |
| Install Speed Fine Information Signs | June - July |
| Upgrade Guiderail End Treatments | July - August |
| Install, replace or trim vegetation obscuring signs at Guiderail End Treatments | July - August |
| Install Object Marker Signs on Guiderail End Treatments | June - July |
| Install Permanent Raised Pavement Markings from Greenhill to QEW | August - September |
| Install Advance Diagrammatic Sign on Rousseaux on-ramp west of Mohawk Road | August – September* |
| Install Advance Sign with Advance Right Lane Exits, Next Lane Exit or Through Sign between Hwy 403 and Mohawk Rd. | August – September* |
| Install Digital Speed Feedback Signs | September - October |
| * Timing is tentative. Coordination and approval required from Ministry of Transportation. | |

397. On May 13, 2016, Mr. Moore emailed his response to Mr. White.⁴¹¹ He wrote:

The only comment I have is that we are possibly looking at pavement rehab work on the Red Hill in 2017 I would not plan on any on pavement work this year as it will likely be overlaid next year.(pending successful outcomes of trials this year and available budget next year). I would just note that raised pavement markings will be coordinated with future rehab works, timing TBD. I'm good with the rest.

398. On May 13, 2016, Mr. White responded to Mr. Moore.⁴¹² He wrote:

Ok perfect Gary thanks.. May I please ask that we include durable markings and inlaid pavement reflectors within the paving contract please. I will pay for that part of it.... If that works for you I will have Traffic Engineering forward a spec for the inlaid markers and durable markings (I think you have the durables already)... for inclusion in the project spec....

⁴¹¹ [HAM0005105_0001](#)

⁴¹² [HAM0005105_0001](#)

399. On May 13, 2016, Dr. Uzarowski made the following note in his notebook: “15) Hamilton – Leonard Taylor.” Dr. Uzarowski made the following note in his notebook the same day: “32) Call Gary Moore – pav. perf.”⁴¹³

400. On May 20, 2016, Ms. Harbin emailed the members of City Council on behalf of Mr. Lupton, attaching the “Information Update on the LINC & Red Hill Valley Parkway (RHVP) Safety Improvements”.⁴¹⁴ The final version of the staff report contained the following anticipated timeline for short term safety options on the RHVP and LINC:

Table 1 - Short-Term Safety Enhancements/ Improvements for the LINC & RHVP

| Short-Term Safety Enhancements/ Improvements to be Implemented in 2016 | Estimated Completion Dates |
|---|---|
| Trim Vegetation on on-ramps, Queenston Rd. and Barton St. | June - July |
| Install Oversized Speed Limit Signs | June - July |
| Install “Slippery When Wet” Signs | June - July |
| Install “Merge” and “Bridge Ices” Signs | June - July |
| Install Speed Fine Information Signs | June - July |
| Upgrade Guiderail End Treatments | September - November |
| Install, replace or trim vegetation obscuring signs at Guiderail End Treatments | July - August |
| Install Object Marker Signs on Guiderail End Treatments | September - November |
| Install Permanent Raised Pavement Markings from Greenhill to QEW | Timing pending pavement review. Possible resurfacing. |
| Install Advance Diagrammatic Sign on Rousseaux on-ramp west of Mohawk Road | August – September* |
| Install Advance Sign with Advance Right Lane Exits, Next Lane Exit or Through Sign between Hwy 403 and Mohawk Rd. | August – September* |
| Installation of Signs Stating the Penalties and Costs Associated with Speeding. | September - October |
| * Timing is tentative - Coordination and approval is required from Ministry of Transportation. | |

⁴¹³ [GOL0007409](#) at image 30

⁴¹⁴ [HAM0000771_0001](#) attaching [HAM0000772_0001](#)

401. On May 24, 2016, Dr. Uzarowski made the following note in his notebook: “1) Meeting in Hamilton.”⁴¹⁵ On May 26, 2016, Dr. Uzarowski made the following note in his notebook: “11) Hamilton – Leonard Taylor.”⁴¹⁶

402. On August 2, 2016, Dr. Uzarowski made the following note in his notebook: “16) Hamilton!”⁴¹⁷

U. Mr. Oddi’s Views about Lawsuits Related to the RHVP

403. On April 18, 2016, Mr. Oddi left the following voicemail for someone at Phillips Engineering:

It's Marco Oddi calling. It's about quarter to ten on Monday, April 18th. Just wanted to let you know I had an interesting talk with our claims adjusters and some of our risk management people. Because we got some other lawsuits coming up and I see the trend from our lawyers, who are I don't mind in that same firm, tend to want to know who the engineers are, and the principal and chartered, that kind of a thing. But I'm a little disappointed that we're charging. It doesn't make any sense, especially when design guidelines, and the guidelines were set by the region and city. Anyway, they did say that you know what? They just named them in the suit in case there's insurance and these people have insurance to cover. They're just trying to look to gather money. So in the case of Phillips, and hopefully Gary Tansley, they're going to basically drop you guys from the suit. And when they do that, if and when they do that, you guys can turn around and ask the city to reimburse you for the legal costs you incur. I just said to our insurance people that seems insane that that's the strategy we're taking when we know they're not responsible. I guess they just didn't do enough homework on those in deciding to charge the firm to the principal. So be patient. If you guys get dropped out of it because of the evidence provided at discovery, then you've got an out to turn around and ask the city to reimburse the legal expenses that you guys have incurred.⁴¹⁸

V. Mr. Moore requests temperature data

404. On September 30, 2016, Mr. Moore emailed Dr. Uzarowski under the subject line “Red Hill Parkway asphalt performance data”:⁴¹⁹

⁴¹⁵ [GOL0007409](#) at image 31

⁴¹⁶ [GOL0007409](#) at image 31

⁴¹⁷ [GOL0007409](#) at images 33-34

⁴¹⁸ [HAM0052464_0001](#)

⁴¹⁹ [HAM0000825_0001](#)

I asked you in the spring for the temperature information data we have. I.E. Ambient temp/ surface pavement temp/ temperature at depth. I need this as soon as possible. Thanks

405. On October 3, 2016, Dr. Uzarowski responded to Mr. Moore:⁴²⁰

This is what I could quickly find as analysed in my records. In the analysis for the 2009 report we have analysed four days that would cover the entire year. We used November 24/2008, January 18/ 2009, March 30/ 2009 and June 09/2009. The temperature trees do not measure ambient temperature so I have included the ambient temperature reported by Environment Canada for Hamilton Airport for those particular days.

| Lift | Depth (mm) | Temperature (°C) | | | |
|--|------------|------------------|---------|---------|------------|
| | | 11/24/08 | 1/18/09 | 3/30/09 | 06/09/2009 |
| Ambient temperature (Hamilton Airport) | - | 3 | -4 | 1 | 18 |
| SMA | 20 | 6 | -1 | 10 | 22 |
| Superpave 19.0 | 65 | 5 | -1 | 10 | 22 |
| Superpave 25.0 | 125 | 6 | -1 | 10 | 22 |
| RBM | 200 | 5 | -1 | 10 | 22 |
| Base | 315 | 7 | -2 | 9 | 28 |
| Subgrade | 880 | 6 | -2 | 9 | 27 |

406. On October 4, 2016, Mr. Moore responded to Dr. Uzarowski “Perfect thanks” by email.⁴²¹

W. Proposed Critical Success Factors for the Public Works Department in January 2017

407. On January 26, 2017, Ed McMahon (Partner, COREinternational Inc.) emailed Mr. McKinnon, attaching documents titled “Critical Success Factors for Organization Implementation” and “Role Purpose Statements FINAL” for the Public Works Department.

He wrote:

We have updated these two documents to reflect our conversation on Tuesday evening. I’m sorry we couldn’t get these to you yesterday but we needed a little extra time to do the cross-checking between Mike’s notes and mine to be sure we had captured things correctly.

⁴²⁰ [HAM0000825_0001](#)

⁴²¹ [GOL0002706](#)

The section on Technology and Digital Strategy in the CSFs is what has changed the most. To be precise this incorporates some of the findings from the work that we did earlier in HR but I don't think that changes the fact that there are a multitude of technologies deployed, and that the lack of a digital strategy creates a risk of further divergence.

Hope these are helpful. We will be looking to set up a meeting next week to discuss next steps and the scope of work and costing for the implementation.

Can I share these with Lora when we meet, or would you prefer not at this point? She has never had a real debrief on the design part of this engagement and it might be helpful to bring her up to speed. If it works for you, I would like to show here the new organization design together with these two documents.

Please let me know if that's OK.⁴²²

408. The document titled “Critical Success Factors for Organization Implementation”, included the following content:

Critical Success Factors

Right players, in the right roles, operating at the right level

An early theme that emerged from the interview data was compression (role holders working one or more levels below the level of their role) across the organization.

There are typically four reasons why this happens (or sometimes, a combination of two or more of these):

1. Roles are not clearly defined at the appropriate level;
2. Role holders are unclear about the level of work of their role;
3. Role holders lack the requisite skill, knowledge, experience or information processing capability to successfully execute on the requirements of the role;
4. Role holders who are new to their higher level role choose to continue to execute the lower level work they are more accustomed to.

As part of the implementation of the new organization design, roles must be designed to reflect level-appropriate accountabilities. Before final placement of people in roles, potential role holders should be assessed to determine whether they have the information processing capability, knowledge, skills, experience and leadership capabilities sufficient to the requirements of the role.

Identified theme(s):

- ❖ Department-wide confusion about accountability and level of work contributes to challenges with LW3 continuous improvement work and LW4 general management work

⁴²² [HAM0062343_0001](#) attaching [HAM0062344_0001](#) and [HAM0062345_0001](#)

Additional Focus on business process improvement

Another theme that emerged in the course of data collection and analysis was the limited volume of cross-divisional inter- and intra-departmental business process and systems improvement work underway.

This theme is directly related to the theme noted above.

When role holders are not executing at the right levels, important work fails to be done. In this case, the important work (which should happen at LW3 and LW4) involves designing, implementing and continuously improving systems and processes that are designed to facilitate the flow of work inside a Division, between Divisions in the same Department, and between Departments.

This situation is particularly acute between Public Works & Planning and Economic Development (at the Departmental level) but was also reported regularly between Divisions within Public Works.

The implementation of the new organization provides a good opportunity to clearly define these continuous improvement accountabilities, and to hold the appropriate role holders accountable for execution.

Identified theme(s):

- The attention of LW4 and LW3 organizational leaders is focused inward and down, suppressing cross-boundary work required within PW and across City departments
- This has a high degree of impact on Continuous Improvement work, which is generally insufficient for an organization of this scale and complexity ⁴²³

409. On March 20, 2017, Mr. McKinnon submitted a report titled “Public Works Organizational Structure Review” (“Report PW17025”) to the Public Works Committee. The report summarized changes to Public Works’ organizational structure following COREinternational’s review.⁴²⁴

⁴²³ [HAM0062344_0001](#)

⁴²⁴ [HAM0061797_0001](#) attaching [HAM0061798_0001](#), [HAM0061799_0001](#) and [HAM0061800_0001](#)

X. Efforts by HPS to improve safety on RHVP in January 2017

410. On April 4, 2016, the PWC received a report titled “Hamilton Strategic Road Safety Program Update (PW16027).”⁴²⁵ This report included speed monitoring on the LINC and RHVP as a Hamilton Strategic Road Safety Program project for 2016:

8.0 Red Hill Valley Parkway (RHVP) and Lincoln Alexander Expressway (LINC) Vehicle Speed Monitoring

As Part of the Hamilton Strategic Road Safety Program, Traffic reported in report PW15091 respecting collision mitigation on the RHVP and The LINC and recommended a list of short term, medium and long term actions to reduce collisions. One of the recommendations to reduce collisions resulting from motorist speeding was to request additional Hamilton Police Services (HPS) speed and aggressive driving enforcement on these roadways. The Police have conducted speed enforcement over this winter and have observed that the incidents of speeding have reduced while Police are present. Traffic staff and HPS staff met in January 2016 to determine a permanent means for HPS to monitor the speed of traffic on the expressways. It was agreed that Traffic will utilize the new Advanced Traffic Management System technology and install new speed monitoring cameras on the RHVP and the LINC and provide the HPS with a display of the images and recorded vehicle speeds, such that they can monitor expressway condition and provide enforcement based on real time conditions and observations. The estimated cost to provide the equipment and system monitoring is approximately \$200,000.⁴²⁶

411. The Information Update on the LINC & Red Hill Valley Parkway (RHVP) Safety Improvements dated May 20, 2016, stated:

Staff are currently working in partnership with Hamilton Police Services investigating various types of digital radar speed feedback signs that would meet the needs of both groups. The new digital information radar feedback signs will monitor vehicle speeds on the LINC and the RHVP and provide appropriate feedback to drivers through variable message signs. The new system would be controlled through the Traffic Management Centre and will provide notifications to Hamilton Police Services of the operating speeds along both roadways. This would enable the police to deploy selective enforcement resources as needed. Hamilton Police Services has been conducting regular enforcement on both the LINC and the RHVP and have issued over 1600 violations in four months. This new system will provide the City of Hamilton and Hamilton Police Services with the ability to monitor vehicle speeds efficiently and deploy resources as needed.⁴²⁷

412. On January 17, 2017, Nelson Melendez (Project Manager - ATMS, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets

⁴²⁵ [HAM0043666_0001](#) at image 2

⁴²⁶ [HAM0044774_0001](#) at images 8-9

⁴²⁷ [HAM0000772_0001](#) at image 3

& Strategic Planning, Public Works, Hamilton) emailed Mr. White and Mr. Jacobson under the subject line "Speed Deterrent System Update".⁴²⁸ Mr. Melendez copied Mr. Ferguson, Kevin Spadaro (Supervisor Signals, Traffic Operations, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works, Hamilton), and Ms. Boylan on this email, which read:

Unfortunately, we were not able to complete Phase 1 of this project before the end of 2016. However, our crews did accomplish a substantial amount of work in 2016. Based on my estimates, we have completed approximately 90% of the field deployment. The completion of Phase 1 will allow us to share the following information with Hamilton Police:

- Video feeds and traffic data on ATLAS (ATLAS to be upgraded this month)

Video: <https://youtu.be/PDFRNxtEDQ8>

- Speed data from multiple sources including video, radar and Bluetooth
- Traffic congestion and travel time information through the Bluetooth GUI
- Statistical speed and volume raw data

Please keep in mind that many of this system's components and software had to be specifically designed or modified for this project. Please find below a summary of the key accomplishments of 2016 and what needs to be done to complete Phase 1:

DEPLOYMENT SUMMARY:

1)Vector Camera Deployment:

We have deployed 95% of the speed cameras but all cameras require a radar unit and firmware upgrade. An early version of the new radar units and firmware is currently being beta tested at the RHVP and Mount Albion.

Video: https://youtu.be/_5ukGLcQkJ8

2)GRIDSMART Camera System Upgrade:

In order to leverage the existing deployment of GRIDSMART cameras on the LINC, I challenged GRIDSMART to develop a speed detection algorithm. The speed detection algorithm has been deployed and is currently being Beta tested on the LINC.

Video: <https://youtu.be/y7lpsRs9lXw>

3)Velocity Bluetooth Sensor Deployment:

⁴²⁸ [HAM0025670_0001](#)

We have deployed 100% of the Bluetooth stations and activated 40% of the units. A number of minor components such as Bluetooth antenna cables still need to be deployed in order to activate the remaining 60% of the units.

4) Speed Deterrent Communication Systems:

The speed deterrent system has its own communication system which is made up of a network of LTE cell modems and short range GRIDSMA^RT wireless communication links. The communication system is 95% deployed and operational but a handful of GRIDSMA^RT wireless communication links need to be upgraded.

5) Speed Deterrent PTZ Camera Network:

Speed cameras provide directional/stationary camera views with no ability to pan-tilt-zoom. In order to provide some surveillance capability we are expanding the existing network of surveillance cameras to a total of 5 stations. One more camera needs to be deployed and connected to an existing speed camera cabinet.

Video : <https://youtu.be/nv4DcbGPTnY>

6) Speed Camera Hybrid Cabinets:

Because the Speed Deterrent System uses a number of different components from both Iteris and GRIDSMA^RT we had to design and manufacture a hybrid cabinet that could accept equipment from both companies. The result was our new Hybrid cabinet which is currently manufactured by GGI. We have deployed 86% of the 14 Hybrid cabinets.

7) Hamilton Police Monitors and Computer Terminals:

I will be working with Shelley to proceed with the purchase of monitors and a dedicated computer in the next couple of weeks. We are also working with IT to create a network link between the City and Hamilton Police.

This is truly an integrated ATMS system that combines a number of speed and volume sensing components from both ITERIS and GRIDSMA^RT. The result will be a system that delivers rich, verifiable and accurate volume/speed data that can be shared with Hamilton Police and used in KITS for future ATMS applications. In order to complete Phase 1 of this project, I'm requesting two signal crews for a period of 3 days. The work does not have to be carried out on consecutive days but weather conditions need to be optimal as we are replacing sensitive electronics inside the camera housings. Please let me know if you have any questions or concerns.

413. On January 17, 2017, Mr. Ferguson forwarded this email to Superintendent Mason:

Here is some updated info, I have asked for a date when it will be completed. ⁴²⁹

⁴²⁹ [HAM0025670_0001](#)

414. Superintendent Mason responded to Mr. Ferguson that morning.⁴³⁰ He wrote:

Thanks for the update, looks like a lot of work.

With regards to point 7 - the purchase of monitors and computers for our use, it would appear the decision to purchase some monitors and computers will take place in the next few weeks. I would ask that this be paused for the moment, we have to look at whether we have the available staff to monitor these units, and where they would be placed.

This is part of a larger discussion taking place within the service and I will need to discuss this with my Deputy further before we move forward.

415. On January 19, 2017, Superintendent Mason sent a follow-up message to Mr. Ferguson.⁴³¹ He wrote:

I have reviewed this with my Deputy. In looking at this in conjunction with everything else we have happening the installing of large monitors and a standalone computer does not make sense right now.

We are constrained for space and will wind up re-allocating space once our new ISD facility is built. Compounding this is the staffing component. We do not have sufficient staff to consistently monitor these cameras, as such it is not fair to take the equipment without the ability to fully utilize it.

If there is an IP address we could be provided to be able to access the camera feeds as time permits that would be great. It would allow us to check in on what is happening periodically. This is similar to what we set up during PAN AM.

If City Traffic is able to send us periodic updates on trends they see within the traffic patterns that would also be of use and assist us in deploying our officers more effectively.

We are appreciative of the offer and the intent but it just doesn't make sense for us at the moment.

416. Mr. Ferguson forwarded this email to Mr. White and Mr. Jacobson.⁴³² Mr. White then forwarded the email to Mr. Mater and Mr. Lupton:

Hi guys, we were just about to complete the Linc/RHVP speed profiling project by installing it at the police station. We have spent substantial time and resources of both City staff and our suppliers to engineer and develop the programming and hardware to capture the speed on the freeways as we promised the deputy chief a year ago and as we verbally promised at PW last year. We have installed many cameras along the facilities to collect this data. I was pretty dismayed to get the below two emails from the Police basically turning down the project at Police central. Thought I better give you a heads up. I asked Dave to set up

⁴³⁰ [HAM0025670_0001](#)

⁴³¹ [HAM0025670_0001](#)

⁴³² [HAM0025670_0001](#)

a meeting and they replied with the below email. The intent of the system was to allow HPS to monitor the speeds on the facilities and to allow them to direct “POP” enforcement to problem times and locations knowing the trends rather than endless patrolling. Frankly I’m not sure which way to turn next. Our council expected speed enforcement without extra costs We can run this system from within the TMC and it will become a part of the planned FTMS system but really the speeding and enforcement issues are still valid.

Thoughts? ⁴³³

417. Mr. Mater responded to Mr. White and Mr. Lupton, and said “I don’t think email will solve it. I would sit with them to see what else might work.”⁴³⁴ Mr. White confirmed that he would be talking to them next week.⁴³⁵

418. On February 27, 2017, the PWC recommended that Council direct City staff to work with the HPS to identify the cause of fatal accidents on the RHVP:

10. Traffic Incidents on the LINC and Red Hill Valley Parkway (Added Item 10.3)

That staff from Traffic Operations be directed to consult with the Hamilton Police Service to bring forward a plan to report yearly on fatal incidents on the LINC and Red Hill Valley Parkway (in the time since those roads have been opened) and that the report identify the causes of the incidents.⁴³⁶

419. On March 16, 2017, Mr. Shebib emailed Mr. Melendez, writing: “I really need your support in determining a way we can start drawing data for MS2 from one of your cameras overlooking the RHVP (and eventually the LINC). As seen below, our count station is no longer functioning, and we have discontinued our contract with Golder. Can we meet and discuss?”⁴³⁷

420. On March 22, 2017, Mr. Shebib replied to his own email, writing: “They are now asking for a ridiculous amount of money just to do a site assessment. I think it’s time we

⁴³³ [HAM0025670_0001](#)

⁴³⁴ [HAM0025670_0001](#)

⁴³⁵ [HAM0025670_0001](#)

⁴³⁶ [HAM0056929_0001](#) at image 5

⁴³⁷ [HAM0058924_0001](#)

move away from the ground counting stations, and go to overhead. Are your systems capable of drawing traffic counts yet, or should I be looking elsewhere? If we can please meet and discuss, it would be appreciated.”⁴³⁸

421. Mr. Ferguson replied to this email later the same day, writing: “I’m sure we can assist you as Nelson is working on this now. Its not going to occur overnight, however it will be in place probably this year...”⁴³⁹

422. On March 23, 2017, Mr. Melendez replied, writing:

There is no doubt that we can provide you with a compatible file format for MS2. The tricky part will be lining up the data in our files with your MS2 system.

However, I have been primarily focused on getting all the equipment installed and operational so we can start sharing speed data with Hamilton Police. Volume and class data collection has been a secondary goal for this project. Regardless, we have setup test count zones and are currently conducting data verification at a number of test locations. We definitely need a little more time to complete the system installation, setup and fine tuning. The good news is that I now have a full time employee to help me out but bringing new staff up to speed also takes time.

I estimate that we need another 3-4 months before I can provide you with this type of data. I don't want to provide volume/class data until I have full confidence that the system is operating 100%. For our Hamilton Police system we are just looking for overall traffic trends but in terms of count and class data we need to do more work to ensure data accuracy. Please keep in mind that the system is much more than just cameras. We are also building a communication system and upgrading ATMS software so data can be displayed and downloaded remotely.

I will keep you posted on our progress and will share data with you as soon as possible. If you have any questions please call me.⁴⁴⁰

423. On April 13, 2017, Chief Eric Girt (Chief of Police, Office of the Chief of Police, HPS) submitted a report titled “Five Year Statistical Analysis of Fatal Collisions in Hamilton (PSB17-057)” to the Hamilton Police Services Board.⁴⁴¹ This report commented

⁴³⁸ [HAM0058924_0001](#)

⁴³⁹ [HAM0058924_0001](#)

⁴⁴⁰ [HAM0058924_0001](#)

⁴⁴¹ [HAM0057004_0001](#)

on fatal collisions on the RHVP and LINC as follows: “From figures contained in the stated chart, the three most common contributing factors to a Fatal Collision is Speed, Intoxicating Substances and Inattentiveness.”⁴⁴²

424. The day before, Nicole O’Reilly (Reporter, Hamilton Spectator) had published an article about this report, titled “Inattentive driving the leading factor in fatal Hamilton crashes.” This article included the following content:

The impetus for the report came from city council in response to widespread speculation about structural problems on the Lincoln Alexander and Red Hill parkways, said Coun. Sam Merulla.

The report found speed is the most common contributing factor in fatal crashes on the 17 kilometres of roadway at 37.5 per cent, with inattention and intoxication following closely as noted factors in 25 per cent of the eight fatal crashes, respectively, on the parkways since 2012.

This is slightly different than the overall trend for roads across the city, where inattentiveness was the leading contributing factor.

Merulla said he hopes the report "dispels myths" and allows the city to "focus on new priorities."

His top priority is reducing speed, including a request to the province to allow the use of photo radar on the Red Hill.⁴⁴³

425. On April 25, 2017, Mr. Ferguson emailed Mr. Melendez and Robert Declair (Senior Project Manager, ATMS and Signals, Traffic Operations & Engineering, Transportation, Public Works, Hamilton), attaching two speeding reports. He wrote: “These are the two reports that I am supportive of as I think they provide the info that the police are looking for as well as ourselves. Please arrange to produce reporting for all available locations along both the RHVP and the LINC to be produced Monday Mornings.”⁴⁴⁴

⁴⁴² [HAM0057004_0001](#) at image 19

⁴⁴³ [HAM0061699_0001](#)

⁴⁴⁴ [HAM0058943_0001](#) attaching [HAM0058944_0001](#) and [HAM0058945_0001](#)

426. On April 26, 2017, Mr. Melendez emailed Mr. Ferguson, Mr. Worrton, Mr. Cooper, Mr. White, and Ed Switenky (Superintendent, Traffic Operations, Traffic Operations & Engineering, Transportation, Public Works, Hamilton). He wrote:

Despite some bad luck with weather and a number of minor software glitches we have made significant progress with the BT deployment on the LINC/RHVP. As previously discussed, 95% of the BT hardware was deployed by the Fall in 2016 but we had a lot setup and fine-tuning work that required field staff resources. The BT equipment was at various stages of being setup, programmed and fine-tuned. With the help of Kevin, Christina, Jack and Sandy we have activate (8) BT stations in the last few days and are now reporting speeds on a number of LINC/RHVP segments. We still have a significant amount of work left but we will be able to report speeds in both travel directions by the end of this week. The following BT Segments are now operational:

SEGMENTS ONLINE:

- RHVP SB – Queenston to Mount Albion
- RHVP SB – Mount Albion to Greenhill
- RHVP WB – Pritchard to Gage
- LINC WB – Gage to U. Wentworth
- LINC WB – U.Wentworth to U. James
- LINC WB – U. James to Garth
- LINC EB – U. Horning to Garth
- LINC EB – Garth to U. James

SEGMENTS TO BE COMPLETED THIS WEEK:

- LINC EB – Gage to Pritchard
- RHVP NB – Pritchard to Greenhill
- RHVP NB – Greenhill to Mount Albion
- RHVP NB – Mount Albion to Queenston

Please find attached a few sample speed reports I extracted from the system this morning and a BT sensor status map showing the (8) BT sensors online. Please note that we don't have enough speed data in the server to generate more complex reports as we just started collecting data in the last couple of days. However, I have generated some simple reports showing individual vehicle speeds to demonstrate that speed data is being collected right now. Christina and I will start working on generating more detailed/complex reports as soon

as we have enough speed data in the server and more BT segments. As soon as we are able to generate more complex speed reports from the system we will share them with the group.⁴⁴⁵

427. On May 30, 2017, Mr. Melendez emailed Mr. Declair, copying Mr. Ferguson. He wrote:

I have been up since 4 am trying to sort out an Excel compatibility problem with the BT raw data ☹ Developing ATMS systems from scratch is unpredictable and creating procedures to collect and report the data not an easy task. We have been plagued with issues in the last few weeks that have prevented us from completing a number of key tasks. Christina has been trained on the programming, testing and network setup of Bluetooth equipment and while she is making great progress she still needs more knowledge and experience. It takes time to train new staff specially with no previous experience in the deployment of ITS systems. Therefore, I find myself still having to spend time on the road to correct and troubleshoot issues. I'm giving Christina every opportunity to learn from me and have provided her with significant hands on experience to get her up to speed as soon as possible. The following problems have blocked our progress in recent weeks:

1. A health and safety concern has stopped all work on LINC/RHVP Bluetooth stations located over open lanes.
2. As a result of the health and safety concern (6) key Bluetooth station have been left offline. (Creates gaps in our BT data)
3. A bug in the Velocity software is preventing us from seeing speeds above 100 km/h on the Velocity Charts.(Iteris is working on this)
4. An Excel compatibility problems was preventing us from manipulating Bluetooth raw data. (Solved this morning)
5. Mapping function was offline on server due to a change in firewall settings.(resolved last week)

It is extremely difficult to complete Christina's training and hand over the responsibility of generating these reports when we are dealing with so many issues. We are working towards solutions to all the above noted problems and hope to complete Christina's training in the next couple of weeks. I'm working towards developing a system for Christina to automatically generate these reports but the above noted issues have prevented me from completing this task. Please find below the network path for the "BT Weekly Reports" folder located on the O:/ Drive or you can download the attached shortcut. In the folder you will find LINC/RHVP folders organized by travel direction and BT segments. The folders with a # have reports from last Wednesday which should provide Hamilton Police with a good snapshot from last week. You will find an Excel and PDF file both containing speed distribution information from the available BT segments. Thank you for your patience, I will try to have a well stablished process in place within the next few weeks.⁴⁴⁶

⁴⁴⁵ [HAM0058948_0001](#)

⁴⁴⁶ [HAM0058979_0001](#)

428. On May 31, 2017, Mr. Ferguson replied to Mr. Declair alone, writing: "This will be discussed at today's meeting, but essentially it will be left to you to manage. We really need to start looking at the structure and who is responsible for what."⁴⁴⁷

429. On May 31, 2017, Superintendent Mason emailed Mr. Ferguson under the subject line "Speed Reports". He wrote: "Just checking in to see if there is any update on when we might start seeing these reports?" Mr. Ferguson responded later the same day, writing: "Unfortunately we have been having issues and trying to get the reports in a more suitable output for the Police to utilize. We are still looking at it along with other options. Sorry for the delay, all I can say at this point is that we will be in contact when we have a solution that is working and in a useful format."⁴⁴⁸

430. On June 2, 2017, Mr. Field emailed Mr. Declair, copying Mr. McGuire and Dipankar Sharma (Street Lighting Specialist, Street Lighting & Electrical Engineering, Geomatics & Corridor Management, Engineering Services, Public Works, Hamilton). He wrote: "Thanks for meeting with Dipankar and I yesterday. I've included some meeting notes and embedded them below in my original e-mail. If I've missing anything, please let me know."⁴⁴⁹

431. Mr. Field annotated his original email to Mr. Declair as follows:

Ahead of this afternoon's meeting, I just wanted to advise you on the meeting discussion and things in which we will be looking for.

As you are aware, we are concerned with the process that has been followed when it comes to traffic attaching cameras to our street light poles. There have been many internal discussions going back until 2013 on this file. We feel that we have been accommodating

⁴⁴⁷ [HAM0058979_0001](#)

⁴⁴⁸ [HAM0058980_0001](#)

⁴⁴⁹ [HAM0058984_0001](#)

to date, but have not had the same courtesy returned to us from traffic – we will go over this.

These are the things that we will be looking for going forward.

a) A moratorium on any new traffic camera (or associated equipment) on City street light poles – this mandate was previously requested to Kris Jacobson in late 2016.

Traffic will maintain a moratorium on any new traffic camera installations on street light poles until a memorandum of understanding is in place.

b) We require a comprehensive inventory of traffic equipment currently attached to City street light poles, including general methods of attachment, energy consumption, date of installation and any other pertinent data.

Traffic does not maintain a list of installation locations and therefore needs time to investigate and compile a list. To assist with this task, street lighting will forward the results of the 2016 City street light pole audit project where third party attachments were found, as noted as traffic attachments. Traffic expects to have a list ready and delivered to street lighting in early September. Post receipt, street lighting will review existing installations to determine if they are acceptable and if the attachments can remain or need to be modified and/or removed.

c) We require a plan put in place to true-up energy being consumed by traffic equipment, fed from the street lighting network, with Alectra and Hydro One.

Traffic will look into the process on how to true-up on energy costs for traffic equipment powered from the street lighting distribution network. Going forward, traffic equipment cannot be powered from flat-rate street light distribution as this contravenes the OEB regulations related to the permissible use of the street lighting rate class. It would be acceptable to power traffic equipment off of metered street light distribution, however and internal process for journaled costs will need to be developed – this will be included as part of the memorandum of understanding. Street lighting is undertaking the next phases of a City-Wide LED conversion 2017-2019. As part of this project, instances where traffic equipment is fed from the street light luminaire will be disconnected. The street lighting contractor will note when these occur and this will be passed onto traffic. An alternative feed for these locations will need to be established.

d) We require a fulsome review of the implications of the traffic equipment that is attached to the street light poles along the Linc/Red Hill and a plan to address any perceived structural and operational impacts to the poles

Traffic will look at re-assigning their consultant from reviewing traffic pole bases to reviewing the Linc/Red Hill poles to determine if the poles can safely carry the traffic equipment. Street lighting has considerable concern for what impact the traffic equipment is introducing to these poles considering that they are over live-lane Linc/Red Hill traffic. Traffic will expedite this study as soon as convenient and in the absence of a study, street lighting may require traffic to remove all equipment. Going forward, traffic will seek out alternative locations for equipment along the Linc/Red Hill, likely by installing their own poles and therefore not requiring the use of street light poles.

e) The development of a memorandum of understanding between traffic and street lighting for all proposed traffic equipment being attached to street light poles.

Street lighting will utilize the Dan Lawlor 2015 memorandum of understanding as a template and develop a MOU specific for traffic attachments to City street light poles. The MOU will be used on a go-forward basis and set the rules and procedures for attaching traffic equipment to street light poles.

Should you have any questions please let me know. I look forward to meeting with you to discuss this important topic and make plans to productively move forward.⁴⁵⁰

432. On June 5, 2017, the PWC recommended that City Council approve the Hamilton Strategic Road Safety Program for 2017-2018 (as described in PW17045).⁴⁵¹ PW17045 included a detailed summary of 15 initiatives from 2016, including speed monitoring on the LINC and RHVP:

RHVP/LINC Hamilton Police Services has been conducting targeted Enforcement & speeding enforcement on both roadways since December 14, 2015. Statistics up to December 31, 2016 are as follows:

- 5,972 violations issued
- 5,523 issued as a result of speeding
- 92.5% of violations related to speeding

Traffic Engineering staff are currently in the final stages of completing the vehicle speed & volume monitoring system for both roadways. These works are expected to be operational in Q3 2017.⁴⁵²

433. On June 12, 2017, Mr. Melendez emailed Mr. Ferguson, Mr. Declair, and Christina Mastrangelo (Technologist, Traffic Signals, Traffic Operations & Engineering, Transportation, Public Works, Hamilton). He wrote:

Based on the feedback provided by Hamilton Police we have determine that the best way to provide them with the information they want is to print our hourly speed distribution reports. We will use the following procedure to collect and summarize the speed data:

We will continue to use the "BT Weekly Reports" folder but the folder structure will be modified slightly.

- Hourly speed distribution reports will be exported to PDF files for each BT segment and day of the week. (Tues-Thursday)

⁴⁵⁰ [HAM0058984_0001](#)

⁴⁵¹ [HAM0045310_0001](#) at image 7

⁴⁵² [HAM0045310_0001](#) at image 57

- We will continue to PDF the full 24hr speed distribution charts for each segment.
- Raw data will also be exported to the network folder for each hourly speed distribution report.
- Data will be collected between Friday and Monday morning and will be available for distribution before noon on Mondays.
- The ATMS student will collect the data and provide it to Christina for her review on Monday mornings.

The speed distribution report contains a majority of the information Hamilton Police has requested. Since there will be a lot of individual PDF files I would suggest that we find a way to share this info on the network or on a cloud base storage service. We are continuing to work with Iteris to solve a software bug that is preventing us from seeing speeds above 100 kph on Velocity charts. We expect a new version of Velocity in the next few weeks which will correct this problem and provide additional data summary tools. Once the new version is installed Christina and I will sit down to determine if there are better ways to summarize speed data in the updated software.⁴⁵³

434. On June 15, 2017, Mr. Melendez emailed Mr. White, Mr. Ferguson, Mr. Declair, and Mr. Switenky under the subject line “Speed Detection System Update”. He wrote:⁴⁵⁴

We have completed an upgrade to the Iteris Bluetooth server which has corrected a number of bugs and introduced new features that I had asked for. The mapping interface was also upgraded to show higher resolution mapping and a few new options to display the Bluetooth speed and travel time layer. Please find below a list of notable fixes and upgrades:

Maximum Speed on Charts: The software code has been corrected to report speeds above 100 kph on all Velocity charts. Please find attached a sample chart that shows recent data for the eastbound LINC at Upper Horning. This particular chart shows average speeds in the form of a blue average speed line over the 24 hour period. I have asked Iteris to develop an option to display an 85th and 95th percentile speed lines on the same chart that can be toggle on and off. For the time being we will continue to generate hourly speed distribution charts for Hamilton Police, but our goal will be to print one chat per location/day to show hourly fluctuations in average, 85th % and 95th% speeds.

Maximum Speed Alert: I had asked Iteris to develop the capability to generate alerts when average speeds exceed a specific threshold or percentage above historical data. The speed alert condition would be monitored over a user specified time period and an alert generated every time the speed thresholds were met. Please find below a screenshot of the new speed alert feature which Iteris has developed for Hamilton. This is a key system component that will be used by KHA to automate the generation of speed warning messages from the KITS’ DMS and Congestion Manager modules.

⁴⁵³ [HAM0058998_0001](#)

⁴⁵⁴ [HAM0059005_0001](#)

435. On June 16, 2017, Mr. White replied to Mr. Ferguson, Mr. Declair, and Mr. Melendez, copying Mr. Worrone. He wrote:⁴⁵⁵

That's a lot of great data for one day! The speeds are so high that I will ask if the calibration is correct? Please confirm that it is. If it is then we have a larger speeding issue then we realized. Can we restructure this data or summarize it so that the median, 85 % and speeds from 100-110 110-120 120 and over etc are captured as I am seeing substantial green dots at over 150 km hr? Can that be true? How many other stations are we monitoring (is that data consistent?), how are we summarizing for the police? I would like to see the data reports please.

436. The same day, Mr. White forwarded this email to Mr. Mater, writing: "Very interesting and a bit scary." Mr. Mater replied, writing: "Martin, can you please schedule some time for us to sit down with staff to review this. I find it very interesting and I want to understand it a bit more."⁴⁵⁶

437. On June 16, 2017, Mr. Melendez emailed Mr. White, copying Mr. Declair and Mr. Ferguson. He wrote:

I'm working with Iteris to modify the charts so we can see 85th and 95th speeds on their speed graphs. The 85th and 95th speeds would be shown as a line graph the same way average speeds are being displayed today. We can also print more detailed hourly reports for specific hours of interest.

Speed accuracy would be affected by communication delay between the BT device and the BT reader but keep in mind that this is only milliseconds of travel time. On the other hand, BT antenna range and placement could introduce a degree of error as the mounting angle and antenna alignment is not the same at all locations. However, based on Iteris experience the degree of accuracy should be between 90-95% depending on the degree of calibration . We are basically determining speeds based on distance between readers (GPS Coordinates) and the time it takes for a MAC address to be released at a downstream BT reader. We will conduct floating car tests to measure the degree of accuracy and calibrate the sensors when necessary. We also built the system with multiple data sources so we could calibrate the various components. We will be downloading radar/video speed data from our Vector cameras to conduct another level of data validation. Regardless, of the degree of calibration that maybe required, I think we can be pretty confident that we have a significant speeding problem.

The BT data appears consistent between adjacent BT segments but there is significant variability between data from the LINC and RHVP which is probably a side effect of road alignment. We are currently capable of monitoring 2 ½ segments on the LINC and 4

⁴⁵⁵ [HAM0059005_0001](#)

⁴⁵⁶ [HAM0059005_0001](#)

segments on the RHVP. We are however missing information from 4 critical segments on the LINC. We are currently exporting hourly reports from Tuesday-Thursday for each working segment. I'm hoping we will be able to replace the hourly reports with a chart that shows average, 85th and 95th speeds all in one graph. We are also looking into giving Hamilton Police access to our Bluetooth Web interface so they can view this data themselves.

Please find attached two PDF documents with the information that you requested. The first one is a sample report from the Northbound RHVP between Queenston to Barton (shows consistency) and the second one is the type of chart we have been providing to Hamilton Police. Hope this information is helpful and sorry for the long email.⁴⁵⁷

438. Mr. Declair replied later that day, writing:⁴⁵⁸

Nelson, the Linc chart shows two entries for 85th %ile speed and 85%ile travel time and both are different. Why is that?

The chart for the RHVP shows speeds of up to 175 km/h (over 100 mph) through most of the daytime hours. This just does not seem right or possible.

439. On June 16, 2017, at 1:41 p.m., Mr. Ferguson replied to Mr. Declair and Mr. Melendez, removing Mr. White from the email chain. He wrote: "Please put the presentation together and get it to me the day before we meet with Mater. Please keep Martin off the discussion between the two of you."⁴⁵⁹

440. On June 16, 2017, at 8:51 p.m., Mr. Melendez replied to Mr. Declair, Mr. Ferguson, and Mr. White. He annotated Mr. Declair's earlier email as follows:

Nelson, the Linc chart shows two entries for 85th %ile speed and 85%ile travel time and both are different. Why is that? **In this chart there are 85th and 95th speed values as well as 85th and 95th travel time values.**

The chart for the RHVP shows speeds of up to 175 km/h (over 100 mph) through most of the daytime hours. This just does not seem right or possible. **Traffic tends to pick up speed after Barton Street which may partially explain the lack of a dip in the graph during the afternoon peak. Nevertheless, 175kph readings during the 4-6pm period is unusual. I looked at the BT reader programming a found one mistake that could have cause these data outliers. I will use these BT segment to conduct a floating car test and BT sensor calibration. Please find attached a chart for the opposite direction which shows no speeds above 100kph during the afternoon peak. We definitely need to conduct some system**

⁴⁵⁷ [HAM0058999_0001](#) attaching [HAM0059000_0001](#) and [HAM0059001_0001](#)

⁴⁵⁸ [HAM0059005_0001](#)

⁴⁵⁹ [HAM0059002_0001](#)

calibration once we are allowed to work on speed detection cabinets again. Thank you for pointing this out, I will double check the programming on the rest of the BT sensors.⁴⁶⁰

441. On June 26, 2017, Mr. White emailed Mr. Declair and Mr. Ferguson in response to an email chain under the subject line “ATMS Implementatioon Schedule and Cost Estimate.” He wrote:

Thanks Rob. Good stuff. Please add the below data or rewrite or update the actual work plan (attached) as Dan has asked me for it so we need to maintain it current. Latest copy attached. Also can you add a little detail on Control box and timer spec, conflict monitor spec, D4 procurement and license as well as KITS production version to the work plan. Where does LRT planning and TSP fit? Thanks⁴⁶¹

442. Mr. White attached the “ATMS Project Work Plan” to his email. This work plan included the following section on the RHVP and LINC:

1. LINC/RHVP Speed Monitoring System

The installation, configuration and calibration of field equipment is largely complete and data is being collected.

Dynamic Message Signs (DMS) to be purchased and installed. A specification for the DMS is being developed. Tender to go out in June for supply and installation of DMS

Purchase DMS module for KITS and retain Kimley-Horn & Associates (KHA) to integrate module, DMS and field collection devices (\$700,000 US to be funded from RLC).

Expected delivery of project December 2017⁴⁶²

443. On September 1, 2017, Mr. Shebib emailed Mr. Melendez under the subject line “Lincoln Alexander cameras”. He wrote: “Can you please give me a call on this? Dave Ferguson is looking for new counts on the RVHP and LINC for this council speed limit reduction request so time is tight.”⁴⁶³

⁴⁶⁰ [HAM0059003_0001](#) attaching [HAM0059004_0001](#)

⁴⁶¹ [HAM0059016_0001](#)

⁴⁶² [HAM0059017_0001](#) at image 1

⁴⁶³ [HAM0059066_0001](#)

444. On September 13, 2017, Mr. Melendez replied, writing:

I was away on vacation and have been very busy in the last few days just playing catch up. Work on the LINC and the RHVP count stations has been put on hold indefinitely due to issues raised by your group regarding the use of street lighting poles as well as some internal health and safety issues. In order to provide data to you we would have to go back to the count stations to conduct equipment upgrades and sensor tuning. Unfortunately, we are not in a position to share data from the LINC/RHVP count stations until we are allowed to work on this equipment again. I'm still hoping we will be able to share volume, class and speed information with your group but I honestly would not be able to tell you when at this point in time.⁴⁶⁴

445. On September 18, 2017, Mr. Ferguson emailed Mr. Melendez, Mr. Declair, and Ms. Mastrangelo. He wrote: "With the speed study's we are doing on these roadways, is the system also providing us with the 24 hour volume for both roads? If so, can you please provide me with the 24 hour volumes so I can add to the report I am writing."⁴⁶⁵

446. Mr. Melendez replied, writing:⁴⁶⁶

I have been trying to get this kick started again but I keep running into road blocks. We have not conducted any sensor fine tuning or testing on the equipment since the health and safety concerns were raised. Our efforts are being hindered by the structural review of the poles and the health and safety concerns. I had asked Christina to issue a work order and to generate a work plan to test and fine tune the sensors but she was told that all work on the LINC/RHVP was on hold until this fall. We also need to upgrade hardware and equipment on many of the count stations in order to access the count data remotely. Both the Iteris and GRIDSMART systems are capable of providing 24 hour volumes but we need the techs/crews cleared to work on these equipment again. At this point in time I do not have the confidence to use this data without proper sensor tuning and data validation. We should also keep in mind that the sensor tuning is needed to feed accurate information to the FVMS units in the near future. Hope this information helps, if you have any other questions or concerns please call me.

447. Mr. Declair replied later that day, copying Mr. Switenky. He wrote:

By the end of this week Parsons had indicated they will have completed the structural analysis of the street light poles over the Linc which have speed detection equipment on them. If the poles are structurally sound then the issue becomes working on these poles. If the poles are not structurally sound then we need to remove our equipment and find alternative locations for the equipment.

⁴⁶⁴ [HAM0059066_0001](#)

⁴⁶⁵ [HAM0059073_0001](#)

⁴⁶⁶ [HAM0059073_0001](#)

Ed – where do we stand with crews working above “live” traffic?⁴⁶⁷

448. On September 22, 2017, Mr. Declair emailed Mr. Ferguson in response to an email chain under the subject line “PCMS rentals for Linc/Red Hill.” He wrote:⁴⁶⁸

Dave, how are we going to run these signs? What will be the messages? What will be the triggers to implement a new message? What do we do on weekends, Stat holidays or Christmas break? What do we do between 4 pm and 8 am M-F? What staff will perform these tasks? Do we have staff to perform these tasks?

The more I think about this the more this does not make sense. We are going to install these rental VMS, we are going to do a half effort to convey information to the public. The first time a major incident occurs and we have not changed the message we will be severely criticized for having a message board that provides useless information. By even putting out these temp signs we are going to attract more criticism than if we had no signs at all. I really think this is a big mistake.

The Congestion Manager software of KITS needs to be developed to interact with these VMS and as far as I am concerned this will occur in 2019 or beyond. Our primary focus with KITS will be deploying the central traffic signal system across the City for the next 2 years. Once we are ready to start developing and testing the Congestion Manager then we can rent temp signs to confirm the operation and comm system.

As for the permanent sites – these were selected by Nelson – is that really how we should go about this? He suggests the Stinson pedestals since he assumes Gary Moore does not want us to dig along the Linc and Red Hill or disturb drainage – these pedestals just sit on the ground and the weight holds them in place. I suggest that for the permanent sites we hire a knowledgeable consultant who can identify the proper location for the signs based on spacing, human factors, traffic incidents, etc. The consultant can also identify the mounting type - centre median pedestal, conventional mounting on the shoulder or mounting over the roadway on a sign bridge. The consultant could also design the mounting system which could include taking core samples to determine the size and depth of footings. They would also identify the need for barriers or guard rail to protect to the sign, drainage issues, accessibility for maintenance, etc.

In my opinion this would be the proper way to deploy a million \$ system. Right now we seem to be putting the cart before the horse.

449. Mr. Ferguson replied later that day, writing:

I here Ya, we will have to create all of that.

For the rentals all we need is communication to change the signs with basic messages. You and I will need access to implement signage.

Martin has committed to having these in place this year. We need to get it done.

⁴⁶⁷ [HAM0059073_0001](#)

⁴⁶⁸ [HAM0059086_0001](#)

I agree with you on the perm signs. We should hire a consultant to design and review placement opportunities.

Let's run this in 2 phases, the first phase is the rentals, will allow us to evaluate and we can get a consultant to look at things next year. 2nd phase we will install the perms in 2019.⁴⁶⁹

450. On October 13, 2017, Mr. Declair emailed Mr. Ferguson an updated copy of the "ATMS Project Work Plan."⁴⁷⁰ This work plan included the following section on the RHVP and LINC speed monitoring system for 2017:

1. LINC/RHVP Speed Monitoring System

The installation, configuration and calibration of field equipment is largely complete and data is being collected.

Portable Dynamic Message Signs (DMS) to be rented and deployed in the fall of 2017 at select sites along the LINC and RHVP.⁴⁷¹

451. This work plan included the following section on the RHVP and LINC speed monitoring system for 2018:

1. LINC/RHVP Speed Monitoring System

City wide phase of KITS includes development of the Congestion Manager software. This software will interact with the Speed Monitoring System to provide messaging to the Dynamic Message Signs (DMS). In 2018 the portable Dynamic Message Signs (DMS) will be used to test and evaluate this software.

In 2018 a specification for the permanent DMS is to be developed and an RFP issued for evaluation and approval of product. The installation of the DMS will be a separate Contract. DMS and field collection devices (\$700,000 US to be funded from RLC).⁴⁷²

452. This work plan included the following section on the RHVP and LINC speed monitoring system for 2019: "**1. LINC/RHVP Speed Monitoring System** Installation of permanent DMS signs."⁴⁷³

⁴⁶⁹ [HAM0059086_0001](#)

⁴⁷⁰ [HAM0059111_0001](#) attaching [HAM0059112_0001](#)

⁴⁷¹ [HAM0059112_0001](#) at image 1

⁴⁷² [HAM0059112_0001](#) at at image 3

⁴⁷³ [HAM0059112_0001](#) at image 4

Y. Discussion of repaving RHVP in 2017

453. Ms. Cameron sent a calendar invitation to Mr. Moore and Dr. Uzarowski, titled “Discussion w/ Ludomir - Asphalt Specs & RHVP”, for January 6, 2017.⁴⁷⁴

454. On January 23, 2017, Mr. Ferguson emailed Mr. Moore and Mr. Sidawi under the subject line “Repaving RHVP”, copying Mr. White:⁴⁷⁵

Just following up on the plans for the RHVP. You had mentioned last year that you were planning on repaving the RHVP and that we should hold off on installing the reflective markers until that time.

Do you have a timeline for the repaving to take place?

455. On January 25, 2017, Mr. Moore responded to Mr. Ferguson and Mr. Sidawi, copying Mr. White and Mr. Andoga:⁴⁷⁶

We need to do it soon. Or at least start a program (I.e. a bit each year for 5 years) I don't know yet. Sam please set up a meeting with Traffic and Operations to discuss timing and need. thanks

456. On January 25, 2017, Mr. Andoga responded to Mr. Moore, copying Mr. White, Mr. Ferguson, and Mr. Sidawi:⁴⁷⁷

Totally agree. Road Operations will be completing test strips in 2017, which will result in a project / program to address the surface needs of the Redhill and LINC. The same will be reflected in the 2018 budget.

457. On January 25, 2017, Mr. Sidawi responded to Mr. Moore and stated “we will set up a meeting.”⁴⁷⁸ Mr. Moore replied “Yes, even more of a reason to meet and discuss.”

479

⁴⁷⁴ [HAM0000837_0001](#)

⁴⁷⁵ [HAM0044791_0001](#)

⁴⁷⁶ [HAM0044791_0001](#)

⁴⁷⁷ [HAM0044792_0001](#)

⁴⁷⁸ [HAM0044791_0001](#)

⁴⁷⁹ [HAM0044792_0001](#)

458. Lisa Castronovo (Administrative Secretary, Asset Management, Engineering Services, Public Works, Hamilton) circulated a calendar invitation for a meeting titled “Repaving RHVP”, scheduled for February 6, 2017. The required attendees for this meeting were Mr. Moore, Mr. Sidawi, Mr. Ferguson, Mr. White, Mr. Andoga, Susan Jacob (Manager, Design, Engineering Services, Public Works, Hamilton), Mr. Hughes, and Ms. Matthews-Malone.⁴⁸⁰

459. On February 7, 2017, Ms. Matthews-Malone emailed Mr. Paul, Mr. McCleary, Mike Christian (District Superintendent - Roads, District South, Roads & Maintenance, Operations, Public Works, Hamilton), Mr. Marques, and Ryan Moore (Drainage Superintendent/Project Manager, Capital Rehabilitation & Technical Operations, Operations, Public Works, Hamilton) under the subject line “RHVP & LINC.”⁴⁸¹ She copied Mr. Hughes and wrote:

Guys, Brian and I attended a meeting with Asset Management yesterday and the following is an overview of that meeting;

- They are looking to shave and pave the RHVP in 2018/19 and cold in place LINC 2020/21
- Some ideas being tossed around about sequencing, i.e. one direction per year, weekend work only, etc. but final plans to be determined
- There are some road depressions that can’t be readily explained by culverts, etc. so there may be some padding this year to confirm if there will be further movement. They will share a schematic with us showing the areas of interest and I would like us to review with our staff to see if we concur with highlighted areas. Terry, this includes After Hours please as I know they spend a lot of time out there.
- Looks like cats eyes will be installed on RHVP with works
- If we have any potential works that should or could be coordinated we need to let them know as soon as possible. We do not have any capital budget allocated for these arterials in the years given but if they are going to close down sections, we

⁴⁸⁰ [HAM0034635_0001](#)

⁴⁸¹ [HAM0005362_0001](#)

may want to take advantage of it and they may be able to include within their budget allocation.

That is all we know at the moment. Will let you know if we hear something more. Thanks.

460. On February 7, 2017, Mr. McCleary emailed Richard Boorsma (Supervisor (D7 After Hours), District North, Roads & Maintenance, Operations, Public Works, Hamilton), Derek Noble (Supervisor (After Hours & Nights) – Roads, District East, Roads & Maintenance, Operations, Public Works, Hamilton), Reinaldo Spagnuolo (Supervisor (After Hours) - Roads, District North, Roads & Maintenance, Operations, Public Works, Hamilton), and Chris Dunsmuir (District Supervisor - Roads, District North (After Hours), Roads & Maintenance, Operations, Public Works, Hamilton) under the subject line “RHVP and Linc”:⁴⁸²

They are looking at these 2 roadways over the next few years starting with RHVP shave and pave, I have been asked to get your takes on the worst areas of these roadways real trouble spots. I haven't received the drawing yet but want to start a list of areas that are bad seeing as you 4 spend the most time on these routes you would know best.

Your input is very important for funding these projects

461. Mr. McCleary then responded to Ms. Matthews-Malone's email.⁴⁸³ He wrote:

I have asked the after-hours staff to identify any real trouble spots, as they spend a lot of time on these roads.

My thoughts are the RHVP is the worst between the two. I base this on accidents and complaints by Police every time the road surface is wet.

As soon as they identify locations I will send it along.

⁴⁸² [HAM0009204_0001](#)

⁴⁸³ [HAM0009201_0001](#)

462. On February 9, 2017, at 4:57 a.m., Mr. Dunsmuir responded to Mr. McCleary's email under the subject line "RHVP and Linc."⁴⁸⁴ He attached an annotated map of the LINC and wrote:

Attached you will find a map.

- Red is **DUE** for a new top. (Both Directions especially W/B)
- Yellow is moderate wear. (Both Directions)
- Green is good condition. (Both Directions)

The RHVP surface still has quite a bit of life left IMO.

Would you like feedback for the on/off ramps?

463. Mr. Cooper circulated a calendar invitation to a meeting titled "RHVP/LINC improvements for re-surfacing" scheduled for February 28, 2017. Mr. Cooper invited Mr. Worrone, Mr. Ferguson, and Mr. White as required attendees of this meeting. The stated purpose of this meeting was as follows:⁴⁸⁵

To discuss the collision trends, CIMA reports and areas for improvements for the upcoming re-surfacing of the RHVP/LINC.

464. On February 7, 2017, Mr. Ferguson forwarded an email under the subject line "FW: Linc & Red Hill Stats" to Mr. Cooper and Mr. Worrone.⁴⁸⁶ Mr. Ferguson copied Mr. White and wrote:

Further to our discussion this morning and meeting with Martin at the end of the month, please find below some updated statistics.

Please arrange to have each of these collisions plotted on a map of both roadways to see if we can identify specific locations of concern which we can use as support for implementing something with Gary.

Im thinking maybe have the student do it similar to what they did on the Upper RHP exit.

⁴⁸⁴ [HAM0009204_0001](#) attaching [HAM0009205_0001](#)

⁴⁸⁵ [HAM0005365_0001](#)

⁴⁸⁶ [HAM0005373_0001](#)

465. On February 7, 2017, Mr. Worrton responded to Mr. Cooper, copying Mr. Ferguson:⁴⁸⁷

Please work on having this information plotted. From what I understand we will need to have Linda pull each collision so that we can plot? Please confirm. In addition to all collisions I'd like the following:

- Heat map for all collisions
- Heat map for mainline collisions
- Heat map for ramp collisions
- Map of cross-overs
- Map of severe injury/fatal
- Map of nighttime vs daytime
- Map of trucks
- Heat map of inclement weather and/or surface condition

Let me know if you think of anything else. I'm not sure a student can do all the leg work. I'm leaving this in your hands to tackle. We need this by the end of the month so please send to Dave and I by Feb 21.

466. On February 21, 2017, Mr. Cooper responded to Mr. Worrton, copying Mr. Ferguson.⁴⁸⁸ Mr. Cooper's email attached a document titled "Pavement Improvements – RHVP & LINC", which listed the short term safety options included in the 2015 CIMA Report and 2015 CIMA LINC Report :

As requested, please see the link below, the map files are too numerous and large to send.

[Z:\FILES FOR EVERYONE'S VIEWING\RHVP-LINC re-surfacing](#)

The word doc attached, is a summary of the improvements from the CIMA reports to discuss- I will bring the reports to the meeting.

I have printed copies for everyone for next week's meeting. If you'd like hard copies before the meeting, just let me know.

⁴⁸⁷ [HAM0005373_0001](#)

⁴⁸⁸ [HAM0005373_0001](#) attaching [HAM0005374_0001](#)

LINC - 2020 - 2021

In addition to identifying the traffic needs, is there a preference as to the scheduling of the work to be performed? We have structure the timing from our perspective in doing 50% of the required resurfacing per year, but the resurfacing limits can be adjusted if needed.

469. On February 28, 2017, at 1:58 p.m., Mr. Ferguson responded to Mr. Andoga and Mr. White, copying Mr. Sidawi, Mr. Jazvac, Mr. Cooper, Mr. Worrton, and Ms. Matthews-Malone.⁴⁹¹ He wrote:

Traffic Operations and Engineering have completed a quick review of the Safety Reports for both of these roadways and provide the following comments;

Installation of Recessed Pavement Markings - full length of both roadway including on/off ramps

Pavement Markings to be completed in hard plastic - both roadways

Shoulder Rumble Strips - both roadways

Modification to the Eastbound Dartnall on-ramp to upper RHVP off ramp should be a continuous lane

Modification to Alignment between Dartnall and Mud Street - modification to Spiral Curve

We have also conducted a 5 year collision history review of both roadways with a specific focus on Crossover incidents. Based on this evaluation, we have identified 2 segments of concern that barriers would be installed.

LINC - Upper Paradise to West 5th

RHVP - Dartnall to King St

In addition to the barriers and locations, staff also identified secondary locations of concern in which Edge Markers should be installed to assist in providing guidance.

Linc - Uper Sherman to Upper Ottawa

RHVP - King to Barton

In terms of sections of roadway, a review of total collisions over a 5 year period, showed a distinct higher level of incidents occurring between Upper Ottawa and King St, either direction and would also include the on/off ramps. I would say this would be our highest priority area for improvements.

I would also note that the section of roadway between upper Ottawa and Barton, is the highest area for collisions that result in Injuries and fatalities.

⁴⁹¹ [HAM0000858_0001](#)

If you require further details on the above mentioned alignment modifications, I have copied Stephen Cooper who can assist with explaining those further.

470. On March 1, 2017, Mr. Andoga responded to Mr. Ferguson.⁴⁹² He wrote:

Thanks Dave,

Please note the following for consideration:

Items 1) Installation of Recessed Pavement Markings and 2) Pavement Markings - the associated costs should be identified within your budgets (?), we will need to define the costs.

Item 3 Shoulder Rumble Strips - should not be an issue.

Items 4 Modification to the Eastbound Dartnall on-ramp to upper RHVP off and 5 Modification to Alignment between Dartnall and Mud Street being horizontal / alignment improvements maybe challenging and currently outside the project scope. We should meet to discuss.

Item 6 being the installation of barriers will be a sensitive issue

Item 7 Edge Markers we will need costing and/or are these to be budgeted within your current programs?

I'm sure there will be additional discussion as we develop the project scope.

471. Mr. Mater circulated a calendar invitation for a meeting titled "Discuss RHVP/LINC options for further investigations" scheduled for March 20, 2017. Mr. Moore and Mr. McKinnon were listed as required attendees.⁴⁹³

472. On March 27, 2017, Mr. Ferguson emailed Mr. Malone under the subject line "RHVP Design Speed".⁴⁹⁴

In our meeting the other day, did I hear correctly that the Design Speed for the RHVP was 100km?

Isn't the design speed usually 20-40k over the posted speed?

⁴⁹² [HAM0000858_0001](#)

⁴⁹³ [HAM0025810_0001](#); and [HAM0058688_0001](#)

⁴⁹⁴ [HAM0045007_0001](#)

473. On March 28, 2017, Mr. Malone responded to Mr. Ferguson.⁴⁹⁵ He copied Scott Roberts (Associate Partner, Director, Transportation, CIMA) and wrote:

I may have put Scott on the spot when I asked him to comment at the meeting, but it is possible that he did say 100 k/hr. However, he has mentioned that he does not have the documentation of the design speeds with him. That does exist, of course, and should be available from the records of the former "Freeway Office". That said, the common approach used by TAC and others is for the design speed to be 20 km/h above the posted speed. The MTO uses 30 k over on some areas of the 401. But it is also not uncommon for the design speed to be only 10 k over and, in some situations having design speed even matching the posted can be found.

We expect that the design speed for the LINC and Red Hill is likely 110 based on the geometric constraints at the curves and the interchange separation & ramp lengths. The 110 design speed also coordinates with the posted of 90. There is a possibility that some specific spots might be 100, but that would have to be confirmed. The other thing to keep in mind is that on flat tangent sections of road design speed is effectively much higher than whatever number is on paper, because there is no physical constraint on the driver. The other challenge is that drivers perceive the roadway as being the same as other 400 series highways, thus a possible conflict if they perceive a higher design conditions that might actually exist and select associated operating speeds.

474. Mr. Ferguson forwarded this email to Mr. White, who responded saying "Interesting... what will Gary Moore say do you think?"⁴⁹⁶

475. On June 12, 2017, at 1:59 p.m., Mr. Worrone emailed Sarath Vala (Project Manager, Design, Engineering Services, Public Works, Hamilton), Mr. Becke, Ms. Jacob, Mr. Andoga, and Mr. Jazvac under the subject line "RE: CPMS 10986 -Redhill Valley Parkway (RHVP) Rehabilitation."⁴⁹⁷ He wrote:

Thanks for the opportunity to sit and discuss the upcoming contract for improvements to NB RHVP. Based on the CIMA+ safety review and consideration within Traffic Ops & Eng we recommend a Type M Steel Beam Guide Rail System on Both Sides of the Median

1. This is the latest MASH standard for Ontario. It looks essentially the same, but it is mounted a bit higher to work better with the current fleet and the splices are between posts. There is no channel with MASH SBGR, channel only needed at structure connections.

2. Left shoulder width of 3m min.

⁴⁹⁵ [HAM0045007_0001](#)

⁴⁹⁶ [HAM0045007_0001](#)

⁴⁹⁷ [HAM0026071_0001](#)

3. SBGR located at edge of pavement, can be tied into existing SBGR locations for cost effectiveness
4. Mount rail rider reflectors on top of SBGR to meet current standards to provide enhanced visibility throughout this corridor.
5. Create openings in SBGR for grass mowing and other maintenance operations.

In addition to the median barrier system we recommend the following items:

- Construct an auxiliary lane NB for consistent interchange design to meet driver expectations
- between Queenston and Barton
- between Dartnall and URHVP/Mud
- Mark all off-ramps as single lane exits. (We are ball banking all ramps along the Linc and RHVP and will be providing an update on those finding in the near future)
- OH sign modifications will be required at King, Queenston and Barton to reflect revised lane configuration
- Retro-reflective recessed pavement markers for the complete limits of the project to MTO standards.
- Edgeline rumble strips
- Durable pavement markings

I trust this helps. I believe this is everything we discussed this morning.

476. On June 12, 2017, Mr. Moore forwarded this email to Mr. Mater.⁴⁹⁸ Mr. Moore added the following comment:

Why are we getting this? I though you, and I and the GM were going to decide what to do. Where do your people get this from. Do they think we are going to spend \$10M

477. Mr. Mater responded to Mr. Moore and said “They are providing the scope they believe is required.”⁴⁹⁹

⁴⁹⁸ [HAM0026071_0001](#)

⁴⁹⁹ [HAM0026071_0001](#)

478. On June 16, 2017, Mr. Ferguson responded to Mr. Worrone's email under the subject line "RE: CPMS 10986 -Redhill Valley Parkway (RHVP) Rehabilitation." He wrote:⁵⁰⁰

I have reviewed this scope submission with Jason and have the following update to these specific items.

- * Construct an auxiliary lane NB for consistent interchange design to meet driver expectations
 - o between Queenston and Barton - this section of roadway would require a widening, therefore we are retracting this request.
 - o between Dartnall and URHVP/Mud - there is existing pavement width in which this is just a simple restriping that can be added under the existing pavement width.
- * Mark all off-ramps as single lane exits. (We are ball banking all ramps along the Linc and RHVP and will be providing an update on those finding in the near future) - this would be desirable from a design guidelines stand point, however it would have other residual impacts and requirement for additional funding. In reviewing the ramps, the only location that will be receiving this treatment is the ramp to Mud Street as it was identified in the CIMA report and is already identified in our work program, again this will be a simple restriping. For all other ramp locations with double lane exits, we will include a through arrow/right turn arrow durable pavement markings on the mainline travel lane to assist in raising awareness to the motorist.
- * OH sign modifications will be required at King, Queenston and Barton to reflect revised lane configuration - based on the above, no modifications for OH signs are required.

Hopefully this provides some clarification on these items. If you have any questions, please feel free to contact me.

One additional question, can you please confirm that we are also repaving the ramps? We have had a number of requests from the public and the area councillor related to the off ramp to Stone Church/URHVP and the number of collisions occurring, A review of the 5 year collision history identified 10 injury collisions and 13 property damage collisions, all of them occurred in wet weather. If we are repaving the ramps, then we believe this may address this collision concern (might want to add some additional pavement friction on the ramp), if we aren't repaving, then I would recommend that we add a guiderail through this section.

479. On June 20, 2017, Mr. Andoga responded to Mr. Ferguson, writing:⁵⁰¹

⁵⁰⁰ [HAM0057122_0001](#)

⁵⁰¹ [HAM0057122_0001](#)

Upon further review we will proceed with the project scope as outline in your email. We are assuming the request for mentioned the placement of continuous guiderail and/or the previous discussion surrounding lighting improvements will not be required. Council direction as well as a funding source will be required for any such enhancements.

The following will be included in the project scope, with your agreement:

Retro-reflective recessed pavement markers for the complete limits of the project to MTO standards. (red light camera funding)

Edgeline rumble strips (capital funding)

Durable pavement markings (capital funding)

480. Later that same day, Mr. White forwarded this email to Mr. Ferguson, copying Mr.

Mater. He wrote:⁵⁰²

David if I read this correctly they are stating that they are rejecting the center barrier and Street Lighting as they are not required?? Unless we provide a funding source and get Council approval?? Council Direction is still required for the paving as well so it could all be approved as one capital budget item! From a safety perspective the barriers will prevent cross over collisions.... Should that not be Councils call not Rick Andoga's and Gary's?? What is the cost of the barriers for each section of the 4 sections of the repaving? Where do we go with this now?⁵⁰³

481. Mr. Ferguson replied to Mr. White and Mr. Mater, writing:⁵⁰⁴

I would concur, they are saying the barriers and lighting is not required. I will need to review the reports to see if a costing was provided or outlined which we can utilize, however as the construction and engineering group, they should be able to assess and determine what the cost is, they do that now on all their projects.

Next steps, I would recommend that we respond stating that the Transportation Division requires the inclusion of barriers as originally submitted in the previous Scope. All costs should be associated with the project and submitted as part of the Capital Budget submission for this project. Additional funding should not be required as the works are to enhance the safety of the roadway.

It should also be noted, today we have received a claim from an incident on the RHVP in which a vehicle travelling in one direction was hit by a vehicle that crossed the median.

482. Mr. White replied to Mr. Ferguson's email at 4:04 p.m., writing:

Hi John do you wish us to pursue this (barriers) as Dave suggests below or do you wish us to forgo the barriers or go it alone later? I will need your support if we are to make any

⁵⁰² [HAM0057122_0001](#)

⁵⁰³ [HAM0057122_0001](#)

⁵⁰⁴ [HAM0026106_0001](#)

progress with Engineering Services on this matter as they have unilaterally decided not to include them in the project. The overhead lighting will not happen while Gary controls the asset I would expect.. How would you like us to proceed please.⁵⁰⁵

483. Mr. Mater replied to Mr. Ferguson's email at 4:06 p.m., writing:

Hold on a second guys. I thought the barriers were suggested in the CIMA report to be done in conjunction with a widening? The question of lighting is restricted by the environmental conditions. Let's discuss before we respond,⁵⁰⁶

484. On June 28, 2017, Mr. Jazvac emailed Pat McNab (Coordinator, Infrastructure Programming, Asset Management, Engineering Services, Public Works, Hamilton) under the subject line: "RHCE & LINC Ramps Rehabilitation' project update". He wrote:

This is in regards to a project in the 10-year xls that you left highlighted in yellow. If you follow these steps below, then everything will be updated properly. I unhighlighted the project in the 10 year.

RHCE & LINC Ramps Rehabilitation 4031811015

- rename project to be RHVP Rehabilitation
- Wards 4, 5, 6, 9
- multi-year 2018 and 2019, with \$6,500K in each year (total \$13M)

New objective...

The roadway has become surface deficient and is in need of resurfacing and base repairs. This will extend the life of the roadway, improve the level-of-service, increase safety and reduce maintenance costs. Works will include the mainline expressway and associated on/off ramps. Condition assessment of subsurface appurtenances completed and cleared.⁵⁰⁷

485. On July 26, 2017, Mr. Worroneau emailed Mr. Sidawi under the subject line "RHVP Scope", copying Mr. Ferguson, Mr. White, and Ms. Jacob. He wrote:

As discussed at this morning's Project Coordination meeting I am following up on the FINAL scope for Traffic. I met with John to confirm.

Traffic Scope:

⁵⁰⁵ [HAM0026106_0001](#)

⁵⁰⁶ [HAM0026107_0001](#)

⁵⁰⁷ [HAM0061700_0001](#)

Note: the following scope was requested by Traffic staff for coordination with the resurfacing of RHVP and LINC. The scope for both the RHVP and LINC, and for both directions, has been included below, for your information, and is to be considered/applied to the respective section of roadway being designed.

1. Installation of Reflective Recessed Pavement Markings - full length of roadway including on/off ramps (funded 100% by Red Light Camera fund)

- Each edge line and lane line

2. Pavement Markings to be completed in hard plastic (capital funding) (refer to pavement marking info/documents on S:\ path)

Note: budgeted \$500K for each direction of RHVP and \$500K for each section of LINC, total \$2M for pavement markings

3. Shoulder Rumble Strips (capital funding)

Note: budgeted \$250K for each direction of RHVP and \$375K for each section of LINC

4a. Modify the Dartnall eastbound on-ramp to Upper RHVP off ramp so that it is a continuous auxiliary lane. Minor widening may be required.

5. Modification to Alignment between Mud Street and Dartnall - modification to Spiral Curve

8. Only one off-ramp is to be converted to a single lane exit, that being the off-ramp from RHVP NB to Mud St. This was identified in the CIMA report and is already identified in Traffic's work program. This will be a simple restriping. For all other ramp locations with double lane exits, Traffic will include a through arrow/right turn arrow durable pavement markings on the mainline travel lane to assist in raising awareness to the motorist.

I have removed the following:

4b. Request for continuous auxiliary lane in NB direction of RHVP between Queenston and Barton retracted by Traffic due to insufficient width.

6. TO BE DISCUSSED FURTHER: We have also conducted a 5 year collision history review of both roadways with a specific focus on Crossover incidents. Based on this evaluation, we have identified 2 segments of concern that barriers would be installed.

6a LINC - Upper Paradise to West 5th

6b RHVP - Dartnall to King St

7. In addition to the barriers and locations, staff also identified secondary locations of concern in which Edge Markers should be installed to assist in providing guidance. (to be funded through Red Light Camera program revenue)

7a. LINC - Upper Sherman to Upper Ottawa

7b. RHVP - King to Barton

I trust this helps and communicates our scope.⁵⁰⁸

486. On September 27, 2017, City staff attended a Project Coordination Meeting. The minutes from this meeting include the following: “RHV Rehab/Linc complete over the next 4 years”.⁵⁰⁹

Z. Fatalities on RHVP

1. January 25, 2017 accident

487. On January 26, 2017, Mr. Dunsmuir emailed Mr. Paul under the subject line “Linc/RHVP Update”, copying Mr. McCleary, John Searles (District Superintendent - Roads, District East, Roads & Maintenance, Operations, Public Works, Hamilton), and Mr. Christian.⁵¹⁰ He updated them on a fatal accident:

Both RHVP W/B @ Stonechurch and the Linc E/B @ Dartnall were closed at 5:00pm due to a fatal accident.

Police opened up the Linc @ Dartnall westbound at 2:30am. The Linc eastbound was re-opened at 11:00pm.

Police re-construction opened the scene for clean-up at approximately 8:45pm.

Quantum Murray was on scene to handle [clean up] .

Quantum Murray ordered in a sweeper and sander to assist with the large clean-up.

Mike Pena from COH Abatement was called in as oil was penetrating the Jersey barrier heading towards the active moving stream on the North side of the road.

Mike Pena notified the MOE of the large oil spill.

Quantum Murray will be excavating a trench on Thursday to remove the contaminated soils as well, to remove the oil from the Jersey barriers.

⁵⁰⁸ [HAM0059037_0001](#)

⁵⁰⁹ [HAM0059136_0001](#) at image 2

⁵¹⁰ [HAM0025687_0001](#)

488. On January 27, 2017, Ms. Juchniewicz emailed Mr. White, copying Mr. Ferguson, and attached a police report on the fatal accident.⁵¹¹

489. Mr. White forwarded this email to Mr. Lupton and Mr. Mater, copying Mr. Ferguson and Mr. Worrone.⁵¹²

Confirming this is a crossover median head on fatal near Dartnell. Police report attached in confidence. Thanks.

2. February 21, 2017 accident

490. On February 22, 2017, Mr. White emailed Mr. Mater, Mr. Lupton, and Mr. Ferguson under the subject line “RHVP”.⁵¹³ He notified them about a fatal accident the previous evening:

Just a heads up there was another cross over fatality on the RHVP last night. We need to review the CIMA report on barriers as these fatals can likely be mitigated with a barrier system. Vision Zero is about reducing fatalities and serious injuries!

Dave please update the collision stats and map locations. Also can we review the run off road collisions in wet conditions on the ramps as that seems to be an issue also. We can regroup when we have the updated data!

491. On February 22, 2017, Liz Hall (Reporter, CHCH) emailed Amanda Kinnaird (Communications and Media Advisor, Mayor’s Office, City of Hamilton) under the subject line “CHCH Request”.⁵¹⁴

Is the mayor available to do a quick on-camera today about the Red Hill Valley Parkway? As you may have heard, there was another fatal on the stretch of highway last night and someone died after a vehicle crossed over into the on-coming lanes. I know that the city has discussed the possibility of installing medians/barriers on the highway. Does this need to be re-visited? Is there any kind of plan to do this? Why/why not?

⁵¹¹ [HAM0010912_0001](#) attaching [HAM0010913_0001](#)

⁵¹² [HAM0010912_0001](#) attaching [HAM0010913_0001](#)

⁵¹³ [HAM0044891_0001](#)

⁵¹⁴ [HAM0025766_0001](#)

Please let me know when you can. I'm working on getting someone from the city to speak to this but I would also like to get the mayor's take.

492. On February 22, 2017, Ms. Kinnaird forwarded this email to Mayor Eisenberger.⁵¹⁵

493. On February 22, 2017, Jasmine Graham (Communications Officer, Communications, Public Works, Hamilton) emailed Mr. Ferguson under the subject line "CHML is at 12:30", copying Mr. White.⁵¹⁶

Martin says stick to the short-medium and long-term strategies from the report.

Interview is at 12:20 if you can give them a call at 12:15 at (905) 521 2318

When you are done, let's set up a time to talk CHCH timing.

Both CHML and CHCH have asked about plans to install guardrails – I think the message here is that we are looking into this and will take direction from Council,

- A report on the safety on the RHVP and Linc went to Council about a year and a half ago – outlining short, medium and long-term improvements
- Safety improvements on the RHVP/Linc to date:
 - o Sight line improvements (branches, shrubs removed in some places)
 - o Oversized speed limit signage
 - o Additional warning signage
 - o Guiderail end treatments have been upgraded
 - o Pavement marking modifications
- Some things in the future:
 - o Report going to Council March 20 about rumblestrips
 - o ATMS capabilities – notifying police and giving drivers instant feedback on speed
 - o Three studies:
 - Variable speed system – potentially lower speed limits under certain conditions, looking at this now (weather, congestion)

⁵¹⁵ [HAM0025766_0001](#)

⁵¹⁶ [HAM0025771_0001](#)

- Rain activated flashing beacon warning system
- Warning lights to signal back-up or slow traffic ahead

494. On February 22, 2017, Ms. Graham emailed Andrea McKinney (Director, Communications & Corporate Initiatives, City Manager's Office, Hamilton) and Jen Recine (Senior Communications Officer, Communications, Communications & Corporate Initiatives, City Manager's Office, Hamilton) under the subject line “Heads up – rhvp”:⁵¹⁷

Another accident on the RHVP last night is resulting in a lot of media inquiries this morning about the safety on the Red Hill and Linc. Many councillors offices have also been engaged and several are asking traffic safety section about messaging, etc.

David Ferguson is doing two interviews (CHCH and CHML) and will talk about the report that went to council about 1.5 years ago that outlined short-term, medium-term and long-term safety improvements.

- Safety improvements on the RHVP/Linc to date:
 - o Sight line improvements (branches, shrubs removed in some places)
 - o Oversized speed limit signage
 - o Additional warning signage
 - o Guiderail end treatments have been upgraded
 - o Pavement marking modifications
- Some things in the future:
 - o Report going to Council March 20 about rumblestrips
 - o ATMS capabilities – notifying police and giving drivers instant feedback on speed
 - o Three studies:
 - Variable speed system – potentially lower speed limits under certain conditions, looking at this now (weather, congestion)
 - Rain activated flashing beacon warning system
 - Warning lights to signal back-up or slow traffic ahead

⁵¹⁷ [HAM0025767_0001](#)

There is a direct question about barriers – the message on this right now is that it's part of the ongoing studies.

495. On February 22, 2017, Mr. Ferguson forwarded Ms. Graham's email under the subject line "CHML is at 12:30" to Mr. McKinnon under the subject line "RHVP/LINC Barriers."⁵¹⁸ He copied Mr. Mater and Mr. White:

Dan, Just in case something comes up at Council.

I just got off the phone with Collins and Conley asking questions about the barriers and the recent incident. I believe they also talked to Gary.

Jasmine put some notes together below for my interviews today which may assist you if needed. These notes are primarily on what we have done to date and what we are working on.

In my interviews today when the question arose about barriers, my comment was that, barriers were identified as a longer term option as the TMP is being completed and we have to wait for what the recommendation would be on the widening of the roadway so Engineering could move forward with a Design and cost analysis.

In my discussion with the Councillors, Chad did start to get onto a bit of rant about these issues occurring as a result of driver behaviour and that the action of the motorists isn't being made public. I suggested to them, they may not want to go that route as it goes against the principals of Vision Zero and they may get some public backlash. I think they understood what I was trying to say.

496. On August 23, 2017, Ms. Wunderlich forwarded an email from Ms. Leduc approving a delegation request from a member of the public who was advocating for the installation of barriers on the LINC and the RHVP to Mr. Mater, writing "FYI – According to Gary it is a Traffic issue."⁵¹⁹

497. Mr. Mater replied, adding Mr. White to the exchange: "According to Gary, everything is a traffic issue."⁵²⁰

⁵¹⁸ [HAM0025771_0001](#)

⁵¹⁹ [HAM0026311_0001](#)

⁵²⁰ [HAM0026311_0001](#); and [HAM0011055_0001](#) attaching [HAM0011056_0001](#)

498. On August 24, 2017, Ms. Leduc emailed Mr. McKinnon, Mr. Mater, Mr. White, Councillor Arlene VanderBeek (Ward 13, Hamilton) and Councillor Ferguson under the subject line “Delegation regarding RHVP and the LINC”. She wrote:

I wanted to give you a heads up about delegations that will be coming forward at a future PW Committee meeting regarding the LINC and RHVP.

Two requests have been already been approved. They are from family members of people involved in a fatal accident and they are asking for barriers to be installed.

I've received 4 additional requests to speak and was told by one of the requestors to expect a couple more.

They may be coming to the September 18th meeting but it seems the two people already approved aren't available on the 18th so the delegations may come forward at the October 2nd meeting instead.

I'll keep you posted should anything else arise.⁵²¹

499. Mr. White forwarded the email to Mr. Ferguson the same day, writing:

Note below Dave.

Id like to see the Linc RhVP draft PW report before they show up Dave. For the median barriers we should say how many cross over collisions may be mitigated, that they could contribute to other collision types bouncing off etc, that it is more efficient to install with any widening project, that they can be an independent project costing xxxx and that the short medium and long term safety mitigation be put in place first plus whatever else you have. Plus the repaving and marking upgrades and cats eyes etc.⁵²²

500. Mr. Ferguson replied the next day, “I plan on working on the revisions to the report next week, I will make sure this is in it.”⁵²³

501. On October 16, 2017, the PWC received a delegation on the installation of safety barriers on the RHVP and LINC:

(f)(ii) Delegations respecting Safety Concerns and the Installation of Barriers on the LING and Red Hill Valley Parkway (Item 6.2)

⁵²¹ [HAM0045622_0001](#)

⁵²² [HAM0045622_0001](#)

⁵²³ [HAM0045622_0001](#)

Treena Williams and C.J. MacDonald were permitted to address the Committee respecting Safety Concerns and the Installation of Barriers on the LINC and Red Hill Valley Parkway.

The following individuals addressed the Committee respecting Safety Concerns and the Installation of Barriers on the LINC and Red Hill Valley Parkway.

- (a) Kim Lackie
- (b) Treena Williams (Added Delegation)
- (c) Leony and Corey Hastings
- (d) Susan Sholer
- (e) Sarah Warry-Poljanski (Added Delegation)
- (f) C.J. MacDonald (Added Delegation)

Ms. Samantha White, Mr. Jacob Lundrigan and Ms. Lauren Calarco were not in attendance at the meeting.

The delegations respecting Safety Concerns and the Installation of Barriers on the LINC and Red Hill Valley Parkway, were received and referred to staff for consideration in the forthcoming report about this matter.⁵²⁴

502. The same day, the CBC published an article written by Samantha Craggs (Reporter, CBC) relating to the delegation request, titled “Barriers would save lives on the Linc and Red Hill, say grieving families”.⁵²⁵

503. On October 17, 2017, Mr. White forwarded the article to Mr. Ferguson, copying Mr. Mater. Mr. Ferguson replied, indicating he had prepared some information regarding the roadways ahead of an interview on the subject on October 19, 2017.

As you may know, I am doing an interview on CHML Thursday morning.

I have gone into the weeds of the report and completed the following.

LINC 2008-2014
389 MVC's, 66 or 17% classified as Median Related collisions
Of the 66 Collisions, 22 or 6% are Crossover collisions

RHVP 2008 to July 2015
474 MVC's, 131 or 28% classified as Median Related collisions

⁵²⁴ [HAM0058713_0001](#) at images 5-6

⁵²⁵ [HAM0001043_0001](#)

Of the 131 collisions, 17 or 3% are crossover collisions

So the discussion becomes, spending \$10 million to install a barrier to address crossover collisions, which are represented at 6% and 3%. If the true concern of traffic safety is on the table, then we need to look beyond the crossover collisions and identify what the true issues are. Here are the things we know to be true.

Both Traffic Safety reports identify a direct relations of collisions to vehicle speeds, aggressive driving.

Hamilton Police conducted targeted enforcement on both facilities and identified that 95% of violations issues were attributed to speeding

The Police Chief has reported that the majority of fatal collisions occurring in Hamilton are related to vehicle speeds, aggressive driving, distracted driving

OPP has reported the majority of fatal collisions that occurring on roadways is directly related to vehicle speeds, aggressive and distracted driving.

I believe this needs to be the message we move forward with, imagine that we could eliminate 80% of serious injuries, 100% of fatalities by simply requiring motorists to obey and follow the rules of the road and the speed limit and the cost to the municipal levy is \$0. The impact of something so simple, would have the greatest safety impact any municipality in the World had ever seen. Installing barriers doesn't truly address the Safety issue of these two roadways, it would follow the principles of Vision Zero in the sense of "people make mistakes", but it is still going to leave us with over 90% of the collisions unaddressed.

For our discussion this afternoon Martin⁵²⁶

AA. *Preparation of resurfacing report to Council*

504. On March 1, 2017, Mr. Andoga emailed Mr. Hughes and Mr. McGuire under the subject line "RE: LINC – RHVP resurfacing."⁵²⁷ He copied Mr. Sidawi, Mr. Jazvac, Ms. Matthews-Malone, Mr. Moore, Ms. Jacob, Mr. Becke, Mr. Ferguson, and Mr. White and wrote:

Brian / Gord,

FYI we are proposing the resurfacing of the RHVE in 2018 – 2019, followed by the LINC in 2020 – 2021.

Please note the email below, any comments / project scope / concerns for your respective sections?

If you should have any questions in this regard, please feel free to contact this office.

⁵²⁶ [HAM0026463_0001](#)

⁵²⁷ [HAM0025799_0001](#)

505. On March 1, 2017, Mr. White forwarded Mr. Andoga's email to Mr. Mater:⁵²⁸

For your info. I mentioned yesterday to andoga that they may wish to tell council sooner rather than later.

506. Mr. Cooper circulated a calendar invitation for a meeting titled "TOC", location "RHVP/LINC", scheduled for March 2, 2017.⁵²⁹ Mr. Cooper listed John Della Pietra (Signs & Markings Supervisor, Traffic Operations & Engineering, Transportation, Public Works, Hamilton) as a required attendee and the stated purpose of the meeting was:

To determine what improvements have been completed and the remaining work

507. On March 9, 2017, Mr. Cooper emailed Mr. Ferguson under the subject line "RHVP/LINC Info updates /report".⁵³⁰ Mr. Cooper's email attached two documents, titled "RHVP LINC INFO REPORT – resurfacing" and "INFORMATION REPORT RHVP LINC – BARRIERS". He wrote:

As you requested, please see the attached reports as discussed with Martin. I did meet with him this week to discuss and have made changes as per our meeting.

There are comments/items in red that either need clarification OR are where comments are to be added by Eng. Services or Transportation Planning. As I understand the report will be a joint report.

508. The subject of the draft resurfacing information report was "LINC/RHVP Safety Improvements".⁵³¹ This report stated, in part:

At the February 27th, 2017 Public Works Committee meeting, the Ward 9 Councillor requested an update on the short term safety improvements completed to date, as approved by Council at the December 9th, 2015 meeting; Appendix "C" to report PW15091 on the Redhill Valley Parkway (RHVP) and Lincoln Alexander Expressway (LINC) to improve safety and reduce collisions. Appendix "A" attached, indicates the recommended improvements, estimated cost and status of each. The medium and long term

⁵²⁸ [HAM0025799_0001](#)

⁵²⁹ [HAM0034723_0001](#)

⁵³⁰ [HAM0044938_0001](#) attaching [HAM0044939_0001](#) and [HAM0044940_0001](#)

⁵³¹ [HAM0044940_0001](#) at image 1

recommended improvements are Appendix 'B' attached. It is anticipated that these measures may be implemented during resurfacing of both roadways beginning in 2018.

Staff is finalizing an implementation plan to complete the remaining short term works over the spring/summer of 2017. It is expected that these improvements will be complete by September 2017. Installation of the speed feedback signs on the LINC/RHVP is in progress and expected to be completed in the fourth quarter of 2017.

509. Appendix B to this report contained the following chart of medium and long term safety options and estimated costs:⁵³²

Medium and Long Term Safety Options and Estimated Costing for the LINC & RHVP

| Medium Term Options (2-5 Years) | Estimated Cost \$ |
|---|-------------------|
| Conduct Pavement Friction Testing | 40,000- Completed |
| Shield Rock Cuts between Upper James and Upper Wellington | 241,590 |
| Total Cost | 281,590 |
| Total Cost with 25% Contingency | 351,988 |

| Long Term Options (6+ Years) | Estimated Costs \$ |
|--|--------------------|
| Provide Shoulder Rumble Strips along entire length of the LINC | 105,000 |
| Install Median Barrier System on LINC | 5,569,000 |
| Install Median Barrier System on RHVP | 2,528,400 |
| Install End to End Illumination | 810,000 |
| Total Cost | 9,012,400 |
| Total Cost with 25% Contingency | 11,265,500 |

510. The subject of the draft barrier information report was "RHVP/LINC Median Barriers".⁵³³ This report stated, in part:

⁵³² [HAM0044940_0001](#) at image 4

⁵³³ [HAM0044939_0001](#) at image 2

Both roadways are scheduled for re-surfacing beginning on 2018 and it is anticipated that barriers.....[Refer to Engineering Services from comments](#)

The initial estimated costs from the original safety report which recommended the installation of barriers down the centre of both roadways are as follows:

| | |
|---------------------------------------|-------------|
| Install Median Barrier System on LINC | \$5,569,000 |
| Install Median Barrier System on RHVP | \$2,528,400 |

The cost above assumes the use of High- Tension Post and Cable as recommended by CIMA Canada Inc. and presented to Council On December 9th, 2015 in report PW15091. Appendix "A" (attached) provides high level costing for long term improvements previously recommended.

[Referred to Engineering Service for review, costing, comments for medians, lighting, etc](#)

511. On March 10, 2017, Mr. Cooper emailed Mr. Ferguson a revised version of the LINC/RHVP Safety Improvements report, having incorporated comments received from Mr. Ferguson.⁵³⁴ Appendix B to this report now read as follows:⁵³⁵

⁵³⁴ [HAM0044947_0001](#) attaching [HAM0044948_0001](#)

⁵³⁵ [HAM0044948_0001](#) at image 4

Medium and Long Term Safety Options and Estimated
Costing for the LINC & RHVP

| Medium Term Options (2-5 Years) | Estimated Cost \$ | Status |
|---|-------------------|--|
| Conduct Pavement Friction Testing | 40,000 | Completed |
| Shield Rock Cuts between Upper James and Upper Wellington | 241,590 | To be reviewed by Engineering Services |
| Total Cost | 281,590 | |
| Total Cost with 25% Contingency | 351,988 | |

| Long Term Options (6+ Years) | Estimated Costs \$ | Status |
|--|--------------------|--|
| Provide Shoulder Rumble Strips along entire length of the LINC | 105,000 | To be completed during re-surfacing |
| Install Median Barrier System on LINC | 5,569,000 | To be reviewed by Engineering Services |
| Install Median Barrier System on RHVP | 2,528,400 | To be reviewed by Engineering Services |
| Install End to End Illumination | 810,000 | To be reviewed by Engineering Services |
| Total Cost | 9,012,400 | |
| Total Cost with 25% Contingency | 11,265,500 | |

512. On March 15, 2017, Mr. Ferguson emailed Ms. Aquila a further revised version of the LINC/RHVP Safety Improvements report, copying Marlene Romanoski (Administrative Secretary, Traffic Operations & Engineering, Transportation, Public Works, Hamilton), Mr. White, and Mr. Mater.⁵³⁶ This version of the report included an Appendix C, described as follows:

Public Works Committee also requested information regarding the number of fatalities that have occurred since the opening of the LINC in the fall of 1997 and the RHVP in the fall of 2007. A breakdown of the yearly fatalities can be found in Appendix "C". There have been a total of 6 collisions on the LINC and 4 collisions on the RHVP that resulted in fatalities up to December 31, 2016.

⁵³⁶ [HAM0025831_0001](#) attaching [HAM0025832_0001](#)

Staff also conducted an assessment of traffic volumes on both facilities. Since the opening of the LINC in October 1997 the average volume has increased from approximately 48,000 vehicles per day (vpd) to 85,000 vpd in 2015 (77% increase). A large part of the increase can be attributed to the opening of the RHVP in 2007 which created a continuous connection between Highway 403 to the QEW. Since the opening of the RHVP in November 2007 the average volume has increased from 49,000 vpd to 57,000 vpd in 2015 (16% increase).

Observations indicate that both roadways operate efficiently outside of the peak periods. Observations of peak period volumes indicate that these facilities are approaching a Level of Service 'E' depicted by unstable traffic flow; rapid irregular vehicle speeds; no useable gaps; delay; and queuing.⁵³⁷

513. On March 16, 2017, Mr. Mater forwarded this email, with the attached report, to Mr. Kirkpatrick for his review.⁵³⁸

514. On March 16, 2017, Mr. Kirkpatrick emailed Mr. Mater under the subject line "Review of LINC/RHVP traffic report":⁵³⁹

Thanks for forwarding a copy of martin's (david's) draft report on the safety improvement for the LINC/RHVP. In anticipation of your meeting with Dan and Gary tomorrow and further work we have to do, I'll forward these comments:

Was this a motion-based request or just comments at the PW Committee mtg? I wasn't at mtg so I don't know the context of the request?

They have included traffic volumes. Volumes weren't asked for but they are interesting but also beg some further questions.

1. Why the difference in volume between Linc 48,000 - 85,000 vs 49,000 - 57,000 on RhVP? They may ask why the difference and if only 57,000 on RHVP, why is it regularly backed-up'd??

2. Mentioned LOS 'E'. It begs the question "so what". They didn't ask for that material but if presented, probably needs some more material about relationship of traffic flow and volumes, road/weather conditions, and other factors contributing to roadway capacity, etc.

Doesn't talk about any next steps. They didn't ask but there might be a comment about on-going monitoring or planning??

Appendix A: doesn't seem to have any order to it. Maybe group "completed" together, and then "spring-summer 2017" together etc.

⁵³⁷ [HAM0025832_0001](#) at image 1

⁵³⁸ [HAM0025836_0001](#) attaching [HAM0025837_0001](#)

⁵³⁹ [HAM0025840_0001](#)

It shows at 25 percent contingency. On completed works? 25 percent seems high? Gary's repaving isn't listed. If he's repaving because of "safety" (or partially because of safety) it should be shown. What about previous CIMA report on safety?

Appendix "B" Medium term and long term charts. Medium shows one "completed"? Why is that listed in 2-5 years?

This material contains lots of physical matters. Is there any "soft" improvements, ie police enforcement/presence, Hamilton road safety initiatives for parkways, etc.

Appendix "C" your comments about 2 incidents in 2017 not indicated. Should be mentioned somehow - they're known incidents.

515. On March 16, 2017, Mr. Mater responded to Mr. Kirkpatrick:⁵⁴⁰

I haven't reviewed yet. I'm going to edit it back to what they asked for. The rest just begs more questions as you note.

516. On March 24, 2017, Ms. Aquila emailed a copy of the final version of the LINC/RHVP Safety Improvements report to the members of City Council. The report stated as follows:⁵⁴¹

At the February 27th, 2017 Public Works Committee meeting, staff were requested to provide an update on the short term safety improvements on the Lincoln M. Alexander Expressway (LINC) and the Red Hill Valley Parkway (RHVP) as approved by Council at the December 9th, 2015 meeting. The list of identified short term improvements is attached in Appendix "A" which indicates the recommended improvements and status of each improvement. The medium and long term recommended improvements are attached as Appendix "B", which details the recommended improvements and status.

517. The final version of Appendix B to this report was as follows:⁵⁴²

⁵⁴⁰ [HAM0025840_0001](#)

⁵⁴¹ [HAM0025869_0001](#) attaching [HAM0025870_0001](#) at image 1

⁵⁴² [HAM0025870_0001](#) at image 3

Medium and Long Terms Safety Improvements LINC and RHVP

| Medium Term Options (2-5 Years) | Status |
|---|--|
| Conduct Pavement Friction Testing | Completed |
| Shield Rock Cuts between Upper James and Upper Wellington | To be reviewed by Engineering Services |

| Long Term Options (6+ Years) | Status |
|--|---|
| Provide Shoulder Rumble Strips along entire length of the LINC | To be completed during re-surfacing |
| Install Median Barrier System on LINC | To be reviewed and considered during re-surfacing |
| Install Median Barrier System on RHVP | To be reviewed and considered during re-surfacing |
| Install End to End Illumination | To be reviewed by Engineering Services |

518. Mr. Mater circulated a calendar invitation for a meeting titled “LINC/RHVP Plan” scheduled for May 1, 2017. Mr. Mater attached a document titled “LINC.RHVP Plan Agenda.May 1, 2017” to this appointment.⁵⁴³ The agenda listed the following items:

1. Introduction
2. Review of Reports and Council Direction
3. Status of Recommended Improvements
 - * Short Term
 - * Medium Term
 - * Long Term
4. Friction Testing Results
5. OBL Directions

⁵⁴³ [HAM0000888_0001](#) attaching [HAM0000889_0001](#)

6. Strategy to Address

* So What?

519. On May 1, 2017, Mr. Worrone emailed Mr. White, Mr. Ferguson, and Mr. Mater under the subject line “RE: Emailing: Linc-RHVP PW update - draft 2.pptx”. Mr. Worrone’s email attached a PowerPoint presentation titled “Linc & RHVP Update”.⁵⁴⁴ This PowerPoint presentation contained the following slide:⁵⁴⁵

December 7, 2015 – LINC & RHVP Safety Review (PW15091)

| Options | Estimated Cost | Status |
|---|----------------|------------|
| Conduct Pavement Friction Testing | \$ 40,000 | Complete |
| Shield rock cuts between Upper James and Upper Wellington | \$ 241,590 | Incomplete |
| Estimated Cost | \$ 281,590 | |
| Total cost with 25% contingency | \$ 351,988 | |



| Options | Estimated Cost | Status |
|---------------------------------------|----------------|------------|
| Shoulder rumble strips along Linc | \$ 105,000 | Incomplete |
| Install median barrier system on Linc | \$ 5,569,000 | Incomplete |
| Install median barrier on RHVP | \$ 2,528,400 | Incomplete |
| Install end to end illumination | \$ 810,000 | Incomplete |
| Estimated Cost | \$ 9,012,400 | |
| Total cost with 25% contingency | \$ 11,265,500 | |

⁵⁴⁴ [HAM0025976_0001](#) attaching [HAM0025976_0001](#)

⁵⁴⁵ [HAM0025976_0001](#) at image 18

520. On May 2, 2017, Mr. McKinnon emailed Mr. Mater under the subject line “Rhvp Meeting”, copying Ms. Wunderlich:⁵⁴⁶

John, I appreciate you calling the meeting yesterday and think there is discussion yet to be had on the topic. Let's discuss at our next QT.

521. Mr. Mater responded to Mr. McKinnon:

Yes, thanks for attending. I really wanted you to hear the conversation. I have asked Martin and his team to lead on the preparation of a report that will consider all of the motions and likely adjust our approach given the news on repaving and such. Can discuss more thoroughly at our QT.⁵⁴⁷

522. Mr. McKinnon then replied to Mr. Mater:

I'm concerned about the optics of the paving, nowhere in the forecast and suddenly getting done right away. Anyways, we'll chat some more⁵⁴⁸

BB. *Members of City Council raise concerns about the RHVP*

523. On April 4, 2017, Mayor Eisenberger emailed Mr. McKinnon and Mr. Murray under the subject line “Expressway”, copying members of City Council. He wrote:

Dan, I travel through our city often and quite frequently in our redhill and Linc and I find the lane markers very faint on dry days and virtually invisible when it is raining. The reflectors that have been installed in some locations do help some but many of them are missing or not reflecting, I am not sure which.

When I compare that to the bright and reflective lane markers on the QEW, the 401 or the 407 in most weather conditions they are bright and highly visible until you get to our expressways. I am generally a confident and unflappable driver and as I drive the Expressways especially in wet road conditions I find myself searching and guessing where the lane markers are. I find it to be an unsafe condition and a Hazard for all drivers and should be easily remedied.

Please advise as to why they are so dim/ invisible and what can we do to remedy this unsafe condition.

If I am uncomfortable driving in those conditions I have to imagine that most users of these great access ' have the same experience Before you question my eyesight/vision, which some in our community are doing relative to other issues, you should know I have had every available surgery on one or both of my eyes and they are 20/20 day time and

⁵⁴⁶ [HAM0025979_0001](#)

⁵⁴⁷ [HAM0025979_0001](#)

⁵⁴⁸ [HAM0025979_0001](#)

nighttime. ;-) I look forward to your answer and some immediate attention to this safety issue.⁵⁴⁹

524. Later that same day, Councillor Jackson responded to this email. He wrote:

Dear GM McKinnon....I could not agree more with the Mayor on this request. I drove Red Hill in the last 24 hours too during the late evening and it was horrendous trying to determine where the lane markings were!! Traffic staff have attempted to enhance with "cats eyes" markings and other reflectors from time to time, but unlike other roadways, I'm not sure why this problem persists??!! During a rainfall, its even worse. I know the hard working Ward 4 and 5 Councillors have raised this matter before at PWs Committee too. I'll leave it in your capable hands with much thanks, Councillor Jackson....⁵⁵⁰

525. On April 5, 2017, at 12:39 p.m., Mr. White responded to Mayor Eisenberger's email, copying members of Council, Mr. Mater, and Ms. Aquila. He wrote:

Good afternoon Mr. Mayor and Members of Council:

The pavement markings on both the Red Hill Valley Parkway and Lincoln Alexander Parkway consist of road paint on the parkway mainline and plastic markings on the ramps and ramp terminals. These painted road markings are repainted on an annual basis by Public Works using the MOE approved formula for latex road paint. This is the same formula used by the MTO and authorities throughout the rest of Canada. Unfortunately these markings wear down throughout the winter months and the retro reflectivity is reduced as sand and salt and vehicle tires wear down the reflective "glass beads" imbedded in the paint. In addition to the wear, Pavement Marking visibility is much reduced during wet weather conditions as the rain reduces the retroreflective properties of the paint and causes the lines to be less visible.

In 2015 Public Works addressed traffic safety concerns on the Linc and RHVP. One of the remedial collision counter measures implemented was to install inlaid retroreflective pavement markers on the RHVP. The specification used by the City for these markers is the exact same specification as used by the MTO. We are aware that a number of these markers are now missing from the RHVP. The Engineering Services section is planning to repave the Linc and the RHVP over the next few years. Therefore instead of replacing the missing markers we are planning the following actions in combination with the anticipated upcoming paving operations:

1. Upon paving, pavement markings will be reinstated on the parkways using durable material (plastics) rather than traditional road paint which will provide a longer life to the markings and reduce the issue of faded markings and poor retro reflectivity.
2. Inlaid pavement markers will be (re) installed in the new asphalt along the RHVP and at select locations on the Linc. Staff will monitor the markers and replace missing sections annually.

⁵⁴⁹ [HAM0056959_0001](#)

⁵⁵⁰ [HAM0056959_0001](#)

3. Traffic will be repainting both roadways as soon as we get adequate installation temperatures and humidity conditions to paint, usually mid to end of May. Repainting should provide immediate improvement in the visibility of the markings.⁵⁵¹

CC. *Audit Report - Use of External Consultants*

526. On April 10, 2017, Charles Brown (Director and Auditor General, Audit Services, Office of the City Auditor, City Manager’s Office, Hamilton) submitted Performance Audit Report 2016-03 - Use of External Consultants (AUD 17008) to the Audit, Finance and Administration Committee.⁵⁵²

527. The Performance Audit Report was attached as Appendix A to the Recommendation Report. It concluded as follows:

Audit Services identified a lack of corporate governance over the hiring and management of consultants. Individual service areas utilize consultants in ways that meet their individual business needs. Based on the audit findings, opportunities exist to improve overall project management, financial management and budgeting processes and the alignment of spending to overall corporate priorities. Significant cost miscoding, unbudgeted expenditures, cost overruns, project changes, delays, and non-value added activities do not demonstrate good management practices. Management should be held accountable to demonstrate best practices in these areas and operate with appropriate due diligence to ensure the best use of taxpayer dollars.⁵⁵³

DD. *May – Spectator request of City for friction data*

1. *Internal inquiries around request and friction testing data*

528. On May 26, 2017, Ms. Graham emailed Mr. Moore under the subject line “Reporter Questions”.⁵⁵⁴ Her email stated:

Martin and David Ferguson met with a reporter from the Spec yesterday to go over safety improvements along the Linc and Redhill. They did not answer some questions related to lighting and pavement and have referred the reporter to you – do we have anything we could provide her (Council Updates??) about lighting/pavement?

⁵⁵¹ [HAM0056975_0001](#)

⁵⁵² [RHV0000607](#)

⁵⁵³ [RHV0000605](#) at image 17

⁵⁵⁴ [HAM0000994_0001](#)

She has also asked for a copy of the pavement friction testing done on the RHVP – I had not heard of this before, is it a public document?

529. On May 30, 2017, Ms. O'Reilly (Spectator) emailed Councillor Conley:⁵⁵⁵

Nice chatting with you. If you can, I'm interested in info on the pavement friction testing conducted on the RHVP last year.

530. On May 31, 2017, Councillor Conley forwarded Ms. O'Reilly's email to Robert Ribaric (Assistant to Councillor Doug Conley, Ward 9, Hamilton):⁵⁵⁶

Rob could you please follow up as per our conversation

531. On June 1, 2017, Mr. Ribaric emailed Mr. Ferguson under the subject line "RHVP pavement friction testing", copying Councillor Conley:⁵⁵⁷

Was there pavement friction testing done on the RHVP last year and if so, what were the results? Thanks.

532. On June 1, 2017, Mr. Ferguson responded to Mr. Ribaric, copying Councillor Conley and Mr. Moore:⁵⁵⁸

I have copied Gary on this email.

533. On June 5, 2017, at 1:33 p.m., Mr. Ribaric received an "out of office" message from Mr. Moore in response to an email he sent under the subject line "RHVP pavement friction testing."⁵⁵⁹ Mr. Moore was scheduled to return to the office on June 12, 2017.

⁵⁵⁵ [HAM0034895_0001](#)

⁵⁵⁶ [HAM0034895_0001](#)

⁵⁵⁷ [HAM0000998_0001](#)

⁵⁵⁸ [HAM0000998_0001](#)

⁵⁵⁹ [HAM0057058_0001](#)

534. On June 5, 2017, at 1:34 p.m., Mr. Ribaric replied to Mr. Ferguson's email, which copied Mr. Moore. He added emailed Ms. Cameron, copying Councillor Conley, Mr. Moore, and Mr. Ferguson:⁵⁶⁰

With Gary out of the office, can you find someone to provide a response for Doug? Thanks.

535. On June 5, 2017, at 1:46 p.m., Ms. Cameron responded to Mr. Ribaric by email, copying Councillor Conley, Mr. Moore, Mr. Ferguson, and Mr. Oddi:⁵⁶¹

Hi Rob – I most certainly will get a response for you by copy to Marco.

Marco – please ensure you copy all on your response.

536. On June 5, 2017, at 5:08 p.m., Mr. Oddi responded to Ms. Cameron and Mr. Ribaric by email, copying Councillor Conley, Mr. Moore, and Mr. Ferguson:⁵⁶²

Sorry, I was not aware of and have not seen the results from the RHVP pavement friction testing.

This will probably have to wait until Gary returns the week of June 12th.

537. On June 5, 2017, at 2:58 p.m., Councillor Conley emailed Mr. Moore and Mr. White under the subject line "Payment friction testing", copying Mr. Ribaric:⁵⁶³

On my update sheet it says that the pavement friction testing is completed

What were the results of the testing?

⁵⁶⁰ [HAM0000998_0001](#)

⁵⁶¹ [HAM0000998_0001](#)

⁵⁶² [HAM0000998_0001](#)

⁵⁶³ [HAM0000996_0001](#)

538. On June 5, 2017, at 3:00 p.m., Councillor Conley forwarded this email to Ms. Cameron, copying Mr. Ribaric, and asked Ms. Cameron to follow up on this request “in Gary’s absence.”⁵⁶⁴

539. On June 5, 2017, at 3:07 p.m., Mr. White forwarded Councillor Conley’s email to Mr. Ferguson and Mr. Mater and stated “Let’s see what answer he gets!!”⁵⁶⁵

540. On June 5, 2017, at 3:25 p.m., Ms. Cameron replied to Councillor Conley by email, copying Mr. Ribaric and Mr. Oddi:⁵⁶⁶

By copy I will ask Marco Oddi (Manager of Construction) to investigate and respond.

541. On June 5, 2017, at 3:52 p.m., Ms. Cameron responded to Councillor Conley by email, copying Mr. Ribaric, Mr. Moore, Mr. Oddi, and Ms. Jacob:⁵⁶⁷

My apologies, it was Gary who requested the Friction Testing in 2014 and unfortunately I do not have a copy of that report. I will follow up with Gary on your request when he returns to the office on June 12th.

542. On June 5, 2017, at 3:58 p.m., Ms. Jacob responded by email to Ms. Cameron alone.⁵⁶⁸

Is this for Red Hill? May be we can touch base with Ludomir

543. On June 5, 2017, at 4:30 p.m., Ms. Cameron responded to Ms. Jacob by email:⁵⁶⁹

I wouldn’t give anything to the Councillor without Gary’s permission

⁵⁶⁴ [HAM0000996_0001](#)

⁵⁶⁵ [HAM0026045_0001](#)

⁵⁶⁶ [HAM0005438_0001](#)

⁵⁶⁷ [HAM0000996_0001](#)

⁵⁶⁸ [HAM0000996_0001](#)

⁵⁶⁹ [HAM0000997_0001](#)

544. On June 5, 2017, at 4:35 p.m., Mr. White responded to Councillor Conley and Mr. Moore by email, copying Mr. Ribaric, Mr. Andoga, and Mr. Sidawi:⁵⁷⁰

Hi Doug, Traffic doesn't have the RHVP pavement friction testing results. I believe Asset Management has this info. Thanks

545. On June 8, 2017, at 11:46 a.m., Mr. Sidawi responded to Mr. White, Councillor Conley, and Mr. Moore by email, copying Mr. Ribaric and Mr. Andoga:⁵⁷¹

We're trying to track down who has the info.

546. On June 8, 2017, at 12:14 p.m., Ms. Cameron responded to Mr. Sidawi alone, copying Mr. Moore:⁵⁷²

I already replied to the Councillors office that this needed to wait until Gary gets back on Monday.

Too many people answering the same e-mail.

547. On June 21, 2017, Ms. O'Reilly emailed Mr. Ferguson and Mr. White under the subject line "RE: RHVP LINC Map":⁵⁷³

I was finally able to talk to Gary Moore today about RHVP pavement and lighting now have a couple follow up questions I hoped you could answer.

1) repaving work is now planned (pending budget approval) for the downbound lanes next year and upbound lanes in 2019. When we spoke before there was some work that was expected to happen at the same time as repaving because of efficiencies. It's my understanding that rumble strips and the continuation of the cat eye reflectors will happen at the same time. Is this true? Is there any other road work that is expected to happen at the same time?

2) What does this repaving mean for considering a media barrier system?

3) Gary also mentioned something about some work to change ramp configurations . . . can you clarify what this is and when it will happen?

⁵⁷⁰ [HAM0001000_0001](#)

⁵⁷¹ [HAM0001000_0001](#)

⁵⁷² [HAM0001000_0001](#)

⁵⁷³ [HAM0005446_0001](#)

If it's easier to answer these by email that's fine, or you can call me.

2. Inability to obtain answers

548. On June 27, 2017, at 11:01 a.m., Mr. Ribaric emailed Mr. Sidawi, Mr. White, Mr. Moore, and Councillor Conley under the subject line “RE: Pavement friction testing”, copying Mr. Andoga.⁵⁷⁴

Good morning,

Doug is still looking for this information. Has anyone found it yet? Thanks.

549. On June 27, 2017, at 11:09 a.m., Mr. White forwarded Mr. Ribaric’s email to Mr. Mater, and commented “This isn’t going to go away I don’t think.”⁵⁷⁵

550. On June 27, 2017, at 11:23 a.m., Mr. Moore responded to Mr. Ribaric. He wrote: “Rob, have Doug call in this regard. Thanks.” Mr. Ribaric forwarded this email to Councillor Conley a few minutes later, writing: “FYI. Gary is at extension 2382.”⁵⁷⁶

551. Mr. Ribaric responded to Mr. Moore: “Will do.”⁵⁷⁷

552. On June 27, 2017, at 11:25 a.m., Mr. Sidawi responded to Mr. Ribaric, Mr. White, Mr. Moore, and Councillor Conley, copying Mr. Andoga:⁵⁷⁸

I wasn't able to track down skid resistance information. However, we are proposing to resurface RHVP starting next year.

⁵⁷⁴ [HAM0001003_0001](#)

⁵⁷⁵ [HAM0026141_0001](#)

⁵⁷⁶ [HAM0057153_0001](#)

⁵⁷⁷ [HAM0057154_0001](#)

⁵⁷⁸ [HAM0001003_0001](#)

553. On June 27, 2017, at 4:06 p.m., Councillor Conley emailed Mr. Moore under the subject line “Gary friction testing”, copying Mr. Ribaric:⁵⁷⁹

Gary have you got any information or results from the pavement friction testing done last year

554. On July 15, 2017, Ms. O’Reilly’s article, titled “Highway traffic tragedies: Why are there so many crashes on the Red Hill?” was published in The Hamilton Spectator.⁵⁸⁰

This article includes the following statements from Mr. Moore:

Yet that 2015 engineering report found crashes when the road is wet are inexplicably going up, not down, and recommended the city study friction.

And the city did test friction later that year, The Spectator has learned. But the results were never made public.

There is no official report, Moore said, only an informal chart sent in an email in December 2015. The friction testing was not fulsome and the results were "inconclusive," he said.

But instead of doing further testing, as was recommended, the city has decided to repave.

"All we got was an indication that we should do further work," Moore said. "It was moot when we decided to go ahead with (repaving)."

The city refused to share that chart with The Spectator.

"No one ever releases (that type of) information ... because it's the first thing anybody (would use in a) lawsuit," Moore said.

It's not exactly clear when staff decided to push for repaving, or how much concern over friction was a factor, but the work will be requested in next year's budget. The repaving will include "shaving and paving" the top layer, work that was supposed to happen 12 to 15 years after initial paving.

555. On July 15, 2017, Councillor Jackson exchanged emails with a member of the Public under the subject line “Red Hill Valley Parkway”. The member of the public wrote:

I am writing because I just read a portion of an excessively long article in The Spectator about crashes on the Red Hill Valley Parkway, and learned that, as I suspected, many occur between Mud Street and Dartnall Road.

⁵⁷⁹ [HAM0034972_0001](#)

⁵⁸⁰ [HAM0052704_0001](#)

It was stated that some think the road is slippery and that the City is planning to repave all/parts of it. Perhaps you have heard this before; however, the Red Hill Valley Parkway in that particular spot is either not graded properly or the road lines are poorly painted.

I can tell you that I never speed, yet when going South on the Red Hill Valley Parkway, I almost always leave the lane slightly or have to be very aware and make sure I stay in the lane right at the very spot noted above.

The City would be wise to have their engineers take a serious look at, or another look at, the way it is graded (perhaps that is the incorrect term, but the angle is definitely off).⁵⁸¹

556. Councillor Jackson replied on July 17, 2017:

Much appreciation for your thoughts specifically in that section of road you've described below. I will ask all 3 Departments (Roads Operations/Roads Engineering/Traffic) to review your recommendations. I can honestly tell you nearly \$1m. in the last 12 months has been spent on "improvements" of various kinds to Red Hill, including brighter "cats eyes" and markings and signage. I've been very supportive of changing and redesigning any portion of the roadway if necessary...pending the professional advice. Be safe and thanks for sharing.⁵⁸²

557. A few minutes later, Councillor Jackson emailed Mr. Moore, Ms. Matthews-Malone, Mr. White and Mr. Ferguson, forwarding the email exchange with the member of the public, and writing:

Please read below. The weekend Spectator story triggered her communication, specifically between Mud and Dartnall section. Your replies of work carried out in the last year or so thus far AND work to come would be welcomed to share with her.⁵⁸³

558. The following day, Mr. White replied to Councillor Jackson's email, writing:

In December 2015 Traffic reported in PW report 15-091 (attached) a list of short medium and long term Safety Option for the LINC and the RHVP. Please find the report attached as well as the safety options and the estimated costs to implement each option. All the items in appendix A Short term option (0-2 years) are scheduled to be completed this year. In addition PW (Asset Management) is reviewing the possibility of repaving the RHVP and the Linc over the next 4 years. It is anticipated that as these facilities are repaved that Durable Pavement Markings as well as permanent raised pavement markers will be installed in the newly applied asphalt. Furthermore Public Works is currently working on an updated committee report on the safety of the LINC and RHVP including expansion, and the use of safety barriers and other items to address a number of motions. This report is anticipated to be delivered to PW Committee in December 2017.⁵⁸⁴

⁵⁸¹ [HAM0001017_0001](#)

⁵⁸² [HAM0001017_0001](#)

⁵⁸³ [HAM0001017_0001](#)

⁵⁸⁴ [HAM0001017_0001](#)

559. Mr. White attached the staff report and appendices prepared for the December 7, 2015 PWC meeting to his email.⁵⁸⁵

EE. Mr. Moore sends the Tradewind Report to Shillingtons LLP

560. On July 20, 2017, Ms. Crawford emailed Mr. Ferguson under the subject line “Hamilton ats Melo / Lee / Barlow”. She wrote:

David, as you will likely recall, we represent the City with respect to several accidents on the Linc and RHVP. We would like to arrange a telephone conference with you to review the roads, the recent friction studies completed by the City and the proposed roadwork. Can you advise if you have time to discuss this matter with us over the next couple of weeks?

561. Later that day, Ms. Crawford forwarded this email to Ms. Wyskiel. Mr. Ferguson was not copied on this email. Ms. Crawford wrote: “Kim, I tried emailing David (see below). However, I got a bounce back saying his email is full. Is there any way you can pass along my email to him?”⁵⁸⁶

562. On July 25, 2017, Mr. Ferguson emailed Ms. Crawford. Ms. Wyskiel was not copied on this email. Mr. Ferguson wrote:

Kim provided me with a copy of your email about a conference call to discuss RHVP/LINC. If you want to send me a date for the next couple of weeks and time, I can talk to you about it.

When it comes to the Friction Testing, Gary Moore, Director of Engineering should be approached as I have not seen the results nor have I been involved in the process.⁵⁸⁷

563. On August 3, 2017, Ms. Crawford replied, copying Ms. Wyskiel. She wrote:⁵⁸⁸

Thank you for your email David, perhaps we should first speak with Gary Moore regarding the Friction Testing as you have not been involved in that process.

⁵⁸⁵ [HAM0001018_0001](#), [HAM0001019_0001](#) and [HAM0001020_0001](#)

⁵⁸⁶ [HAM0061971_0001](#)

⁵⁸⁷ [HAM0061965_0001](#)

⁵⁸⁸ [HAM0061965_0001](#)

Do you mind sending me his contact information?

564. Mr. Ferguson replied to Ms. Crawford and Ms. Wyskiel with Mr. Moore's contact information that same day.⁵⁸⁹

565. On August 10, 2017, Ms. Crawford forwarded this email chain to Mr. Moore, copying Ms. Wyskiel and Mr. Ferguson. She wrote:

I have tried to reach you by telephone, and understand that you have just returned from vacation and are likely swamped, so I thought that I would try you by email.

Our firm represents the City with respect to several accidents on the Linc and RHVP. We would like to arrange a telephone conference with you to review the roads, the recent friction studies completed by the City and the proposed roadwork. Can you advise if you have time to discuss this matter with us over the next few days?⁵⁹⁰

566. Mr. Moore replied to Ms. Crawford that day, copying Ms. Wyskiel, Mr. Ferguson, and Ms. Cameron. He wrote:

I have been in all day meetings, since I got back. I'm out of the office again tomorrow but will be back Monday. I am available for a phone meeting @ 11:00am on Monday and again @ 3:30 pm. Please contact my Admin Diana (x 4867) to confirm one of these times or another.⁵⁹¹

567. Ms. Cameron and Ms. Crawford exchanged emails on August 11, 2017. They arranged a call between Ms. Crawford, Terry Shillington (Partner, Shillingtons LLP), and Mr. Moore on August 15, 2017. Ms. Cameron, on behalf of Mr. Moore, sent a calendar appointment for this meeting to Ms. Crawford under the subject line "Brief Discussion w/ Shillington's Lawyers re: Friction Testing on Linc & Red Hill".⁵⁹²

⁵⁸⁹ [HAM0061965_0001](#)

⁵⁹⁰ [HAM0061965_0001](#)

⁵⁹¹ [HAM0061965_0001](#)

⁵⁹² [HAM0061968_0001](#); and [HAM0061966_0001](#)

568. On August 15, 2017, Mr. Moore emailed Ms. Crawford under the subject line “Red Hill Friction report”. Mr. Moore did not copy anyone else on this email. He wrote: “As requested, the testing was done in late 2013 and I received it in early 2014.”⁵⁹³

569. Mr. Moore attached a copy of the Tradewind Report to his email.⁵⁹⁴

FF. Discussions with Miller Paving Limited

570. On August 9, 2017, Claudio Leon (Project Manager, Contracts and Standards, Design, Engineering, Public Works, Hamilton) replied to a calendar invitation for August 31, 2017 under the subject line “Review of Asphalt Specifications with Ludomir”. This invitation was sent to Mr. Moore, Ms. Jacob, Mr. Oddi, Mr. Becke, and Dr. Uzarowski. Mr. Leon wrote:

Please note that the meeting start time has been changed to 9 a.m.

Thanks,

Claudio.

Good afternoon,

As requested by Gary, I have gone through the documents to delete overlaps in SP42 as most of the information needed is in Form 800. Both draft documents are attached for review.

In Form 800, the yellow highlights are Ludomir’s revisions. Green highlights are mine.

This meeting has been scheduled to discuss any concerns with the changes. I hope this date works for everyone.

Related OPSS links for quick reference:

OPSS 310

OPSS.MUNI 1003

⁵⁹³ [HAM0062244_0001](#)

⁵⁹⁴ [HAM0053107_0001](#) attaching [HAM0053108_0001](#); See also [HAM0054606_0001](#) attaching [HAM0054607_0001](#)

OPSS.MUNI 1101

OPSS 1150

OPSS.MUNI 1151⁵⁹⁵

571. On August 23, 2017, Dr. Uzarowski emailed Trevor Moore (Corporate Technical Director, Miller Paving Limited, Miller Group) and Mr. Cifelli. He wrote:

I hope everything is going well. Could you please call me? I have the major meeting with the City of Hamilton on August 31st. I have talked about the technology I want to try in the City with a few guys there and one of the engineers told me that Miller Paving has already met with the City and talked about ... (he wasn't sure). However, the same engineer asked me to talk directly to Gary. Gary is organizing the meeting on August 31st and, although it is about a different subject, I would have a chance to talk to him about it. I would have to know if you have already discussed it with the City or you still want me to go ahead and do it.⁵⁹⁶

572. Mr. Cifelli replied that day, writing:

FYI...

March 21, 2016, I presented our Lunch & Learn in Hamilton on the following:

- Gravel roads
- Pulverizing & base stabilization
- Surface treatment
- Microsurfacing
- CCAP
- Hot mix asphalt best practices
- PatchMaster
- Cold in place recycling

May 20, 2016: Trevor & Tony (McAsphalt) followed up with a presentation on hot mix asphalt (distresses & best practices) and asphalt cements.⁵⁹⁷

⁵⁹⁵ [GOL0003921](#)

⁵⁹⁶ [GOL0002925](#); and [GOL0002927](#)

⁵⁹⁷ [GOL0002925](#)

573. Dr. Uzarowski replied, writing: “Anything this year after I met with Trevor and Ryan?”⁵⁹⁸

574. Mr. Cifelli replied, writing: “Paul Murray and George Berenyi asked me about Scrub Seals in late March this year. Not sure when your meeting was with Trevor & Ryan.”⁵⁹⁹

575. Mr. Trevor Moore replied, writing: “We have not met or had any discussions with Hamilton since our discussion on fibre micro. If you still need to talk before your discussions with them, you can call my office at the number below or cell”.⁶⁰⁰

576. On August 25, 2017, Mr. Trevor Moore emailed Dr. Uzarowski, writing:

In speaking with our micro surfacing manager, you can budget \$4.50/m² for a single fibre reinforced microsurfacing and \$7.50/m² for a double fibre reinforced microsurfacing, based on 20,000 m².⁶⁰¹

577. Dr. Uzarowski prepared a PowerPoint presentation titled “City of Hamilton 2017 MSCR Asphalt Specification” for the August 31, 2017 meeting, which included the following content:

Other subjects:

- Fibre reinforced microsurfacing
- Dips on RHVP.⁶⁰²

578. On August 31, 2017, Dr. Uzarowski made the following note in his notebook:⁶⁰³

1) Hamilton 6500 km, \$5 billion

⁵⁹⁸ [GOL0002925](#)

⁵⁹⁹ [GOL0002925](#)

⁶⁰⁰ [GOL0002925](#)

⁶⁰¹ [GOL0002928](#)

⁶⁰² [RHV0000703](#) at image 30

⁶⁰³ [GOL0007414](#) at images 44-45

200 million required

Spend ~ 30 million

trial batch

surface at Contractor's own risk

Asset Management & Operations

OGRA – mastic

Miller in Hamilton

Skid resistance

Steel slag

MG 58S-28 – verify – confirm

80 mm in 2 lifts

When the results are deemed rejectable

Asphalt cement – what to use.

579. On September 5, 2017, Dr. Uzarowski emailed Mr. Trevor Moore, under the subject line “microsurfacing”. He wrote:

We talked about using microsurfacing with fibre last Thursday. The City is interested.

It was suggested we should talk to Rick Andoga from Asset Management and Rob Marques, Manager of Road Maintenance.⁶⁰⁴

580. Mr. Trevor Moore replied later that day, writing:

Ok great thanks Ludomir. We will reach out to them and get back in touch with you.

We are active in the Hamilton area through our MSO group for micro surfacing and seal coats. We have certainly bid on the work in Hamilton but don't think we have been successful.⁶⁰⁵

⁶⁰⁴ [GOL0002929](#)

⁶⁰⁵ [GOL0002929](#)

581. On September 8, 2017, Dr. Uzarowski made the following note in his notebook: “1) Hamilton – friction.”⁶⁰⁶

582. On September 19, 2017, Mr. Cifelli emailed Mr. Andoga, copying Mr. Trevor Moore. Mr. Cifelli attached a letter on fibre-reinforced micro-surfacing to his email. He wrote:

Hello Richard, we met in May 2016 at a Lunch & Learn at the City of Hamilton. I hope you are doing well. You expressed interest in a trial of micro-surfacing with fibers, and thus I have attached a short letter outlining our thoughts. Please have a read and let me know what you think. Thank you & have a great day,⁶⁰⁷

583. Mr. Trevor Moore forwarded this email to Dr. Uzarowski, writing: “Attached is a letter sent to the City of Hamilton FYI.”⁶⁰⁸

584. On September 29, 2017, Dr. Uzarowski made the following note in his notebook:

Gary Moore

Municipal Liaison committee

SMA polishing after 10-11 years, PSV of the original⁶⁰⁹

⁶⁰⁶ [GOL0007414](#) at images 46-47

⁶⁰⁷ [GOL0002926](#) attaching [GOL0002927](#)

⁶⁰⁸ [GOL0002926](#)

⁶⁰⁹ [GOL0007414](#) at image 49

GG. Appendix A: Individuals Referenced in Overview Document #7

| Last Name | First Name | Organization | Position(s)⁶¹⁰ |
|------------------|-------------------|-------------------------|--|
| Anderson | Kelly | City of Hamilton | Communications Officer , Public Works |
| Andoga | Richard | City of Hamilton | Senior Project Manager , Infrastructure Programming, Asset Management, Engineering Services, Public Works |
| 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 (until February 2017) Administrative Secretary , Traffic Operations & Engineering, Transportation, Public Works (February 2017 onwards) |
| Atkinson | Jennifer | City of Hamilton | Roads Operations & Maintenance Coordinator , Roads & Maintenance, Operations, Public Works |
| Bates | Nancy | City of Hamilton | Administrative Assistant to Councillor Tom Jackson , Ward 6 |
| Bates | Samantha | City of Hamilton | Assistant to Councillor Tom Jackson , Ward 6 |
| Baudin | Alex | RP Shotblasting Inc. | Commercial Representative |
| Becke | Michael | City of Hamilton | Project Manager , Design, Engineering Services, Public Works (until 2016) (Acting) Senior Project Manager , Design, Engineering Services, Public Works (beginning in 2016, until approximately February 2017) Senior Project Manager , Design, Engineering Services, Public Works (February 2017 onwards) |
| Bishop | Kathy | City of Hamilton | Assistant to Councillor Lloyd Ferguson , Ward 12 |
| Boorsma | Richard | City of Hamilton | Supervisor (D7 After Hours) , District North, Roads & Maintenance, Operations, Public Works |
| Bottesini | Giovani | CIMA | Engineering Trainee, Transportation |
| Bowes | Gord | Hamilton Community News | Reporter |

⁶¹⁰ Only positions held during the time covered by Overview Document #7 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.

| | | | |
|---------------------|----------|------------------|--|
| Boylan | Shelley | City of Hamilton | Traffic Operations Coordinator , Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works |
| Brown | Charles | City of Hamilton | Director and Auditor General , Audit Services, Office of the City Auditor, City Manager's Office |
| Calvert | Dave | HPS | Superintendent, Support Services Division |
| 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 Secretary , Asset Management, Engineering Services, Public Works |
| Charter | Sherrie | Golder | Project Coordinator & Division Administrator |
| Christian | Mike | City of Hamilton | District Superintendent - Roads , District South, Roads & Maintenance, Operations, Public Works |
| Cifelli | Nicholas | Miller Group | Technical Services Manager, Miller Paving Limited |
| Clark | Nancy | City of Hamilton | Administrative Coordinator to the General Manager , Public Works |
| Collins | Chad | City of Hamilton | Councillor, Ward 5 |
| Conley | Doug | City of Hamilton | Councillor, Ward 9 |
| Cooper | Stephen | City of Hamilton | Project Manager , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works (until February 2017) Project Manager , Traffic Engineering, Traffic Operations & Engineering, Transportation, Public Works (February 2017 onwards) |
| Craggs | Samantha | CBC | Reporter |
| Crawford | Colleen | Shillingtons LLP | Senior Law Clerk |
| Davis | Gerry | City of Hamilton | General Manager , Public Works |
| De Caire | Glenn | HPS | Chief of Police, Office of the Chief of Police |
| Decleir | Robert | City of Hamilton | Senior Project Manager , ATMS and Signals, Traffic Operations & Engineering, Transportation, Public Works |
| Del Conte | Robert | City of Hamilton | District Supervisor – Roads , District North, Roads & Maintenance, Operations, Public Works |
| Della Pietra | John | City of Hamilton | Signs & Markings Supervisor , Traffic Operations & Engineering, Transportation, Public Works |
| DiDomenico | Jennifer | City of Hamilton | Manager , Corporate Service Delivery Review, Financial Planning & Policy, Corporate Services |
| Dixon | David | City of Hamilton | Director , Transit, Public Works |

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|---------------------|----------|-------------------------|--|
| Dunsmuir | Chris | City of Hamilton | District Supervisor - Roads , District North (After Hours), Roads & Maintenance, Operations, Public Works |
| Durant | John | City of Hamilton | District Supervisor - Roads , District North, Roads & Maintenance, Operations, Public Works |
| Duvall | Scott | City of Hamilton | Councillor, Ward 7 |
| Edwards | Debbie | City of Hamilton | Assistant City Solicitor , Legal Services, Legal & Risk Management Services, Corporate Services |
| Eisenberger | Fred | City of Hamilton | Mayor of Hamilton |
| 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 (until February 2017) Superintendent , Traffic Engineering, Traffic Operations & Engineering, Transportation, Public Works (February 2017 onwards) |
| Field | Mike | City of Hamilton | Project Manager , Street Lighting & Electrical Engineering, Geomatics & Corridor Management, Engineering Services, Public Works |
| Fulton | Brad | MSO Construction Ltd. | Project Manager |
| Girt | Eric | HPS | Chief of Police, Office of the Chief of Police |
| Gordon | Cameron | Hamilton Community News | Group Managing Editor |
| Graham | Jasmine | City of Hamilton | Communications Officer , Communications, Public Works |
| Hadayeghi | Alireza | CIMA | Partner, Director, Transportation |
| Hall | Liz | CHCH | Reporter |
| 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 and Traffic ; Energy, Fleet and Traffic; Corporate Assets & Strategic Planning, Public Works |
| Hawash | Khaled | CIMA | Traffic Engineering, Transportation |
| Henderson | Dr. Vimy | Golder | Pavements and Materials Engineer |
| Hughes | Brian | City of Hamilton | Manager , Capital Rehabilitation & Technical Operations, Operations, Public Works |
| Izadpanah | Pedram | CIMA | Senior Project Manager, Transportation |
| Jackson | Tom | City of Hamilton | Councillor, Ward 6 |
| Jacob | Susan | City of Hamilton | Manager , Design, Engineering Services, Public Works |

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|--------------------|-----------|--------------------|---|
| Jacobson | Kris | City of Hamilton | Superintendent , Traffic Operations, Traffic Planning, Geomatics & Corridor Management, Engineering Services, Public Works (until 2016) Transportation Lead - Light Right Transit , LRT Project, Public Works (2016 onwards) |
| Jagdat | Steven | Golder | Project Manager, Pavements and Materials Engineer |
| Jazvac | Alan | City of Hamilton | Project Manager (Surface Infrastructure) , Infrastructure Programming, Asset Management, Engineering Services, Public Works |
| Johnston | Walter | HPS | Police Constable, Support Service Division (Traffic) |
| Juchniewicz | Linda | City of Hamilton | Collision Analyst , Traffic Operations, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works |
| Kinnaird | Amanda | City of Hamilton | Communications and Media Advisor , Mayor's Office |
| Kirkopoulos | Michael | City of Hamilton | Director , Communications, Corporate Communications & Intergovernmental Affairs |
| Kirkpatrick | Alan | City of Hamilton | Manager , Transportation Management, Corporate Assets & Strategic Planning, Public Works (until February 2017) Manager , Transportation Planning Services, Transportation, Public Works (as of February 2017) |
| Krampien | Garry | Blastrac/ Diamatic | Sales Manager, Eastern Canada |
| 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 |
| Lefebvre | Alexandre | Groupe Lefebvre | Project Manager |
| Leon | Claudio | City of Hamilton | Project Manager , Contracts and Standards, Design, Engineering Services, Public Works |
| Lin | Joe | Golder | Pavement & Geotechnical Technician, Geotechnical Group (East), Engineering Services Division |
| Lupton | Geoff | City of Hamilton | Director , Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works |
| Malone | Brian | CIMA | Partner, Vice-President, Transportation |
| Marques | Robert | City of Hamilton | Project Manager , Capital Rehabilitation & Technical Operations, Operations, Public Works |
| Masliah | Maurice | CIMA | Project Manager, Transportation |

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| Mason | Will (William) | HPS | Inspector, Support Services Division (May 2015 - September 2016) Superintendent, Division 1 (September 2016 - November 2016) Superintendent, Support Services Division (November 2016 - July 2017) |
| Mastrangelo | Christina | City of Hamilton | Technologist , Traffic Signals, Traffic Operations & Engineering, Transportation, Public Works |
| Mater | John | City of Hamilton | Director , Corporate Assets & Strategic Planning, Public Works (until February 2017) Director , Transportation, Public Works (February 2017 onwards) |
| 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 |
| McKinney | Andrea | City of Hamilton | Director , Communications & Corporate Initiatives, City Manager's Office |
| McKinnon | Dan | City of Hamilton | Director , Hamilton Water, Public Works (until September 2016) General Manager , Public Works (September 2016 onwards) |
| McMahon | Ed | COREinternational Inc. | Partner |
| McNab | Pat | City of Hamilton | Coordinator , Infrastructure Programming, Asset Management, Engineering Services, Public Works |
| McShane | Paul | City of Hamilton | Project Manager , Technical Operations & Infrastructure Rehabilitation, Roads & Maintenance, Operations, Public Works |
| Melendez | Nelson | City of Hamilton | Project Manager - ATMS , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works (until February 2017) Project Manager - ATMS , Traffic Engineering, Traffic Operations & Engineering, Transportation, Public Works (February 2017 onwards) |
| Merritt | Rob | City of Hamilton | Traffic Signal Technologist , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works |

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| Merulla | Sam | City of Hamilton | Councillor, Ward 4 |
| Moore | Ryan | City of Hamilton | Drainage Superintendent/Project Manager , Capital Rehabilitation & Technical Operations, Operations, Public Works |
| Moore | Trevor | Miller Group | Corporate Technical Director, Miller Paving Limited |
| Moore | Gary | City of Hamilton | Director , Engineering Services, Public Works |
| Murdoch | Craig | City of Hamilton | Director , Environmental Services, Public Works |
| Murray | Chris | City of Hamilton | City Manager , City Manager's Office |
| Noble | Derek | City of Hamilton | Supervisor (After Hours & Nights) , Roads East, Roads & Maintenance, Operations, Public Works |
| Nunn | Derek | Walker Industries | Division Manager, Asphalt Emulsions, Norjohn Contracting |
| O'Reilly | Nicole | Hamilton Spectator | Reporter |
| Oddi | Marco | City of Hamilton | Manager , Construction, Engineering Services, Public Works |
| Paul | Bob | City of Hamilton | Manager , Winter Control, Operations, Public Works (until August 2015) Manager , Roads & Maintenance, Operations, Public Works (August 2015 onwards) |
| Perusin | Dennis | City of Hamilton | Senior Project Manager , Construction, Engineering Services, Public Works |
| Picone | Lindsay | City of Hamilton | Solicitor , Legal Services, Legal & Risk Management Services, Corporate Services |
| Piedigrossi | Nick | City of Hamilton | Infrastructure Programming Technologist , Infrastructure Programming, Asset Management, Engineering Services, Public Works |
| Pilon | Janet | City of Hamilton | Manager Legislative Services/Deputy Clerk , Office of the City Clerk, Corporate Services |
| Poei | Astrid | MTO | Communications Coordinator, Communications Branch |
| Recine | Jen | City of Hamilton | Senior Communications Officer , Communications, Communications & Corporate Initiatives, City Manager's Office |
| Ribaric | Robert | City of Hamilton | Assistant to Councillor Doug Conley , Ward 9 |
| Rizvi | Rabiah | Golder | Pavement and Materials Engineering Analyst |
| Roberts | Scott | CIMA | Associate Partner, Director, Transportation |
| Romanoski | Marlene | City of Hamilton | Administrative Secretary , Traffic Operations & Engineering, Transportation, Public Works |
| Searle | Patrick | MTO | Press Secretary & Senior Advisor, Digital Communications, Office of the Minister |
| Searles | John | City of Hamilton | District Superintendent - Roads , District East, Roads & Maintenance, Operations, Public Works |

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| Sharma | Dipankar | City of Hamilton | Street Lighting Specialist , Street Lighting & Electrical Engineering, Geomatics & Corridor Management, Engineering Services, Public Works |
| Shebib | Rich | City of Hamilton | Traffic Technologist , Corridor Management, Geomatics & Corridor Management, Engineering Services, Public Works |
| Shillington | Terry | Shillingtons LLP | Partner |
| Sidawi | Sam | City of Hamilton | Manager , Asset Management, Engineering Services, Public Works |
| Spadaro | Kevin | City of Hamilton | Supervisor Signals , Traffic Operations, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works |
| Spagnuolo | Reinaldo | City of Hamilton | Supervisor (After Hours) – Roads, District North , Roads & Maintenance, Operations, Public Works |
| Starr | Joanne | City of Hamilton | Traffic Technologist , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works |
| Swain | Jon | Skidabrader | Owner & Chief Executive Officer |
| Switenky | Ed | City of Hamilton | Superintendent , Traffic Operations, Traffic Operations & Engineering, Transportation, Public Works |
| Taylor | Leonard | Tradewind Scientific | President & Chief Executive Officer |
| Uzarowski | Dr. Ludomir | Golder | Principal, Pavements and Materials Engineering |
| Vala | Sarath | City of Hamilton | Project Manager , Design, Engineering Services, Public Works |
| Van Dongen | Matthew | Hamilton Spectator | Reporter |
| VanderBeek | Arlene | City of Hamilton | Councillor, Ward 13 |
| Vorkapic | Jasmine | City of Hamilton | Legislative Secretary , Office of the City Clerk, Corporate Services |
| Weatherhill | Kenneth A. | HPS | Deputy Chief of Police, Office of the Chief of Police |
| White | Martin | City of Hamilton | Manager , Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works (until February 2017) Manager , Traffic Operations & Engineering, Transportation, Public Works (as of February 2017) |
| Whitehead | Terry | City of Hamilton | Councillor, Ward 8 |
| Woozageer | Ajay | MTO | Senior Media Liaison Officer, Communications Branch |

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|-------------------|-------|------------------|---|
| Worron | Jason | City of Hamilton | <p>Senior Project Manager, Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works (until February 2017)</p> <p>Senior Project Manager, Traffic Engineering, Traffic Operations & Engineering, Transportation, Public Works (as of February 2017)</p> |
| Wunderlich | Nancy | City of Hamilton | Administrative Assistant to the Director of Operations , Operations, Public Works |
| Wyskiel | Kim | City of Hamilton | <p>Superintendent, Traffic Services, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works (until February 2017)</p> <p>Superintendent, Traffic Services, Traffic Operations & Engineering, Transportation, Public Works (February 2017 onwards)</p> |
| Zaszkowska | Aneta | City of Hamilton | Transportation Technologist , Traffic Engineering, Traffic Operations & Engineering; Energy, Fleet & Traffic; Corporate Assets & Strategic Planning, Public Works |