

Answers to the Terms of Reference in the Inquiry Report

#	Term of Reference	Answer to Term of Reference
1	Identify all individuals who received a copy of the Report or were advised of the Report or the information and recommendations contained therein after it was provided to the City's Department of Engineering Services in January, 2014	<ul style="list-style-type: none"> • City Staff: Gary Moore, Diana Swaby, Mike Becke • Shillingtons LLP: Terry Shillington, David Thompson, Colleen Crawford • CIMA: Brian Malone*, Brian Applebee*, Giovanni Bottesini*, Khaled Hawah*, Pedram Izadpanah* • Other: Tom Dziedziejko* (General Management, AME, Aecon Materials Engineering Corp.) <p>This list does not include those who were involved in the Tradewind Report's preparation or initial transmission to Mr. Moore. Individuals who received some information about the contents of the Tradewind Report without receiving a copy or having a full appreciation of its contents are identified with an asterisk.</p>
2	Based on the City's by-laws, policies and procedures, as they were in 2014, should Council have been made aware of the Report, or the information and recommendations contained therein, once the Report was submitted to the Department of Engineering Services in 2014?	<p>There was no requirement in 2014 under the City by-laws or policies to bring all consultant reports to Council.</p> <p>There was no obligation or best practice that required that Council be made aware of the Tradewind Report. However, as described in Question 3, Mr. Moore had an obligation to disclose the existence of the Tradewind Report to Traffic.</p>
3	Why was the information in the Report, or the information and recommendations contained therein, not provided to Council or the public once the Report was submitted to the Department of Engineering Services in 2014?	<p>Given the City's by-laws and policies as they existed from January 2014 to February 2019, Mr. Moore did not have an obligation to disclose the Tradewind Report, or the information and recommendations contained therein, to Council. Mr. Moore was obligated to provide the Tradewind Report to Traffic staff for their consideration in the context of traffic safety. Mr. Moore's decision not to provide it to Traffic staff foreclosed any analysis by Traffic of the significance of the Tradewind Report for traffic safety. Whether any such analysis would have resulted in disclosure to Council in connection with Traffic's recommendations for traffic safety is speculative.</p> <p>Mr. Moore kept the Tradewind Report to himself because his focus was on the state of the RHVP pavement with a view to preservation of the perpetual pavement. In addition, from Mr. Moore's perspective, the upcoming rehabilitation was a complete answer to Dr. Uzarowski's conclusions in 2014 that the friction levels were "relatively low". Mr. Moore's decision not to provide the Tradewind test results to Traffic staff notwithstanding that they had an involvement in traffic safety also reflected his approach of keeping all substantive matters relating to the RHVP to himself and his view that he was the person most capable of determining the reliability and utility of the Tradewind Report.</p> <p>Even if Mr. Moore saw no utility in the Tradewind Report from his perspective, the Tradewind Report should have been made available to Traffic to enable it to fulfill its mandate. If he had reservations about the Tradewind Report, he should have nevertheless provided the Tradewind Report and explained his reservations to his colleagues when he did so. If he had concerns regarding the circulation of the results within Public Works or publication of the results, Mr. Moore should also have identified those to his colleagues at the same time he provided the report.</p>

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4	Who, if anyone, was responsible for the failure to disclose a copy of the Report, or the information and recommendations contained therein, to Council in 2014?	As the sole recipient of the Tradewind Report, Mr. Moore was responsible for the nondisclosure of the Tradewind Report, and the information and recommendations set out therein, to Council in January 2014.
5	Was there any negligence, malfeasance or misconduct in failing to provide the Report, or the information and recommendations contained therein, to Council or the public?	<p>The Commissioner expressly noted that a judicial inquiry cannot make findings of civil or criminal liability or whether a legal standard has been breached. The Commissioner was guided by the definition of misconduct as "improper or unprofessional behaviour" or "bad management" directly relevant to the subject matter of the Inquiry, which would have been considered improper at the time the conduct allegedly occurred. The term "misconduct" does not indicate findings of professional misconduct in the context of professional regulation.</p> <p>Mr. Moore's failure to provide the Tradewind Report to the Traffic group for the purposes of its traffic safety mandate constituted misconduct.</p> <p>In addition, Mr. Moore provided inadequate, incomplete, or inaccurate information which constituted misconduct on three following occasions: (a) when he provided inadequate and incomplete data to Brian Malone regarding the nature and results of the Tradewind testing; (b) when made a statement to councillors at the PWC meeting on December 7, 2015 clearly inconsistent with the findings and recommendations in the Tradewind Report; and (c) when he made inaccurate statements to the Hamilton Spectator in advance of publication of an article on July 15, 2017.</p>
6	How was the Report discovered in 2018?	<p>In the weeks before his retirement in May 2018, Mr. Moore uploaded two emails from Dr. Uzarowski to the Director's Office Folder in ProjectWise: the January 2014 Uzarowski Email with the averages of the Tradewind and 2007 MTO friction testing, and the December 2015 Uzarowski Email which attached a copy of the Tradewind Report.</p> <p>Mr. McGuire located the uploaded January 2014 Uzarowski Email on August 30, 2018. He also forwarded the December 2015 Uzarowski Email to a person that the Inquiry could not identify, but did not read the email or the standalone copy of the Tradewind Report that was attached to that email at that time.</p> <p>Mr. McGuire found and read the December 2015 Uzarowski Email and the Tradewind Report while looking at the contents of the Director's Office Folder in ProjectWise on September 26, 2018. On that day or the following day, he or his assistant, Ms. Cameron, also located a hard copy of the 2014 Golder Report amongst the documents that Mr. Moore had left in his office.</p>

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7	Identify all individuals who received a copy of the Report or were advised of the Report or the information and recommendations contained therein, in 2018	<ul style="list-style-type: none"> • Public Works Staff: Susan Jacob, Gord McGuire, Dan McKinnon, Edward Soldo, Dipankar Sharma • Legal Services/Risk Management Staff: Nicole Auty, Debbie Edwards, Byrdena MacNeil, John McLennan, Ron Sabo • Communications Staff: Jasmine Graham, John Hertel, Jen Recine • Audit Services Staff: Charles Brown, Domenic Pellegrini, Brigitte Minard • Administrative Staff: Diana Cameron, Nancy Wunderlich, Cathy Bojeski, Pam Delry • Mayor's Office: Mayor Fred Eisenberger, Drina Omazic • City Manager's Office: Mike Zegarac • External: David Boghosian (Boghosian LLP) and Ryan Ellis (Area Manager, National Walkway Safety Auditing) <p>This list does not include individuals who received a copy of the Tradewind Report and/or were advised of the Tradewind Report or the information and recommendations contained in it, before September 26, 2018 (addressed in Question 1) or anyone who received it after December 31, 2018.</p>
8	Were appropriate steps taken to disclose the Report, or the information and recommendations contained therein, once it was discovered in 2018?	<p>There was an obligation to bring the Tradewind Report to the attention of Council in light of the prior inconsistent statements made to Council and the media regarding friction testing on the RHVP, irrespective of whether the Tradewind Report was going to be provided to the FOI requestor.</p> <p>In part, the failure to consider whether the collision history of the RHVP and whether the actual friction levels in 2018 and 2019 posed a safety concern reflected an absence of a clear understanding between Mr. McGuire and Mr. Soldo regarding responsibility for addressing the significance for traffic safety on the RHVP of the Tradewind Report findings and recommendations because of the siloed structure of the Public Works department.</p> <p>It is not clear how or if the Tradewind Report would have been disclosed to Council absent the FOI request. When it became clear that the Tradewind Report would have to be disclosed under that request, City staff worked expeditiously to prepare a presentation to Council on the outstanding RHVP-related matters including the Tradewind Report. From that time onward, senior staff members worked hard to that end and provided notification to Council of the Tradewind Report within a reasonable time frame.</p> <p>Nevertheless, the content of the notification to Council of the Tradewind Report was deficient as a result of the unclear and overlapping roles and responsibilities of those involved and the compressed timeframe. This ultimately led to notification to Council and the public that focused on damage control.</p> <p>While the staff involved in the presentations to Council legitimately sought to be open and transparent with Council and the public, Council could have been provided with more information in the written materials to understand more comprehensively the factors contributing to accidents on the RHVP.</p>

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9	Was there any negligence, malfeasance or misconduct in failing to disclose the Report, or the information and recommendations contained therein, once the Report was discovered in 2018?	<p>Although the Commissioner expresses certain reservations regarding the actions of staff after discovery of the Tradewind Report, he does not find that any individual engaged in improper or unprofessional behaviour, or bad management, to warrant a finding of misconduct.</p> <p>However, the absence of a joint project structure, effective communication among those involved, and the compressed timeframe had the result that there was no analysis of any significance on the critical issues in the presentations to Council – that is, the implications, if any, of the Tradewind Report for the present operating conditions on the RHVP and, more specifically, whether the traffic safety measures put in place over time were appropriate and sufficient.</p>
10	Were users of the RHVP put at risk as a result of the failure to disclose the Report's findings?	<p>It is not possible to provide a simple answer to this question. There are many potential contributing factors to collisions and other accidents on a roadway including factors relating to highway conditions, vehicles involved, and driver(s) involved.</p> <p>There is no evidence that the friction levels on the RHVP in or after 2013 were sufficiently low as to pose an increased risk of accidents in and of themselves. Additionally, the undisputed evidence is that inadequate friction levels are rarely the principal or proximate cause of a highway accident.</p> <p>However, inadequate friction levels can be a contributing factor to accidents along with other factors such as the road surface conditions, the geometry of the highway, and interchange spacing.</p> <p>It is reasonable to assume that Traffic would have recommended a reduction in the posted speed limit on the RHVP and enhanced speed enforcement earlier than 2019. It is also reasonable to assume that Traffic would have recommended implementation of the permanent raised pavement markings whose actual implementation was tied to Engineering Services' resurfacing schedule on an independent and earlier basis. To the extent that these actions did not occur, it is logical to assume that users of the RHVP were exposed to more risk than would have been the case if they had been implemented.</p>
11	Did the Report contain findings or information that would have triggered Council to make safety changes to the roads or order further studies?	<p>The Tradewind Report contained findings that not only required a further investigation but also called into question the simple explanation of bad driver behaviour that was provided to the PWC and Council as the explanation for the abnormal accident experience on the RHVP.</p> <p>It is therefore reasonable to assume that if the Traffic group had received the Tradewind Report, it would have conducted a further investigation of the roadway surface including the friction levels and would have developed a more comprehensive view of the factors that were contributing to the accident experience of the RHVP in 2014. The Commissioner has no doubt that Council would have authorized any study or investigation given the public attention and Council's ongoing engagement on RHVP matters.</p> <p>With respect to the countermeasures recommended by CIMA that were actually implemented between 2014 and 2019, it is reasonable to assume that, as a consequence of a more comprehensive approach to traffic safety, Traffic would have recommended to Council that such countermeasures be implemented earlier than actually occurred, including a reduction in posted speed limit and enhanced speed enforcement. It is also</p>

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		reasonable to assume that Traffic would have recommended implementation of the countermeasures tied to the resurfacing schedule (e.g. permanent raised reflective markings) on an earlier and independent basis.
12	Did the failure to disclose the Report, or the information and recommendations contained therein, contribute to accidents, injuries or fatalities on the RHVP since January, 2014?	<p>The evidence for a definitive conclusion on this issue was not available to the Inquiry and would be difficult to generate, partly due to the COVID-19 pandemic and its effects on traffic patterns and the limitations of drawing statistically meaningful conclusions from the limited number of such incidents.</p> <p>However, to the extent that the earlier implementation of the countermeasures would have decreased the demand for friction on the RHVP, the expert evidence establishes that decreasing the demand for friction will decrease the number of collisions, injuries, and deaths even if it is not possible to quantify the effect.</p> <p>Accordingly, to the extent that the earlier implementation of these countermeasures did not occur, it is logical to assume that the failure to disclose the Tradewind Report, or the information and recommendations contained in the Tradewind Report, contributed to accidents and injuries on the RHVP since January 2014.</p>
13	Did anyone in the Public Works Office or Roads Department request, direct or conduct any other friction test, asphalt assessment, or general road safety reviews or assessments on the RHVP?	<p>The other friction tests, asphalt assessments, general road safety reviews, and other assessments of the RHVP from 2005 to 2020 are as follows:</p> <ul style="list-style-type: none"> • Golder Associates Ltd. <ul style="list-style-type: none"> ○ “Perpetual Pavement Feasibility Study, Red Hill Creek Expressway” (August 2005); ○ “Perpetual Pavement Design Study, Phase 2, Red Hill Creek Expressway” (issued in draft in March 2006); ○ Laboratory and field testing Quality Assurance services for the paving of the RHVP ramps and mainline (beginning in mid-2006 until November 2007); ○ Periodic engagements pertaining to data collection from the pavement instrumentation and monitoring system and the traffic data system installed in the RHVP mainline pavement (beginning in November 2007); ○ Phases I, II, and III of the City-wide “Pavement and Materials Technology Review” (between 2009 and 2013); ○ Inertial Profiler testing on the RHVP (to identify the location of dips and bumps on the parkway) (presented on March 4, 2016); ○ “Evaluation of Pavement Surface and Aggregates – Red Hill Valley Parkway, City of Hamilton” (March 2019); and ○ “Red Hill Valley Parkway HIR Suitability Study” (March 2019); • CIMA <ul style="list-style-type: none"> ○ “Red Hill Valley Parkway Safety Review” (December 2013); ○ “Lincoln Alexander Parkway Median Safety Study” (November 2015); ○ “Red Hill Valley Parkway Detailed Safety Analysis” (November 2015); ○ “Lincoln Alexander Parkway / Red Hill Valley Parkway Collision Rates” memo (January 2018); ○ “Hamilton LINC and RHVP Speed Study” (October 2018); ○ “Detailed LINC/RHVP Illumination Review” (January 2019);

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		<ul style="list-style-type: none"> ○ "Roadside Safety Assessment – Red Hill Valley Parkway" (January 2019); ○ "Lincoln Alexander Parkway / Red Hill Valley Parkway Collision Rates" (January 2019); ○ "Red Hill Valley Parkway – Pavement Friction Testing Results Review" (February 4, 2019); ○ "Red Hill Valley Parkway – Review of MTO Pavement Friction Data 2008-2014" (February 26, 2019); ○ "Red Hill Valley Parkway Analysis" (April 2020); and ○ "Review of Red Hill Valley Parkway Friction Test Results" (May 2020). <p>The City of Hamilton also published Annual Collision Reports from 2017 and onward.</p>
14	Did subsequent consultant reports provide additional support or rebuttal to the conclusions contained in the Report?	<p>Subsequent friction test results and reports supported the results and conclusions in the Tradewind Report.</p> <p>The MTO test results reflected a decline in the friction levels on the RHVP from 2008 to 2012 which levelled off by 2014 at a level slightly in excess of the friction level of FN30 on an average basis for each lane in each direction.</p> <p>The friction testing conducted by Englobe in May 2019 before resurfacing of the RHVP confirm a reduction in friction levels of approximately 20% which levelled off after 2013 or 2014.</p> <p>The MTO test results and the ARA test results obtained prior to the resurfacing in 2019 were obtained using a locked-wheel test device and the results are therefore not directly comparable to the Tradewind results. However, the technical experts engaged considered the Tradewind results to be generally consistent with the MTO test results and the results obtained by ARA and Englobe.</p> <p>The various CIMA reports prepared subsequent to the Tradewind Report, even though issued in ignorance of the Tradewind Report, contained collision history statistics and analysis suggesting that low friction might be a contributing factor to the accident experience on the RHVP.</p>
15	Identify any changes to the City's bylaws, policies and procedures to prevent any such future incidents of non-disclose of significant information to Council	<p>The Commissioner's recommendations are outlined at section E of this Recommendation Report. The Commissioner's recommendations specific to bylaws, policies, and procedures can also be found in Volume 2 of the Report at pp. <u>309 to 319</u>.</p>
16	Did the MTO Report provide additional support or rebuttal to the conclusions contained in the Report?	<p>The MTO 2007 friction test results in the MTO Report provided neither support nor rebuttal to the conclusions of the Tradewind Report.</p> <p>The condition of the RHVP pavement surface at the time of the Tradewind testing in 2013 was different from that at the time of the 2007 MTO testing. The frictional performance in 2007 prior to opening was distinct from, and cannot be compared to, the parkway's frictional performance six years later in 2013 when tested by Tradewind.</p>

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17	Why was the MTO Report not provided to Council or made publicly available?	<p>The 2007 test results were sent by the MTO to Golder. MTO's distribution to Golder staff, rather than directly to the City, was consistent with the MTO's standard distribution practice for municipal testing requirements.</p> <p>Dr. Uzarowski subsequently forwarded Dr. Raymond's email and the 2007 test results to Mr. Moore and Mr. Oddi at the City. Mr. Moore and Mr. Oddi were the only City staff who received the 2007 friction test results. Further distribution of the results within the City, including to Council, therefore rested with either or both of Mr. Moore and Mr. Oddi. Neither distributed the results further, nor was there any by-law or policy requiring that they do so.</p> <p>Mr. Moore made an operational decision not to share the 2007 results with anyone within Public Works. Having received satisfactory results for newly placed SMA pavement that disclosed no issues, there was nothing to report to Council. Mr. Moore's decision not to share the results was not inappropriate in the circumstances.</p> <p>Council would not have expected to receive the 2007 results in October 2007 because (a) RHV Project Office staff had delegated authority over operational and construction-related decisions pertaining to the RHVP; (2) the 2007 results were of an overall acceptable nature such that no further steps were required; and (3) the 2007 results were not accompanied by any assessment or interpretation.</p>
18	Who was briefed within the MTO's office about the MTO Report?	<p>For the purposes of this Question, "briefed" includes all individuals at the MTO who received a standalone copy of the 2007 test results in 2007 and/or information pertaining to the 2007 results between 2008 and 2019.</p> <ul style="list-style-type: none"> • Frank Marciello performed RHVP friction testing on October 16, 2007 and prepared the spreadsheets • In 2007: Dr. Chris Raymond, Becca Lane, Chris Rogers, Bob Gorman, Tom Kazmierowski, Dennis Billings, Henry Bykerk, and Rob Kohlberger • At least one of 2008 to 2012 and 2014: Bob Gorman, Dr. Chris Raymond, Joseph Ponniah, Stephen Senior, Becca Lane, Karen Smith, and Stephen Lee • In 2014, Hanna Schell, Becca Lane, Pamela Marks, Seyed Tabib, Stephen Senior, Stephen Lee, Anil Virani and Imran Bashir were given a copy of, or a link to access, a presentation given by Tom Dziedziejko which included average FN and FN ranges from the 2007 friction test results as well as the average friction values from Tradewind's testing • On February 12, 2019, Kevin Bentley received a spreadsheet containing MTO 2008 to 2014 RHVP friction test results. Several staff in the MTO's communications branch were also copied on the email and thus received the results.

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19	Did the MTO Report contain findings or information that would have triggered Council to make safety changes to the roads or order further studies?	<p>Even if the 2007 friction test results had been provided to Council in 2007, they would not have triggered any safety changes to the RHVP or prompted any further friction-related studies of the parkway.</p> <p>The uncontroverted evidence before the Inquiry was that no further assessment, remediation, or action was warranted in 2007 because the results were acceptable for newly paved SMA pavement and friction levels were expected to increase shortly after the parkway opened at that time.</p>
20	Did the failure to disclose the MTO Report, or the information and recommendations contained therein, contribute to accidents, injuries or fatalities on the RHVP since January, 2014?	<p>The non-disclosure of the MTO's 2007 test results to Council did not contribute to any RHVP collisions after 2014.</p> <p>The 2007 RHVP friction test results were considered acceptable in the context of the early age low friction characteristic of an SMA pavement. No contemporaneous safety concerns arose from the 2007 results, which were expected to (and did) increase after traffic wore down the asphalt film layer on the surface of the RHVP SMA.</p> <p>The 2007 testing was performed six years prior to 2013, and friction levels had, as expected, increased in the following year from the measurements taken in October 2007 to a materially higher level from which they declined thereafter.</p>
21	Did the MTO request, direct or conduct any friction tests, asphalt assessments, or general road safety reviews or assessments on the RHVP other than the MTO Report?	<p>The MTO conducted friction testing on the RHVP in 2008, 2009, 2010, 2011, 2012, and 2014. All of this testing was conducted pursuant to the MTO's standard procedures for assessing applications for a DSM listing and for maintenance of an existing listing. It was not performed or analyzed for traffic safety purposes.</p> <p>The MTO did not distribute the 2008 to 2014 test results externally, including to anyone at the City or Golder, until February 12, 2019, when Mr. Bentley shared the 2007 to 2014 results with the City and the results were shared with the media. The MTO did not conduct or direct any other asphalt and/or road safety reviews or assessments, aside from the aforementioned DSM-related friction testing, in respect of the RHVP.</p>
22	What is the standard in Ontario, if any, with respect to the acceptable levels of friction on a roadway?	<p>There is no formal standard for acceptable levels of friction on a roadway in Ontario. The MTO also does not publish any friction measurement standards or friction level investigatory limits in respect of highways in Ontario.</p> <p>However, in practice, for traffic safety purposes, the MTO uses a tested friction level of FN30 (measured at the posted speed) as an informal investigatory level guideline for assessing roadway friction based on testing using its locked-wheel trailer testing equipment. This informal threshold is applied flexibly in different circumstances.</p> <p>While this guideline is not published, the MTO's use of this informal guideline was not a secret within the asphalt or paving industries in Ontario, although it was not universally known during the relevant period for the Inquiry.</p>

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23	What information with respect to the friction levels of the roadways in Ontario is publicly available?	<p>The MTO does not broadly share its friction data externally as a rule, although on occasion MTO friction data may be published or shared in technical papers and industry presentations.</p> <p>There is no formal MTO directive governing responses to friction-related inquiries, but in practice MTO staff appear to have limited their responses to generic, high-level information avoiding the provision of specific information regarding friction results on specific MTO highways, any MTO views regarding appropriate threshold levels, and any interpretation of friction results.</p>
24	To what extent do other factors, including, but not limited to, driver behaviour, lighting and weather conditions, contribute to motor vehicle accidents when compared to the impact of friction levels on motor vehicle accidents on the RHVP?	<p>The combination of geometry, the posted speed, driver expectations, road surface conditions, and the friction levels are all contributing factors to collisions on the RHVP. The evidence before the Inquiry does not support a ranking of these factors in order of importance.</p> <p>The evidence establishes that the friction supplied by the RHVP, particularly in the areas experiencing the highest frequency of accidents, was low relative to the friction demanded and was a contributing factor to collisions on the RHVP, particularly wet road collisions.</p> <p>There are, however, many potential contributing factors to collisions and other accidents on a roadway, which can be broken down into three categories: factors related to the highway conditions, factors related to the vehicles involved, and factors related to the driver(s) involved. Pavement friction is particularly important in circumstances where other factors that increase friction demand are present.</p> <p>The motorist is the primary contributor to collisions, and individuals react faster and more accurately to events, conditions, and hazards that are "expected" compared to those that are unexpected or a surprise. When the environment deviates from expectations, all else being equal, the potential for collisions and conflicts increases.</p> <p>It is estimated that road design, operations, and maintenance is a contributing factor in approximately one quarter of motor vehicle collisions. This significant contribution suggests that, in particular, roadway infrastructure must be designed, operated, and maintained so that motorists understand the system they are using and will make rapid and appropriate decisions in selecting speed and path.</p>