

**OTTAWA LIGHT RAIL TRANSIT COMMISSION / COMMISSION D'ENQUETE SUR
LE RESEAU DE TRAIN LEGER SUR RAIL D'OTTAWA**

**CLOSING STATEMENT OF
RIDEAU TRANSIT GROUP ENGINEERING JOINT VENTURE**

OPENING COMMENTS

1. The Rideau Transit Group Engineering Joint Venture (“RTGEJV”) would like to again take this opportunity to thank the Commissioner, Commission Counsel, and the entire Commission for their thorough and informative investigation of this matter. RTGEJV would also again like to thank the citizens of Ottawa for their involvement in assisting the Commission in its investigation of the construction and delivery of Stage 1 Confederation Line (“the Project”).
2. RTGEJV shares in the views expressed by many participants during the hearing, in that this was a very complex Project in which all involved parties worked very hard towards the goal of delivering a world-class system to the citizens of Ottawa.
3. RTGEJV believes the work of the Commission will be not only beneficial to the citizens of Ottawa by providing a better understanding of the factors underlying the problems the System has encountered but will also benefit the industry at large. RTGEJV was pleased to cooperate with the Commission by making available RTGEJV’s design manager for an interview, by producing all relevant documentation to the Commission’s satisfaction, and by voluntarily applying to be a Participant in the hearing.
4. To reiterate the composition of RTGEJV, it is a joint venture of engineers comprised of SNC-Lavalin Inc. and MMM Group Limited (now WSP Canada Inc.). Both SNC Lavalin Inc. and WSP are world-leading engineering firms in designing transportation systems.
5. In brief, RTGEJV’s involvement in the Project included designing the main infrastructure

components of the Project, such as the track and stations. RTGEJV was not responsible for the entire design of the Project. Among other components, RTGEJV was not responsible for the design of the vehicles or the vehicle signalling system.

RTGEJV's ROLE IN THE PROJECT

6. As was noted in its Opening Statement and confirmed by the hearing evidence, while RTGEJV had a significant role in this Project, though that role was devoid of substantial involvement in the majority of issues explored by the Commission during the hearing process. RTGEJV was not involved in, or had cursory involvement in, the following topics which received significant attention during the hearing:
 - i. Determining the P3 model to be used for this Project,
 - ii. The drafting of the Project Agreement,
 - iii. The Award of the Project,
 - iv. Procurement and design of the vehicles,
 - v. Overall management of the Project,
 - vi. The relationship between the City of Ottawa ("the City") and other Participants,
 - vii. The City's enforcement of the Project Agreement,
 - viii. Construction sequencing and means and methods of construction, and
 - ix. The timing for and manner in which the system would be opened to the public.
7. RTGEJV was focussed on delivering the designs that it was responsible for to the satisfaction of its client, OLRT-C, while being compliant with the relevant specifications and guidance provided by the Project Agreement. As part of obtaining client satisfaction, RTGEJV's designs were subjected to scrutiny and comments from both the City and OLRT-C.
8. To summarize RTGEJV's involvement, following the Award of the Project to *Rideau Transit Group General Partnership* ("RTG") to design, build, finance, and maintain the Project, on February 12, 2013, RTG executed an agreement with *Ottawa Light Rail Transit Constructors* ("OLRT-C") to have OLRT-C design and build the Project. The partners making up OLRT-C

included SNC-Lavalin Constructors (Pacific) Inc., Dragados Canada Inc., and EllisDon Corporation. For the purposes of the Project, SNC-Lavalin Constructors (Pacific) Inc. and SNC-Lavalin Inc. were and are distinct entities with one engaged as partner to OLRT-C and another to RTGEJV. For SNC at large, Ethical Wall Protocols were put internally put in place to ensure the distinction. Throughout the hearing, many references to “SNC-Lavalin” were made without specifying whether the referral was to the OLRT-C constructor entity or the RTGEJV consultant entity. RTGEJV submits that the Commission needs to be aware of this potential misidentification issue and guard against it when drafting its final report¹.

9. On March 15, 2013, OLRT-C entered into the *Services Agreement*² with RTGEJV wherein RTGEJV agreed to complete the design work for a large portion of the Project.
10. RTGEJV was only in contract with OLRT-C to provide the design services that were outlined in the Services Agreement. All services that were not expressly identified in the Services Agreement were outside of RTGEJV’s scope of services.
11. At the time of the bid, the City had a preliminary design of the track’s route and station location as completed by Capital Transit Partners, as well as design specifications that were to be followed which were captured in the Project Agreement³. In other words, RTGEJV was provided with an engineered overview of the location of the infrastructure and the design parameters that were to be met in completing the design. RTGEJV developed the preliminary designs of the infrastructure into what became the final designs for the infrastructure.
12. In its Opening Statement, RTGEJV identified to the Commission a non-exhaustive list of notable exclusions from RTGEJV’s scope of services. That same list of services excluded from

1 For instance, Jacques Bergeron, an OLRT-C witness, at Hearing Transcript Volume 7 page 91 line 1 identifies as having been employed by ‘SNC Lavalin’. By context of his affiliation with OLRT-C, the ‘SNC Lavalin’ being referred to is not the RTGEJV partner.

2 The Services Agreement has document ID PRRR000123. Each reference made to the Service Agreement in these submissions is referring to this document.

3 Hearing Transcript Volume 1, Page 8 line 9 – 20, Hearing Transcript Volume 1, Page 177 line 8- 15, Hearing Transcript Volume 2 Page 104 line 21 to page 105 line 7, Hearing Transcript Volume 1 Page 173 line 2- page 174 line 15.

RTGEJV's scope is captured in the table below, along with a new column noting any lack of contrary evidence or evidence to the contrary that was revealed during the hearing:

#	Service that RTGEJV Did <u>NOT</u> Perform	Competing Evidence
1.	Development or oversight of the specifications contained with the Project Agreement.	No witness gave evidence that RTGEJV had a role in the development of the Project Agreement.
2.	Contract Award. Though RTGEJV supported RTG's bid for the Project by completing preliminary designs to meet the demands of the RFP, the RTGEJV was not involved in the selection process.	No witness gave evidence that RTGEJV had a role in determining which consortium would be awarded the contract.
3.	Oversight and management of the project as a whole.	No witness gave evidence that RTGEJV had project-wide oversight or project-wide management responsibilities.
4.	Construction, inclusive of the means and methods of construction.	No witness gave evidence that RTGEJV was responsible for construction or the means and methods of construction. In fact, this facet of the project is specifically excluded from RTGEJV's scope, pursuant to Appendix B, Article 6.1 of the Services Agreement.
5.	Construction scheduling.	No witness gave evidence that RTGEJV was responsible for construction scheduling. OLRT-C was responsible for construction scheduling ⁴ .
6.	Financing of the Project.	No witness gave evidence that RTGEJV had a role in financing the delivery, operation, or maintenance of the Project.

⁴ Services Agreement Appendix C article 2.0. Participant Database production # PRRR0000123

7.	Maintenance of the system.	No witness gave evidence that RTGEJV was responsible for maintenance of the System.
8.	The design, procurement, supply, installation, review, testing, commissioning and or performance of revenue vehicles provided by Alstom;	No witness gave evidence that RTGEJV was responsible for the design, procurement, supply, installation, review, testing, commissioning and or performance of revenue vehicles. This is excluded from RTGEJV's scope services per Appendix B, Article 6.9 of the Services Agreement.
9.	The design, procurement, supply, installation, review, testing, commissioning and or performance of non-revenue vehicles;	No witness gave evidence that RTGEJV was responsible for the design, procurement, supply, installation, review, testing, commissioning and or performance of non-revenue vehicles. This is excluded from RTGEJV's scope services per Appendix B, Article 6.9 of the Services Agreement.
10.	The design, procurement, supply, installation, review, testing, commissioning and or performance of train control provided by Thales;	No witness gave evidence that RTGEJV was responsible for the signalling system. This is excluded from RTGEJV's scope services per Appendix B, Article 6.9 of the Services Agreement.
11.	The design, procurement, supply, installation, review, testing, commissioning and or performance of integration between vehicles and train control systems, including identification and design of interfaces; and	OLRT-C's System Integration Director, Jacques Bergeron, confirmed that it was his role to oversee the integration as between Vehicles and Vehicles Signalling ⁵ . This is excluded from RTGEJV's scope services per Appendix B, Article 6.9 of the Services Agreement.
12.	The design, procurement, supply, installation, review, testing, commissioning and or performance of alternate fire and code strategies involving	No witness gave evidence that RTGEJV had a role in the on-board vehicle fire suppression systems. This is excluded from RTGEJV's scope services per Appendix B, Article 6.10 of the Services Agreement.

	on board vehicle fire suppression systems.	
13.	Procurement and Quantities, including but not limited to procurement of the vehicles.	No witness gave evidence that RTGEJV had a role in procurement or quantities for this Project. This is excluded from RTGEJV's scope services per Appendix B, Article 6.14 of the Services Agreement.
14.	Several components of tunnel design for the underground stations.	No witness gave evidence of RTGEJV's involvement in tunnelling. The extent of tunneling exclusions from RTGEJV's scope services is captured at Appendix B, Article 6.3 of the Services Agreement.
15.	Traffic management plans.	No witness gave evidence of RTGEJV's involvement, if any, in traffic management plans.
16.	Standard structures, including noise walls.	No witness gave evidence of RTGEJV's involvement in standard structures or noise walls being deficient as a result of its design. Further, Appendix B, Article 6.6 (b) of the Services Agreement contains the relevant exclusion.
17.	Smoothness testing of pavement.	This topic was not canvassed during the hearing and is excluded from RTGEJV services via Appendix B, Article 6.7 of the Services Agreement
18.	Certain geotechnical investigations.	RTGEJV's involvement in geotechnical testing was not canvassed during the hearing. The extent of exclusions from providing geotechnical activities is found at Appendix B, Article 6.8 of the Services Agreement
19.	Obtaining and managing permits.	No witness gave evidence that RTGEJV had a role in obtaining construction permits. Appendix B, Article 8.6 of the Services Agreement confirms that this is the responsibility of OLRT-C.
20.	Systems Integration. RTGEJV provided designs for certain sub-systems, though Integration of the	Evidence pertaining to RTGEJV's involvement in Systems Integration is discussed further below. RTGEJV has held the position that it is not responsible for system-wide integration and that this responsibility rests with OLRT-C.

System as a whole was completed by others.	The pre-hearing interview evidence of Dr. Roger Woodhead, who was RTGEJV’s original Design Manager, gave evidence that “integration” was specifically excluded from the Services Agreement and that other exclusions such as RTGEJV having no involvement in vehicles or signals rendered RTGEJV incapable of being the system integrator ⁶ .
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Table 1

13. During the interview of RTGEJV’s former Design Manager, Dr. Roger Woodhead, he was asked a series of questions regarding RTGEJV’s scope and general project involvement. The following notable evidence was given:

- i. RTGEJV had generally no role in procurement of project materials,
- ii. RTGEJV had zero involvement in operations and maintenance,
- iii. RTGEJV had no involvement in the selection of Alstom or Thales,
- iv. RTGEJV had no involvement in the delivery of the vehicles, and
- v. RTGEJV’s designs were reviewed by both the City and OLRT-C⁷.

RTGEJV’S SERVICES AND THE COMMISSION’S MANDATE

14. In its Opening Statement, RTGEJV provided a Table comparing its scope of services with the Commission’s mandates for the Inquiry – those mandates being located at paragraph 3 of the Commission’s Terms of Reference. The contents of that Table along with a new column noting any lack of contrary evidence or evidence to the contrary is captured in the Table immediately below.

Terms of Reference Mandate	RTGEJV Connection to Mandate	Competing Evidence
3. (a) The decisions and actions	The RTGEJV was not involved	No competing evidence

⁶ OLRT Interview, Roger Woodhead 4/19/2022 page 21 line 19 to page 23 line 13.

⁷ ibid Page 87 line 4 to Page 90 line 22.

<p>that were taken in determining: (i) the procurement approach the City selected for the OLRT1 Project;</p>	<p>in the procurement approach taken by the City.</p>	<p>provided during the hearing.</p>
<p>3. (a) The decisions and actions that were taken in determining: (ii) the selection of the Rideau Transit Group ("Concessionaire");</p>	<p>RTGEJV was not involved in the City/IO's process of selecting RTG. RTG subcontracted the design and construction of the Project to OLRT-C who then subcontracted a large portion of the design to RTGEJV. RTGEJV took its direction from OLRT-C for the purposes of the bid. RTGEJV provided preliminary designs to support the bid.</p>	<p>No competing evidence provided during the hearing.</p>
<p>3. (a) The decisions and actions that were taken in determining: (iii) the award of the alternative financing and procurement ("AFP") contract for the OLRT1 Project to the Concessionaire;</p>	<p>RTGEJV was not involved in this decision.</p>	<p>No competing evidence provided during the hearing.</p>
<p>3. (b) Whether the City-led procurement process had an impact on the technical standards applied for the OLRT1 Project and the design, building, operation, maintenance, repair and rehabilitation of the OLRT1</p>	<p>As a subcontractor to the Design-Builder (OLRT-C), RTGEJV was provided with the standards and specifications to be met when completing its designs.</p>	<p>No competing evidence provided during the hearing.</p>

<p>Project;</p>		
<p>3. (c) Whether the AFP contract between the City and the Concessionaire ("Concession Agreement") was adequate to ensure that the design, building, operation, maintenance, repair, and rehabilitation of the OLRT1 Project was carried out in accordance with all applicable laws and industry standards, including performance and safety;</p>	<p>RTGEJV had no role in the development or oversight of the AFP contract.</p>	<p>No competing evidence provided during the hearing.</p>
<p>3. (d) Whether the Concessionaire and its subcontractors did carry out the design, building, operation, maintenance, repair and rehabilitation of the OLRT1 Project in accordance with applicable laws and industry standards;</p>	<p>Insofar as RTGEJV's involvement in the Project is concerned, the RTGEJV strived to, and is of the view that it did, meet all applicable standards and laws in the execution of its services. RTGEJV's designs were subject to OLRT-C, City, and local authority scrutiny throughout the Project prior to the Project being accepted by the City and being opened for public use.</p>	<p>During the hearing, not a single design drawing was referenced or critiqued. Two design-related topics addressed during the hearing for which RTGEJV was involved included track design and Systems Integration. Regarding RTGEJV's design of the track, it is submitted that no evidence was presented to the Commission which concluded that the track design was non-compliant with any applicable Code, standard, regulation, or the Project Agreement. There was no evidence of a component of the design that</p>

		<p>was deficient or required correction.</p> <p>Regarding Systems Integration, Other than a scope debate between OLRT-C and RTGEJV regarding which party was to complete Systems Integration and the assurance documentation required to complete same, the evidence before the Commission is that OLRT-C retained SEMP to complete this task and that the integration standards were met prior to achieving Revenue Service Availability.</p>
<p>3 (e) Whether the City's oversight of the Concession Agreement and the OLRT1 Project, including its audit, evaluation, inspection and monitoring of the OLRT1 Project, was adequate to ensure compliance with the Concession Agreement and any applicable laws and industry standards. The above includes an inquiry into the decisions that led to the declaration that the OLRT1</p>	<p>Given that the City was not a direct client to RTGEJV, the vast majority of communications between RTGEJV and the City were through OLRT-C.</p>	<p>No competing evidence provided during the hearing. It was confirmed that the City conducted a review and provided comments on all RTGEJV drawings throughout the Project⁸.</p>

⁸ Hearing Transcript Day 4 Page 197 line 28 to Page 198 line 2.

Project had reached substantial completion and any associated testing carried out to support such declaration.		
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Table 2

EVIDENCE INVOLVING RTGEJV

15. When considering the hearing evidence, RTGEJV’s involvement in the project received little attention. Within that minimal amount of hearing attention, none of RTGEJV’s design drawings were put to any witnesses or materially challenged.
16. Commission Counsel conducted over 90 pre-hearing interviews and arranged for 42 witnesses to give evidence for the hearing. After making fulsome production, making the requested RTGEJV individual, Design Manager Dr. Roger Woodhead, available for two pre-hearing interviews, and responding to all undertakings stemming from those interviews of Dr. Woodhead, Commission Counsel determined that no further pre-hearing interviews of RTGEJV members were required. Commission Counsel also determined that no RTGEJV witnesses were required to give evidence for the hearing.
17. Not only was little to no direct evidence from RTGEJV members deemed necessary for the hearing, but it is also submitted that minimal *viva voce* evidence pertaining to RTGEJV’s involvement was given by others. This result is unsurprising as RTGEJV had no role in regard to the vehicles or project management, which it is submitted were two of the most focal topics of consideration during the hearing.
18. Of the 42 hearing witnesses, just 11 witnesses⁹ mentioned RTGEJV, including those that mentioned RTGEJV in a passing manner. Of the 11 witnesses that mentioned RTGEJV during

⁹ Jensen, Cosentino, Rivaya, Holloway, Bergeron, Slade, Morgan, Guest, Lauch, Mammoliti, and Wynne

their evidence, the following is submitted as being a summation of those witnesses' testimony regarding RTGEJV.

#	Witness	Evidence Provided Relating to RTGEJV
1.	John Jensen, City of Ottawa	Mr. Jensen could not confirm RTGEJV as OLRT-C's subcontractor ¹⁰ . It is submitted that this witness' evidence insofar as RTGEJV is concerned, is immaterial.
2.	Ricardo Cosentino, RTG	Confirms RTGEJV's scope as being the designer of the infrastructure, the stations, and non-train components, while also noting that as a member of RTG, he has no real insight into the subcontract between OLRT-C and RTGEJV ¹¹ . Other than confirming its involvement as designer to non-vehicle components of the Project, it is submitted that this witness' evidence insofar as RTGEJV is concerned, is immaterial.
3.	Manuel Rivaya, OLRT-C	<p>Much of Mr. Rivaya's testimony was relative to OLRT-C, RTGEJV, Alstom and Thales' role as it pertained to System's Integration. This is despite Mr. Rivaya acknowledging that he has not read the subcontracts of Alstom and Thales in full¹², that he is self-admittedly not an expert in this field¹³, that he was unaware of SEMP's scope on the project¹⁴, he is not a systems engineer¹⁵, that he has no experience in systems engineering¹⁶, and is unfamiliar with the System Integration standards that were applicable to this Project¹⁷. It is submitted that Mr. Rivaya's lack of involvement in Systems Integration on the project and his general lack of Systems Engineering knowledge rendered him an unhelpful witness, as it relates to this subject matter. In his defence, Mr. Rivaya was an Executive Committee member to OLRT-C, and he was not intended to be a subject-matter expert on Systems Integration.</p> <p>Given Mr. Rivaya's lack of knowledge on the parties' involvement and a lack</p>

¹⁰ Hearing Transcript Volume 1, page 56, line 2

¹¹ Hearing Transcript Volume 1, page 102 line 28 to page 103 line 10.

¹² Hearing Transcript Volume 4, page 190

¹³ ibid page 149 line 2

¹⁴ ibid page 149 line 8-9

¹⁵ ibid page 196 line 1

¹⁶ ibid, page 196 line 4

¹⁷ ibid page 198 line 21-27.

		of knowledge on the subject matter of Systems Integration, RTGEJV submits that Mr. Rivaya's evidence as it relates to Systems Integration is not reliable and should not be given any weight.
4.	Rupert Holloway, OLRT-C	<p>After agreeing that OLRT-C was responsible for all the systems and for overseeing the testing and integration of all the systems on the project¹⁸, Mr. Holloway briefly addressed RTGEJV's role in Systems Engineering and Integration. He recognized that a clear handoff between design and construction was not present, which caused initial issues on the topic for OLRT-C.¹⁹ Mr. Holloway also testified that there was not a problem with the engineering work completed by RTGEJV, but rather the scope uncertainty left output documentation required for Systems Assurance satisfaction incomplete by the time OLRTC had retained SEMP to complete that effort²⁰.</p> <p>Mr Holloway was the OLRT-C Project Director during the focal time period insofar as Integration is concerned and when SEMP was retained to address Systems Integration and System Assurance. It is therefore submitted that Mr. Holloway's evidence regarding OLRT-C's satisfaction with the engineering work completed by RTGEJV be given considerable weight if and when considering the involvement and work-product produced by RTGEJV as it relates to readying the systems it was responsible for.</p>
5.	Jacques Bergeron, OLRT-C	<p>This witness was asked about RTGEJV's role insofar as Systems Integration was concerned. Mr. Bergeron, <u>OLRT-C's Director of Integration</u>, confirmed that OLRT-C had overall responsibility for Systems Integration on the project²¹. When asked of RTGEJV's role in System Integration, he explained that RTGEJV was responsible for the design work for all systems, but for vehicles and the signaling system²². When pressed on the involvement of RTGEJV, Mr. Bergeron confirmed RTGEJV's role was not an integration role²³.</p>

18 Hearing Transcript Volume 5, Page 105 Line 17

19 Hearing Transcript Volume 5, Page 111 line 21

20 *ibid*, pages 111-114.

21 Hearing Transcript Volume 7, Page 94, line 20.

22 *ibid*, Page 94 line 24 – Page 95 line 2.

23 *ibid*, Page 106, line 20-21.

		It is submitted that OLRT-C's Director of Integration did not provide evidence that was critical of RTGEJV. Mr. Bergeron was given the opportunity to cast blame on RTGEJV if warranted. Mr. Bergeron did recognize that OLRT-C and RTGEJV had disagreements on smaller matters, such as a bill of material being omitted on an unspecified drawing ²⁴ , though no evidence was given by this witness that can be construed as RTGEJV failing to provide services it was contracted to perform.
6.	Matthew Slade, OLRT-C / RTM	The witness was asked about RTGEJV's track design insofar as it relates to the rail neutral temperature. The witness provided evidence that the design, which included corroboration from the City and the City's track engineer, was designed in compliance with the Project Agreement ²⁵ . It is submitted that no evidence was presented which suggests that RTGEJV's design did not comply with the Project Agreement, nor is there any evidence of RTGEJV's track design being non-compliant with a particular standard or Code. It is further reiterated that RTGEJV's track designer was not requested to participate in a pre-hearing interview or the hearing itself.
7.	Michael Morgan, City of Ottawa	RTGEJV involvement in this project was not discussed. The witness made a passing comment regarding his review of RTGEJV's pre-hearing interview transcript regarding trial running of the Canada Line ²⁶ . It is submitted that this witness' evidence insofar as RTGEJV is concerned is immaterial.
8.	Brian Guest, Boxfish	RTGEJV involvement in this project was not discussed. The witness made a passing comment of RTG prioritizing disputes with its subcontractors, inclusive of RTGEJV ²⁷ . Not only is this an immaterial mentioning of RTGEJV involvement in the Project, but it is also an incorrect statement. RTG and RTGEJV have not been engaged in a dispute as RTGEJV's contractual relationship is with OLRT-C.
9.	Peter Lauch, RTG	Discussion of RTGEJV involvement was minimal. Counsel to RTG put design certification documentation from RTGEJV and SEMP to the witness, wherein

²⁴ Hearing Transcript Volume 7, page 106 line 20-24

²⁵ Hearing Transcript Volume 10, page 120, line 22-28.

²⁶ Hearing Transcript Volume 11, page 44 line 2-6.

²⁷ *ibid*, page 181 line 23-27

		the witness confirmed that these pieces of documentation represent that the track was constructed in accordance with design ²⁸ .
10.	Safety Panelist, Sergio Mammoliti, TUV Rheinland	Brief discussion of RTGEJV involvement in systems engineering occurred. When asked if TUV was concerned to the point that the systems engineering and assurance work could not be rehabilitated, the witness expressed confidence in the EJV team as based on its previous rail experience, stating that obtaining goals was a matter of when and not if ²⁹ .
11.	Safety Panelist, Derek Wynne, SEMP	Mr. Wynne discussed how EJV’s designs were not initially accompanied by assurance documentation required to confirm outputs and were in his view not compliant with the System Integration standards ³⁰ , which Mr. Mammoliti agreed with. RTGEJV submits this information was misleading as these compliance documents are, in RTGEJV’s submission, to be completed by the Systems Integrator which RTGEJV understood to be outside of its scope of services. Regardless of the scope debate, Mr. Wynne noted that Systems Integration was ultimately achieved ³¹ .

Table 3

19. When considering the collective hearing evidence as it pertains to RTGEJV, only OLRT-C and the Safety Panel provided substantive evidence regarding RTGEJV’s involvement. There was some evidence of an internal disagreement between OLRT-C and RTGEJV regarding who was to perform the full systems integration, which OLRT-C addressed by retaining SEMP and making Jacques Bergeron the Integration Manager. All required Systems Integration work was carried out.

20. No witness gave any evidence that any of RTGEJV’s designs were not in compliance with the Project Agreement or any regulatory Code or Standard.

28 Hearing Transcript Volume 13, Page 144 line 10 – Page 146 line 25.

29 Hearing Transcript Volume 14, Page 14 line 22 – Page 15 line 7.

30 *ibid*, page 17 page 15

31 *ibid* page 15, line 24-27/

21. To further contextualize the evidence involving RTGEJV, it bears repeating that not a single design drawing was put into evidence or questioned. It is respectfully submitted that no negative inferences can be made against RTGEJV, given that neither the work product, nor the direct evidence of any RTGEJV designer was questioned throughout the hearing on any particular design.

Systems Integration

22. As raised in RTGEJV's Opening Statement, the Commission heard evidence on which party was responsible for Systems Integration. Insofar as RTGEJV's role was concerned, it completed the designs of multiple sub-systems, which were to be left with interfacing capabilities for the overall systems integrator to utilize in integrating the entire system.

23. It is the position of RTGEJV that OLRT-C was responsible for Systems Integration. As the Design-Builder with full responsibility to deliver the Design-Build portions of the Project Agreement, OLRT-C had a contractual obligation to integrate the system.

24. In its Opening Statement, RTGEJV noted relevant Project Agreement definitions that pertained to Systems Integration. Those definitions were not challenged during the hearing.

25. The Project Agreement does not have a definition for "Systems Integration", but it does have definitions for "System" and "Integration". Section 1.634 of the PA defines "system" as:

the light rail rapid transit system to be Designed, Constructed, supplied, tested, commissioned and Maintained by Project Co in accordance with this Project Agreement, being the Fixed Facilities, the Vehicles and the E&M, but, for greater certainty, including without limitation:

- (a) all Infrastructure;*
- (b) all site services, utilities, roadways and parking areas required to support such Infrastructure;*
- (c) all supporting systems and improvements; and*

(d) all other works, improvements, and demolitions to occur on the Lands or the Site, in each case required to meet the Output Specifications and the requirements under the Permits, Licences and Approvals and whether or not in the course of construction, installation or completion.

26. The definition of “Integration”, the Project Agreement at 1.338 defines it as:

... the Design, Construction, testing and commissioning of all elements of the System, in part and as a whole, including the Fixed Facilities, the Vehicles, the MSF, and the E&M, such that all components of the System function together as one coherent system, notwithstanding the creation of the System as separate components, in accordance with the Output Specifications and otherwise as required in accordance with this Project Agreement, and “Integrated” shall have a corresponding meaning.

27. It is submitted that contractually, RTGEJV could not be the System Integrator as “Integration” requires design, construction, testing & commissioning of each component of the “System”. RTGEJV had no construction scope, it had limited testing & commissioning scope, and its design mandate excluded two key facets of the System – the vehicles and the vehicle’s signalling system, amongst other exclusions. RTGEJV’s scope exclusions therefore prevented it from being able to be the Integrator of the System.

28. As noted above in Table 1, Dr. Roger Woodhead, who was RTGEJV’s original Design Manager, gave evidence that Systems Integration was specifically excluded from the Services Agreement and that other exclusions such as RTGEJV having no involvement in vehicles or signals, rendered RTGEJV incapable of being the System Integrator³². It is submitted that Dr. Woodhead’s expressed understanding of RTGEJV not being responsible for Systems Integration is the most direct evidence on the topic.

29. The evidence given by Dr. Woodhead is supported by the Services Agreement, which does not state that RTGEJV would be responsible for Systems Integration.

³² OLRT Interview, Roger Woodhead 4/19/2022 page 21 line 19 to page 23 line 13.

30. Mr. Rivaya of OLRT-C agreed with Thales' counsel that OLRT-C had the overall obligation for Systems Integration³³. Thales' witness, Michael Burns, confirmed to Commission Counsel that the Thales and OLRT-C contract identified OLRT-C as the integrator³⁴. Mr. Burns also confirmed to the City's counsel that OLRT-C was responsible for integration³⁵
31. Two key OLRT-C witnesses on the topic confirmed that OLRT-C was responsible for Systems Integration. During OLRT-C's Director of Integration, Jacques Bergeron's pre-hearing interview, he was asked if OLRT-C had subcontracted any of the Systems Integration out, and he replied "design-wise, no"³⁶. As we know, SEMP was eventually retained to provide Systems Assurance and complete Systems Integration efforts – which per Mr. Bergeron's evidence, did not include any design work. During Mr. Bergeron's hearing testimony, he was asked if RTGEJV would receive all relevant information for matters that it was not responsible for designing in order to complete overall systems engineering. Mr. Bergeron denied the insinuation that RTGEJV was responsible for completing system engineering tasks on a project-wide basis and corrected Commission Counsel to state that RTGEJV only required information necessary for its design³⁷. We also note that systems engineering is but one component of Systems Integration.
32. OLRT-C's Project Director, Rupert Holloway also confirmed OLRT-C responsibilities. As captured in Table 3 above, this witness gave evidence that the designs of the systems completed by RTGEJV were satisfactory and that OLRT-C was responsible for integration.
33. What is notable from OLRT-C's evidence on RTGEJV's role in Systems Integration is that Mr. Rivaya, the witness with the least on-site experience and the least amount of system-

33 Hearing Transcript Volume 4, Page 190 line 25 to Page 192 line 7.

34 Hearing Transcript Volume 6 page 8- line 21-22.

35 *ibid* page 115, line 7-10

36 Jacques Bergeron Interview 4/27/2022 Page 92 line 21 to page 93 line 2.

37 Hearing Transcript Volume 7, page 97 line 9 to 16.

integration experience, is the only witness that was critical of RTGEJV's involvement. OLRT-C's Project Director and Director of Integration both acknowledged that OLRT-C was responsible for Integration, and neither of them were critical of RTGEJV's role insofar as Systems Integration was concerned. It is submitted that the overwhelming weight of the evidence convincingly demonstrates that RTGEJV appropriately completed its limited scope of services regarding systems integration.

34. Further, Mr. Palmer of the Parson Delcan panel was taken to his pre-hearing interview evidence wherein he stated that since RTG had purchased the trains and signals that it had to be the party that integrates the system³⁸. It is submitted that Mr. Palmer singled out the trains and signals as these components are focal to achieving complete Systems Integration.

35. Further, RTGEJV submits that none of the designs for the systems designed by RTGEJV were investigated for causing or contributing to project delays, breakdowns, or derailments.

THE LEGAL FRAMEWORK BEHIND RTGEJV'S INVOLVEMENT IN THE PROJECT

36. RTGEJV recognizes that the Commission's purpose is not to find liability against any party, but rather to investigate and identify issues encountered on this Project and provide guidance on avoiding similar issues on future projects³⁹. With that intent of the Commission in mind, RTGEJV still considers it valuable for the Commission to consider an engineer's governance model and the professional standards to be met when providing services in Ontario.

37. It is submitted that RTGEJV was governed by two points of law on this project: (1) It's contractual relationship with OLRT-C, and (2) ensuring that it's services met or exceeded the standard of care ordinarily applied by a consultant in a similar situation at a similar time.

³⁸ Hearing Transcript Volume 8, page 105 line 5 to 14.

³⁹ Hearing Transcript Volume 3, Page 123, line 16-19.

Ontario Engineers' Standard of Care

38. The general common law test for negligence applying to consultants can be succinctly stated as follows:

*“ ... The test is one of fact and depends upon the consideration of whether other persons exercising the same profession and being men of experience and skill therein would or would not have acted in the same way as the architect in question. It is evidence of ignorance and lack of skill that the architect has acted contrary to the established practices that are universally recognized by members of the profession. It is not sufficient to establish a breach of a duty to show that another architect of greater experience and ability might have used a greater degree of skill or care.”*⁴⁰

39. Similarly, when considering the liability of an engineering firm, the Nova Scotia Supreme Court remarked on the standard of care issue as follows:

*The standard of a professional is to be assessed on an objective standard. The Court must ask, not whether the professional performed at his or her best. The Court must determine whether the professional's conduct was up to the standard of the person of average professional competence exercising a particular calling.*⁴¹

40. The consultant's potential liability is not absolute in the sense they are liable in every instance where loss may result from their acts. They do not guarantee that their services will be successful, nor are they held to a standard of perfection. Indeed, as the Court opined in *Trizec Equities Ltd. v Ellis-Don Management Services Ltd.*, “[p]erfection is not expected; the world of work, not the ideal of the debating arena, is the standard”.⁴²

⁴⁰ *Neisner-Kratt Enterprises Ltd v Building Design 2 Ltd*, [1988] CLD 244, 39 BLR 98 (Sask QB) citing *Halsbury's Laws of England* (4th ed) at page 680.

⁴¹ *Hilton Canada Inc. v S.N.C. Lavalin Inc.*, [1999] NSR (2d) 155, 46 CLR (2d) 131 (SC), aff'd 2000 NSCA 41, at para 62.

⁴² *Trizec Equities Ltd v Ellis-Don Management Services Ltd*, 1998 ABQB 1133 at para 420, 227 AR 1; aff'd 1999 ABCA 306

41. Not holding engineers to a standard of perfection is the same view taken in Ontario.⁴³ In *Power Contracting Inc. v Falby*, the Plaintiff was a watermain contractor who brought an action against the consulting engineer who designed a new watermain project.⁴⁴ The engineer relied on a soils report when he determined that a “bore and jack” method would be an appropriate method for the new watermain to cross a river. After excavations began, the “bore and jack” method had to eventually be abandoned. The court held that the engineer had not breached the standard of care. The assumptions of the engineer were reasonable, even if they proved incorrect, because the standard of care required is not perfection but the standard of reasonable care of a competent engineer in the field of work.

42. The *Professional Engineers of Ontario* (“PEO”), the regulatory body which governs the profession in this province, maintains a similar outlook on what is and is not acceptable delivery of services. Specifically, s.72 of PEO Regulation 941/90 speaks to what is and is not professional misconduct. Subsection (1) refers to “negligence” as being an act or an omission in the carrying out of the work of a practitioner that constitutes a failure to maintain the standards that a reasonable and prudent practitioner would maintain in the circumstances. In other words, the PEO’s understanding of what amounts to negligence, is the same as the courts – that being a breach of a reasonably employed standard of care. Also within s.72(2) of the Regulation is a list of instances of what amounts to professional misconduct (which is not copied here for brevity). It is submitted that there is insufficient evidence to make a finding of professional misconduct under any of the instances enlisted at s.72.

43. On this Project, the contract between OLRT-C and RTGEJV expressly provides for an ordinary

⁴³ *Dupont Canada Inc. v Prodigy Colour Systems Inc.*, 2001 CarswellOnt 844 at para 35, 104 ACWS, (3d) 79 (Ont Sup Ct).

⁴⁴ 1995 CarswellOnt 414 at para 36, 20 CLR (2d) 100 (Gen Div).

standard to be applied, rather than a heightened one, as captured at 2.2.1

The Service Provider shall carry out its obligations under this Agreement in conformity with the standard of care, skill and diligence normally provided by a reasonable and competent professional person in the performance of similar services at the time and place the Services are being provided, in accordance with the terms and conditions of this Agreement and in full compliance with all applicable laws.

44. When considering both the Court's interpretation of when an engineer is negligent, and the PEO's guidance on what amounts to professional misconduct, RTGEJV submits that the hearing evidence presented could not result in a finding of RTGEJV having been negligent, nor could the conclusion be reached that it engaged in professional misconduct as specific designs or engineered solutions were not specifically challenged in any sufficient detail to warrant such a conclusion.
45. Not only was insufficient evidence for a finding of negligence or professional misconduct presented, RTGEJV's designers were not presented with any such allegations and as a result were not provided an opportunity to respond. Further, in order to make a determination of negligence or arrive at a finding of professional misconduct, such an assessment requires opinion evidence from an appropriately qualified engineer to advise if a breach or misconduct occurred.
46. As a result of the complete absence of any independent expert evidence which challenges whether RTGEJV failed to meet its applicable standard of care for any particular design issue, specifically the lack of any independent expert opinion evidence or a particular design being put to an RTGEJV member, it is submitted that a finding or inference of negligence or misconduct against RTGEJV cannot be made.

Responsibility for Project Delivery

47. It is submitted as an uncontentious position that RTG had primary responsibility to deliver this

Project and that the City of Ottawa, via its authorities provided for in the Project Agreement, held management and oversight responsibilities in receiving RTG's work-product. It is also submitted as an uncontentious position that RTG subcontracted the design and construction of the Project to OLRT-C, who in-turn further sub-contracted a portion of the design obligations to RTGEJV.

48. By not having a full design mandate, RTGEJV's scope of services were limited to those services contained in its agreement with OLRT-C (the previously cited Services Agreement).

49. RTGEJV submits that it is not only a trite contractual law position to state that a party cannot be held responsible for efforts it did not agree to be engaged in or responsible for, but more pertinent to this matter is that the party with full responsibility for the project, maintains sole responsibility for all efforts unless those efforts are properly subcontracted.

50. The duties of the consultant arise primarily from the contract with their client⁴⁵, in this case OLRT-C. The common law standard of care for design consultants is subject to qualification. The general standard of care expected of the architect or engineer may be modified (i.e. either restricted or expanded) by the terms of the contract entered into between the client and the consultant. *In R.W. Tomlinson Ltd. v Trow Ontario Ltd.*, Justice Bell cited, with approval, the following passage from *The Canadian Law of Engineering*

*The foregoing principles apply where the contract between the architect or engineer and the client contains no special provisions altering the usual duties presumed by the law. However, the architect or engineer may undertake by that contract, either expressly or impliedly, to exercise a higher standard of care than that normally imposed by the law ... If they do so, they will be held to the standard of care to which they have bound themselves.*⁴⁶

45 A. M. Grant, B. M. McLachlin & W. J. Wallace, *The Canadian Law of Architecture and Engineering*, 2nd ed. (Markham: Butterworths, 1994) at p 101 [*The Canadian Law of Engineering*].

46 *R.W. Tomlinson Ltd. v Trow Ontario Ltd.*, [1995 CarswellOnt 594](#) at para 6 (Ont Gen Div).

51. General contractors are responsible for the work of their subcontractors, much in the same way that an employer is responsible for the work of its employees.⁴⁷ Unless otherwise stipulated, the general contractor is responsible for instructing all subcontractors, supervising all subcontractors, and inspecting the work of all subcontractors.⁴⁸
52. Where a party undertakes to act as a design-builder, they have an obligation to ensure that the design and construction of the project conforms to the building standards of the day.⁴⁹ It is submitted that if a portion of work was not subcontracted (i.e., a scope gap between the Project Agreements and the subcontracts) then the general contractor remains responsible for ensuring that work which was omitted from any subcontract agreement is completed.
53. Further, even when services are subcontracted, it is submitted that the downloading party still retains ultimate responsibility for the work-product of its subcontractors. In *Swift v Eleven Eleven Architecture Inc.*, the owners hired an architecture firm as the main consultant to build a home on land they purchased.⁵⁰ The architect subcontracted the structural engineering aspect of the design to an engineering company as their subconsultant. Serious deficiencies in the elements of the engineering design of the home were found, and the owners brought claims against both the main consultant and the subconsultant.
54. The Alberta Court of Appeal found that the subconsultant had been negligent in the performance of its obligation to provide a suitable structural design for the residence, and that this failure created a real and substantial danger to the owners. With respect to the main consultant, the Court held that, although it had not been negligent, it was nevertheless responsible for the structural engineering work performed by the subconsultant as it had

⁴⁷ *Dominion of Canada v Fortress*, [2006 CanLII 31018](#) at para 15.

⁴⁸ *Maximum Concrete Foundations Inc. v Vasiljevic*, [2010 ONSC 4420](#) at para 41.

⁴⁹ *Madalena v Kuun*, [2009 BCSC 1597](#) at para 50.

⁵⁰ [2014 ABCA 49](#), leave to appeal to SCC ref'd [2014 CarswellAlta 1274](#), [2014] SCCA No 135.

contractually agreed to provide these services to the owners.⁵¹

55. RTGEJV therefore submits that it is only responsible to deliver the scope of services that was contained in its contract with OLRT-C. Further, for any portion of the overall project design that was not included in RTGEJV's scope of services, OLRT-C/RTG would be responsible for ensuring that the omitted scope was completed. To that end, it is RTGEJV's understanding that OLRT-C/RTG materially accomplished that feat by achieving substantial completion and Revenue Service Availability, albeit subject to its agreement with the City, regarding minor deficiencies and outstanding work.

DERAILMENTS AND BREAKDOWNS

56. As noted in the Terms of Reference, Stage 1 Confederation Line experienced two main-line derailments and sporadic "breakdowns", since the System was introduced for public-use.

57. The derailments occurred on August 8 2021 ("the August Derailment") and September 19 2021 ("the September Derailment").

58. For the purposes of these submissions, "breakdowns" are being considered separate and apart from the derailments and the corresponding delays in service resulting from the derailments.

59. As a general submission in regard to all breakdowns and derailments, RTGEJV reiterates its lack of involvement or responsibility in (1) project management, including decisions relative to trial running duration and criteria, or choosing to not have a soft-start (2) operations, (3) maintenance, (4) vehicle design or construction, (5) vehicle signalling, or (6) construction generally. If the Commission determines that any of these 6 factors caused or contributed to the breakdowns or derailments, RTGEJV is not a responsible party.

⁵¹ *Ibid* at para 63.

Breakdowns

60. Insofar as the breakdowns are concerned, RTGEJV submits that little to no direct evidence was presented of RTGEJV having caused or contributed to System breakdowns. RTGEJV acknowledges that passive reference was made to instances of stoppages, such as the Guideway Intrusion Detection System (“GIDS”) being overly sensitive until rectified (and again those designs were not questioned). However, there was no material evidence supporting a position that RTGEJV caused or contributed to any breakdowns of any significance or problematic frequency.

61. Mr. Yiu of Alstom’s evidence canvassed some maintenance-related breakdowns, such as wheel flats occurring and the wheel lathe (the tool used to reshape the wheels) was frequently unavailable to the maintenance team⁵². He also advised that wheel cracking occurred due to the installation of jacking screws which took many months to address⁵³, that issues with the emergency braking system being automatically triggered and stopping the trains needed to be addressed⁵⁴ were all examples of breakdowns occurring due to vehicle-related issues.

62. RTGEJV had no role in the application or design or selection of materials contributing to these causes for the System to be down.

63. No witness gave evidence stating that an RTGEJV design caused any of the breakdowns.

The August Derailment

64. RTGJEV’s understanding of the cause of the August Derailment was that a wheel axle bearing assembly came apart, causing the derailment⁵⁵.

⁵² Ibid page 186 line 20 to page 187 line 6.

⁵³ Ibid page 189 line 1-6

⁵⁴ Ibid page 185 line 15 to page 186 line 9.

⁵⁵ Hearing Transcript Volume 10 Page 109 line 18-20

65. Some discussion ensued from Alstom's preliminary root cause analysis of the August Derailment. What was noted and acknowledged by all is that the analysis was completed by Alstom's staff and it was not conclusive. Mr. Guerra for RTM commented on the incompleteness of the report by stating there was a vague reference to track design being a contributor without any analysis of whether the design was actually deficient or not⁵⁶. He did comment that the report considered wheel-rail interface maintenance efforts that could improve service, though these suggestions were already known to the maintenance team⁵⁷. In discussing wheel-rail interface further and issues resulting therefrom, such as corrugation of the wheels, responding to this issue is a maintenance endeavor under the responsibility of Alstom, who is responsible for maintenance of the track⁵⁸.
66. From a design standpoint, Interfleet conducted an independent assessment of the wheel-rail interface and approved the design. This information was known and understood by Alstom pursuant to the testimony of Mr. Declercq⁵⁹. It is noted that no evidence from an independent engineer or investigator stating that the track design was non-compliant with applicable standards or the Project Agreement was put before the Commission.
67. Further, RTGEJV's track designer was not questioned on the design of the track. Should the track design itself require further investigation, examining RTGEJV's track designer and reviewing design drawings would have been required. Since there is no plausible evidence that the track design was deficient in any manner, this information was deemed unnecessary by the Commission to explore further.
68. As noted in the section above, *The Legal Framework Behind RTGEJV'S Involvement In The*

56 Hearing Transcript Volume 18, page 140 line 13 to line 21.

57 *ibid.*

58 *ibid* page 141 line 10-25

59 Hearing Transcript Volume 4, page 93 line 15 – 21.

Project, a finding or inference of misconduct or that an engineer breached their standard of care requires the support of expert opinion evidence, which was not given for the hearing.

69. There was some discussion of the track gauge requiring alteration, though it is submitted that this is a combination of installation and maintenance responsibilities rather than design. Mr. Slade of OLRT-C/RTM gave evidence that the gauge was tight at some areas, but not the entire alignment. Moreover, the areas that did have tight gauge installation were corrected by OLRT-C in the summer of 2018⁶⁰. No evidence was put before the Commission stating that RTGEJV's specification of the track gauge was inadequate in any way.

70. Further, Alstom's then lead engineer, Mr. Goudge, agreed that Alstom would take the track design and installation into account when working on the vehicles. Mr. Goudge also confirmed that if the as-installed track was narrow, it would be remedied⁶¹. There was no discussion that the specified gauge in the design was deficient. Since no party gave evidence that the gauge specification in the design was in non-compliance with the Project Agreement, that gauge alterations would be made on-site to meet the specification where installation failed to meet the specification, and the train designer/builder is aware of the track design when readying its vehicles for service, the track design itself was a non-issue.

71. At the completion of the hearing, there was no conclusive or even reasonably plausible evidence to suggest that RTGEJV's track design caused the August Derailment.

The September Derailment

72. RTGEJV's understanding was that the September Derailment occurred as the result of a

⁶⁰ Hearing Transcript Volume 10, page 143 line 16 to page 144 line 4.

⁶¹ Hearing Transcript Volume 7, Page 35 line 16-24.

human-error by one of the maintainers⁶². Alstom's witness, Yang Liu, confirmed the evidence that it was a maintainer's error⁶³. Alstom's lead engineer Lowell Goudge also confirmed the root cause of the September Derailment was that a maintenance technician failed to bolt and torque a gearbox⁶⁴.

73. No witness or party has provided reliable evidence that the September Derailment occurred for some other reason.

74. Given that RTGEJV personnel were not involved in the human-error, nor was RTGEJV involved in the design of the vehicles or their parts, it is submitted that RTGEJV did not cause or contribute towards the September Derailment.

RTGEJV's Evidence on the Derailments

75. During the pre-hearing interview of RTGEJV's former Design Manager, Dr. Roger Woodhead, he was directly asked if he had any knowledge of any design issues that the RTGEJV was responsible for which had contributed to the derailments. His response was "I am not aware of any, no"⁶⁵. It is submitted that this is the most direct evidence put to an RTGEJV member regarding their knowledge of their services potentially contributing to the derailments. This evidence was not challenged during the interview, nor was it challenged during the hearing.

THE FUTURE OF P3 RAIL PROJECTS IN ONTARIO

76. In taking a 'lessons learned' approach from Stage 1 of Confederation Line from the perspective of RTGEJV's involvement, retaining an independent party to audit all Project Requirements

62 Hearing Transcript Volume 10 Page 109 line 24-25, Hearing Transcript Volume 17, page 67 line 16, Hearing Transcript Volume 17, page 153 line 24 to page 154 line 1., Hearing Transcript Volume 18, Page 178, line 6-9.

63 Hearing Transcript Volume 10, page 175, line 12

64 Hearing Transcript Volume 7, page 70, line 12-14

65 OLRT Interview, Roger Woodhead 4/19/2022 page 88 line 11 - 15

and all Subcontracts to ensure that scope gaps do not inadvertently occur could be a value-add worthy of the additional cost for such a large and complex project.

77. Given the lack of reliability on certain vehicle components, such as wheels, line inductors, maintenance equipment such as wheel lathes and equipment to move immobile vehicles, service proven materials, rather than a service proven concept of a vehicle, may be a focal consideration moving forward.

CONCLUDING REMARKS

78. RTGEJV thanks the Commission for the time and effort devoted to this Inquiry.

79. RTGEJV's partners are committed to supporting and contributing towards a safe, efficient, and reliable approach to the future of infrastructure in Ontario.

August 12, 2022

GIBBS & ASSOCIATES
150 York Street, Suite 1810
Toronto ON M5H 3S5

Gary W. Gibbs LS#: 29493H
email: ggibbs@gibbslaw.ca
Tel: 416-361-0024 Ext. 222

Michael Vrantsidis LS#: 68934G
Email: mvrantsidis@gibbslaw.ca
Tel: 416-361-0024 Ext. 240

Counsel to Rideau Transit Group Engineering Joint
Venture