

OTTAWA LIGHT RAIL TRANSIT COMMISSION OF INQUIRY

The Honourable C. William Hourigan, Commissioner

**WRITTEN SUBMISSIONS OF
STV INCORPORATED AND STV CANADA CONSULTING INC.**

August 12, 2022

Tyr LLP
488 Wellington Street West
Suite 300-302
Toronto, ON M5V 1E3
Fax: 416-987-2370

James Doris (LSO# 33236P)
Email: jdoris@tyrllp.com
Tel: 647.519.5840

Michael O'Brien (LSO# 64545P)
Email: mobrien@tyrllp.com
Tel: 416.617.0533

Theodore Milosevic (LSO# 78428H)
Email: tmilosevic@tyrllp.com
Tel: 437.219.3696

Eileen Church Carson (LSO# 82651H)
Email: echurchcarson@tyrllp.com
Tel: 437.992.6432

Lawyers for STV Incorporated and
STV Canada Consulting Inc.

A. Introduction

1. These written submissions are filed on behalf of STV Incorporated and STV Canada Consulting Inc. (collectively, “**STV**”) in relation to its role advising the City of Ottawa (the “**City**”) on the Ottawa Light Rail Transit Project from Tunney’s Pasture to Blair (“**OLRT Stage 1 Project**”). These submissions describe STV’s role on the OLRT Stage 1 Project and address certain key issues that STV’s witnesses were asked about during the hearing phase of the Inquiry.

B. STV’s Initial Involvement in Preliminary Design & Engineering and Procurement

2. STV provides architectural, engineering, planning, environmental, and construction management services for transportation systems, infrastructure, buildings, energy and other facilities.

3. Through its Canadian subsidiary STV Canada Consulting Inc., STV became involved in the OLRT Stage 1 Project in 2010 as a member of Capital Transit Partners (“**CTP**”), a joint venture of STV, URS Canada Inc., Morrison Hershfield Limited and Jacobs Associates. CTP submitted a proposal for preliminary engineering and project management services for the OLRT Stage 1 Project in response to a June 14, 2010 Request for Proposals by the City of Ottawa.¹

4. CTP was awarded the contract and CTP’s work providing preliminary engineering and project management services began in August 2010 and concluded in March 2012.²

¹ Request for Proposal Preliminary Engineering & Project Management Services, RFP No. 00410-92594-P01STV, June 14, 2010, Document STV0000001; CTP Service Proposal, RFP No. 00410-92594-P01STV, July 22, 2010, Document STV000002.

² CTP Service Proposal, RFP No. 00410-92594-P01STV, July 22, 2010, Exhibit 3.3, pg. 41, Document STV0000002.

During this period, CTP reported to the City of Ottawa’s Rail Implementation Office (“RIO”),³ and the services provided included developing the design concept for the vehicles and the maintenance facility.⁴ Concept documents prepared by CTP ultimately were developed into project-specific-output specifications (“PSOS”) that were included in the Project Agreement entered into between the City and the successful proponent Rideau Transit Group (“RTG”) and “proof of concept drawings” which had designs to approximately 30 percent.⁵

5. CTP was also involved in the procurement process for the selection of a preferred proponent for the OLRT Stage 1 Project. STV’s role in this process included reviewing and assisting with scoring the proponents’ technical responses to the Request for Proposals.⁶ The lead STV personnel primarily involved in this phase of the OLRT Stage 1 Project were Keith MacKenzie, Bryan Dwyer, Greg Barstow and Joe North.

C. STV’s Involvement Following Procurement

6. The Project Agreement between the City and RTG was executed on February 12, 2013,⁷ following which the successful proponent took over responsibility for design of the Project.⁸ After the conclusion of the procurement process in 2013, CTP had a continuing, but diminished, involvement in the OLRT Stage 1 Project.⁹

³ Formal Interview Transcript of Brian Dwyer, conducted on May 17, 2022, pg. 16, lines 18 – 22.

⁴ Formal Interview Transcript of Keith MacKenzie (“**MacKenzie Transcript**”), conducted on April 13, 2022, pg. 10-12.

⁵ MacKenzie Transcript, pg. 39, line 4 – pg. 40, line 15; Formal Interview Transcript of Greg Barstow, conducted on May 9, 2022 (“**Barstow Transcript**”), pg. 9, line 3 – 9.

⁶ MacKenzie Transcript, pg. 76, lines 7 – 22, pg. 78, 20 – 25;

⁷ Project Agreement, February 12, 2013, Document COM0000158.

⁸ MacKenzie Transcript, pg. 78, lines 2 – 10.

⁹ Formal Interview Transcript of Keith MacKenzie Correction to pg. 88, lines 7-14.

7. In January 2013, CTP submitted a proposal for operations and maintenance services in response to a Request for Standing Offer of Professional Engineering and Advisory Services issued by the City.¹⁰

8. On March 14, 2013, CTP was informed that it met the basis of selection requirements for the Request for Standing Offer, and it was placed on a Standing Offer Call-up List. The individual resources recommended for call up in CTP's bid included STV personnel advising the City on matters related to operation and maintenance services and LRT systems, vehicle and power services.¹¹ Thereafter, from time to time, STV personnel (the leads being Joe North, Brian Dwyer and Mario Semmler) were asked to provide advice to the City concerning the designs for the Project that had been submitted by RTG and their compliance with the PSOS.¹²

D. STV's Involvement in the Independent Assessment Team

9. The Project Agreement contemplated a revenue service availability ("**RSA**") date of May 24, 2018. In May 2017, roughly one year ahead of the original RSA date, John Manconi, the General Manager of the Ottawa-Carleton Regional Transit Commission ("**OC Transpo**") formed an Independent Assessment Team ("**IAT**") of consultants from CTP to provide OC Transpo with assessments of ongoing work, including preparedness of operations and maintenance, and scheduling progress.¹³ The IAT was led by Thomas

¹⁰ Response to Request for Standing Offer, RFSO No. 19612-91842-S01, Document STV0001967.

¹¹ Letter to Bruce Miller, dated March 14, 2013, File No. 19612-91842-S01, Document STV0001944.

¹² MacKenzie Transcript, pg. 79 – 80; Barstow Transcript, pg. 43, lines 5 – 7.

¹³ Hearing Transcript of Examination of Thomas Prendergast, conducted on June 28, 2022, ("**Prendergast Hearing Transcript**") pg. 3 – 4.

Prendergast of STV, a systems engineer with 47 years of experience in transit systems. The IAT reported to Mr. Manconi.¹⁴

10. Pursuant to requests from Mr. Manconi, members of the IAT periodically visited Ottawa for periods of two-four days to go on site visits and work with officials from O-Train Construction (“**OTC**”) to prepare a report and presentation assessing the likelihood of RTG achieving the schedule put forward by OLRTC and the risks should the proposed schedule not be achieved. In addition to preparing scheduling assessments, the IAT participated in meetings and workshops with RTG where members of the IAT discussed issues the IAT had observed and advised of steps that RTG should consider taking to advance construction and achieve system readiness.¹⁵

11. The first IAT site visit took place on May 8-9, 2017.¹⁶ During this visit, the IAT assessed RTG’s strategy for achieving RSA by May 24, 2018 and concluded that it was highly unlikely it would be achieved for several reasons, including:

- (a) unmitigated delay from a sinkhole that had occurred in June 2016;
- (b) RTG’s schedule recovery plan relied on aggressive schedule compression and assumptions regarding testing and commissioning;

¹⁴ Prendergast Hearing Transcript, pg. 2, line 15-26.

¹⁵ Formal Interview Transcript of Thomas Prendergast, conducted on April 27, 2022, (“**Prendergast Interview Transcript**”), pg. 18, lines 8 – 16; See e.g. Joint City/RTG Workshop Review of OLRTC’s RSA Readiness Timeline, Presented to City Manager October 25, 2018, Document STV0000894; May 2017 Joint Workshop, Document COW0462862.

¹⁶ Confederation Line Stage 1, High Level Schedule Assessment of the May 24, 2018 Substantial Completion Date, Conducted May 8-9, 2017, Document COW0462861.

- (c) RTG's productivity expectations were unrealistic and tied to 7-day work weeks with triple shifts; and
- (d) RTG had no schedule float left in its schedule.¹⁷

12. The original RSA date was subsequently extended past May 24, 2018. The IAT had further site visits to Ottawa in 2019 to assess the likelihood of RTG achieving the various proposed dates for substantial completion and RSA that had been proposed to the City. In these assessments, the IAT opined that RTG would not likely achieve proposed RSA dates in August 2018, November 2018, March 2019 and May 2019.¹⁸

13. In the months leading up to the date on which RSA was ultimately achieved (August 30, 2019), Mr. Prendergast of STV and the IAT expressed concerns to the City about the maintainer's (Rideau Transit Maintenance General Partnership ("**RTM**")), readiness to provide maintenance services for the system.¹⁹ These concerns were escalated by Mr. Manconi and the City to the CEO of Alstom, which was the subcontractor responsible for vehicle maintenance with RTM, and a plan was made to commit additional resources to maintenance.²⁰ Mr. Prendergast's evidence was that, in the weeks leading

¹⁷ Joint City/RTG Workshop Assessment of the May 24, 2018 Revenue Service Availability Date, conducted May 24, 2017 ("**May 2017 Joint Workshop**"), pg. 16, Document COW0462862.

¹⁸ See e.g. OTC/IAT Assessment of RTG's Nov 2, 2018 RSA Date, presented June 22, 2018, Document COW0462868; OTC/IAT Assessment of RTG's Nov 2, 2018 RSA Date, presented August 17, 2018, Document COW0462869; OTC/IAT Assessment of RTG's November 2, 2018 RSA Date, presented August 17, 2018, Document COW0436756; OTC/IAT Assessment of RTG ability to obtain substantial completion on March 1, 2019 and RSA on March 31, 2019, presented January 30, 2019, Document STV0001476; OTC/IAT Assessment Review of RTG's Ability to Obtain RSA in Late May 2019, presented April 5, 2019, Document STV0000901.

¹⁹ Email from Thomas Prendergast to John Manconi et al. Re: RTM Readiness, June 24, 2019, Document STV0000565.

²⁰ Prendergast Hearing Transcript, pg. 52, lines 18 – 28, pg. 53, lines 1 – 28; Email from John Manconi to Thomas Prendergast et al. Re: Alstom/RTG Update, August 12, 2019, Document COW0451494.

up to RSA, he saw improved awareness and increased resource deployment from RTG and RTM to meet service level requirements.²¹

14. Through the second half of 2019, STV also provided Operational Readiness Support Services to the City. The primary STV personnel involved were Thomas Prendergast, Larry Gaul, Brian Dwyer and Joe North. This work was focused around reporting to a senior Program Management Team led by John Manconi regarding program status, delays, issues and risks, and working with the City's subject matter experts to advise on various issues leading into Revenue Service.

E. STV's Involvement in Trial Running

15. STV also provided advice in relation to the Trial Running period, which was required under Schedule 14 of the Project Agreement. Trial Running was the final step in testing and commissioning prior to the system entering Revenue Service. Larry Gaul of STV was directed by Troy Charter of OC Transpo to be a representative of OC Transpo on the Trial Running Review Team that was established to evaluate the performance of the system against the Trial Running Criteria during the Trial Running period.²² The other members of the Trial Running Review Team were representatives from OC Transpo, OTC, RTM, OLRTC, and the Independent Certifier.

16. The objective of the Trial Running period was to “confirm readiness for Revenue Service Commencement by exercising the Integrated LRT System” and to demonstrate that “the system [was] capable of safely and reliably operating in accordance with the

²¹ Prendergast Interview Transcript, pg. 54, lines 5 – 11.

²² Mr. Gaul was occasionally replaced on the Trial Running Review Team when he was unavailable by Mr. North.

Initial Service Plan [for the LRT System]—including required travel times and headways.”²³

17. In 2017, an initial set of criteria had been developed to guide the assessment and determination of whether the Trial Running objectives were accomplished (the “**2017 Trial Running Criteria**”). The 2017 Trial Running Criteria provided that one metric for completing Trial Running would be “Achievement of an average daily AVKR [aggregate vehicle kilometre availability ratio] of 96 percent or higher over 9 of 12 days (evaluated over a 12-day moving window of “passing” days) and no three consecutive days below 94 percent”.²⁴ The 2017 Trial Running Criteria were approved by the City under RFI-O-266.

18. In 2019, a separate set of Trial Running criteria were developed (the “**2019 Trial Running Criteria**”) which differed from the 2017 Trial Running Criteria. Specifically, the 2019 Trial Running Criteria required an average AVKR of 98 percent over a 12-day period.²⁵

19. Under either criteria, the Trial Running Review Team had a discretion in determining whether the Trial Running Criteria were achieved for a specific day, and, if the Trial Running Requirement were not achieved, whether that day would lead to a repeat of the day or to a restart or pause in the Trial Running Period.²⁶

²³ Trial Running Test Procedure dated July 31, 2019 at Section 3, Document COW0088944 (“**2019 Trial Running Test Procedure**”).

²⁴ RFI-0-266, Document COW0442401 (“**2017 Trial Running Criteria**”).

²⁵ 2019 Trial Running Test Procedure at Section 4.

²⁶ 2019 Trial Running Test Procedure at Sections 3-4.

20. The Trial Running period commenced on July 29, 2019, and the Trial Running Review Team determined that the Trial Running Criteria had not been met on the first four days of the Trial Running Period. The first “Pass” day during the Trial Running Period was August 3, 2019, after which there were three consecutive passes before a restart was required due to a failed day on August 7, 2019. Starting on August 9, 2019, a 12-day period commenced over which the AVKR of the system averaged 96.90 percent, leading to the completion of the Trial Running period.²⁷

21. On or around August 16, 2019, a decision was made to change certain components of Trial Running. These changes included re-adopting the 2017 Trial Running Criteria benchmark of 96 percent AVKR, rather than the 98 percent AVKR benchmark under the 2019 Trial Running Criteria. A second change was to operate 13 trains in the AM peak window on weekdays rather than 15 trains that had been operating in the period up to August 16, 2019.

22. Mr. Gaul’s evidence was that, after being satisfied that the reduction in the number of trains operating in the AM peak window would still be sufficient to meet the expected capacity demands on the transit system after going into Revenue Service, he did not have concerns with these changes to the Trial Running Criteria as he considered the 96 percent AVKR threshold to represent a “very high bar” indicative of a very reliable service. From a customer experience perspective, Mr. Gaul testified that there would be no difference between a 98 percent and 96 percent AVKR.²⁸ He also testified that he viewed the

²⁷ Independent Certifier Validation of Trial Running Acceptance dated August 23, 2019, Document COW0270758 (“**Independent Certifier Validation**”).

²⁸ Transcript of Examination of Larry Gaul conducted July 5, 2022 (“**Gaul Transcript**”), p. 39, line 26, p. 42, line 17.

reduction in the number of trains from 15 to 13 as being beneficial since it would increase the number of spare trains available to be used if a vehicle experienced a problem and was required to be taken out of service.²⁹

23. Although not a member of the Trial Running Review Team, Mr. Prendergast recalled discussing with the City Manager (Steve Kanellakos) his views that 98 percent as a percentage for AKVR was very high, that 96 percent was more reasonable, and that a 2 percent difference was not a significant change in terms of demonstrating the system's capability.³⁰ Mr. Prendergast also testified that it was not uncommon or unusual to modify criteria during a testing period for system readiness, as was done in Ottawa.³¹

24. The modified Trial Running Criteria were achieved on August 22, 2019, and on August 23, 2019, the Independent Certifier verified that the Trial Running requirements under the Project Agreement had been satisfied.³²

25. Through the Trial Running period, STV also continued to identify potential issues or concerns with the system and the vehicles and communicated these issues or concerns to the City. Mr. Gaul testified that it was normal to expect that a brand-new system would experience issues at the start of Revenue Service, because new systems did not go into service with 100 percent reliability.³³

²⁹ Gaul Transcript p. 87, lines 18 – 27.

³⁰ Prendergast Hearing Transcript, p. 40, line 27 – p. 41, line 3; p. 41, lines 8 – 15.

³¹ Prendergast Hearing Transcript, p. 10, line 28 – p. 11, line 17, p. 42, lines 3 – 5, 18 – 22.

³² Independent Certifier Validation.

³³ Gaul Transcript, p. 42, lines 2 – 9.

F. STV's Involvement Post-Trial Running and Commencement of Revenue Service

26. On August 30, 2019, RTG submitted notice of RSA, officially handing over the LRT system to the City. Practice running of the system continued after completion of Trial Running.

27. On September 14, 2019, the LRT system was opened to the public for Revenue Service. Parallel bus service was maintained for the first three weeks of service. Mr. Prendergast and Mr. Gaul could not recall specifically whether they were asked to opine on the system's readiness for Revenue Service.³⁴

28. Mr. Prendergast clarified that STV's role was not to opine on whether the system was ready for Revenue Service, but rather to identify issues for the City that needed to be addressed for Revenue Service.³⁵

29. Mr. Gaul's evidence was that, if he had been asked for his opinion on readiness for Revenue Service by Mr. Manconi, he would have told him that the system had proved it could operate reliably during the Trial Running period, but that the system would experience a learning curve and problems at the start of Revenue Service just as any new system would. Mr. Gaul further testified that, in retrospect, he believed the system was ready to go into Revenue Service when it did.³⁶

³⁴ Gaul Transcript, p. 49, lines 5 – 8; Prendergast Transcript, p. 36, lines 21 – 23.

³⁵ Prendergast Hearing Transcript, p. 36, line 26 – p. 37, line 4.

³⁶ Gaul Transcript, p. 49, line 11 – p. 50, line 18.

30. Mr. Prendergast and Mr. Gaul were both asked about the possibility of the LRT system opening with a “soft start”.

31. Mr. Prendergast said that he had seen transit systems open with full service or with a “soft start”³⁷ which he understood to be one in which service commenced only on a portion of the full line or with reduced hours. He testified that STV did not recommend that the City open the system with this kind of “soft start”, and that when the possibility of opening with a “soft start” was raised with the City, it appeared to him that the City had already decided to launch with full service.³⁸

32. Mr. Gaul’s evidence was that he viewed the continued operation of a parallel bus service as a form of “soft opening” which benefited the system and that it did not need to be extended longer than three weeks.³⁹

G. STV’s Services During Revenue Service

33. After Revenue Service, STV continued to provide services to the City in relation to the operation of the Confederation Line. Specifically, STV personnel, including Ron Hopkins, Scott Krieger and Greg Barstow, continued to advise the City on vehicle-related issues, reviewing and evaluating standard operating procedures, and conducting audits and evaluations of OC Transpo’s processes.⁴⁰

³⁷ Prendergast Hearing Transcript, p. 5, lines 6-13.

³⁸ Prendergast Hearing Transcript, p. 4, line 17 – p. 6, line 19.

³⁹ Gaul Transcript, p. 50, line 19 – p. 54, line 4.

⁴⁰ See eg. PO 45084092 – Continued Operations and Maintenance Support dated October 4, 2021, Document STV0002023.

ALL OF WHICH IS RESPECTFULLY SUBMITTED this 12th day of August, 2022.



Tyr LLP

488 Wellington Street West
Suite 300-302
Toronto, ON M5V 1E3
Fax: 416-987-2370

James Doris (LSO# 33236P)

Email: jdoris@tyrllp.com

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Email: mobrien@tyrllp.com

Tel: 416.617.0533

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