

From: "Mochrie, Paul" <Paul.Mochrie@vancouver.ca>

To: "Direct to Mayor and Council - DL"

CC: "City Manager's Correspondence Group - DL"

"Dobrovolny, Jerry" <jerry.dobrovolny@vancouver.ca>

Date: 8/21/2019 12:56:07 PM

Subject: Update on SNC-Lavalin Relationship with the City of Vancouver

Attachments: ENG - RTO - Memo to Mayor and Council - Update on SNC Lavalin Relationsh....pdf

Greetings Mayor and Council,

Please find attached a memo in response to the Council motion from May 14, 2019. This motion requested information on the City's relationship with SNC-Lavalin and Bombardier and any implications on the Broadway Subway project resulting from challenges faced by both companies. A summary of the key points is listed below:

- The City has had limited business dealings with Bombardier (approximately \$360,000) and has had contracts with SNC-Lavalin worth approximately \$4.4 million between 2010 and 2018.
- ❓ SkyTrain is the brand name used for grade-separated automated rail rapid transit in Metro Vancouver and neither Bombardier nor SNC-Lavalin hold patents that preclude other contractors from bidding on a SkyTrain project (including the Broadway Subway).
- ❓ SNC-Lavalin has withdrawn its bid to design and build the Broadway Subway Project.

More information on SNC-Lavalin's withdrawal and the Province's strategy for procurement moving forward will be provided to you once it is available. For more information related to this matter, please contact Jerry Dobrovolny at 604.873.7331 or jerry.dobrovolny@vancouver.ca.

Best,
Paul

Paul Mochrie | Deputy City Manager
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604.873.7666



The City of Vancouver acknowledges that it is situated on the unceded traditional territories of the Musqueam, Squamish, and Tsleil-Waututh peoples.

MEMORANDUM

August 21, 2019

TO: Mayor and Council

CC: Sadhu Johnston, City Manager
Paul Mochrie, Deputy City Manager
Lynda Graves, Administration Services Manager, City Manager's Office
Rena Kendall-Craden, Civic Engagement and Communications Director
Katrina Leckovic, City Clerk
Neil Monckton, Chief of Staff, Mayor's Office
Alvin Singh, Communications Director, Mayor's Office
Anita Zaenker, Chief of Staff, Mayor's Office
Cheryl Nelms, Deputy General Manager, Engineering Services
Gil Kelley, General Manager, Planning, Urban Design and Sustainability
Karima Mulji, Director, Engineering Projects and Development Services
Lon LaClaire, Director, Transportation
Steve Brown, Manager, Rapid Transit Office
Chris Robertson, Assistant Director, City-wide and Regional Planning
Patrice Impey, General Manager, Finance, Risk & Supply Chain Management

FROM: Jerry Dobrovoly
General Manager, Engineering Services

SUBJECT: UPDATE – SNC-Lavalin Relationship with the City of Vancouver

At the Regular Council meeting on May 14th, 2019, Council approved a motion related to the City's relationship with SNC-Lavalin and Bombardier as well as any implications related to the Broadway Subway project. The motion contained three resolutions which this memo will address.

- A. THAT Council instruct staff to report back to Council with a thorough review of the existing relationship between the City of Vancouver, SNC-Lavalin, and Bombardier, including the procurement relationship.

City staff provided Mayor and Council with a memo dated May 6th, 2019 that included information on the City's procurement relationship with SNC-Lavalin. A summary table from the May 6th memo is attached for reference (Appendix A). The table includes all purchase orders from the City to SNC-Lavalin between 2010 and 2018. Services include environmental testing, seawall design and inspection, and other design elements. Approximately \$1 million of the total noted in the table represents 1.26% of the total professional and commercial services category awarded by the City from 2017-2018. During this time span, a total of 716 professional and commercial services category contracts were awarded.

The City has had limited business dealings with Bombardier. In 2010, there were two purchase orders related to the demonstration streetcar project during the Winter Olympics. The value of the two purchase orders was \$6792.90 and was related to costs associated with the radio communications equipment and uniforms for staff. Bombardier covered all costs related to the transportation of the two streetcars to and from Vancouver and costs related to testing, commissioning, operations and maintenance for the 90 day duration of the demonstration. Prior to this, the City purchased four plows in 2003 for approximately \$360,000. The details of these purchase orders can be found in the summary table attached.

The information provided in resolution C will help respond to resolution B, so this memo will address resolution C first:

- C. THAT Council instruct staff to consult with TransLink staff and report back to Council on the results as soon as available from the TransLink staff report to the Mayors' Council on any proprietary rights or bidding advantage of SNC-Lavalin and Bombardier for the SkyTrain Millennium Line extension and the ability for other firms to bid competitively.

SkyTrain is the brand name used for grade-separated automated rail rapid transit in Metro Vancouver and includes the Expo, Millennium and Canada Lines. SkyTrain does not refer to a specific or proprietary technology.

The Canada Line uses conventional rotary motor propulsion vehicles that can be provided by a number of manufacturers. The Expo and Millennium Lines (including the Broadway Subway project) are based on linear induction motor (LIM) vehicles and are controlled by a communications-based train control (CBTC) system. While rapid transit systems using LIM vehicles are less common and have fewer suppliers than systems using rotary motor propulsion, neither the CBTC nor the LIM vehicles are proprietary. SNC-Lavalin and Bombardier do not hold patents for either LIM or CBTC, and these systems can be provided by several other companies. For reference, see TransLink's report dated April 25th, 2019 attached (Appendix B).

All but the first order of vehicles for the Expo and Millennium Lines have been procured from Bombardier as they were the only bidding company. Other potential suppliers declined submitting proposals due to the relatively small number of vehicles ordered. The next procurement of SkyTrain vehicles, funded by the Mayors' Plan, is almost three times larger than the last SkyTrain vehicle order procured by TransLink and it is expected to attract increased interest.

In response to resolution B:

- B. THAT Council instruct staff to report back to Council with information on how SkyTrain use as a Millennium Line extension could be affected by further outcomes of the criminal prosecution for corruption charges of SNC-Lavalin Group Inc. and the World Bank's audit of Bombardier for allegations of corruption.

The Province of BC's Ministry of Transportation and Infrastructure (MoTI) is the project owner for the Broadway Subway project and is currently in the early phase of the procurement process. The Province is committed to extensive due diligence when it comes to procurement and selecting a short-list of companies that can deliver the project on-time and on-budget. They use an open procurement process and are dedicated to getting the best value for British Columbians. There are many checkpoints in the procurement process, including the procurement team, project board or steering committees, legal counsel, fairness advisor, and a relationship review committee. However, in late July, SNC-Lavalin withdrew its bid for the Broadway Subway Project. We expect the Province to confirm SNC-Lavalin's withdrawal in the next week or two as well as provide more information on their strategy for the procurement process moving forward. We will report back with more information at that time.

The vehicles that will operate on the Broadway Subway project are being delivered through a separate contract that seeks to upgrade and increase the Expo and Millennium Line fleet of vehicles. TransLink will lead this open procurement process in a similar manner to that of the Province. There will be many checkpoints that will consider any legal outcomes related to Bombardier in relation to any bid received.

While LIM vehicles and CBTC train control is less common than more conventional driver operated systems, multiple companies can deliver guideway structure, rail engineering and construction for the Expo and Millennium Lines – including the Broadway Subway. SNC-Lavalin has withdrawn their bid for the Broadway Subway and will not be designing and building this project. The open procurement processes for the purchase of additional LIM vehicles for the Expo and Millennium Lines (TransLink) will consider any legal outcomes related to Bombardier and how it might affect the delivery of these vehicles.

If you have any questions or require additional information, please do not hesitate to contact me at jerry.dobrovolny@vancouver.ca.



Jerry W. Dobrovolny, P.Eng., MBA
General Manager, Engineering Services

604.873.7331 | jerry.dobrovolny@vancouver.ca

APPENDIX A

Purchase Order Report of Projects by SNC-Lavalin

PO#	Vendor	Name	Date	Year	CAD	Type of Work
4500460203	120626	SNC-Lavalin Inc. (Vancouver)	2010-03-08	2010	\$ 56,300.00	supplemental drilling and investigation
4500463267	120626	SNC-Lavalin Inc. (Vancouver)	2010-04-14	2010	\$ 62,666.24	Water Quality Monitoring Prog
4500465646	120626	SNC-Lavalin Inc. (Vancouver)	2010-05-11	2010	\$ 107,932.92	550 Commodore Road
4500475526	120626	SNC-Lavalin Inc. (Vancouver)	2010-08-25	2010	\$ 24,900.00	4894 Knight-Environmental
4500475912	120626	SNC-Lavalin Inc. (Vancouver)	2010-08-31	2010	\$ 6,497.40	Stormwater treat Sys Rev
4500477691	120626	SNC-Lavalin Inc. (Vancouver)	2010-09-22	2010	\$ 130,426.00	environmental consulting services
4500484659	120626	SNC-Lavalin Inc. (Vancouver)	2010-12-08	2010	\$ 1.00	Deleted - Consulting Services
4500485359	120626	SNC-Lavalin Inc. (Vancouver)	2010-12-15	2010	\$ 253,886.00	environmental consulting services
4500490567	120626	SNC-Lavalin Inc. (Vancouver)	2011-02-14	2011	\$ 65,550.17	COV Water Qual Mnthly Annual Rev
4500510754	120626	SNC-Lavalin Inc. (Vancouver)	2011-09-27	2011	\$ 58,547.38	Soil Characterization Program
4500521738	120626	SNC-Lavalin Inc. (Vancouver)	2012-03-06	2012	\$ 485,063.45	550 Commodore Next Phase Environmental
4500530456	120626	SNC-Lavalin Inc. (Vancouver)	2012-09-19	2012	\$ -	Deleted - Consulting Services
4500533607	120626	SNC-Lavalin Inc. (Vancouver)	2013-01-15	2013	559,506.00	Landfill Hydrogeological Review
4500533762	120626	SNC-Lavalin Inc. (Vancouver)	2013-01-21	2013	\$ 367,195.58	Water Quality Monitoring Program Review
4500536855	120626	SNC-Lavalin Inc. (Vancouver)	2013-05-16	2013	\$ 19,400.00	Detailed Site Investigation 3510 Fraser
4500543417	120626	SNC-Lavalin Inc. (Vancouver)	2014-02-17	2014	\$ 255,205.98	Environmental Services
4500549634	120626	SNC-Lavalin Inc. (Vancouver)	2014-10-22	2014	\$ 1,824.83	Finning - after hours load bank test
4500551471	120626	SNC-Lavalin Inc. (Vancouver)	2015-01-09	2015	\$ 167,027.67	111 Princess - Post remedial monitoring
4500553028	126009	SNC-Lavalin Operations & Maintenance	2015-03-17	2015	\$ 1,824.83	Finning - after hours load bank test
4500553352	120626	SNC-Lavalin Inc. (Vancouver)	2015-03-30	2015	\$ 21,332.00	Environmental Investigation - 688 Cambie
4500558094	106217	SNC-Lavalin Inc. (Burnaby)	2015-10-02	2015	\$ 482,832.00	Waterfront Design and Inspection
4500561144	120626	SNC-Lavalin Inc. (Vancouver)	2016-02-11	2016	\$ 4,845.00	SNC-Lavalin Geotech for Knight St
4500561837	120626	SNC-Lavalin Inc. (Vancouver)	2016-03-09	2016	\$ 24,800.00	Environmental Investigation
4500562283	120626	SNC-Lavalin Inc. (Vancouver)	2016-03-29	2016	\$ 84,267.18	Environmental/Geotechnical for FH 17
4500563607	120626	SNC-Lavalin Inc. (Vancouver)	2016-05-16	2016	\$ 9,580.00	Golf Course Toilets - Geotechnical
4500565788	120626	SNC-Lavalin Inc. (Vancouver)	2016-07-29	2016	\$ 51,767.48	Enviro Investigation - 3510 Fraser
4500567102	120626	SNC-Lavalin Inc. (Vancouver)	2016-09-19	2016	\$ 9,707.11	Chemical cleaning environmental impact
4500569902	120626	SNC-Lavalin Inc. (Vancouver)	2017-01-11	2017	\$ 27,183.00	Guardrail Design Study
4500570909	120626	SNC-Lavalin Inc. (Vancouver)	2017-02-27	2017	\$ 9,969.00	Geophys Investigation: Cambie Works Yard
4500571382	120626	SNC-Lavalin Inc. (Vancouver)	2017-03-16	2017	\$ 24,362.00	VMS Annual Monitoring - 111 Princess Ave
4500571504	120626	SNC-Lavalin Inc. (Vancouver)	2017-03-21	2017	\$ 61,662.50	Eductor System O&M and Performance Eval.
4500572572	106217	SNC-Lavalin Inc. (Burnaby)	2017-05-03	2017	\$ 25,000.00	W10 3d-design&constructability assesment
4500573248	120626	SNC-Lavalin Inc. (Vancouver)	2017-05-26	2017	\$ 306,910.00	Monitoring Program
4500573753	106217	SNC-Lavalin Inc. (Burnaby)	2017-06-13	2017	\$ 220,193.50	10th Ave - detailed design services
4500574767	106217	SNC-Lavalin Inc. (Burnaby)	2017-07-19	2017	\$ 56,446.00	PHSA Parking Lot Study - Phase 1
4500576000	120626	SNC-Lavalin Inc. (Vancouver)	2017-09-06	2017	\$ 4,750.00	Temporary Modular Housing - Env. Reviews

4500576839	120626	SNC-Lavalin Inc. (Vancouver)	2017-10-10	2017	\$ 39,000.00	Fire Hall UST Removals & Env Support
4500577137	120626	SNC-Lavalin Inc. (Vancouver)	2017-10-19	2017	\$ 10,750.00	Geotechnical Services
4500577872	120626	SNC-Lavalin Inc. (Vancouver)	2017-11-16	2017	\$ 58,810.00	599 W 2nd Ave - Human Health Risk
4500578663	120626	SNC-Lavalin Inc. (Vancouver)	2017-12-13	2017	\$ 68,745.00	Maintenance Yard for Vancouver Landfill
4500578939	106217	SNC-Lavalin Inc. (Burnaby)	2018-01-02	2018	\$ 76,720.00	10th Ave - EOR Services Const Phase
4500580960	120626	SNC-Lavalin Inc. (Vancouver)	2018-03-27	2018	\$ 24,790.00	2018 VMS - 111 Princess Avenue
4500581082	120626	SNC-Lavalin Inc. (Vancouver)	2018-04-04	2018	\$ 24,200.00	8324 Granville St - Eductor System O+M
4500583382	120626	SNC-Lavalin Inc. (Vancouver)	2018-06-29	2018	\$ 23,200.00	8324 Granville St - Eductor System O+M
4500587253	120626	SNC-Lavalin Inc. (Vancouver)	2018-12-07	2018	\$ 24,900.00	8324 Granville St - Eductor System O+M

TOTAL \$ 4,400,477.22

Purchase Order Report of Projects by Bombardier

PO#	Vendor	Name	Date	Year	CAD	Type of Work
4500204772	101375	Bombardier Capital Leasing Ltd	2003-02-27	2003	\$ 176,332.00	Purchase of 2 plows
4500206702	113418	Bombardier Recreational Products	2003-03-13	2003	\$ 176,332.00	Purchase of 2 plows
4500472842	122735	Bombardier Transportation	2010-07-02	2010	\$ 3,785.13	Olympic Line radio phone
4500472845	122735	Bombardier Transportation	2010-05-10	2010	\$ 3,007.77	Olympic Line employee clothing

TOTAL \$ 359,456.90

APPENDIX B

TO: TransLink's Mayors' Council

FROM: Sany Zein, Vice President, Infrastructure Management & Engineering
Derrick Cheung, Vice President, Strategic Sourcing and Real Estate

DATE: April 25, 2019

SUBJECT: ITEM 3.2 – SkyTrain Technology and Procurement

RECOMMENDATION:

That the Mayors' Council receive this report.

PURPOSE:

The purpose of this report is to respond to the Mayors' Council direction that TransLink staff report back with information on SkyTrain technology and TransLink's practices to ensure competitive procurement processes.

BACKGROUND:

On February 15 the Mayors' Council received a report on Rail to UBC and endorsed SkyTrain as the technology basis to advance to the next stage of development for a rail project from Arbutus to UBC. During discussion, comments were raised about SkyTrain technology and questions were asked about whether SkyTrain is proprietary and how TransLink can increase competition for future SkyTrain procurement efforts. A motion was passed requesting additional information in response to these comments and questions.

This report provides a factual overview of the history, technology, procurement methods and market competitiveness related to SkyTrain.

DISCUSSION:

SkyTrain launched in 1986 for Expo '86

"SkyTrain" is the brand name used for grade-separated automated rail rapid transit in Metro Vancouver and includes the Expo, Millennium, and Canada lines. When SkyTrain was launched in 1986 for Expo, it was one of the world's first driverless, automated rapid transit systems. Since that time, our automated SkyTrain system has served the region well, with 79 kilometres of track, 53 stations, and a record 160 million boardings in 2018.

Driverless, automated vehicles are the new norm for rapid transit

SkyTrain was one of only three automated systems in 1986 but now there are more than 65 fully-automated lines in 42 cities worldwide that account for 1,052 kilometres in operation. In addition, major systems, including the Metro in Paris and Underground in London, are upgrading their busiest lines to be automated and driverless. Being an early adopter of this technology has paid off in several ways.

First, automation is economical. Without the need to staff trains over the past 30 years, the region has invested additional resources into the maintenance and expansion of the system. Second, driverless technology promotes rail safety because it reduces the potential for human error. Third, automation increases capacity because trains can run more frequently than conventional rapid transit, which allows the system to move more people, more quickly.

SkyTrain is a brand name, not a technology—there are multiple technologies working together to make the system work

Statements made that SkyTrain is “proprietary” to SNC Lavalin and Bombardier (or any other specific manufacturer) are false. SkyTrain is the brand name associated with grade-separated automated rail rapid transit in Metro Vancouver.

The technology underlying SkyTrain consists of trains powered by a linear induction motor (LIM) and controlled by a communications-based train control (CBTC) system. Neither LIM nor CBTC are proprietary. The SkyTrain technology combining LIM and CBTC was conceived in the 1970s as the Intermediate Capacity Transit System (ICTS) by the Urban Transportation Development Corporation (UTDC), an Ontario Crown Corporation. UTDC was subsequently privatized and sold to Bombardier in 1991, however Bombardier does not hold patents that would prevent other suppliers from bidding on any of SkyTrain’s key equipment or components.

The multiple technologies and components working together to make SkyTrain function—power, communications equipment, trains, guideway structure and rail—could each be supplied by several different companies.

Automated control system

The automated control system technology at the heart of making SkyTrain driverless and automated is called Communications-Based Train Control (CBTC). The specific CBTC system used by SkyTrain is known as SelTrac and was originally developed by Standard Elektrik Lorenz. It was subsequently sold to Alcatel and is currently owned, maintained and updated by Thales Rail Signaling Solutions. It is not a requirement that SkyTrain use the SelTrac system. There are several manufacturers with systems that can deliver CBTC of similar size and complexity. However, changing the automated control system would be a multilayered task and complexities exist in upgrading the existing 79 kilometres of SkyTrain or transitioning from one major control system to another.

LIM propulsion vehicles

The Expo and Millennium lines run on conventional metal rails and use power from a third rail.¹ The trains are powered by a linear induction motor (LIM), and use a fourth induction rail placed between the running rails to propel the vehicle. LIM propulsion was originally chosen when SkyTrain technology was conceived in the 1970s because of its superior performance on steep grades and in snowy and icy conditions, as well as its reduced operating and maintenance costs. Linear induction motors capable of powering transit systems are not proprietary. Multiple suppliers can provide vehicles that use linear induction motor technology. While theoretically SkyTrain can be converted to run using conventional rotary motors, this fundamental change would practically require significant technologically conversion resources.

¹ The Canada Line also runs on conventional metal rails and uses power from a third rail, but uses an electric rotary traction motor, which is a more common propulsion technology. Because Canada Line uses different power technology, it is not interoperable with the Expo and Millennium Lines—Canada Line trains cannot be used on the other two lines, and vice versa. The original order of 20 2-car trains was delivered by Rotem, a division of Hyundai Motor Group. Twelve additional 2-car trains are currently being procured by TransLink.

The original fleet of LIM vehicles were supplied by Urban Transportation Development Corporation. Subsequent vehicle procurements were open to competition, but only Bombardier Transportation provided proposals.² Follow-up with other potential suppliers found that the region's orders for additional new cars were too small for them to submit proposals.

SNC-Lavalin has led or been on the team for previous construction and engineering services to build SkyTrain, but has no proprietary role in its function or delivery

Procurement for engineering and construction services are made on a project-by-project basis. Past procurement efforts for delivering large SkyTrain expansion projects have been led by the provincial government, with the exception of Canada Line. The firm SNC-Lavalin has either led, co-led, or was on a team that was awarded past contracts to deliver guideway structure and rail engineering/construction for SkyTrain. However, SNC-Lavalin holds no proprietary technology related to SkyTrain. In addition, SkyTrain does not require SNC-Lavalin to build future extensions. Most major construction and engineering firms could assemble teams to deliver the infrastructure for SkyTrain. Below is a history of past major infrastructure procurement efforts and SNC-Lavalin's involvement:

- **Expo Line.** Procurement was led by the Province and was delivered by the Urban Transportation Development Corporation (UTDC), an Ontario Crown Corporation. Pacific Liaison and Associates Inc. (which became a Division of SNC-Lavalin as part of a merger in 2001) was part of this team and performed design management for the Expo Line.
- **Millennium Line.** Procurement for construction and engineering was led by the Province through a provincial agency called RTP 2000. The consortium that delivered the project included the firms ND Lea, SNC-Lavalin, and Stantec.
- **Evergreen Extension of the Millennium Line.** Procurement for construction and engineering was led by the Province. A team led by SNC-Lavalin was selected from three qualified proponents.
- **Canada Line.** Procurement for construction and engineering services was led through Canada Line Rapid Transit Inc. (formerly RAVCO), a wholly-owned subsidiary of TransLink. During procurement and construction, Canada Line Rapid Transit Inc. was governed by a Board of Directors composed of representatives appointed by various funding agencies. A consortium led by SNC-Lavalin and Serco was selected from three qualified proponents to design, build, finance, operate and maintain the Canada Line for a 30-year period.

TransLink's Strategic Sourcing Department leads procurement to ensure open and fair competition within national and international trade rules

TransLink uses an open and transparent procurement process and is dedicated to increasing competition and getting the best value for money. The Strategic Sourcing and Contract Management department at TransLink handles all capital and operational procurement requirements for projects delivered by TransLink (and in some instances, leading collaborative procurements together with other public sector agencies) and must follow provincial, federal, and international laws governing procurement. Additionally, TransLink abides by all relevant trade agreements, including the Comprehensive Economic and Trade Agreement (CETA), which specifically prohibits preferential treatment for local/national suppliers.

² Subsequent vehicle procurements supplied by Bombardier Transportation for vehicles running on the Expo and Millennium lines include 150 Mark I trains, 108 Mark II trains, and 28 Mark III trains. Additionally, 56 Mark III trains have been procured and are in the process of being delivered and introduced into service.

TransLink procurement efforts must also adhere to any additional rules set as a condition of funding by funding partners.

Multiple tools and methods are used to increase competition. Annual supplier forums, market sounding events and industry presentation events are held to connect suppliers with internal needs and generate greater interest in TransLink projects. TransLink recently upgraded our procurement software to Ariba Discovery, which we can use to reach a wide group of local, national and international suppliers. Ariba Discovery has a positive impact on competition, price, quality, and exposure to “best in class” products and services. TransLink also has checks and balances in place to regularly gauge competition and fairness—the procurement team monitors the projects with advice and assistance from project boards, steering committees, and legal counsel.

TransLink is beginning the procurement process for its largest order of SkyTrain vehicles

The next procurement of SkyTrain vehicles is funded in the Mayors’ Plan for at least 203 cars. The size of this order is more than three times bigger than any previous SkyTrain car order procured by TransLink, and therefore is expected to attract increased interest. The procurement strategy is to ensure competitiveness, and has included ongoing market sounding, an open Request for Information (RFI), and an upcoming open Request for Proposals (RFP). In response to the RFI, multiple responses and expressions of interest were received.

Efforts will continue to be made to broaden the potential pool of proponents.