



EVERGREEN LINE EXTENSION

PROJECT DESCRIPTION

The Evergreen Extension is an 11km LRT extension to the Millennium Line, a previously existing line within Metro Vancouver's SkyTrain network. The extension runs from the Lougheed Town Centre Station in the City of Burnaby, through the City of Port Moody, to the Lafarge Station just north of Coquitlam Town Centre in the City of Coquitlam. The extension comprises:

- › 4km of at-grade guideway immediately adjacent to a busy mainline Canadian Pacific Railway track;
- › 5km of elevated guideway;
- › 2km of bored tunnel; and
- › Six new stations.

The Evergreen Extension is an electric, fully driverless system. SNC-Lavalin was responsible for the full systems scope consisting of trackwork, LIM rail, traction power, train control (with Thales), signalling and train control, communications, and fire and life safety. These systems work together to form the functional driverless rail rapid transit system. The project also comprised construction of six propulsion power substations, train operating systems, parking facilities, and a vehicle maintenance and storage facility. The extension is integrated with bus and other transit facilities to provide pedestrian, vehicle, and bicycle access.

PROJECT INFO

Client	BC Ministry of Transportation and Infrastructure
Capital Cost	CAD \$1.4 billion
Contract Value	CAD \$889 million
Location	Metro Vancouver, BC
Duration	2012-2016

WORKING WITH FIRST NATIONS

SNC-Lavalin's role included extensive consultation and communication with three First Nations groups—the Tsleil-Waututh Nation, the Musqueam Indian Band, and the Kwikwetlem First Nation. SNC-Lavalin provided these groups with information about the project and shared information about employment opportunities and goods and services procurement opportunities.

Working with Indigenous-Owned Businesses as Subcontractors, in Partnerships & Joint Ventures

As the project's lead contractor, SNC-Lavalin developed a First Nations Plan, in accordance within the project agreement, which outlined First Nations engagement requirements for this key Metro Vancouver transportation infrastructure project. The identified indigenous groups on the Evergreen Extension included the Kwikwetlem, Musqueam, and Tsleil-Waututh First Nations.

To maximize the benefits of this project to these First Nations, SNC-Lavalin worked collaboratively with them and the British Columbia Ministry of Transportation and Infrastructure (BC MoTI) to develop the First Nations Plan. As a result of our combined efforts, BC MoTI's First Nations procurement target was exceeded by a very large margin, and employment targets were also significantly exceeded. Indigenous participation procurement targets were exceeded by 5.8 times (680%).

SNC-Lavalin's efforts to engage identified First Nations focused on increasing access to employment and contract opportunities by aligning their interests and capacities with project needs. We provided these groups with opportunities to engage across the full spectrum of the project. We promoted equal opportunity employment and the development of diverse skills. We implemented procedures and mechanisms for developing and maintaining ongoing working relationships with the First Nation groups. We also developed, with input from First Nations, a preliminary list of potential employment and contract opportunities.

Achieving Targets for Working with Indigenous Businesses

SNC-Lavalin exceeded First Nations procurement targets by a very large margin. In its capacity as lead contractor, SNC-Lavalin collaborated with the Kwikwetlem First Nation, the Musqueam Indian Band, the Tsleil-Waututh Nation, and other identified First Nations groups to develop a First Nations Plan that outlined First Nations engagement requirements. A project-needs assessment was conducted so that SNC-Lavalin could create a comprehensive list of prequalified indigenous-owned or indigenous-affiliated businesses. Specific, measurable, and agreed-to procurement targets related to indigenous-owned business participation were set and tracked. The Plan was very successful in that SNC-Lavalin greatly exceeded the client's First Nations procurement targets (Table 3). The client's total procurement target was \$8 million. Over \$95 million in bidding opportunities were offered to indigenous businesses, and over \$54 million in contracts were awarded (Table 3).

Through the experience of working with First Nations on the Evergreen Extension, SNC-Lavalin built close working relationships with indigenous-owned businesses across the Lower Mainland. This experience led to the creation of a valuable contacts database of participating indigenous-owned businesses located throughout the area, which can be tapped into on future projects.

Table 4 presents the procurement targets and the actual value of work awarded to indigenous-owned businesses. All of our procurement targets were significantly exceeded. All three of the First Nations groups were well represented, with a larger number of contracts awarded to the Musqueam and Tsleil-Waututh First Nations, and fewer but higher value contracts awarded to the Kwikwetlem First Nation. The majority of bidders were awarded procurement opportunities.

TABLE 3: RESULTS OF SNC-LAVALIN'S INDIGENOUS PROCUREMENT PROGRAM FOR THE EVERGREEN EXTENSION PROJECT:

INDIGENOUS GROUP	CLIENT'S PROCUREMENT TARGET (\$)	PROCUREMENT OPPORTUNITIES AVAILABLE, AS OF OCTOBER 2016, ESTIMATED VALUE (\$)	ACTUAL CONTRACTS AWARDED, AS OF OCTOBER 2016 (\$)
Tsleil-Waututh Nation	2,000,000	25,637,903	4,980,085
Musqueam Indian Band	2,000,000	51,889,098	43,330,099
Kwikwetlem First Nation	4,000,000	18,123,292	6,238,292
Other	0	50,000	50,000
Total	8,000,000	95,700,294	54,598,475

**TABLE 4: COMPANIES AFFILIATED WITH INDIGENOUS GROUPS THAT WERE AWARDED
PROCUREMENT OPPORTUNITIES ON THE EVERGREEN EXTENSION PROJECT**

PACKAGE NUMBER / TITLE / PO	COMPANY NAME (BIDDER)	AFFILIATED FIRST NATION	AWARDED CONTRACT (ACTUAL \$ VALUE)	PROCUREMENT OPPORTUNITY (EST. \$ VALUE)	STATUS
Soil Removal	Tervita	Tsleil-Waututh	345,000	345,000	Awarded
Supply and Install Piles (Reichhold)	Fraser River Pile & Dredge	Tsleil-Waututh	1,923,713	1,600,000	Awarded
Water Treatment Plant	Tervita	Tsleil-Waututh	688,528	550,000	Awarded
Tunnel Spoil Management and Removal	Quantum Murray	Kwikwetlem	6,238,292	6,238,292	Awarded
Electrical Services	Western Pacific Ent	Musqueam	30,000	50,000	Awarded
			30,000	30,000	Awarded
Office Trailer Rentals	Britco	Tsleil-Waututh	317,000	306,891	Awarded
Electrical and Data – Port Coquitlam Warehouse	M. Wood	Tsleil-Waututh	2,500	2,500	Awarded
Supply and Install Piling	FRPD	Tsleil-Waututh	588,198	761,263	Awarded
Retaining Wall Supply	Eagle West	Tsleil-Waututh	88,845	88,845	Awarded
Modular Buildings	Britco	Tsleil-Waututh	241,069	241,069	Awarded
Electrical Work for Stations	Houle Electric	Musqueam	2,924,000	2,924,000	Awarded
Substation Equipment	Western Pacific Ent	Musqueam	636,460	636,460	Awarded
			583,269	583,269	Awarded
			472,348	472,348	Awarded
			626,246	626,246	Awarded
			427,280	427,280	Awarded
Tunnel Spoil Management and Removal	Quantum Murray	Kwikwetlem	6,238,292	6,238,292	Awarded
Environmental Services – Sumas Remediation	Seven Generations Env. Services	Other	50,000	50,000	Awarded
Total			\$22,451,040	\$22,171,755	

Identifying Project Needs alongside Affiliated First Nations Companies

SNC-Lavalin conducted a project-needs assessment, which identified the following potential opportunities for First Nations:

- › Archaeological surveys and assessments;
- › Casting and cement work;
- › Catering services;
- › Demolition and waste management;
- › Disposal services (landfill and disposal at sea);
- › Environmental surveys (trees, wildlife, bird, fish, vegetation, water quality);
- › Equipment rentals (cranes, paving);
- › Excavating, vegetation clearing, and grading;
- › Fuel supply;
- › General labour and operators (electrical, carpentry, welding);
- › General supplies, including cement and aggregates;
- › Hazardous materials assessments;
- › Landscaping and restoration;
- › Rebar and concrete-related work;
- › Road building and asphaltting;
- › Road paving;
- › Security services;
- › Soils treatment and management;
- › Stormwater treatment and management;
- › Traffic management and signage maintenance;
- › Trucking services (contaminated and noncontaminated materials); and
- › Utility relocation and installation (electrical, communications, stormwater).

Creating a List of Prequalified Businesses

We identified qualified indigenous-owned or affiliated businesses, and created a list of prequalified businesses and the services they could provide. This list was maintained with a view to helping link project needs with qualified businesses. Interested companies (including all entities wishing to do business with the prime contractor) had to be legally registered limited companies and appropriately insured. Each business also had to meet the requirements for being a First Nations business. The list included suppliers like Fraser River Pile and Dredge Inc., Alpha Asphalt, Eagle West, and others.

Our experiences in working with local indigenous-owned businesses as subcontractors on the Evergreen Extension project illustrate a number of our capabilities, including:

- › **Proximity** – Relying on the experience and relationships we built throughout Metro Vancouver and the Lower Mainland;
- › **Identifying opportunities** – Establishing and determining indigenous and other relevant key contacts to identify and develop opportunities to work with indigenous-owned or affiliated businesses; and
- › **Meeting and exceeding targets** – Setting targets related to indigenous-owned business participation and tracking progress toward specific, measurable, and agreed targets.

Indigenous Employment

The Evergreen Extension project directly employed citizens of the Musqueam Indian Band and Tsleil-Waututh Nation across a variety of disciplines, clearly demonstrating SNC-Lavalin's ability to identify, hire, and retain indigenous workers. During the project, SNC-Lavalin created a program, using a combination of approaches and by actively developing relationships, to maximize employment opportunities for First Nations, including:

- › Through the First Nations liaison person, encouraging subcontractors to hire citizens of the local identified First Nations;
- › Directly employing citizens of the Musqueam Indian Band and Tsleil-Waututh Nation across a variety of disciplines;
- › Encouraging subcontractors to hire citizens of the local Identified First Nations through instructions and contract language;
- › Working with First Nations to develop and maintain an employment pool to help track available resources and their employment status; the pool information was then shared with subcontractors, labour brokers, and trade unions;
- › Conducting follow-up and check-in meetings with the First Nations to discuss and seek continual improvement in the employment program; and
- › Encouraging regular and ongoing communication between all relevant parties, including band office employment representatives and labour suppliers, to focus on improving employee retention.

Exceeding Targets

The Evergreen Extension's indigenous employment targets were exceeded. In total, 27 Tsleil Waututh, over 30 Musqueam, and 5 Kwikwetlem citizens were hired, amounting to 78.5 person-years of employment (Table 5). Employment targets for the Musqueam Indian Band were exceeded. Jobs included general labourers, electrical workers, traffic control personnel, trackwork installers, equipment operators, mechanics, and administrative support personnel.

Based on figures generated in October 2016, the following table shows employment targets and actual results as of October 2016. Employment targets for the Musqueam First Nation were exceeded. Targets for Tsleil-Waututh First Nation were pursued at every available opportunity but labour availability was limited, which accounted for the lower actual figure.

TABLE 5: SUMMARY OF SNC-LAVALIN'S INDIGENOUS EMPLOYMENT PROGRAM FOR THE EVERGREEN EXTENSION

INDIGENOUS GROUP	EMPLOYMENT TARGET		EMPLOYMENT AS OF OCTOBER 2016	
	TOTAL HOURS	PERSON-YEARS ^b	TOTAL HOURS	PERSON-YEARS ^b
Tsleil-Waututh Nation	55,000	26.5	36,280 ^a	17.5
Musqueam Indian Band	55,000	25.5	80,500	39.0
Kwikwetlem First Nation	0	-	4,894	2.5
Other	0	-	41,672	20.0
Total	110,000	53.0	163,346	78.5
Total	110,000	53.0	163,346	78.5

^aThe Tsleil-Waututh band reported no more eligible members for employment.

^bperson-years = total hours ÷ 2,080h/y.

Indigenous Training, Mentorship & Other Development Opportunities

SNC-Lavalin's training and mentorship efforts on the Evergreen Extension project focused on building cultural awareness and understanding among the team, providing guidance and information to indigenous-owned businesses, and working collaboratively with the local First Nations to build capacity among indigenous members of the workforce. Specific initiatives which contributed to the realization of these goals are described below.

Community Engagement Training for Key Management Staff

Key components of this training included an introduction to the three local First Nations, contractual obligations outlined in the project agreement relating to indigenous inclusion, and general indigenous business capacities and interests expressed along with expected challenges and solutions. These initiatives occurred early in the project execution phase so as to maximize opportunities for strategic planning and procurement.

Guidance and Information for Indigenous Businesses

A lost-bid form was completed each time a bid was lost by an Identified First Nation business. In these instances, detailed information was retained in order to benefit from lessons learned and to reveal opportunities for improvement. Bids may have been lost because the proposed approach was not technically feasible, the work or service was priced too high, the bidder had insufficient experience, the bidder had a poor safety rating, the bidder was unable to provide performance security, or the bid response comprised too many commercial or technical exceptions.

Capacity-Building through Workforce Training

All on-site indigenous staff members participated in mandatory training programs, including:

- › Health, safety, and environmental orientation;
- › Critical risk control protocols in SNC-Lavalin's Step Back program; and
- › SNC-Lavalin's strict code of ethics and compliance.

Other training related to individual roles and responsibilities included preparing timesheets; showing respect in the workplace; preventing slips, trips, and falls; working in confined spaces; working at heights; and driving safely.

Project managers and those in leadership positions were provided with additional cultural sensitivity training that emphasized the importance of diversity and respect in the workplace.

AWARDS

We received the following awards for our work on this project:

- › **2017:** Award of Merit, Transportation and Bridges Category, Awards for Engineering Excellence, Association of Consulting Engineering Companies British Columbia;
- › **2017:** Award of Excellence, In Recognition of Excellence in Alternate Transportation, For the Evergreen Extension, Deputy Minister's Consulting Engineers Awards, BC MoTI;
- › **2017:** Award of Excellence, In Recognition of Excellence in Design and Contract Preparation – Structures, For the Evergreen Extension – Inlet Centre Station, Deputy Minister's Consulting Engineers Awards, MC MoTI; and
- › **2017:** Award of Excellence, Transportation Category, Canadian Consulting Engineering Awards, Association of Consulting Engineering Companies Canada.