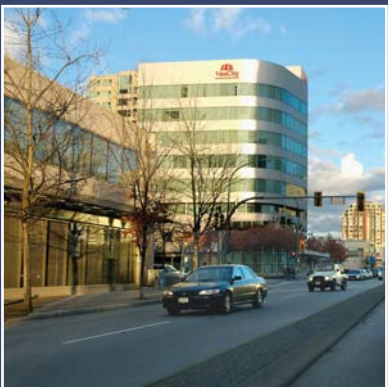




RICHMOND • AIRPORT • VANCOUVER RAPID TRANSIT



# **Best and Final Offer Stage Report & Recommendations**

RAV Project Management Ltd. (RAVCO)

# Introduction & Contents

This report describes the outcome of RAVCO's work during the Best and Final Offer (BAFO) Stage of the competition to design, build, partially finance, operate and maintain the Richmond•Airport•Vancouver (RAV) Line.

The report includes a description of the RAV Project and the competitive selection process. The report also summarizes the BAFO Stage Proposals that were evaluated and RAVCO's recommendations to the Funding Agencies: Government of Canada, Province of British Columbia, Greater Vancouver Transportation Authority (TransLink) and the Vancouver International Airport Authority (the Airport).

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# BAFO Stage Summary

The RAVCO Board was established on October 31, 2003, by the Local Funding Agencies to oversee project design, procurement, construction and implementation.

The Board is comprised of 9 directors, 5 of whom are independent. In addition to directors, one senior representative from the City of Richmond and the City of Vancouver attend Board meetings in a non-voting capacity. A representative from Western Economic Diversification Canada also attends as an observer (non-voting).

On July 6, 2004, following two earlier stages of competition to design, build, partially finance, operate and maintain the RAV Line, an Invitation to Submit a Best and Final Offer (BAFO) for the Project was issued to two short-listed Proponent teams:

- RAVxpress: A consortium of Bombardier Inc., AMEC, Bouygues Travaux Publics, SA and Bilfinger Berger, and;
- SNC-Lavalin/Serco: A team of SNC-Lavalin and Serco Group Inc.

The BAFO Invitation asked Proponents to submit Proposals that satisfied Local Funding Agency performance, design, financial and other requirements. Proponents were also invited to submit

alternate proposals. The BAFO Invitation is a public document and is available on the Project website at [www.ravrapidtransit.com](http://www.ravrapidtransit.com).

Proponents submitted their Best and Final Offers on September 27, 2004 (Technical) and September 29, 2004 (Financial). From late September to November an Evaluation Committee, appointed by the RAVCO Board, evaluated the Proposals and concluded by recommending the Proponent and Proposal they considered to represent the lowest cost and the greatest overall advantage.

The RAVCO Board received reports on Proposal Evaluation, Fairness, Value For Money, and Project Funding at their meetings in mid-November 2004. The following page summarizes the decisions and recommendations that the RAVCO Board has communicated to the Funding Agencies.

The Local Funding Agencies will now decide to:

- Adjust Project scope or funding to provide RAVCO with a revised mandate; or
- Provide RAVCO with a mandate to terminate the Project.

A decision is needed by early December 2004.

## Board of Directors

### L.I. (Larry) Bell

Chair, RAVCO and Chair,  
BC Hydro  
Independent

### Larry Berg

President & CEO,  
Vancouver International  
Airport Authority  
Director, Representing the  
Airport

### Pat Jacobsen

CEO, TransLink  
Director, Representing  
TransLink

### Eva Matsuzaki

Principal, Matsuzaki  
Architects Inc.  
Director, Independent

### Michael O'Connor

Former President & CEO, BC  
Transit; CEO, Expo Line &  
CAO, GVRD  
Director, Independent

### Sheri Plewes

P.Eng., Vice President,  
Capital Management &  
Engineering, TransLink  
Director, Representing  
TransLink

### Peter Powell

Former Vice Chairman,  
Senior Vice President &  
Managing Director, BMO  
Nesbitt Burns  
Director, Independent

### David G. Unruh

Vice Chairman,  
Duke Energy Gas  
Transmission Canada  
Director, Independent

## Other Attendees

### George C. Duncan

Chief Administrator Officer,  
City of Richmond  
Non-voting Representative

### Ardath Paxton Mann

Assistant Deputy Minister,  
Western Economic  
Diversification Canada  
Observer

### Judy Rogers

City Manager, City of  
Vancouver  
Non-voting Representative

# RAVCO Recommendations

## Summary of RAVCO Recommendations

Activity	Objective	Summary of Findings	RAVCO Board Resolutions
Fairness Audit	Ensure evaluation of Proposals is fair & unbiased	<ol style="list-style-type: none"> <li>1. Auditor had complete access to all proceedings &amp; documents</li> <li>2. Committee members had full appreciation of their responsibility</li> <li>3. Each submission underwent close and careful scrutiny</li> <li>4. Process was fair and impartial in every respect</li> </ol>	Receive the Fairness Auditor's Report
Relative Evaluation of BAFO Proposals	Apply evaluation criteria to determine Proponent & Proposal representing lowest cost & greatest overall advantages	SNC-Lavalin/Serco recommended as: <ul style="list-style-type: none"> <li>• Preferred Proponent;</li> <li>• Preferred Proposal;</li> <li>• Lowest cost Proposal; and</li> <li>• Offering greatest overall advantage.</li> </ul>	<ol style="list-style-type: none"> <li>A. Identify SNC-Lavalin/Serco as recommended Proponent based on its Base Proposal.</li> <li>B. Advise Funding Agencies &amp; Proponents of its decision.</li> </ol>
Assessment of Value For Money	Compare recommended Proposal with Public Sector (PSC) to demonstrate if Value For Money is achieved	<ol style="list-style-type: none"> <li>1. SNC-Lavalin/Serco's Base Proposal offers value for money</li> <li>2. Assumes significant risks that would otherwise be borne by public sector, including construction cost overruns, tunneling risks, on-time delivery &amp; operating performance</li> </ol>	Advise Funding Agencies that on basis of Value For Money Report, approach to funding & managing Project, involving both public & private sectors achieves high capacity rapid transit system at lower capital & operating cost & with less risk to taxpayer than a project funded & managed solely by public sector.
Assessment of Project Scope and Funding	Compare the overall Project cost with available funding to determine whether the line can be built	<ol style="list-style-type: none"> <li>1. Proposal offers strong benefits</li> <li>2. Does not require an operating subsidy</li> <li>3. Generates significant revenue</li> <li>4. Creates a public asset worth more than \$3.4 billion at the end of concession period</li> <li>5. Committed contributions from Funding Agencies (\$1.35 billion) &amp; private sector totaling \$1.55 billion (\$2003)</li> <li>6. Cost of Proposal currently exceeds available funding but is achievable with scope changes &amp; funding initiatives</li> </ol>	Recommend to Funding Agencies: <ol style="list-style-type: none"> <li>i. Make a decision on Project by early December 2004 in order to preserve option of completing Project by November 2009;</li> <li>ii. Approve changes to Project scope &amp; funding initiatives jointly recommended by RAVCO and staff of Local Funding Agencies, which would reduce required additional funding by two-thirds; and</li> <li>iii. Address remaining required funding:               <ol style="list-style-type: none"> <li>a) RAVCO enter into pre-selection discussions with SNC-Lavalin/Serco; &amp;</li> <li>b) TransLink, as owner of asset, propose to Province a joint solution to proceed with Project.</li> </ol> </li> </ol>

# Livability & Competitiveness

## Improving Livability & Competitiveness in a Growing Region

### TransLink's Plan

Modern infrastructure and smart transportation choices are important to the livability and prosperity of the region. Greater Vancouver's attractiveness as a place to live, work and operate a business is dependent on our ability to address growing congestion and its related impacts on the economy, the environment and our quality of life.

The population of Greater Vancouver will grow to over 3 million by 2021. The number of vehicles is increasing by about 20,000 vehicles per year. This growth places tremendous pressure on the network of roads and bridges. Lower Mainland residents consistently identify traffic congestion as one of the region's most pressing issues.

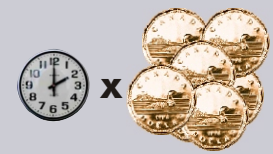
Furthermore, the BC Ministry of Transportation estimated in 2004 that in the Lower Mainland, traffic congestion costs our economy as much as \$1.5 billion a year.

The Greater Vancouver Transportation Authority (TransLink), was established to plan, fund and build Greater Vancouver's road and transit network. The organization's mission is to realize an integrated transportation system that moves people and goods safely and efficiently, supporting Greater Vancouver's regional growth strategy, air quality objectives and development.

TransLink's most recent 10-Year Outlook / Three-Year Financial Plan calls for an investment of \$3.9 billion in transit and roads to maintain or improve travel times for commuters, goods and service providers, cyclists and people with disabilities. In addition to new buses, bridges, and other improvements, the Plan includes a 40% expansion of the regional rapid transit network with the construction of the RAV and Northeast Sector lines.



**Congestion Costs  
Our Regional Economy  
Over \$4 million a Day**



**Number of private  
vehicles in the GVRD**



Source: GVTA



# Livability & Competitiveness



**The RAV Line will provide the capacity of 10 arterial road lanes.**

## Funding Agencies

Government of Canada  
Province of British Columbia  
Greater Vancouver Transportation Authority (TransLink)  
Vancouver International Airport Authority

## Participating Agencies

City of Vancouver  
City of Richmond

## Implementing Agency

RAV Project Management Ltd. (RAVCO)

## RAV Project Description

The planned rapid transit line between Richmond, the Airport and Vancouver will be a high capacity link between dense and growing residential, commercial, health, educational and other centers in a corridor with one-third of the region's jobs and 20% of its population.

The 19.5 km line, an important part of TransLink's strategic plan, will connect with transit serving other parts of the region and will significantly expand the transit network.

The RAV Line is designed to meet the performance specifications and requirements of its Funding Agencies: The Governments of Canada and British Columbia, TransLink, and the Vancouver International Airport Authority.

The Local Funding Agencies have sought private sector involvement in the Project in order to achieve the best transit solution for the corridor at

the most competitive price, to lever private sector investment, and to optimize risk transfer away from the public sector while ensuring public sector ownership and oversight over the long term.

The Local Funding Agencies and RAVCO, the TransLink subsidiary established to implement the Project, commenced a staged process of competition, selection and negotiation leading to a 35 year contract with a private sector Proponent team to design, build, partially finance the Project, and to operate and maintain the line for 30 years.

The Proponent team will invest in the Project and assume significant risks, including construction and schedule risks through a fixed-price, date-certain, turn-key contract. In addition the Proponent will take most operations, performance and maintenance risks.

## RAV Line Journey Time Savings

Downtown Vancouver to Richmond City Centre

Bus (Today)\*  
40-51 min.

RAV Line (2010)  
Less than 30 min.

Downtown Vancouver to Airport (YVR)

Bus (Today)\*  
42-52 min.

RAV Line (2010)  
Less than 25 min.

\*Note: Bus journey times are anticipated to lengthen to 2010 and beyond.

# Livability & Competitiveness

## RAV Project Objectives

The objectives for the RAV Line were developed through early Project definition, feasibility and due diligence studies. Early studies evaluated the transportation needs in the corridor and the region as well as the options that could meet these needs. The Project Definition Report (available at

[www.ravrapidtransit.com](http://www.ravrapidtransit.com)) outlined the transportation objectives for the Board. These became more specific objectives, and were adopted in 2003 by the Local Funding Agencies and the Cities of Vancouver and Richmond as Agency Requirements or “Essential Elements”.

### Summary of Agency Requirements\*:

<b>Completion Date:</b>	On or before November 30, 2009
<b>Affordability:</b>	<p>A two-part concept of affordability was established to assist the Local Funding Agencies with assessing the Project:</p> <ol style="list-style-type: none"> <li>1. Operating revenue from the line must equal or exceed operating costs over the operating period (i.e., no operating subsidy over the life of the contract); and</li> <li>2. Available funding from the public and private sectors must equal the estimated Project Cost during the construction period.</li> </ol>
<b>Performance &amp; System Requirements:</b>	<ul style="list-style-type: none"> <li>• Maximum travel times: <ul style="list-style-type: none"> <li>- 30 minutes from Waterfront to Richmond Centre; and</li> <li>- 25 minutes from Waterfront to the Airport;</li> </ul> </li> <li>• High standard of design;</li> <li>• High level of safety and security;</li> <li>• Minimal community and environmental impacts, including no net loss of green space on the Cambie Heritage Boulevard in Vancouver; and</li> <li>• Designed to accommodate future capacity and stations at specified locations.</li> </ul>
<b>Vertical Alignment:</b>	<p><u>Street-level or Elevated:</u></p> <ul style="list-style-type: none"> <li>• Along No. 3 Road from the Richmond terminus to the Bridgeport Station;</li> </ul> <p><u>Elevated:</u></p> <ul style="list-style-type: none"> <li>• To cross the railway tracks near Bridgeport Station;</li> <li>• From Bridgeport Station to the Airport terminus;</li> <li>• From the Bridgeport Station to 63rd Avenue on Cambie Street;</li> </ul> <p><u>In trench, tunnel or at street-level:</u></p> <ul style="list-style-type: none"> <li>• Between 63rd and 49th or 46th Avenues on Cambie Street;</li> </ul> <p><u>In tunnel:</u></p> <ul style="list-style-type: none"> <li>• From 49th or 46th Avenue to the downtown Vancouver terminus.</li> </ul>

\*Note: this summary is provided for convenience. If there is any discrepancy between this summary and the Agency Requirements published in the BAFO Invitation, the Invitation prevails.



# Competitive Selection Process

## Key Milestones

Stage	Milestone	Timeframe	Description
Competition	Request for Expressions of Interest (RFEI)	Completed April 30 2003	Established qualifications and interest from private sector; Four teams short-listed.
	Project Approval	Approved May 2003	Project, Estimates and Essential Elements approved by TransLink and the Cities of Vancouver and Richmond.
	Request for Proposals (RFP)	Completed March 31 2004	Proposals received from three teams: <ul style="list-style-type: none"> <li>• RAVLink Transportation</li> <li>• RAVxpress</li> <li>• SNC-Lavalin/Serco</li> </ul> At completion of RFP stage: <ul style="list-style-type: none"> <li>• Commercial structure demonstrated value for money;</li> <li>• Potential for additional funding and scope changes identified; and</li> <li>• RAVxpress and SNC-Lavalin/Serco selected to compete in “best and final offer” (BAFO) stage.</li> </ul>
	“Best and final offers” (BAFO)	Final Offers Received September 2004	Local Funding Agencies approved proceeding to BAFO stage of competition.
Negotiation	Preferred Proponent Negotiations	Anticipated Early December 2004	RAVCO Board: <ul style="list-style-type: none"> <li>• Considers results of evaluation, available funding, value for money, Fairness Audit;</li> <li>• Reports to Funding Agencies on the results of BAFO competition; and</li> <li>• Seeks confirmation of mandate.</li> </ul> Local Funding Agencies may: <ul style="list-style-type: none"> <li>• Confirm RAVCO’s existing mandate; or</li> <li>• Adjust project scope or funding to provide RAVCO with a revised mandate; or</li> <li>• Provide RAVCO with direction to terminate the Project.</li> </ul>
	Contract Signing	Anticipated February 2005	Once Preferred Proponent has been selected and Funding Agencies confirm RAVCO’s mandate to negotiate a contract, RAVCO and the Preferred Proponent will negotiate the final terms and conditions of the contract.
Construction		November 30 2009	Contract signed upon completion of negotiations and related due diligence and the construction/operations phase of the Project begins.
Start of Service		November 2009	Construction completed.
			The RAV Line commences operations.



# BAFO Evaluation Process

## BAFO Evaluation Process

An Evaluation Committee was appointed by the RAVCO Board to evaluate the final offer proposals.

The Evaluation Committee included members nominated by the Local Funding Agencies and was assisted by independent evaluators and advisors with financial, design & construction, legal and other expertise.

The evaluation of compliant proposals was undertaken in strict accordance with the evaluation criteria established in the Invitation to Submit a Best and Final Offer documents. These documents are publicly available at [www.ravrapidtransit.com](http://www.ravrapidtransit.com).

## BAFO Evaluation Criteria

- **Cost of the system;**
  - Construction cost;
  - Operating cost;
  - Ridership revenue;
  - Bus cost savings.
- **Strength of the submission and the team's ability to deliver it;**
- **Value of the transit line and the revenue it generates;**
- **Value of transportation benefits;**
- **Qualitative factors including:**
  - Quality;
  - Safety;
  - Environmental benefits;
  - Design aesthetics;
  - Connectivity and integration; and
  - Ability to accommodate airport.

\*Note: this summary is provided solely for convenience. The evaluation of proposals is being conducted in strict accordance with the criteria described in the BAFO Invitation. If there is any discrepancy between this summary and the BAFO Invitation, the Invitation prevails.

**Fairness Auditor**  
Ted Hughes, O.C., Q.C.

## Evaluation Committee

**L. I. (Larry) Bell**  
Chair, RAVCO

**Jane Bird**  
Chief Executive Officer,  
RAVCO

**Bob Cowan**  
Senior Vice-President,  
Engineering, Vancouver  
International Airport  
Authority

**John Eastman**  
Senior Vice-President,  
Technical, RAVCO

**Don Fairbairn**  
Senior Vice-President &  
CFO, RAVCO

**Jim Hancock**  
Principal, Hancock,  
Bruckner, Eng & Wright  
Architects

**John Hubbell**  
Director of Calgary Transit,  
City of Calgary

**Doug Kelsey**  
President & CEO, British  
Columbia Rapid Transit  
Company Ltd. & West  
Coast Express Ltd.

**Michael O'Connor**  
Former President & CEO,  
BC Transit; CEO, Expo Line  
& CAO, GVRD  
Director, Independent

**Sheri Plewes**  
Vice-President, Capital  
Management & Engineering,  
TransLink

**Peter Powell**  
Former Vice-Chairman,  
Senior Vice President &  
Managing Director, BMO  
Nesbitt Burns

# Summary of Proposals

## Summary of Proposals Evaluated

The proposal summaries are intended to provide a brief overview of the proposals that were submitted by the two short-listed Proponent teams (presented in alphabetical order by team name):

- RAVxpress, a team comprised of Bombardier Inc., AMEC, Bouygues Travaux Publics, SA, and Bilfinger Berger; and
- SNC-Lavalin/Serco, a team comprised of SNC-Lavalin Inc. and Serco Group Inc.

In response to the Invitation to Submit a Best and Final Offer, each Proponent team submitted a base proposal, which addressed the requirements of the Local Funding Agencies, and alternatives.

The following summaries describe key features of the base and alternate proposals evaluated by RAVCO. The evaluation of compliant proposals was undertaken in strict accordance with the criteria outlined in the BAFO Invitation.



RAV Line - Connecting Major Regional Centres

# RAVxpress Proposals



**Route / Alignment:**

- Waterfront to 49<sup>th</sup> Ave.:  
Underground
- 49<sup>th</sup> Ave. to 63<sup>rd</sup> Ave.:  
In trench (centre of street)
- 63<sup>rd</sup> Ave. to YVR:  
Elevated
- No 3 Road:  
Elevated (centre of street)

**Travel Time:**

Waterfront to YVR: 22 minutes  
 Waterfront to Richmond Centre: 21 minutes

**Type of System:**

Fully automated train system  
 Bombardier Mk II vehicles

**Train Frequency (Peak Periods):**

Waterfront to Richmond Centre: 5.3 minutes apart  
 Waterfront to Airport: 5.3 minutes apart  
 Combined Waterfront to Bridgeport: 2.7 minutes apart

**Stations:**

Richmond: 5 stations  
 Airport: 5 stations  
 Vancouver: 8 stations



**Route / Alignment:**

- Waterfront to 49<sup>th</sup> Ave.:  
Underground
- 49<sup>th</sup> Ave. to 63<sup>rd</sup> Ave.:  
In trench (east side of street)
- 63<sup>rd</sup> Ave. to YVR:  
Elevated
- == No 3 Road:  
Street Level (centre of street)

**Travel Time:**

Waterfront to YVR: 22 minutes  
 Waterfront to Richmond Centre: 24 minutes + Transfer Time

**Type of System:**

Fully automated train system between Waterfront Station and the Airport.  
 Manually driven streetcar between Bridgeport Station and Richmond Centre.  
 Passengers transfer at Bridgeport between two separate systems.

**Train Frequency (Peak Periods):**

Bridgeport to Richmond Centre: 5 minutes apart  
 Waterfront to Airport: 5.3 minutes apart  
 Combined Waterfront to Bridgeport: 2.7 minutes apart

**Stations:**

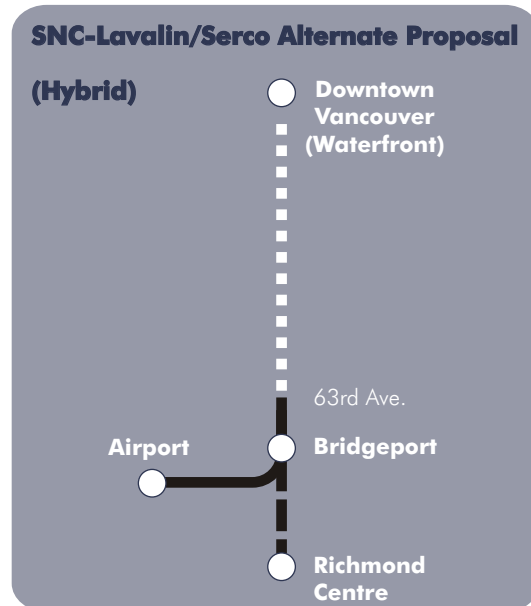
Richmond: 5 stations  
 Airport: 4 stations  
 Vancouver: 8 stations

**Traffic Impacts:**

The street car will operate at street level along No. 3 Road from Capstan Way to Richmond Centre passing through 11 signal controlled traffic intersections. Priority would be given at all intersections.

# SNC-Lavalin/Serco Proposals

## SNC-Lavalin/Serco Proposals



### \*Recommended Proposal, see page 13

#### Route / Alignment:

- Waterfront to 63<sup>th</sup> Ave.:  
Underground
- 63<sup>rd</sup> Ave. to YVR:  
Elevated
- No 3 Road:  
Elevated (east side of street)

#### Travel Time:

Waterfront to YVR: 24 minutes  
Waterfront to Richmond Centre: 24 minutes

#### Type of System:

Fully automated train system  
Light metro type vehicle

#### Train Frequency (Peak Periods):

Waterfront to Richmond Centre: 6 minutes apart  
Waterfront to Airport: 6 minutes apart  
Combined Waterfront to Bridgeport: 3 minutes apart

#### Stations:

Richmond: 5 stations  
Airport: 4 stations  
Vancouver: 8 stations

#### Route / Alignment:

- Waterfront to 63<sup>th</sup> Ave.:  
Underground
- 63<sup>rd</sup> Ave. to YVR:  
Elevated
- No 3 Road:  
Street Level (centre of street)

#### Travel Time:

Waterfront to YVR: 24 minutes  
Waterfront to Richmond Centre: 27 minutes

#### Type of System:

Dual or hybrid system  
Automated between Waterfront Station, Bridgeport Station and Airport  
Operated manually and at grade south of Capstan Way  
High floor type vehicle

#### Train Frequency (Peak Periods):

Waterfront to Richmond Centre: 6 minutes apart  
Waterfront to Airport: 6 minutes apart  
Combined Waterfront to Bridgeport: 3 minutes apart

#### Stations:

Richmond: 6 stations  
Airport: 4 stations  
Vancouver: 8 stations

#### Traffic Impacts:

The trains will operate at street level along No. 3 Road from Capstan Way to Richmond Centre. All traffic intersections will be closed to cross traffic except at Capstan Way, Cambie, Alderbridge and Westminster. Left turns at these four intersections will be banned for train priority.

## RAVCO Reports & Recommendations

### RAVCO's Mandate

This section of the BAFO Stage Report describes the reports that RAVCO and its advisors have prepared to assist the RAVCO Board and the Funding Agencies in making decisions about the Project.

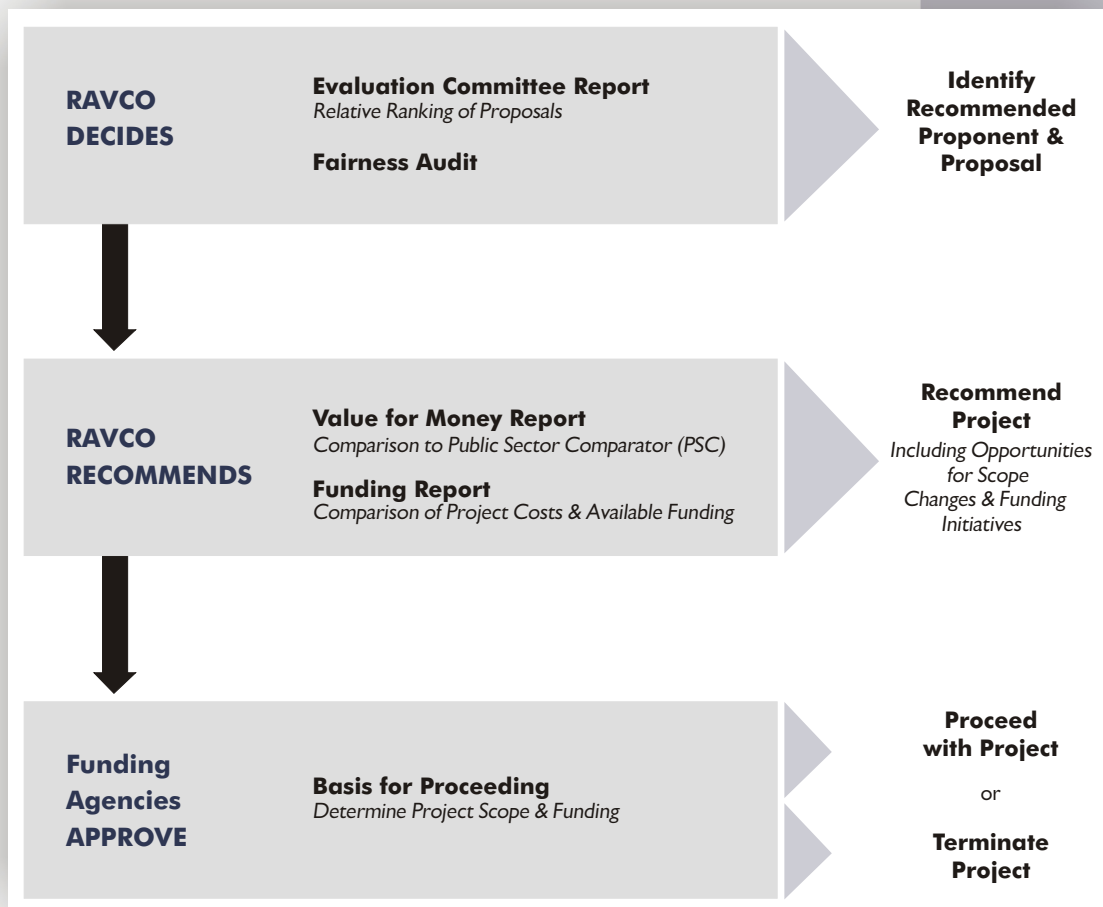
The four key Project BAFO Stage Reports are:

- Evaluation Committee Report
- Fairness Auditor's Report
- Value For Money Report
- Funding Report

The full Fairness Auditor's Report as well as the executive summaries of

the other reports are available on the Project website at: [www.ravrapidtransit.com](http://www.ravrapidtransit.com). All of the reports and supporting information are also available to Funding Agency representatives. However, public release of the reports could harm RAVCO's ability to negotiate a contract delivering the best possible value and therefore are not public till after the financial close, early 2005.

After considering these reports, the RAVCO Board has made recommendations to the Funding Agencies consistent with its current mandate.





## Fairness

RAVCO Board Resolution:  
Receive the Fairness  
Auditor's Report for  
Information

### Fairness Audit

Retired Judge and former B.C. Deputy Attorney General and Conflict of Interest Commissioner Ted Hughes, O.C., Q.C., provided Fairness Reports at the completion of the RFEI and RFP stages of the competition. The Reports of the Fairness Auditor for each stage of the competitive selection are issued publicly and posted on the Project website:

[www.ravrapidtransit.com](http://www.ravrapidtransit.com).

Mr. Hughes oversaw the evaluation of BAFO Stage Proposals and provided the first part of his Fairness Report to the RAVCO Board of Directors. Part one of his report reviewed the fairness of the Evaluation Committee's work. In preparing this Report, Mr. Hughes had complete and unrestricted access to every aspect of the evaluation process. He concluded that each submission underwent close and careful scrutiny and that the process was fair and impartial in every respect.

Part two of the Fairness report will review the fairness of the RAVCO Board's deliberations and decisions regarding the Preferred Proponent and Proposal.

# BAFO Evaluation Results

## Recommended Proponent and Proposal

The Evaluation Committee recommended that the RAVCO Board select SNC-Lavalin/Serco and its Base Proposal.

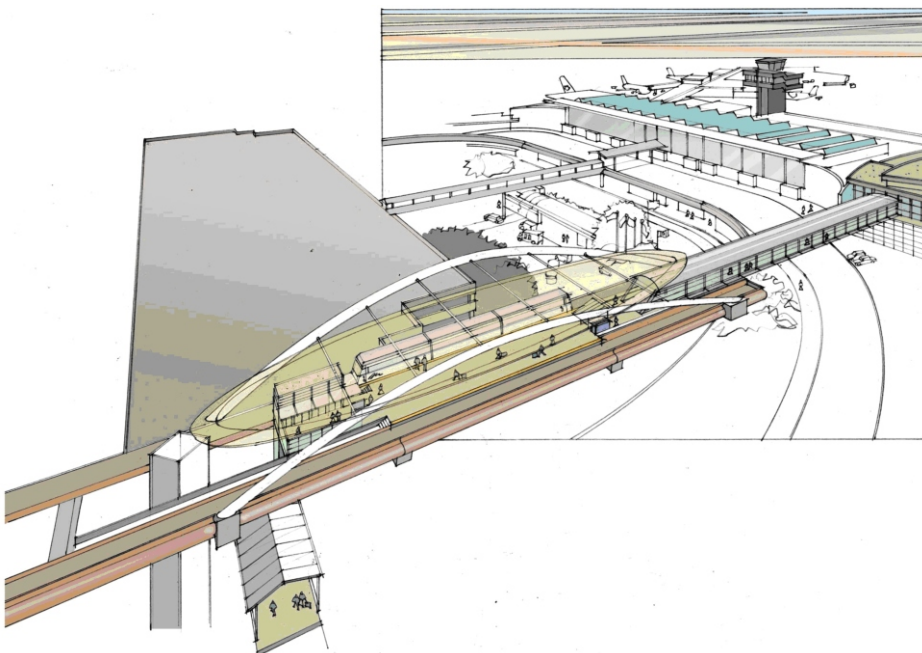
SNC-Lavalin/Serco's Base Proposal:

- Is the lowest cost Proposal;
- Contains all of the Essential Elements prescribed by the Local Funding Agencies;
- Confirms a completion date of November 2009, if there is a December 2004 decision to proceed;
- Provides an asset that does not require an operating subsidy over the life of the operating concession;
- Assumes significant risks that would otherwise be borne by the public sector, including construction cost overruns, tunneling risks, on-time delivery, and operating performance;
- Is a proposal to design, build, partially finance, operate and maintain the line which offers a lower capital and operating cost and less risk to the taxpayer than a project funded and managed solely by the public sector; and
- Generates revenues substantially in excess of operating costs before the end of the concession period.

## Evaluation

RAVCO Board Resolutions:

- A. Identifies SNC-Lavalin/Serco as the recommended proponent based on its Base Proposal.
- B. Advise the Funding Agencies and Proponents of its decision.



YVR Station Rendering

# BAFO Evaluation Results

The following factors supported the choice of SNC-Lavalin/Serco's Proposal for a fully automated, grade-separated transit system (Base) over the SNC-Lavalin/Serco's Alternate Proposal for a Hybrid System:

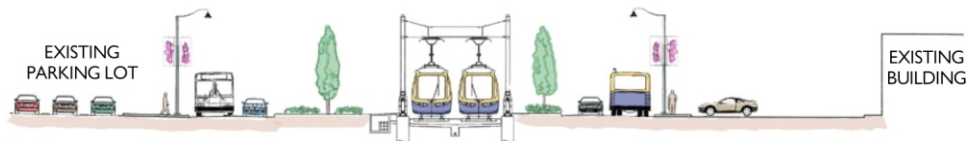
- Approximately \$90 million (net present value), lower cost when considering construction costs, operating costs and ridership revenues;
- Lower travel times and higher ridership;
- Alternate Proposal has high cost of vehicles which would have to operate in both automatic and manual modes; and
- Qualitative factors, such as the need to: reduce the number of streets crossing No. 3 Road to four; ban all left turns off No. 3 Road; and consider possible adverse long term affects of traffic restrictions on local businesses.



W Broadw



Example of elevated guideway on No. 3 Road



Example of at-grade guideway on No. 3 Road

# RAVCO Reports

## Achieving Value For Money

The Funding Agencies have sought private sector involvement in the RAV Project in order to achieve the best transit solution for the corridor at the most competitive price, to lever private sector investment, and to optimize risk transfer away from the public sector while ensuring public sector ownership and oversight over the long term.

Having evaluated the final Proposals, RAVCO has identified SNC-Lavalin/Serco and its Base Proposal for a fully automated, grade-separated transit system between Richmond, the Airport and Vancouver as offering the greatest overall advantage at the lowest cost, and has recommended this Proponent and Proposal.

This competitive selection process has

included a value for money analysis comparing the estimated cost or range of costs of a conventionally procured and implemented project (a Public Sector Comparator) to the cost or range of costs of the recommended Proposal.

The Value For Money Report found that SNC-Lavalin/Serco's Proposal offers value for money in that it:

- Costs less than the Public Sector Comparator;
- Offers lower construction costs, similar operation and maintenance costs, enhanced level of service, and significantly higher projected ridership and revenue;
- Assumes significant risks otherwise borne by the public sector (eg: tunneling risks, construction cost overruns, on-time delivery and operating performance).

## Value For Money

### RAVCO Board Resolution:

Advise the Funding Agencies that on the basis of the Value for Money report, the approach to funding and managing the RAV Project, involving both the public and the private sectors achieves a high capacity rapid transit system at a lower capital and operating cost and with less risk to the taxpayer than a project funded and managed solely by the public sector.

### Allocation of Risks Between Public and Private Sectors

Risk	PSC	SNC Proposal
Land acquisition cost and schedule	RAVCO	RAVCO
Municipal and regulatory permitting	RAVCO	Shared
Cost of design build packages	RAVCO	SNC
Cost of construction	Contractors	SNC
Construction inflation (labour, steel, etc)	RAVCO	SNC
Construction delay	RAVCO	SNC
Utility relocation cost	RAVCO	RAVCO
Utility relocation delay	RAVCO	SNC
Changed ground condition (tunnels)	RAVCO	SNC
Changed ground condition (other assets)	Contractors	SNC
Design integration	RAVCO	SNC
Integration between civil works and systems	RAVCO	SNC
Operating performance	RAVCO	SNC
Operating costs	RAVCO	SNC
Maintenance costs	RAVCO	SNC
Useful life of trains and other systems	RAVCO	SNC
Condition of civil assets	GVTA	SNC
Ridership revenues	GVTA	~90 % GVTA

## Completing the BAFO Stage

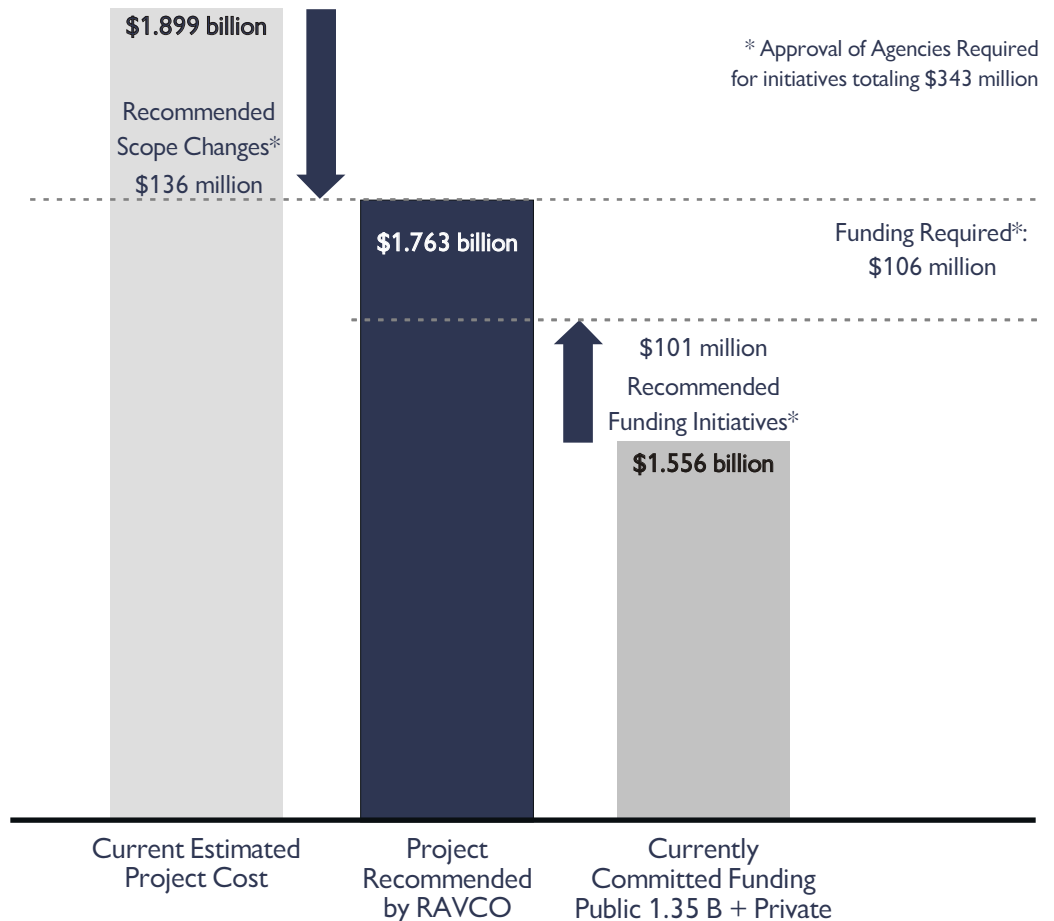
The Funding Report examined the estimated Project costs, currently committed funding, and the funding required to complete the Project. The report also identified opportunities to reduce costs or increase funding and reviewed Project risks.

The Funding Agencies and the private sector have committed over \$1.55B (\$2003) (\$1.35B from governments and the Airport, plus

\$200m from the private sector). The SNC-Lavalin/Serco Proposal is the lowest cost proposal, with costs lower than the PSC.

The TransLink Board's June 30, 2004 resolution authorizing RAVCO to proceed to the BAFO Stage asked the RAVCO Board to report back to the TransLink Board, including suggested scope changes and efficiencies to reduce Project costs, if costs exceeded available funding.

## Project Costs & Funding (\$2003)





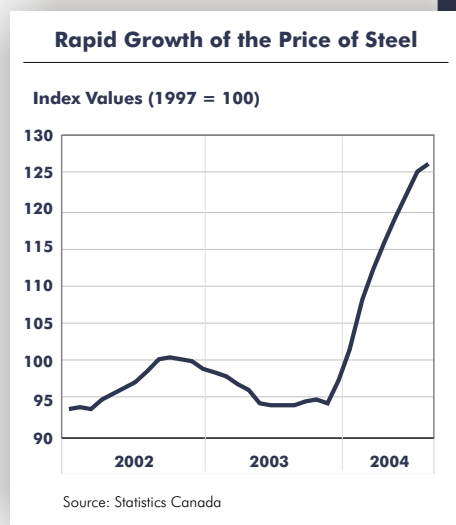
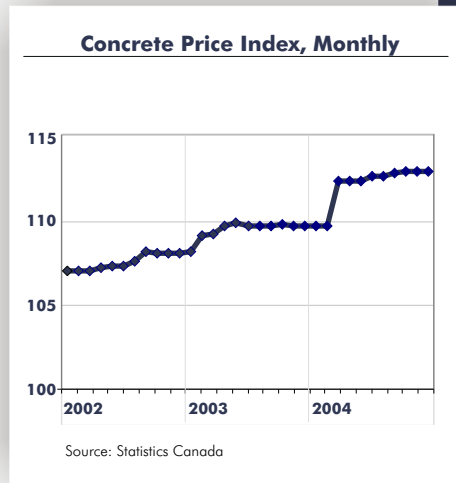
# RAVCO Reports

The cost of building the RAV Line compares favorably with the cost of building the Expo and Millennium rapid transit lines, particularly considering the RAV Line crosses three waterways, provides a new maintenance facility and half of the line is in tunnel.

With the scope changes recommended by staff from RAVCO and the Local Funding Agencies, the line can be built for \$1.76 billion. The RAVCO Board has recommended that the difference between this cost and the currently committed funding be addressed through a combination of initiatives.

These scope changes and additional funding initiatives are required, primarily as a result of:

- Increases in construction costs for materials such as steel, concrete, oil, and labour since the RFP Stage (January 2004);
- Changes to the scope of the Project since the RFP Stage; for example changes in the bridge over the Fraser River North Arm to accommodate navigation requirements;
- Increased property costs as a consequence of the alignment and station locations, responding in part to design guidelines from the Cities.



## Completing the BAFO Stage

### RAVCO Board Resolutions:

#### A. Recommends proceeding given:

- i. The RAV Line is important to the region & a critical part of an expanded rapid transit network;
- ii. The line is an opportunity to add significant capacity to one of the region's busiest corridors in a sustainable way;
- iii. Given its strong ridership, the line offers significant revenue generating potential;
- iv. The scope changes & funding initiatives jointly recommended by RAVCO, TransLink, the Airport & Provincial staff are reasonable & offer an opportunity to reduce the requirement for additional funding by two thirds, such that the remaining required funding could be addressed;
- v. The proposed scope changes & additional funding will allow the Project to proceed at \$1.76B; and
- vi. The cost of delaying & restarting the Project in 5 or more years would be significant.

#### B. Recommends to TransLink, the Airport & the Province that:

- i. TransLink, the Airport & the Province make a decision on the Project by early December 2004 in order to preserve the option of completing the Project by November 2009;
- ii. TransLink, the Airport & the Province approve the changes to Project scope & funding initiatives jointly recommended by RAVCO & staff of TransLink, the Airport & the Province, which would reduce the required additional funding by two-thirds; and
- iii. To address the remaining required funding:
  - I. RAVCO enter into pre-selection discussions with SNC-Lavalin/Serco; and
  - II. TransLink, as the owner of the asset, propose to the Province a joint solution & proceed with the Project.

RAVCO and staff of the Local Funding Agencies, with input from Vancouver and Richmond, jointly investigated all opportunities for reasonable changes to the scope of the Project and additional funding initiatives. Of these opportunities, staffs have jointly recommended certain changes to Project scope, development opportunities, and other funding initiatives, which together address more than two thirds of the required additional funding.

These opportunities have been jointly recommended as opportunities which:

- reduce Project costs;
- comply with Agency Essential Elements; and
- comply with Local Funding Agency policies.

After carefully considering the economic, social, and environmental value of the transit system, and the unprecedented collaboration between the Funding Agencies to advance the Project to this stage, the RAVCO Board recommended the Local Funding Agencies find the remaining required funding of \$106 million through a variety of initiatives, including discussions with SNC-Lavalin/Serco.

## Frequently Asked Questions

### 1. Who decides which Proponent/Proposal is selected?

The Evaluation Committee appointed by RAVCO recommended the SNC-Lavalin/Serco fully-automated, grade-separated proposal to the RAVCO Board. The RAVCO Board decided which Proponent/Proposal offers best value and communicated the decision to the Funding Agencies. The Local Funding Agencies will decide whether they wish to proceed with recommended scope changes and funding initiatives, or terminate the project.

### 2. Why are decisions required by early December 2004?

The Funding Agencies agree that the line must be built by November 2009 so construction activities don't disrupt the 2010 Olympics/Paralympics. Construction must begin no later than August 2005 in order to be complete by November 2009. The decision process so far has taken longer than anticipated, significantly impacting the Project schedule. We are seeking a fixed-price, date certain contract, so the longer we wait, the more costly the contract.

### 3. How much will the line cost?

With the scope changes recommended by staff from RAVCO and the Local Funding Agencies, the line can be built for \$1.76 billion. The RAVCO Board

has recommended that the difference between this cost and the currently committed funding be addressed through a combination of funding initiatives and discussions with SNC-Lavalin/Serco.

### 4. Why did Project costs increase between the RFP and BAFO Stages?

Projects around the world are experiencing steeply rising costs for steel, concrete, oil and labour. More specifically, there were changes such as adjustments to the bridge span over the Fraser River North Arm to accommodate navigation requirements. Property costs also increased as a consequence of the alignment and station locations, partly in response to design guidelines from the Cities.

### 5. Why is RAVCO recommending scope changes and additional funding initiatives?

The RAVCO Board carefully considered the costs and benefits of the transit line. The Board concluded that the line responds to one of the significant challenges facing the region; how to increase our transportation capacity in one of the busiest corridors in an efficient and sustainable way. The Board concluded that the Funding Agencies were so close to achieving their objectives that every reasonable opportunity to build the line should be considered.



# Frequently Asked Questions

## 6. Why not pull the tunnel back from 63rd Avenue to 49th Avenue and reduce the overall project costs?

SNC-Lavalin/Serco investigated the option of constructing the transit system in trench along the centre of Cambie Street from 63rd Avenue to 49th Avenue. The tracks would have to be in a deep trench to pass beneath the crossroads. In addition, there is a large watermain and high voltage cables running beneath the median. These would have to be relocated at considerable expense.

SNC-Lavalin/Serco developed an innovative method for constructing the tunnel north of 49th Avenue. They explored the option of extending this method of construction from 49th Avenue to 63rd Avenue and placing the tunnel beneath the north bound lanes of Cambie Street in order to avoid the large utilities.

SNC-Lavalin/Serco concluded that the tunnel was cheaper than constructing the guideway in trench along the centre of Cambie Street and relocating all the utilities.

## 7. Why didn't RAVCO choose an at-grade option in Richmond?

The lowest cost, best-value system is the SNC-Lavalin/Serco fully-automated, grade-separated system. Proposals for at-grade systems were more expensive, less safe and would disrupt traffic flow along No. 3 Road from Capstan Way to Richmond Centre, where all traffic intersections would be closed to cross traffic except at four intersections where left turns would have had to be banned for train priority.

The public, including Richmond residents, strongly support the RAV Line and the majority indicate a preference for systems that deliver reliable service with shorter travel times. The City of Richmond's 2004 public consultation report shows that of those who live and work in Richmond, 53% support an elevated system while 39% support an at-grade system.

