



Ministry of  
Transportation  
and Infrastructure



transportation  
investment  
corporation



# Service Delivery Option Analysis

## Surrey Langley SkyTrain Project

October 2021

## TABLE OF CONTENTS

1	Service Delivery Options Analysis and Project Scope .....	3
1.1	Guiding Principles and Project Objectives .....	3
1.2	Service Delivery Options Analysis .....	4
1.2.1	Background of Service Delivery Options Analysis .....	4
1.2.2	Service Delivery Options Analysis .....	6
1.3	Qualitative Analysis .....	9
1.3.1	Multiple Criteria Analysis (MCA) Results .....	9
1.4	Risk Assessment .....	11
1.5	Project Cost Estimates .....	13
1.6	Recommended Service Delivery Option .....	15
1.7	Concept Plan Approval .....	16
1.8	Review and Approvals .....	16

## LIST OF TABLES

Table 1	Project Objectives and Criteria .....	3
Table 2	Final MCA Alternatives .....	5
Table 3	Schedule Comparison of Options .....	9
Table 4	MCA Assessment Scoring Methodology .....	9
Table 5	MCA Summary Table .....	9
Table 6	Qualitative Risk Assessment .....	12
Table 7	Cost Estimate Comparison .....	13
Table 8	Estimated costs associated with Project .....	13

## LIST OF FIGURES

Figure 1	Consolidated Approach High Level Schedule .....	7
Figure 2	Phased Approach High Level Schedule .....	8

## 1 SERVICE DELIVERY OPTIONS ANALYSIS AND PROJECT SCOPE

### 1.1 GUIDING PRINCIPLES AND PROJECT OBJECTIVES

The following objectives and assessment criteria have been established for the Project. The Project Team looked at the project objectives developed by TransLink as well as the objectives detailed in the City of Surrey SPA. The Project Team added to the objectives developed by TransLink in recognition of evolving government policies such as active transportation, community benefits and affordable housing.

Table 1 Project Objectives and Criteria

Theme	Project Objective	Criteria
<b>Customer Service/User Experience</b>	<b>Provide users with a positive experience</b>	A service that is fast, frequent, reliable, comfortable, and safe, with a superior user experience
<b>Transportation</b>	<b>Facilitate increased share of sustainable modes of transport</b>	A service that attracts new transit riders, has the capacity to meet future transportation needs, increases sustainable mode share, and increases access to various opportunities such as employment and post-secondary education
	<b>Support active transportation</b>	A service that supports safe, convenient multi-modal travel options for pedestrians and cyclists and connects to existing community active transportation networks
<b>Urban Development and Housing</b>	<b>Support increased density in the adjacent communities</b>	A service that encourages mixed-use and higher density development, promotes an increase in a wider range of housing options including rental housing, and supports high-quality urban design around the Project stations
	<b>Support affordable housing</b>	A service that attracts net new affordable housing options adjacent to transit, that also supports new transit riders
<b>Social, Community and Environment</b>	<b>Support a healthy environment</b>	A service that supports healthy and accessible communities and contributes to a healthy environment by

		reducing vehicle kilometers travelled
<b>Economic Development</b>	<b>Enhance regional goods movement, commerce and job opportunities</b>	A service that advances local and regional prosperity through job creation and enhances goods movement efficiency and reliability during operation
	<b>Deliver community benefits</b>	Support Indigenous and other Equity Groups by providing access to work and facilitating training and employment opportunities on select major infrastructure projects that ensures individuals, communities and businesses have full and fair opportunity to participate in the benefits of a project.
<b>Financial</b>	<b>Provide a service that is good value for money</b>	A service that provides good value for public money and is cost-effective
<b>Deliverability and Acceptability</b>	<b>Provide infrastructure that meets the needs of the community</b>	A service that is constructible, operable, and publicly acceptable

## 1.2 SERVICE DELIVERY OPTIONS ANALYSIS

### 1.2.1 Background of Service Delivery Options Analysis

Between 2009 and 2010 over 1000 combinations of technologies and routes were identified by TransLink. These options underwent a screening process using a Multiple Criteria Analysis (MCA) framework to highlight trade-offs and to assess which options best met the identified multiple accounts.

The first phase concluded by recommending a shortlist of 12 network alternatives for more detailed analysis against a BAU alternative. The BAU alternative assumed that the South of Fraser Sub Region would continue to be served by buses, in accordance with TransLink's *South of Fraser Area Transit Plan*, with service increases consistent with past trends and forecast population and employment growth, but without rapid transit investment.

As part of the evaluation process, an MCA methodology was applied using a series of accounts to evaluate costs, benefits, and impacts of each alternative. Application of the MCA resulted in further evaluation of 13 alternatives (12 shortlisted network alternatives plus the BAU alternative). Based on the results of the additional analysis, TransLink and its advisors identified four of the alternatives for consideration within a regional investment planning process, see Table 3.

Table 2- Final MCA Alternatives

<b>Alternative 1 (BRT1)</b>	BRT on Fraser Highway, and BRT on King George Boulevard and on 104 Avenue
<b>Alternative 2 (LRT5A)</b>	LRT on Fraser Highway, BRT King George Boulevard, and BRT on 104 Avenue
<b>Alternative 3 (LRT1)</b>	LRT on Fraser Highway, LRT on King George Boulevard south to Newton with BRT continuing to White Rock, and LRT on 104 Avenue
<b>Alternative 4 (RRT1A)</b>	RRT on Fraser Highway, and BRT on King George Boulevard and on 104 Avenue

TransLink and its municipal and provincial partners concluded that all four alternatives would be advanced for further consideration as part of TransLink’s Regional Transportation Strategy – the strategic framework setting the vision, goals, principles, strategies and key initiatives for transportation investment in the Metro Vancouver over the next 30 years.

TransLink developed the RTS strategic framework and in 2014 the Province requested that the Mayors’ Council confirm its transportation vision, including clarification around technology and timing for the major projects recommended within the RTS. In response, the Mayors’ Council formed a subcommittee with support from TransLink, Metro Vancouver, and staff from municipalities throughout the region to define this vision. This resulted in the *Regional Transportation Investments: A Vision for Metro Vancouver* (the Mayors’ Council Vision). In developing the Mayors’ Council Vision, the subcommittee considered the four alternatives that were put forward.

The Mayors’ Council considered the trade-offs based in part on the City of Surrey’s publicly-expressed preference, and selected LRT on all three corridors in Surrey (Alternative 3 – LRT1) for the 10-Year Vision (with a B-Line instead of BRT connecting Newton to White Rock). Implementation would be undertaken using a phased approach with the first phase of construction of LRT along the Surrey Newton-Guildford corridor, followed by LRT connecting Surrey City Centre to Langley City Centre along Fraser Highway. The BRT component to White Rock was redefined as a separate initiative to be analyzed independent of this network.

In December 2018, following a request from a newly-elected Surrey City Council, the Mayors' Council endorsed a TransLink recommendation to suspend the Surrey LRT Project, pausing all work and spending on it and instead proceed immediately with planning and project development for the Project along Fraser Highway.

As part of the TransLink Stage 1 Business Case, an MCA was developed to compare the recommended SkyTrain option (along Fraser Highway between King George Station to 203 Street in Langley City Centre) with two other options:



- Business as Usual (BAU) option - defined as the Fraser Highway RapidBus service, which is a continuation of the current Route 503 service; and
- Light Rail Transit (LRT) option – previously endorsed and analyzed rapid transit technology as directed by the Mayors' Council in 2014.

The SkyTrain was recommended as the preferred option for the Fraser Highway Corridor.

The Ministry and the Ministry of Environment and Climate Change Strategy (ENV) went to the Planning and Priorities Committee (PPC) in February 2021 to seek direction on the approach for the Project. PPC directed the Ministries to assume the Province will own and deliver the line from Surrey to Langley City Centre. Given this direction from PPC, and the significant work that has already been completed by TransLink to review all the potential options, only SkyTrain options, as well as a BAU option have been considered.

## 1.2.2 Service Delivery Options Analysis

Service delivery options are as follows:

- **Business as Usual:** Fraser Highway RapidBus service, which is a continuation of the current Route 503 service;
- **Option 1: Consolidated Approach-** Construct the Project in one phase using SkyTrain technology with an advance works package to mitigate risk.
- **Option 2: Phased Approach-** Construct the Project in two phases using SkyTrain technology: Stage 1 from King George to Fleetwood and Stage 2 from Fleetwood to Langley with an advance works package to mitigate risk; and

Refer to section 2.1 for a detailed explanation of the scope of the Project. If the Project were to be delivered in two stages, Stage 1 would involve all activities up to Fleetwood.

### 1.2.2.1 Business as Usual

Annual boardings for bus routes on the Corridor were roughly 4,000,000 in 2018 and are projected to continue to increase. The demand for transit along the Corridor far exceeds capacity. Local riders who wish to access points in-between Surrey Central and Langley Centre are frequently being passed up by buses full of commuter-oriented riders wishing to connect to the SkyTrain at Surrey Central. In September 2019, Route 503 had 33,800 annual service hours added to address the increasing demand for transit in the Corridor. The BAU option does not have the capacity to meet future transportation needs. SkyTrain has roughly twelve times the capacity during AM and PM peak periods, and six times the capacity during Mid-Peak.

### 1.2.2.2 Consolidated Approach

The consolidated approach would involve the following steps and estimated timelines:

- Development of the Reference Concept Design for the Project;
- Advance works program;
- Development of a consolidated Business Case;
- Securing funding of the Project;
- Procurement;
- Implementation of affordable housing and integrated development initiatives; and
- Construction of the Project with estimated completion in Q3 2028.

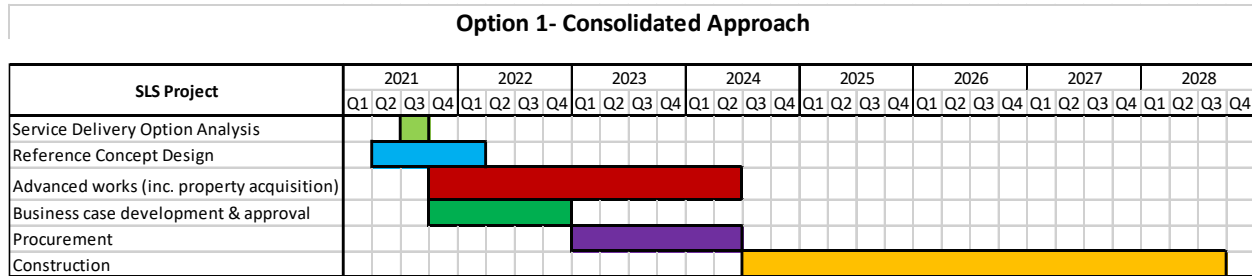


Figure 1: Consolidated Approach High Level Schedule

### 1.2.2.3 Phased Approach

The phased approach would involve the following steps and estimated timelines:

- Advance works program;
- Finalizing the Stage 1 Business Case. The Business Case has been developed by TransLink but would require amendments if the Project is to be delivered by the Province;
- Procurement of a contractor or multiple contractors for Stage 1 would begin in Q2 2022;
- Implementation of affordable housing and integrated development initiatives;
- Stage 1 construction (King George to Fleetwood) with estimated completion by the end of 2027;
- The Reference Concept Design for Stage 2 would be undertaken during the procurement of Stage 1;
- Business Case development for Stage 2 would start once the design and construction of Stage 1 was underway;
- Procurement for Stage 2 would begin in Q2 2025; and
- Construction of Stage 2 would be complete by the end of 2030.

The high-level schedule for the phased approach is shown in Figure 5.

**Option 2- Phased Approach**

SLS Project- Stage One	2021				2022				2023				2024				2025				2026				2027							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Service Delivery Option Analysis																																
Advanced works (inc. property acquisition)																																
Business case development & approval																																
Procurement																																
Construction																																

SLS Project- Stage Two	2021				2022				2023				2024				2025				2026				2027				2028				2029				2030			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Reference Concept Design																																								
Advanced works (inc. property acquisition)																																								
Business case development & approval																																								
Procurement																																								
Construction																																								

Figure 2: Phased Approach High Level Schedule



Table 3: Schedule Comparison of Options

Milestones	Consolidated Approach	Phased Approach (Stage 1)	Phased Approach (Stage 2)
<b>Business Case Approval</b>	Q4 2022	Q1 2022	Q1 2025
<b>Advance Works Completion</b>	Q2 2024	Q3 2023	Q3 2026
<b>Procurement Start</b>	Q1 2023	Q2 2022	Q2 2025
<b>Construction Start</b>	Q3 2024	Q4 2023	Q4 2026
<b>In-service date</b>	Q3 2028	Q4 2027*	Q4 2030

\*To Fleetwood only

Table 4 shows that the entire alignment, from Surrey to Langley, would be delivered approximately two years earlier if the consolidated approach were to be taken.

### 1.3 QUALITATIVE ANALYSIS

#### 1.3.1 Multiple Criteria Analysis (MCA) Results

An MCA has been completed to analyse the two SkyTrain options, as well as the Business as Usual option. The MCA process provides a framework for evaluating qualitative factors and presenting the advantages and disadvantages of each option in a form that can be easily assimilated by decisions makers.

The MCA utilizes qualitative assessment criteria, requiring judgment to be made on the magnitude of the relative benefits or impacts of each option of a particular assessment criterion. The scoring methodology is shown in Table 5.

Table 4: MCA Assessment Scoring Methodology

X	✓	✓✓	✓✓✓
Option fails to meet basic service or program requirements.	Option minimally meets the service or program requirements.	Option adequately meets the service or program requirements.	Option strongly meets the service or program requirements.

The results of the MCA assessment of the three service delivery options are summarized in Table 6.

Table 5: MCA Summary Table

Criteria	Business as Usual	Option 1: Consolidated Approach	Option 2: Phased Approach <sup>1</sup>
A service that is fast, frequent, reliable, comfortable, and safe, with a superior user experience	X	✓✓✓	✓✓✓

<sup>1</sup> The scores for option 1 and option 2 are the same for a number of the criteria. However, it should be noted that the benefits associated with option 2 will not be realized until two years after option 1.

A service that attracts new transit riders, has the capacity to meet future transportation needs, increases sustainable mode share, and increases access to various opportunities such as employment and post-secondary education	x	✓✓✓	✓✓✓
A service that supports safe, convenient multi-modal travel options for pedestrians and cyclists and connects to existing community active transportation networks	x	✓✓✓	✓✓✓
A service that encourages mixed-use and higher density development, promotes an increase in a wider range of housing options including rental housing, and supports high-quality urban design around the Project stations	x	✓✓✓	✓✓✓
<b>Support affordable housing</b>			
A service that attracts net new affordable housing options adjacent to transit, that also supports new transit riders	x	✓✓✓	✓✓✓
A service that supports healthy and accessible communities and contributes to a healthy environment by reducing vehicle kilometers travelled	✓	✓✓✓	✓✓✓
A service that advances local and regional prosperity through job creation and enhances goods movement efficiency and reliability during operation	x	✓✓✓	✓✓✓
During construction provide opportunities for the development of a skilled workforce, including apprentice and training opportunities and inclusion of Indigenous and other equity seeking groups.	x	✓✓✓	✓✓✓
A service that provides good value for public money and is cost-effective	x	✓✓✓	✓
A service that is constructible, operable, and publicly acceptable	x	✓✓✓	✓✓

Results of the MCA indicate that the Business as Usual option does not meet the project objectives or the future transportation needs of the three municipalities, and the options 1 and 2 would be more effective delivery options.

Advantages of the Business as Usual option include the lack of disruption to the public including property acquisitions, noise, and traffic, as well as less environmental disruption. This option also means that no funding is required. However, this option is ineffective in adequately meeting any of the Project objectives.

The phased approach and consolidated project approach have similar rankings because they both use the SkyTrain technology. Overall, the consolidated project scores higher against the project objectives because the objectives will be met in a shorter timeframe for the entire alignment from Surrey to Langley. The consolidated approach also provides better value for public money spent on infrastructure, with the project benefits delivered more effectively.

## 1.4 RISK ASSESSMENT

A qualitative risk assessment has been carried out for the Project, assuming provincial delivery based on the current project implementation schedule for both the consolidated and phased approach.

A risk workshop was held in May 2021 to identify the key risks that either differentiate between the options, or are significant risks associated with one of more options. Participants in the risk workshop included individuals from TIC Executive, Infrastructure BC, and the Owner's Engineer team. The outcomes of the risk workshop and associated analysis allowed for a qualitative understanding of the risk profiles for the options. Risk analysis will continue to be conducted in the Business Case phase.

Risks were identified, categorized and analyzed for the Business as Usual and options 1 and 2. The risk assessment was carried out using a risk matrix with different ratings for probability (likelihood of occurrence) and consequence of the risk in terms of project cost and schedule implication, reputation, safety, quality and environmental. The risk matrix determines the four levels of project risks: low, medium, high and extreme.

Table 7 shows the key risks for the options.

Table 6: Qualitative Risk Assessment

Risk	Risk Description	Business as Usual	Option 1: Consolidated Approach	Option 2: Phased Approach
<b>Congestion on Fraser Highway</b>	Congestion on the Fraser Highway results in levels of service that are unacceptable	High	Low	Medium
<b>Scope Changes</b>	Changes to scope are initiated by the Owner after contract award resulting in cost and/or schedule impact.	N/A	Medium	High
<b>Market Capacity and Bidder interest</b>	Lack of bidder interest due to competitive environment or risk profile of the works.	N/A	Medium	Medium
<b>Construction Delay</b>	Total project completion is not achieved within the prescribed timeframe.	N/A	Medium	High
<b>Integration Risk</b>	Risks associated with systems integration of transit project.	N/A	Medium	High
<b>Public Support</b>	Loss of public support for the Project	Extreme	Low	High

In summary, the consolidated approach is the lowest risk and would deliver the Project two years quicker than the phased approach. The consolidated approach is the option most supported by the public and will result in reduced congestion on the Fraser Highway in the shortest timeframe. The integration risk associated with the phased approach is higher than the consolidated approach as well as the risk of construction delays and scope changes. The risk of a lack of a bidder interest is seen to be the same for both the consolidated and phased approaches.

A high-level quantification risk assessment was adopted for determining the risk contingencies for the project budget and it was assessed that risk contingencies for the consolidated approach are comparatively less than the contingencies for a phased approach. A more systematic risk quantification (using Monte Carlo simulation) will be carried out during the Business Case development.



## 1.5 PROJECT COST ESTIMATES

The project cost estimates have been prepared based on the project scope, as defined in the Reference Concept Design drawings, corresponding quantities and schedule. Labour, materials, equipment costs, and productivity have been considered in a detailed project analysis and there has been an adjustment of historic unit rates to accurately reflect the Project specific constraints and current market forces including resource availability and market interest. Some estimates are based upon an opinion of cost that creates a preliminary estimate with assumptions and allowances covering work that cannot be quantified. This will need to be reviewed as the Project becomes more clearly defined and will be adjusted as necessary to reflect any changes in scope and levels of pricing.

Table 8 compares the current, high-level cost estimates which are Class 4 (-30% to +50%), as per the Ministry Project Cost Estimates Guidelines. For the cost estimates the Project Team made the following high-level assumptions for both options:

- Design-Build (DB) procurement with one DB contract for the consolidated approach and two DB contracts for the phased approach;
- A competitive tender process with three motivated proponents;
- TI Corp will deliver the Project; and
- Project will achieve community benefits.

Table 7: Cost Estimate Comparison

	Option 1: Consolidated Approach	Option 2: Phased Approach
Construction costs	████	████
Other implementation costs (includes Project planning and development costs)	████	████
Properties	████	████
Contingencies	████	████
<b>Estimated Total Project Cost</b>	<b>\$3.95B</b>	<b>\$4.5B</b>

The consolidated approach is \$550 million or 14% less expensive than the phased approach.





Table 9 outlines all potential costs associated with the Project.

Table 8: Estimated costs associated with Project

Scope	Estimated Cost	Detailed Scope
<u>Core project costs</u>		
<b>Option 1 (Recommended): Consolidated Approach</b>	\$3.95 billion	- Construction of a 16 km elevated guideway with eight new stations for a seamless SkyTrain; extension of the Expo Line;

		<ul style="list-style-type: none"> <li>- Roadwork including widening and modifications to accommodate the Project;</li> <li>- Right of way design to accommodate safe, user-friendly, and accessible facilities for pedestrians and cyclists;</li> <li>- Utility relocation and protection;</li> <li>- Purchase of 30 SkyTrain vehicles;</li> <li>- Construction funding for a storage and maintenance centre (OMC5) for SLS vehicles (apportioned based on 55/155 cars);</li> <li>- Construction of three new transit exchanges and provision for parking;</li> <li>- Power supply including power distribution and propulsion power sub-stations;</li> <li>- Trackwork and all other integrated systems, including automated train control, communication, and power supply systems;</li> <li>- Environmental Screening Review; and</li> <li>- Property acquisition to accommodate the expanded right of way</li> </ul>
<p><b>Option 2: Phased Approach</b></p>	<p>\$4.5 billion</p>	<ul style="list-style-type: none"> <li>- Construction of a 16 km elevated guideway with eight new stations for a seamless SkyTrain; extension of the Expo Line;</li> <li>- Roadwork including widening and modifications to accommodate the Project;</li> <li>- Right of way design to accommodate safe, user-friendly, and accessible facilities for pedestrians and cyclists;</li> <li>- Utility relocation and protection;</li> <li>- Purchase of 30 SkyTrain vehicles;</li> <li>- Construction funding for a storage and maintenance centre (OMC5) for SLS vehicles (apportioned based on 55/155 cars);</li> <li>- Construction of three new transit exchanges and provision for parking;</li> <li>- Power supply including power distribution and propulsion power sub-stations;</li> <li>- Trackwork and all other integrated systems, including automated train control, communication, and power supply systems;</li> <li>- Environmental Screening Review; and</li> <li>- Property acquisition to accommodate the expanded right of way</li> </ul>



<b>Storage and Maintenance Centre (OMC5) – TransLink’s portion</b>		<ul style="list-style-type: none"> <li>- TransLink’s portion of the funding required to build the OMC5 (apportioned based on 100 of 155 cars) to account for future storage and maintenance over and above the SLS cars.</li> <li>- Note: Ownership and delivery of the OMC5 is still to be determined.</li> </ul>
<u>Additional costs beyond the core project</u>		
<b>Active Transportation Initiative</b>		<ul style="list-style-type: none"> <li>- Development of a supplementary active transportation initiative along the corridor</li> </ul>
<b>Strategic Land Acquisition Initiative</b>		<ul style="list-style-type: none"> <li>- Land acquisitions, legal &amp; due diligence (with  contingency);</li> <li>- Planning and schematic design (consultant);</li> <li>- Business Case development;</li> <li>- Consideration for future proofing station design for Transit Oriented Communities (TOCs); and</li> <li>- SLS integrated development staffing.</li> </ul>

Consideration has been given to ways to manage the risk of cost escalations. In general, the stations are the area of scope where there is the most flexibility to make scope changes. If costs need to be reduced, a station could be eliminated or alternative funding methods, such as private sector funding could be used. The Project Team will conduct a value engineering exercise as part of the Business Case to assess the need for all eight stations on the alignment.

## 1.6 RECOMMENDED SERVICE DELIVERY OPTION

The Project Team recommends option 1, the consolidated approach, be advanced to the detailed Business Case stage as the preferred option.

The current scope of the consolidated approach includes:

- Construction of a 16 km elevated guideway with eight new stations for a seamless SkyTrain; extension of the Expo Line;
- Roadwork including widening and modifications to accommodate the Project;
- Right of way design to accommodate safe, user-friendly, and accessible facilities for pedestrians and cyclists;
- Utility relocation and protection;
- Purchase of 30 SkyTrain vehicles;
- Funding for the Project’s share of the construction of a storage and maintenance centre for vehicles;
- Construction of three new transit exchanges and provision for parking;
- Power supply including power distribution and propulsion power sub-stations;
- Trackwork and all other integrated systems, including automated train control, communication, and power supply systems;
- Environmental Screening Review; and
- Property acquisition to accommodate the expanded right of way.

- Property acquisition to accommodate the expanded right of way.

The Project Team is currently completing and optimizing the Reference Concept Design. This may result in changes to elements of the project scope. Any revisions will be detailed in the Business Case.

Delivering the Project using the consolidated approach has the following benefits to the Province:

- SkyTrain to Langley would be delivered approximately two years sooner than if the phased approach were used; and
- It will cost \$550 million, or 14% less to deliver the Project using the consolidated approach (\$3.95 billion compared to \$4.5 billion for the phased approach).

Based on the qualitative risk assessment and high-level risk quantification, the risk to the Province is lower than the phased approach.

The Business Case will also advance the analysis of the additional cost items, including:

- A partnership with TransLink and the local governments on enhanced active transportation links;
- An agreement with TransLink on how the broader OMC will be delivered; and
- The finalized strategic land acquisition and development strategy.

## 1.7 SERVICE DELIVERY OPTION ANALYSIS APPROVAL

This Service Delivery Option Analysis demonstrates the need for the Project to address transportation challenges along the Surrey Langley corridor. The Project will provide significant user benefits and support transportation options and economic development potential in the region.

This Service Delivery Option Analysis recommends the consolidated approach at an estimated total cost of \$3.95 billion.

## 1.8 REVIEW AND APPROVALS

The Project Team confirms that the recommendations of this Service Delivery Option Analysis have been reviewed and endorsed by:

- TI Corp;
- Infrastructure BC;
- MOTI; and
- Project Board.