

TO: Mayors' Council on Regional Transportation

FROM: Sany Zein, VP, Infrastructure Management & Engineering
Jeff Busby, Director, Surrey Langley SkyTrain Project Development

DATE: July 18, 2019

SUBJECT: **ITEM 3.1 – Update on the Surrey Langley SkyTrain Project**

RECOMMENDATIONS:

That the Mayors' Council on Regional Transportation receive this report for information.

PURPOSE:

This report provides a mid-year update to the Mayors' Council on the proposed Surrey Langley SkyTrain project.

BACKGROUND:

On December 13, 2018 the Mayors' Council endorsed a workplan for TransLink to proceed with planning and project development for a SkyTrain on Fraser Highway, and, concurrently, initiate a planning process to refresh the South of Fraser rapid transit strategy, consistent with the 10-Year Vision of building 27-kilometres of rapid transit on three corridors. The workplan included a mid-year update to the TransLink Board and Mayors' Council.

PROJECT CONTEXT:

The area south of the Fraser is one of the fastest growing areas in the region. The population of Surrey, Langley City and Langley Township is projected to increase by another 280,000 people by the year 2035, and a further 200,000 people by 2050. The Mayors' Council's 10-year Vision for Regional Transportation identifies three priority corridors for rapid transit in Surrey and Langley: 104 Avenue, King George Boulevard, and Fraser Highway. The proposed Surrey Langley SkyTrain (SLS) would advance the Vision by extending the Expo Line along Fraser Highway to Langley Centre.

As part of the Phase Two Investment Plan approved in 2018, \$30M was allocated for project development on the Fraser Highway Corridor. Approximately \$1.6 billion in funding is available for the proposed SLS project subject to Business Case approval by funding partners and an enabling Investment Plan.

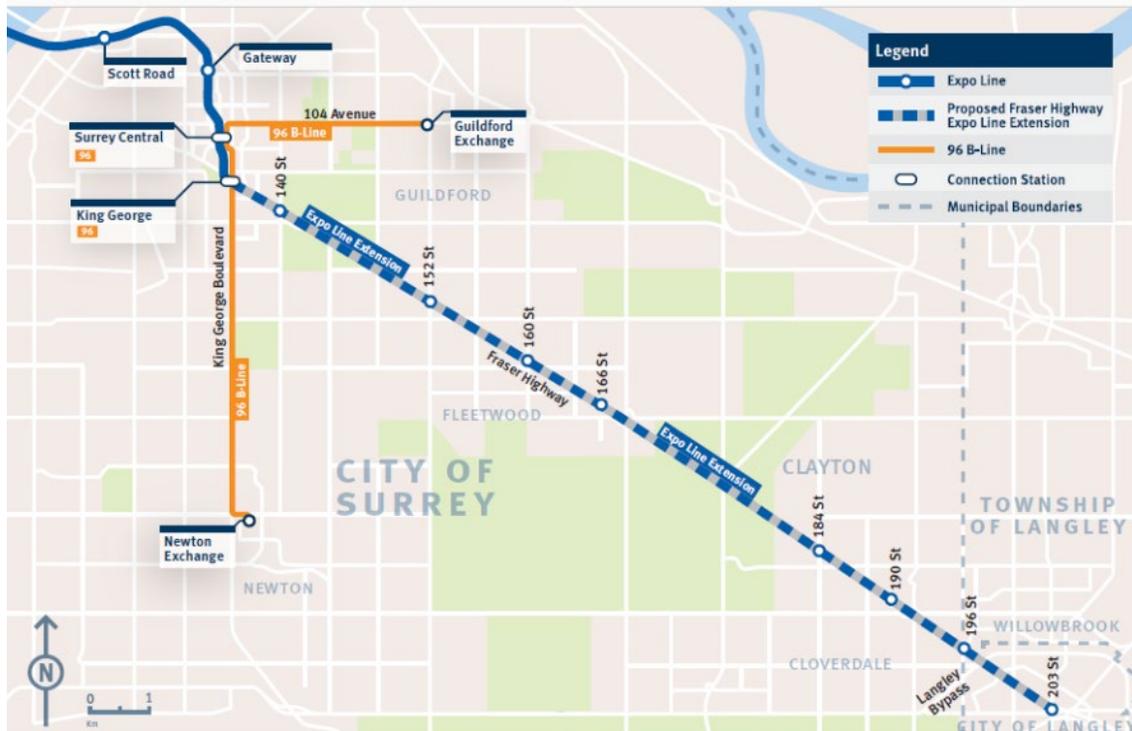
PROJECT OBJECTIVES:

The objectives of the proposed Surrey Langley SkyTrain project are to advance the Vision by providing fast, frequent, reliable and convenient transportation, with a great user experience; to increase access to employment, schools, housing and services; to support healthy communities and a healthy

environment; to advance local and regional prosperity by facilitating movement of people and goods; and to invest and implement transit expansion wisely.

PROJECT DEFINITION:

The Surrey Langley SkyTrain project would extend the Expo Line 16.5 kilometres on an elevated guideway from King George Station to Langley City Centre along Fraser Highway. The proposed project includes eight stations, three bus exchanges, park and ride spaces, 55 SkyTrain vehicles, an operations and maintenance centre and supporting system upgrades.



Trains would operate every 4 to 5 minutes during peak periods and approximately every 10 minutes off-peak with one of three Expo Line trains serving the extension to Langley. Travel time by SkyTrain from Langley Centre to King George is projected to be approximately 22 minutes. This is more than 25 minutes faster than current local bus service, and more than 10 minutes faster than express bus service in the corridor.

PROJECT OUTCOMES:

In support of identified objectives for rapid transit, the proposed project is forecast to deliver the following benefits:

- Increasing transit capacity, reducing travel times, and improving reliability, and improving road safety and congestion by reducing automotive vehicle kilometers travelled;
- Improving regional accessibility by connecting Surrey Metro Centre, Fleetwood Town Centre, and Langley Regional City Centre with rapid transit, connecting people to more housing, employment, schools, and services, and encouraging higher-density uses around SkyTrain stations;
- Improving the environment by reducing greenhouse gas emissions through reductions in vehicle kilometres of travel and replacing diesel bus service with electric SkyTrain service; and

For each month of delay in project approval, the estimated cost of the project increases by approximately \$5 million to account for cost escalation and project management costs. Management is working closely with senior government and the Mayors' Council and believes the approval date of June 2020 is aggressive, but achievable.

STAGING SCENARIOS:

The project team developed three staging scenarios to complete the project should the \$3.12 billion not be available to complete the project in a single stage. Each scenario is operationally feasible and generates quantified benefits that exceed lifecycle costs. The scope, outcomes, cost, and schedule for each scenario is summarized in the table below

	Full Scenario: Single Stage from King George to Langley City Centre	Fleetwood Scenario : Stage 1 from King George to 166 St in Fleetwood*	Clayton Scenario: Stage 1 from King George to 184 St in Clayton**
Scope	16 km 8 stations 55 vehicles	7 km 4 stations 25 vehicles	11 km 5 stations 35 vehicles
Ridership	62,000 in 2035 71,200 in 2050	39,900 in 2035 44,200 in 2050	45,800 in 2035 51,500 in 2050
New transit trips	24,000 in 2035 30,000 in 2050	12,000 in 2035 14,000 in 2050	16,000 in 2035 19,000 in 2050
Benefit cost ratio	1.24	1.12	1.17
Capital cost (VOE)	\$3.12 billion	\$1.63 billion***	\$2.22 billion***
Annual O&M cost (2019\$)	\$32.4 million	\$17.0 million	\$20.4 million
Annual fare revenue in 2035 (2019\$)	\$21.3 million	\$10.2 million	\$13.8 million
In-service date	5.5 years from project approval	5.5 years from project approval	5.5 years from project approval

*Subsequent Stage 2 from Fleetwood to Langley City will follow when funding is secured.

** Subsequent Stage 2 from Clayton to Langley City will follow when funding is secured.

*** Stage 2 costs for project completion to Langley will increase with time.

As part of procurement readiness, Management will develop an agile implementation strategy to maximize delivery flexibility consistent with available and anticipated funding in the Investment Plan. For a project implemented in stages, the cost for the full project will increase with time due to escalation and on-going project management costs.

ENGAGEMENT:

TransLink identified the following engagement priorities for the proposed project:

- Directly engage key stakeholders including community groups, business associations, public institutions and elected representatives, to foster relations, raise awareness of the work at-hand, solicit feedback, and promote engagement opportunities. This work is ongoing.
- Conduct three rounds of public engagement over the fifteen-month project development stage. The first phase is complete.

The first phase of public engagement occurred from April 4 to 26. The engagement comprised an online survey, four open houses, participation in large-scale community events, and a presence at transit hubs in Surrey and Langley. The engagement resulted in 21,267 completed surveys, with nearly 17,000 of them from residents in Surrey and Langley, and over 1,000 attendees at the open houses in Langley, Fleetwood, Surrey City Centre, and Newton.

Public engagement results were presented to the Mayors' Council on May 23. The engagement revealed that the public is interested and engaged in rapid transit south of the Fraser, and there is strong support for improved transit in Surrey and Langley. Approximately 85% of respondents – both in Surrey and Langley, specifically, and in the region, generally - support the proposed Surrey Langley SkyTrain project. Pending further direction from the Mayors' Council, Management anticipate two additional rounds of public engagement to provide opportunities for input on the reference design and the Environmental Screening Review.

TransLink is engaging with a number of First Nations to introduce them to the project, solicit feedback, and invite representatives to join in environmental and archaeological field studies. First Nation permits have been sought for any necessary archeological studies, and engagement is taking place regarding the project's Environmental Screening Review (ESR), including the draft Terms of Reference document. Engagement to date has been conducted via introductory letters, updates via telephone and emails, and in-person meetings. TransLink will continue to engage First Nations to share information, including the proposed design, and collaborate on environmental and archaeological work.

ENVIRONMENTAL SCREENING REVIEW:

The federal and provincial governments both confirmed that the project does not trigger an environmental assessment. Nevertheless, as part of the project's development, TransLink will conduct an Environmental Screening Review (ESR) of the proposed alignment. The review of potential environmental effects will be informed by First Nations, public and stakeholder feedback, and will demonstrate TransLink's commitment to understand and effectively manage construction and operations-related environmental issues. The review will include assessment of potential impacts to traffic and transportation, archaeology and heritage, freshwater aquatics, vegetation and wildlife, noise and vibration, and land use. Field studies to understand baseline conditions are underway. A draft Terms of Reference of the Review is expected to be ready in fall for public and stakeholder review and comment. The ESR report summarizing the review findings, including proposed mitigation measures and environmental management plans, is anticipated for spring 2020.

CITY OF SURREY AGREEMENTS:

Management developed a Memorandum of Understanding (MOU) with the City of Surrey to describe the project scope, objectives, and roles and responsibilities for TransLink and the City of Surrey. The MOU identifies the general scope and need for a supportive policies agreement and outlines the framework for reimbursement of certain funds expended on the Surrey Newton Guildford LRT project. A draft of the MOU is appended to this report.

NEXT STEPS:

To keep the project on schedule and on budget, Management intends to undertake the following work in the coming twelve months:

- Updates to the reference concept design to incorporate feedback from a second phase of public engagement;
- Confirmation of the project delivery agency, an agile implementation strategy, a procurement approach, and funding and financing strategy consistent with an enabling Investment Plan;
- Completion of the Environmental Screening Review;
- Completion of the business case and related senior government project approval requirements as well as the Request for Qualifications and Request for Proposals draft documents; and
- Development of supportive policy and contribution agreements with the City of Surrey (and Langley City and Langley Township as applicable);

APPENDIX 1

Final Draft: Surrey Langley SkyTrain Project MOU

MEMORANDUM OF UNDERSTANDING

**South of Fraser Rapid Transit - Surrey Langley SkyTrain Project
(Portion within Surrey)**

between

**South Coast British Columbia Transportation Authority
("TransLink")**

and

**City of Surrey
("Surrey")**

Made as of the ____ day of _____, 2019

WHEREAS:

- A. TransLink, as the Regional Transportation Authority, has the mandate to plan, prioritize, secure funding and deliver transportation and transit projects and create an integrated transportation and transit system within the Greater Vancouver Regional District pursuant to the *South Coast British Columbia Transportation Authority Act*;
- B. In the 2014 Mayors' Council Regional Transportation Investments, a Vision for Metro Vancouver (the "**Mayors' Vision**"), the Mayors' Council identified a South of Fraser Light Rail Transit network (the "**LRT Project**") as a priority to ensure that the transportation needs of the region are met;
- C. Surrey has requested that the LRT Project be suspended and replaced with an extension of the existing SkyTrain Expo Line;
- D. TransLink and the Mayors' Council have agreed to suspend the LRT Project and instead move forward with planning and development of a 16-kilometre extension of the existing SkyTrain Expo Line from King George Station to Langley Centre along the Fraser Highway (the "**Proposed Extension**");
- E. The Proposed Extension will provide an alternative to traffic congestion and increase transit network capacity to help meet the transportation goals for the region;
- F. Surrey, as the host municipality of the Proposed Extension within the boundaries of the City of Surrey, has the mandate to provide good governance within its municipal boundaries pertaining to the exercise of powers and duties provided to it pursuant to the *Local Government Act*;
- G. The Mayors' Vision calls on the parties to enter into Project Partnership Agreements (the "**PPAs**") whenever the region is making a major investment involving significant cost and risk, the success of which depends on higher degrees of coordination, collaboration and mutually supportive actions by multiple partners;
- H. Both TransLink and Surrey have significant roles and responsibilities with respect to the portion of the Proposed Extension within the boundaries of the City of Surrey (such portion being referred to herein as the "**Project**"), the details of which will be included in a subsequent Supportive Policies Agreement (the "**SPA**") and Municipal Access Agreement (the "**Municipal Access Agreement**") to be entered into by TransLink and Surrey;
- I. Both TransLink and Surrey will enter into a Reimbursement Agreement (the "**Reimbursement Agreement**") whereby Surrey will reimburse TransLink for certain amounts expended by TransLink on the LRT Project prior to its suspension; and
- J. TransLink and Surrey are committed to implement the Project.

THEREFORE:

1. COMMITMENT:

TransLink and Surrey affirm their full public commitment to proceed in good faith and to act expeditiously and reasonably to facilitate, expedite and support the successful procurement, design, construction, operation and maintenance of the Project.

TransLink commits to funding, procuring and delivering the Project pursuant to an Investment Plan to be approved by the TransLink Board of Directors and the Mayors' Council.

Surrey commits to support TransLink in the procurement, delivery and implementation of the Project by, among other actions, minimizing and streamlining municipal approvals to ensure Project delivery timelines are achieved; publicly supporting the Project; and helping to manage expectations and mitigate impacts during Project construction.

Surrey further commits to take proactive steps to advance integrated land use and transportation planning along the Project corridor by promoting residential, business and institutional growth to maximize transit ridership in the short, medium and long terms. Surrey's commitment will be guided by its Official Community Plan, Sustainability Charter, Transportation Strategic Plan, and other relevant planning policies, reflecting generally accepted Transit-Oriented Communities Design Guidelines. Surrey also commits to advancing plans supportive of the goals and targets identified in the Regional Transportation Strategy.

TransLink and Surrey affirm they will continue to support and implement measures to prioritize transit services during Project construction.

TransLink and Surrey commit to developing the following: (a) the SPA, (b) the Reimbursement Agreement, and (c) the Municipal Access Agreement, which will together serve as the PPAs for the Project.

2. ASSIGNMENT OF COMMITMENT:

Until otherwise determined, TransLink will act as the Project delivery agent and the Project owner and operator, and will be responsible for all aspects of the Project's procurement, implementation and operations. In the event that another party replaces TransLink in all or part of this capacity, both parties agree to work cooperatively to maintain the commitments in this MOU and to support any necessary and mutually agreed assignment to a different party.

3. PROJECT OBJECTIVES:

The Project objectives, as fully supported by both TransLink and Surrey, are to:

- (a) provide fast, frequent, reliable and convenient transportation, together with a great user experience;
- (b) use public funds efficiently to maximize the span of the Project and ultimately the Proposed Extension, all in a manner that will result in a constructible and operable Project that is acceptable to the public;
- (c) provide a high-quality urban design that will support, and integrate with, current and future land uses along the Project corridor;
- (d) increase affordable access to various opportunities such as employment, schools, housing and services;
- (e) support healthy communities and a healthy environment by managing various Project impacts; and
- (f) advance local and regional prosperity by facilitating movement of people and goods.

TransLink and Surrey will work together to advance the above objectives and will jointly develop performance measures to quantify and measure the progress in achieving such objectives.

4. PROJECT SCOPE:

- (a) The Project will specifically include, among other things: (i) two-way elevated guideway (track) along Fraser Highway extending the SkyTrain Expo Line from King George Station toward Langley Centre, and (ii) SkyTrain stations along the Fraser Highway corridor.
- (b) In addition, the Proposed Extension will generally include, among other things: (i) additional SkyTrain vehicles for the SkyTrain system, (ii) a new or expanded facility to meet the increased SkyTrain operations and maintenance capacity (which facility may be located, or integrated with another facility, outside of the boundaries of the City of Surrey), and (iii) other associated infrastructure, works and ancillary buildings required for construction and operation purposes (which may or may not be located within the boundaries of the City of Surrey). For clarity, the parties anticipate that Project funding will include any incremental operations and maintenance facility upgrades that may be required to address capacity issues resulting from the Proposed Extension.
- (c) The Project will be fully integrated with TransLink's existing transit network and system including provision of integrated fare structures and utilization of the Compass automated fare payment and collection system.
- (d) The Project may be constructed and delivered in phases, and the procurement strategy will therefore be flexible to accommodate various funding timelines.

5. TRANSLINK'S ROLE AND GENERAL RESPONSIBILITIES:

TransLink will:

- (a) own the Project except for any infrastructure and assets currently owned or controlled by Surrey;
- (b) design, procure and construct the Project, and have responsibility for and control over scope, budget, and scheduling;
- (c) operate and maintain the Project as an integrated part of the region's transit system;
- (d) continue to provide transit operations within the Project corridor throughout Project construction;
- (e) develop and implement a bus integration plan to support the Project; and
- (f) complete a refresh and planning study to identify rapid transit options and costing for the 104th Avenue and King George Boulevard corridors, as the Mayors' Vision prioritized 27 kilometres of rapid transit South of the Fraser River.

6. SURREY'S ROLE AND GENERAL RESPONSIBILITIES:

Surrey will:

- (a) support and actively participate in the design and construction stages of the Project to expedite delivery and ensure municipal and regional objectives are met, and may provide input, assistance and suggestions to TransLink;
- (b) be responsible for the review, approval, inspection, and acceptance of any municipal road infrastructure modifications, utility relocation and upgrading works required in connection with the Project;
- (c) implement transit-oriented land use policies and provisions in any relevant municipal plans and permit approval processes, including mixed-use densification along the Project corridor, all as to be further detailed in the SPA;
- (d) permit connections to municipal utilities to accommodate and support Project facilities;
- (e) support TransLink's effective delivery of bus operations in the Project corridor during the Project construction period; and
- (f) work cooperatively with TransLink to implement traffic management strategies during the Project construction period.

7. JOINT ROLES AND RESPONSIBILITIES:

TransLink and Surrey will each work together to:

- (a) manage public engagement and communications, with TransLink taking the lead on all communications with respect to the Project and Surrey providing support to TransLink as required;
- (b) hold regular meetings, during Project planning and design, to discuss related inquiries including development permit applications, building permit applications and rezoning applications for properties fronting the Project, all for the purposes of: (i) coordinating development activities with Project infrastructure, (ii) ensuring public safety, and (iii) not adversely impacting the future constructability and operability of the Project;
- (c) advance integrated land use and transportation planning through the joint development, implementation and monitoring of the SPA as contemplated in Section 8;
- (d) jointly develop a Reimbursement Agreement as contemplated in Section 9; and
- (e) jointly develop a Municipal Access Agreement as contemplated in Section 10.

8. SUPPORTIVE POLICIES AGREEMENT:

The parties will work collaboratively to complete the SPA prior to both the inclusion of the Project in a funded Investment Plan approved by the TransLink Board of Directors and Mayors' Council and the issuance of the

Request for Proposals in connection with the Project. The SPA will: (i) specify Project supportive land use and transportation policies, actions and investments to support Project objectives, and (ii) identify specific actions and policies to coordinate and integrate transportation and land use planning in the Project corridor. The parties anticipate that the SPA will address, among other things:

- (a) the completion by the City of Project corridor land use plan(s) and policies (the “**Corridor Plans**”), the process for which has already been initiated by the City, by 2021;
- (b) the inclusion in the Corridor Plans of Project supportive population and job densities that are generally aligned with Metro 2040 (Regional Growth Strategy) targets, as well as TransLink’s Transit Service Guidelines and Transit-Oriented Communities Design Guidelines;
- (c) key policies relating to, without limitation, affordable housing, cycling, walking, urban design, parking, and transportation demand management; and
- (d) details of a SPA monitoring program similar to that which was agreed to in the Supportive Policies Agreement Surrey-Newton-Guildford Light Rail Transit Project made on June 12, 2018 between TransLink and Surrey.

9. REIMBURSEMENT AGREEMENT:

The parties will work collaboratively to complete the Reimbursement Agreement prior to both the inclusion of the Project in a funded Investment Plan approved by the TransLink Board of Directors and Mayors’ Council and the issuance of the Request for Proposals in connection with the Project. The parties anticipate that the Reimbursement Agreement will address, among other things:

- (a) Surrey’s reimbursement to TransLink of up to \$39 Million, pending final technical reconciliation of expenditures, being the sum unnecessarily expended by TransLink on the LRT Project prior to its suspension, and potential further reimbursement of \$5.4 million by City of Surrey if there is no decision to implement rapid transit along King George Boulevard by December 31, 2021;
- (b) the various means by which Surrey will reimburse TransLink, which may include all or any combination of the following, per the conditions in the resolution by the Mayors’ Council at the meeting on June 27, 2019 which directed staff to complete further analysis for final approval by the Mayors’ Council on the means by which the City of Surrey could reimburse TransLink:
 - (i) financial contributions;
 - (ii) in-kind property contributions of a permanent or temporary nature;
 - (iii) rights of way and/or road dedications;
 - (iv) certain commercial rights to TransLink in connection with any future use or access by TransLink of city streets or other city lands pursuant to the Municipal Access Agreement; and
 - (v) reduction in costs through a transfer of scope elements;

- (c) timing of Surrey's reimbursement, which is dependent upon and subject to the final approval of the business case and the Project proceeding to the procurement and construction phases; and
- (d) any applicable valuation methodologies.

10. MUNICIPAL ACCESS AGREEMENT:

The parties will work collaboratively to complete the Municipal Access Agreement prior to the issuance of the Request for Proposals in connection with the Project. Pursuant to the Municipal Access Agreement, Surrey will provide TransLink with access to certain city streets or other city lands necessary for the construction, operation and day-to-day maintenance of the Project, for so as long as the Project is operated by TransLink, the Province or a related entity.

The Municipal Access Agreement will include various details on the collaborative relationship between Surrey and TransLink to ensure successful Project delivery and operations. The parties anticipate that the Municipal Access Agreement will address, among other things:

- (a) access to city lands and streets;
- (b) additional or outstanding financial matters;
- (c) design and construction approval process;
- (d) system operations and maintenance;
- (e) public realm;
- (f) public art;
- (g) road infrastructure and utilities;
- (h) traffic management;
- (i) dispute resolution; and
- (j) communications protocol.

11. CONTRIBUTION AGREEMENT:

The parties acknowledge that Surrey may want to increase the Project scope to include works above and beyond those included in any approved business case for the Project. If the parties agree to implement any scope increase requested by Surrey, they will enter into a Contribution Agreement to set out Surrey's financial contribution to such scope increase.

12. GENERAL:

The parties will revisit this MOU as is necessary to ensure the MOU continues to meet the Project needs.

This MOU is a statement of intent to summarize the collective wishes of the parties and to illustrate the parties' mutual support of the Project for the purposes of funding approval. This MOU is intended to advance the development of the SPA, the Reimbursement Agreement and the Municipal Access Agreement.

This MOU may be executed in counterparts, and when counterparts have been executed by the parties, each originally executed counterpart, whether a facsimile, photocopy, PDF or original, will be effective as if one original copy had been executed by the parties.

As governmental or public authorities, each of Surrey and TransLink are documenting their good faith commitments to each other to undertake the actions, cooperation and support described in this MOU in a diligent and timely manner to achieve the Project objectives.

As governmental or public authorities, each party acknowledges that it is governed by officials who are dutybound to enact by-laws and policies in accordance with the mandates stipulated in each party's governing legislation. As such, and despite any other term of this MOU to the contrary, the parties acknowledge and agree that this MOU is not intended to, and will not operate so as to, create legally binding rights and obligations nor to fetter the lawful discretion and powers of either party with respect to the subject matter of this MOU.

13. EXECUTION

Executed by the parties on the date written above.

**South Coast British Columbia Transportation
Authority (TransLink)**

The City of Surrey

Kevin Desmond
CEO

Doug McCallum
Mayor

TO: Mayors' Council on Regional Transportation
FROM: Geoff Cross, Vice President, Transportation Planning & Policy
DATE: July 18, 2019
SUBJECT: **ITEM 3.2 -- South of Fraser Rapid Transit Strategy Refresh**

RECOMMENDATION:

The Chair of the Mayors' Council recommends that the Mayors' Council on Regional Transportation:

1. Complete the Surrey Langley SkyTrain (SLS) project business case to be ready for submission to senior government by January 2020.
2. Concurrently, complete a refresh of the south of Fraser rapid transit strategy, that:
 - a. Considers combinations of alternatives within the \$3.55 billion funding envelope and assesses the consequences of providing less than 27 kilometres of rapid transit.
 - b. Recommends preferred technologies for 104 Avenue and King George Boulevard, and assesses the consequences of exceeding the \$3.55 billion funding envelope, including impacts on a likely timeline to deliver those projects.
3. Prepare an implementation strategy that allows the sequencing of rapid transit south of the Fraser consistent with available and anticipated funding.
4. Prepare the procurement documents for a SkyTrain on Fraser Highway to be ready to initiate the procurement process following an approval of the business base and supportive investment plan.
5. Limit funding available for the first phase of the SLS project to the \$1.63B already secured through the Phase Two Plan of the 10-Year Vision;
6. Ask staff to negotiate an MOU with the Township of Langley and the City of Langley to be considered at the same time as the final business case;
7. Receive this report.

PURPOSE:

The below staff report was originally provided to the Joint Regional Transportation Planning Committee and the Joint Finance and Governance Committee for consideration, provides context to a decision by the Mayors' Council on whether to proceed to develop a full business case and prepare for procurement for a Surrey Langley SkyTrain. Given that these two committees approved slightly different recommendations, the Chair has offered the above recommendations that reconcile the outputs of the

two committees. The recommendations as approved by each committee are provided at the end of this report for reference.

Using results from the report *Update on the Surrey Langley SkyTrain Project*, this report describes the consequences of such a decision for completing 27 kilometres of rapid transit on three corridors south of the Fraser River established in the 2014 Mayors' Vision, within a funding envelope of \$3.55 billion.

This report is based on preliminary findings from a refresh of the south of Fraser rapid transit strategy. The refresh was initiated following a suspension of work on the Surrey Newton Guildford Light Rail Transit project and direction to begin planning for a SkyTrain along Fraser Highway.

The preliminary analysis presented in this report is not intended to provide the basis for a decision on the preferred rapid transit technology for 104 Avenue and King George Boulevard. That will require more detailed assessment and public engagement.

BACKGROUND:

In 2014, the Mayors' Council on Regional Transportation identified 104 Avenue, Fraser Highway and King George Boulevard as priority corridors for rapid transit and decided to plan for 27 kilometres of Light Rail Transit (LRT), to support transportation and urban development objectives.

In December 2018, based on a request from the City of Surrey, the Mayors' Council directed TransLink to suspend work on the first phase of LRT on 104 Avenue and King George Boulevard, and instead begin planning for a SkyTrain along Fraser Highway. TransLink was also directed to initiate a planning process to refresh the south of Fraser rapid transit strategy, consistent with the 10-Year Vision of building 27 kilometres of rapid transit on the three corridors. The direction was for TransLink to conduct this work "subject to the City of Surrey's specific agreement to pay compensation no later than upon signing the MOU, all work plan costs unnecessarily expended to date." This condition has been met within the MOU attached to the SLS Project Update report which embeds the compensation amount approved by the Mayors' Council in June 2019.

South of Fraser Rapid Transit Strategy in the 10-Year Vision

Alternatives for rapid transit on one or more of the corridors from Surrey City Centre – along 104 Avenue to Guildford, Fraser Highway to Langley City and King George Boulevard to Newton – have been discussed in regional planning documents since at least the 1975 Livable Region Plan. Priorities between the corridors, as well as the type of technology considered, have varied considerably. The three corridors were first considered as a package in the South of Fraser Rapid Transit Alternatives Analysis Study, carried out between 2009 and 2012.

The Alternatives Analysis Study reviewed over 1,000 technology and route combinations to develop a shortlist of alternatives on the three corridors. The Study included intensive public and stakeholder engagement. From Study results, the Mayors' Council considered the trade-offs and, based in part on the preferences expressed at the time by the Surrey City Council around city-shaping and land use objectives, chose Light Rail Transit (LRT) as the preferred alternative. As a result, the 2014 Mayors' 10-Year Vision calls for 27 kilometres of LRT. The Surrey Newton Guildford (SNG) corridors were intended to be the first stage of the project, followed by LRT on Fraser Highway from Surrey to Langley.

Status of Funding for South of Fraser Rapid Transit

The Phase One and Phase Two Investment Plans of the 10-Year Vision were approved by the TransLink Board and Mayors' Council in November 2016 and June 2018. The Phase One Investment Plan included project development and preconstruction works on the SNG LRT, while the Phase Two Investment Plan approved \$1.65 billion for construction of the project. Phase 2 also included \$30 million to complete detailed project development and procurement readiness for the Surrey to Langley LRT line along Fraser Highway.

The Phase Three Investment Plan, scheduled to be brought forward in 2020/21, was to have included the Surrey to Langley LRT, estimated to cost \$1.9 billion.

In summary, the envelope of expenditures for 27 kilometres of rapid transit on the three corridors, as defined in the Vision is:

SNG LRT budget:	\$1.65 billion (approved through the Phase Two Plan)
Fraser Highway LRT project development:	\$30 million (approved through the Phase Two Plan)
Fraser Highway LRT budget:	\$1.9 billion (to be approved in the Phase Three Plan)
Total envelope for 27 km rapid transit:	\$3.55 billion

DISCUSSION

This report describes how the Surrey Langley SkyTrain is likely to perform against objectives, what alternatives might be available on the other two corridors, and what the major trade-offs are likely to be for the remaining 11 kilometres of rapid transit, assuming the implementation of the Surrey Langley SkyTrain.

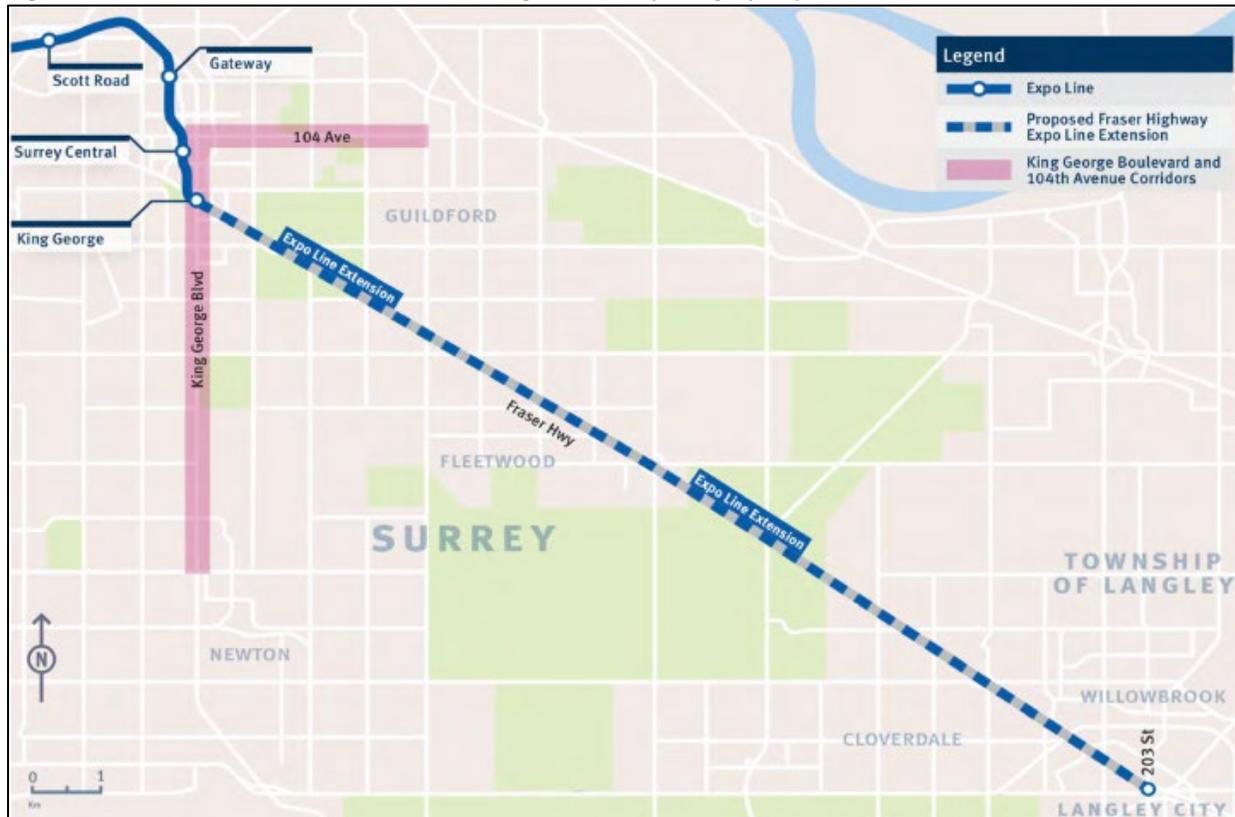
Refresh of the south of Fraser rapid transit strategy

Based on the Mayors' Council December 2018 direction, the starting point for work on a refresh of the south of Fraser rapid transit strategy is that:

1. A SkyTrain from Surrey to Langley along Fraser Highway is the priority corridor for rapid transit;
2. It is still the Mayors' Council's intention to provide 27 kilometres of rapid transit on the three corridors, 104 Avenue, Fraser Highway and King George Boulevard;
3. There is a *notional* funding envelope of \$3.55 billion to provide 27 kilometres of rapid transit on the three corridors.

Note that the funding envelope of \$3.55 billion is only a planning assumption at this stage, based on the projected cost of 27 kilometres of LRT. There is no secured funding beyond the \$1.65 billion in the approved investment plans. The Provincial Government has committed to a 40 percent contribution to the capital projects in the Mayors' 10 Year Vision and there are some remaining unallocated Federal funds that could be applied, pending a business case approval. This assumption does not commit the Mayors' Council to any expenditure or funding ask.

Figure 1: The corridors considered, including the Surrey Langley SkyTrain



Objectives for the south of Fraser rapid transit strategy

The first stage of the strategy refresh was to review the objectives used in previous south of Fraser rapid transit studies and confirm their relevance with the public and stakeholders (see appendix 1). The public were asked to indicate their level of support for thirteen values, reflecting the main components of the previously developed objectives. All values received high levels of public support and the following three were ranked the highest:

- “Predictable transit travel time that helps me get to my destination faster”
- “Efficient use of public money”
- “A comfortable and safe experience when I use transit.”

As a result of public engagement and further refinement of objectives, the following set of objectives have been developed for the south of Fraser rapid transit strategy and used when evaluating alternatives for rapid transit on Fraser Highway, 104 Avenue and King George Boulevard:

- Increase access to employment, schools, housing and services
- Provide a great transportation user experience
- Support healthy people and environment
- Advance local and regional prosperity

While

- Spending wisely
- Implementing prudently

Performance of the Surrey Langley SkyTrain against the strategy objectives

Many of the objectives would be supported by the introduction of any form of rapid transit on Fraser Highway; the specific technologies will play a less significant role. Based on the information provided in the report *Update on the Surrey Langley SkyTrain Project*, the proposed project is likely to perform better than other technologies in the following ways:

- Shorter and more reliable transit travel times
- More comfortable transit with sufficient capacity to minimize overcrowding
- Less adverse ongoing impacts on other road users
- Less greenhouse gas and criteria air contaminant emissions from transportation, consistent with regional and provincial targets

Other technologies are likely to perform better than the SkyTrain in the following ways:

- Visual impacts on adjacent properties
- Cost to build, operate and maintain

Based on this, and other information contained in the *Update on the Surrey Langley SkyTrain Project*, a SkyTrain on Fraser Highway would meet the objectives of the south of Fraser rapid transit strategy. This applies to all three staging scenarios outlined in that report.

Alternatives to complete 27 kilometres of rapid transit on all three corridors

At this stage in the strategy refresh, a limited number of alternatives on 104 Avenue and King George Boulevard have been considered at a high level to understand the consequences of a decision to proceed with a Surrey Langley SkyTrain. This evaluation is not intended to provide the basis for a decision on a preferred technology for future rapid transit on 104 Avenue and King George Boulevard. That will require more detailed assessment and public engagement.

Three alternatives, including combinations of Bus Rapid Transit (BRT), Light Rail Transit (LRT) and SkyTrain, have been considered for 104 Avenue and King George Boulevard. A “business as usual” (BAU) alternative, using B-lines on the two corridors, was also considered. See table 1 for alternatives considered and evaluated as part of the strategy refresh.

Table 1: Alternatives considered and evaluated in the first stage of the strategy refresh

	Business as Usual	Alternative 1	Alternative 2	Alternative 3
Fraser Highway	SkyTrain Surrey to Langley	SkyTrain Surrey to Langley	SkyTrain Surrey to Langley	SkyTrain Surrey to Langley
Cost for SkyTrain on Fraser Highway	\$3.12 billion	\$3.12 billion	\$3.12 billion	\$3.12 billion
104 Avenue	96 B Line (Surrey Centre to Guildford)	BRT (Surrey Central to Guildford)	LRT (Surrey Central to Guildford)	B Line (Surrey Centre to Guildford)
King George Boulevard	96 B Line (Surrey Central to Newton)	BRT (Surrey Central to Newton)	LRT (Surrey Central to Newton)	SkyTrain (King George to Newton)
Est. additional cost of rapid transit	-	\$0.7-0.9 billion	\$1.6-1.8 billion	\$1.2-1.4 billion
Estimated cost in excess of \$3.55B	-	\$0.28-0.48 billion	\$1.17-1.37 billion	\$0.77-0.97 billion

Note that alternative 3 does not provide 27 kilometres of rapid transit as B-lines are not considered rapid transit under the definition used in the previous Alternatives Analysis. Also, at this stage, no alternative considers a SkyTrain on 104 Avenue, for two reasons:

1. Ridership demand along 104 Avenue is the lowest of all three corridors and is well below that which might justify a SkyTrain, and;
2. It was determined that adding a further branch to the Expo Line would result in lower frequencies than is desirable on other branches.

Given the projected \$3.12 billion cost of the Surrey Langley SkyTrain, there are no alternatives that can result in 27 kilometres of rapid transit at a cost within \$3.55 billion total envelope.

Business as Usual

Only the business as usual alternative, with improved B-line service on King George Boulevard and 104 Avenue, is available within the \$3.55 billion funding envelope. B-line service is used as the baseline against which other alternatives are being assessed.

B-lines, with the planned and possible improvements to service and priority, provide a good service and meet many of the objectives described above to increase access, provide a good user experience and support health, environment and prosperity goals. They are, however, at more risk of being impacted by increasing traffic congestion than other alternatives because they predominantly operate in mixed-traffic. As such, speed and reliability could deteriorate unless measures are taken to increase transit priority. Well designed and implemented B-lines can achieve good value for money and can be quick and easy to implement, relative to other alternatives.

Forecasts show that ridership on the B-line will continue to increase to around 22-24 000 per day in 2050. With a 6-minute frequency, capacity would be sufficient to accommodate forecast demand, although demand for the B-line service would be lower than for the rapid transit alternatives.

Alternative 1: BRT on 104 Avenue and King George Boulevard

BRT is to some extent scalable. It could be possible to build BRT on some sections of the corridors but not all, with the same buses serving the full route. A fully realised BRT on the 104 Avenue and King George Boulevard corridors is estimated to cost up to \$900 million. Therefore, within the funding envelope, less than half of the corridor could be constructed as full BRT given the current estimates.

This alternative could also support most of the objectives described above. BRT would operate in its own lane, separated from other traffic and would therefore be able to offer a faster, more reliable journey than B-lines. Specially designed stops and vehicles could improve user experience, by providing increased comfort and deliver better accessibility and security. BRT roadway priority does, however, mean there would be some impacts to vehicle traffic, including goods movement. There is a perception that BRT does not support urban and economic development in the same way rail-based transit can, but TransLink has been unable to find enough empirical evidence to either confirm or refute this perception.

The higher speed, reliability and attractiveness of BRT compared to B-lines is forecast to generate an additional 16-30,000 transit trips per day in 2050 for a total of 40-45,000. With a 5-minute frequency, capacity would be sufficient on most of the two corridors, with the exception of a 2-kilometre section of

King George Boulevard closest to King George Station. This could be addressed through higher frequency, higher capacity vehicles or complementary bus service on parallel routes.

Alternative 2: LRT on 104 Avenue and King George Boulevard

LRT on 104 Avenue and King George Boulevard is essentially the same project as that suspended by the Mayors' Council in December 2018. It is included as a reference case, and in the event that policy-makers wish to revisit that decision in the future; however, TransLink would not pursue this alternative without the full support of the City of Surrey. The cost of that project was estimated in 2018 to be \$1.6 billion. It is likely this would rise due to increased construction costs and so a conservative estimate of \$1.6-1.8 billion has been used in this preliminary analysis.

Similar to business as usual and BRT, this alternative could also support most study objectives. LRT would perform similarly to BRT in many ways, including speed and journey time. LRT vehicles have greater capacity, meaning passenger comfort and accessibility are easier to guarantee than with BRT. Roadway priority would have similar impacts as BRT for other vehicle traffic. Because of its greater capacity and other perceived advantages LRT is forecast to have higher ridership than BRT, which could contribute to a somewhat slower growth in traffic congestion. There would be modest visual impacts from the overhead power cables. As discussed above, there is a perception that LRT would perform better in supporting urban and economic development than BRT, but the evidence is inconclusive. However, LRT has been successfully used in many cities to achieve urban and economic development goals based on significant improvements to the surrounding streetscape.

The higher speed, reliability and attractiveness of LRT compared to B-lines is forecast to generate an additional 21-33,000 transit trips per day in 2050, for a total of 45-55,000. With a 5-minute frequency, capacity would be more than adequate to meet demand on the two corridors.

Alternative 3: B-Line on 104 Avenue and SkyTrain on King George Boulevard

A **SkyTrain** on King George Boulevard, in combination with B-line on 104 Avenue, is estimated to cost in the region of \$1.2-\$1.4 billion. BRT rather than B-line on 104 Avenue would add roughly \$300 million to this cost range, although this has not been assessed in any detail at this point.

Similar to the B-Line and other alternatives noted above, this alternative could support many of the objectives. SkyTrain would be faster and more reliable than the other alternatives and would provide good comfort and accessibility. There would be a "one-seat" ride to more destinations, where other alternatives would require a transfer. There would be minimal impacts to other road users because SkyTrain would operate separately from traffic. SkyTrain's higher ridership could also contribute to a somewhat slower growth in traffic congestion. The elevated guideway would have more visual impacts than the other alternatives and could have greater noise and vibration impacts. SkyTrain contributes to urban and economic development in a different way than BRT or LRT, delivering faster access but a different kind of streetscape. A B-line on 104 Avenue would perform as described above (in the business as usual alternative).

The higher speed, reliability and attractiveness of SkyTrain on King George Boulevard compared to a B-line is forecast to generate an additional 33-38,000 transit trips per day in 2050, for a total of 55-60,000. Having three branches to the Expo Line (Production Way, Langley and Newton) would introduce some operational constraints, customer experience issues and long-term capacity considerations. However,

the 2050 demand forecasting shows more than sufficient capacity in this alternative on King George Boulevard, 104 Avenue and Fraser Highway.

No assessment has been made of the impacts of a further extension on the rest of the Expo Line. A detailed assessment of impacts would be needed to ensure that increased ridership on the sections from King George Station to Waterfront could be accommodated without significant negative impacts that could incur new costs.

Table 2: Summary of ridership metrics for the BAU and three alternatives studied

	BAU	Alternative 1 BRT	Alternative 2 LRT	Alternative 3 SkyTrain/B-line
2050 daily ridership	22-24000	40-50,000	45-55,000	55-60,000
2050 new daily transit trips	-	16-30,000	21-33,000	33-38,000

At this stage all four alternatives, including the business as usual alternative, are capable of contributing towards the study objectives to differing degrees and with different trade-offs. There is insufficient information for TransLink to make a recommendation for or against any alternative, and there may be further alternatives worth consideration. A full evaluation will be carried out over the coming months to provide a basis for further decision-making.

SUMMARY OF PRELIMINARY FINDINGS

- As described in the discussion above, the starting point for this assessment was:
 - SkyTrain from Surrey to Langley along Fraser Highway
 - 27 kilometres of rapid transit on three corridors
 - A *notional* funding envelope of \$3.55 billion
- Based on available information, a Surrey Langley SkyTrain appears to perform well against the strategy refresh objectives. However, given the \$3.12 billion cost estimate, it will not be possible to provide 27 kilometres of rapid transit including a Surrey Langley SkyTrain at a cost within \$3.55 billion total envelope.
- There are alternatives that include a Surrey Langley SkyTrain available within the \$3.55 billion envelope that appear to perform well against objectives, but do not provide 27 kilometres of rapid transit. There could be further combinations of alternatives that provide less than 27 kilometres of rapid transit at a cost within \$3.55 billion, that perform as well or better. These have not yet been identified or evaluated.
- There are alternatives that include a Surrey Langley SkyTrain that provide 27 kilometres of rapid transit and appear to perform well against objectives but come at a cost in excess of the \$3.55 billion total funding envelope. Total estimated costs range between \$3.8 and \$5.0 billion. Costs for any rapid transit in excess of \$3.55 billion would likely need to be set against other regional transportation investments to determine the relative priority of additional expenditure on these corridors. There is no reason to assume that these corridors would have any automatic priority.

FOR REFERENCE:

Recommendations of the Joint Regional Transportation Planning Committee:

That the Mayors' Council direct TransLink to:

1. Complete the Surrey Langley SkyTrain project business case to be ready for submission to senior government by January 2020.
2. Concurrently, complete a refresh of the south of Fraser rapid transit strategy, that:
 - a. Considers combinations of alternatives within the \$3.55 billion funding envelope and assesses the consequences of providing less than 27 kilometres of rapid transit.
 - b. Recommends preferred technologies for 104 Avenue and King George Boulevard, and assesses the consequences of exceeding the \$3.55 billion funding envelope, including impacts on a likely timeline to deliver those projects.
3. Prepare an implementation strategy that allows the sequencing of rapid transit south of the Fraser consistent with available and anticipated funding.
4. Prepare the procurement documents for a SkyTrain on Fraser Highway to be ready to initiate the procurement process following an approval of the business base and supportive investment plan.

Recommendations of the Joint Finance And Governance Committee:

That the Mayors' Council direct TransLink to:

1. Complete the Surrey Langley SkyTrain project business case to be ready for submission to senior government by January 2020.
2. Concurrently, complete a refresh of the south of Fraser rapid transit strategy, that:
 - a. Considers combinations of alternatives within the \$3.55 billion funding envelope and assesses the consequences of providing less than 27 kilometres of rapid transit.
 - b. Recommends preferred technologies for 104 Avenue and King George Boulevard, and assesses the consequences of exceeding the \$3.55 billion funding envelope, including impacts on a likely timeline to deliver those projects.
3. Prepare an implementation strategy that allows the sequencing of rapid transit south of the Fraser consistent with available and anticipated funding.
4. Prepare the procurement documents for a SkyTrain on Fraser Highway to be ready to initiate the procurement process following an approval of the business base and supportive investment plan.
5. Direct staff to:
 - a. Limit funding available for the first phase of the SLS project to the \$1.63B already secured;
 - b. Add the following to the end of Section 9(b) of the Draft MOU: "per the conditions in the resolution by the Mayors' Council at the meeting on June 27, 2019 which directed staff to complete further analysis for final approval by the Mayors' Council on the means by which the City of Surrey could reimburse TransLink;"
 - c. Update Schedule A of the Draft MOU to add reference to the June 27, 2019 recommendation of the Mayors' Council that directs further payment of \$5.4 million by City of Surrey if there is no decision to implement rapid transit along King George Boulevard by December 31 2021.
 - d. Negotiate with Surrey to replace "may" with "will" in Item 11 of MOU;
6. Direct staff to negotiate an MOU with the Township of Langley and the City of Langley to be considered at the same time as the final business case.

Appendix 1: The development of south of Fraser rapid transit strategy refresh objectives

The South of Fraser Rapid Transit Alternatives Analysis Study, carried out between 2009 and 2012, used a set of objectives covering the following evaluation accounts: transportation, financial, environment, urban development, economic development, social and community, and deliverability. A 2017 Strategic Options Analysis, developed as part of the business case for the Surrey Newton Guildford LRT project, used a similar but refined set of objectives.

The first stage of the strategy refresh was to review both sets of objectives and confirm their relevance with the public and stakeholders. The objectives were formulated as thirteen “values”, and the public was asked to rate their level of support for each value during public engagement in April 2019, via a public survey online, at four public open houses and through a market research poll.

More than 21,000 surveys were completed by the public. All the values proved to be relevant, with even the lowest rated value being either “moderately” or “very” important to more than 85 percent of respondents. The following three values received the highest rating:

1. “Predictable transit travel time that helps me get to my destination faster”
2. “Efficient use of public money”
3. “A comfortable and safe experience when I use transit.”

Market research confirmed these results and gave the same top three values, in a slightly different order. Full results can be found on the Surrey Langley SkyTrain website at surreyangleyskytrain.ca/document-library.

The values were converted into the following set of objectives, with associated evaluation criteria, which have been used in the initial assessment of a Surrey Langley SkyTrain and the possible alternatives for 104 Avenue and King George Boulevard.

Values in the public survey	Objective
<ul style="list-style-type: none">• Increased transportation options• Reliable driving time	Increase access to employment, schools, housing and services
<ul style="list-style-type: none">• Predictable transit travel time• Comfortable and safe experience	Provide a great transportation user experience
<ul style="list-style-type: none">• Pedestrian and cycling connections• Choices that limit climate change and exposure to air pollution• Protection of green space	Support healthy people and environment
<ul style="list-style-type: none">• Affordable and desirable community• Economic development and job growth• Reduce urban sprawl• Efficient movement of goods and services	Advance local and regional prosperity
<i>While</i>	
<ul style="list-style-type: none">• Efficient use of public money	Spending wisely
<ul style="list-style-type: none">• Access during construction	Implementing prudently

Note: due to an editing error, the value “Pedestrian and cycling connections to transit services” was omitted from the online survey but was included in the market research poll.