

NO: R105

COUNCIL DATE: **JUNE 15, 2015**

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **June 11, 2015**

FROM: **General Manager, Engineering**

FILE: **8740-01**

SUBJECT: **Update on the Status of Surrey Light Rail Transit Project and Plebiscite Advocacy Plan**

RECOMMENDATIONS

The Engineering Department recommends that Council:

1. Receive this report as information; and
2. Authorize staff to continue the partnership and coordination with TransLink on the P3 Canada Fund application for a federal funding contribution.

INTENT

The purpose of this report is to provide an update on the Surrey LRT Project with respect to its current status in seeking a federal funding contribution from the P3 Canada Fund. It also summarizes the progress of the continued effort to sustain the funding application in partnership with TransLink.

BACKGROUND

The provision of rapid transit in Surrey is supported by nearly 40 years of regional policies and transportation plans. Since the 1976 Livable Region proposal where the town centres in the region were proposed to be connected by a network of rapid transit, a succession of regional strategic plans have identified the need to connect Surrey City Centre with other regional centres and the town centres within Surrey. These plans include the Livable Region Strategic Plan (1993), Transport 2021 (1993), the South of Fraser Area Transit Plan (2008), Metro Vancouver's Regional Growth Strategy (2011), and TransLink's Regional Transportation Strategy (2013).

In 2009, TransLink and the Province jointly launched the Surrey Rapid Transit Alternatives Analysis (SRTAA). Phase 1 of SRTAA identified three types of rapid transit technology for consideration in Surrey:

- Bus Rapid Transit (BRT);
- Light Rail Transit (LRT); and
- SkyTrain.

Phase 1 also assessed numerous alignments and identified the following rapid transit corridors:

- King George Boulevard between Surrey City Centre and Newton Town Centre;
- 104 Avenue between Surrey City Centre and Guildford Town Centre; and
- Fraser Highway between Surrey City Centre and Langley City Centre.

Phase 2 of SRTAA shortlisted four alternatives, which included LRT on the three corridors listed above. In June 2014, the Region's Mayors' Council developed a Transportation and Transit Plan for the region that adopted LRT for Surrey. The Plan commits to providing one third of the capital funding for the Surrey LRT Project through the implementation of a 0.5% regional sales tax, which was put forward to a Plebiscite vote that ended May 29, 2015. The results of the Plebiscite are expected late June or early July.

On November 20, 2013, Council approved a list of priority projects for submission for federal infrastructure funding, of which LRT was the top priority. In June 2014, after the Mayors' Council adopted LRT for Surrey, staff prepared and submitted an application to the P3 Canada Fund. Prior to the submission, staff contacted TransLink and the Province to inform them of Surrey's intention and to seek their feedback. Both agencies provided encouragement and positive feedback on Surrey's application.

In October 2014, the City received notification from PPP Canada that the Surrey LRT Project was successfully screened into Round Six of the P3 Canada Fund. The screened-in status obligates the preparation a P3 Business Case to advance funding negotiations

DISCUSSION

City Advocacy Plan Update

The Region's Mayor's Council developed a Transportation and Transit Plan for the region containing \$7.5 billion of improvements of which approximately 45% are identified for Surrey and the South of the Fraser area. A regional plebiscite on whether to enable a 0.5% sales tax known as the "Metro Vancouver Congestion Improvement Tax" was approved by the Province which took place from March 16, 2015 through to May 29, 2015.

Given the significant level of funding proposed, at the Regular Council Meeting of January 12, 2015 (R007), approval was given for staff to develop and implement a City advocacy plan with the necessary resources to undertake this work. Staff identified a potential funding requirement for the City's advocacy plan of \$200,000 to \$300,000.

Advocacy for the "Yes" campaign involved a number of key stakeholders in particular:

- The City of Surrey supported by staff and Mayor and Council;
- The Better Transit and Transportation Coalition; and
- The Regional Mayor's Secretariat.

Although a Surrey focused campaign, the advocacy effort supported the Regional Mayor's Council and the Better Transit and Transportation Coalition for example by:

- Increasing awareness of the plebiscite among Surrey and South of Fraser stakeholders;

- Providing information on Surrey and South of Fraser transportation issues and improvements in the Mayor's Plan;
- Coordinating and supporting local initiatives with the regional Mayors' Council staff (Secretariat); and
- Working with the "Better Transit and Transportation" Coalition to develop locally relevant messaging.

In addition, staff developed and implemented a comprehensive advocacy plan with a Surrey focus with support from a specialized consultant that included:

- A citizen communications plan to engage, inform and encourage a "yes" vote;
- A social media strategy for platforms including Twitter and Facebook;
- A stakeholder engagement strategy; and
- A media strategy including use of bus shelter and digital media advertising

Advocacy Plan Expenditure

A number of initiatives and activities were promoted and funded within Surrey and the South of Fraser area by the Regional Mayor's Secretariat including radio advertising, the printing and distribution of a brochure to all Surrey households as well as street teams at transit stations and undertaking an on-line Town Hall meeting. The Better Transit and Transportation Coalition was also active in the City for example through its support for the town centre forum meetings co-hosted by the Surrey Board of Trade.

During the advocacy campaign, the City organized and implemented many events and activities complemented by a range of materials, resources and advertising. These included:

- Web based advertising;
- Print advertising including brochures, rack cards, transit shelter advertisements and newspaper advertisements;
- Supplies and materials including facility rentals, tent rentals and signage;
- Design services for the various advertising; and
- Consultant support.

One staff member was seconded to the Regional Mayor's Secretariat for a period of time to assist with coordination between the City and the Regional Mayor's Secretariat campaign but the majority of the Surrey advocacy plan was carried out within staff's existing roles and responsibilities

In total, the advocacy plan involved an expenditure of approximately \$240,500.00

Update on Light Rail Transit Project

The key input to the P3 Business Case is a more detailed cost estimate of the LRT Project, which requires further and more detailed design. Phase 3 will produce inputs for a preliminary Business Case that will demonstrate progress to PPP Canada, and will undertake a sufficient level of engineering design that will yield a cost estimate that meets PPP Canada's requirements for the Final Business Case.

In January 2015, TransLink awarded the initial Phase 3 contract to the joint venture of Hatch Mott MacDonald and Steer Davies Gleave, supported by Stantec, VIA Architecture, Tony Steadman, and The Stewart Group. City staff provided input into the contract Terms of Reference and participated in the evaluation and selection of the consultants.

This initial Phase 3 work is progressing well. City staff have been and continue to be fully engaged in the process, and are collaborating with TransLink staff and the consultant team to resolve design challenges as they arise.

Round Seven P3 Canada Fund Application

On February 24, 2015, the City of Surrey and TransLink co-hosted a day-long seminar with PPP Canada officials. The objectives were to review the status of the Surrey LRT Project and to determine next steps to complete the funding application process.

PPP Canada was satisfied with the progress on the design work and the full cooperation between the City and TransLink. Surrey's initial application was for Round Six, which required proponents to complete project business cases by March 2015. As Phase 3 is currently in progress, PPP Canada advised that an application must be made to Round Seven of the P3 Canada Fund.

As TransLink is the regional transit authority, PPP Canada also required the Round Seven application be made either solely by TransLink or jointly with the City. TransLink retained Partnerships BC with the approval of PPP Canada to assist with the application and to coordinate the financial and legal advisory work that will be needed to complete the P3 Business Case.

On June 12, 2015, TransLink made a submission to Round Seven of the P3 Canada Fund with TransLink as the applicant. Surrey and TransLink jointly prepared the application with Surrey as a partner in the project. Staff anticipate that the Surrey LRT Project will be successfully screened-in for Round Seven. This will require the submission of a completed P3 Business Case in March 2016. The scope of work for completing the Business Case includes additional engineering design, geotechnical work, preparation for environmental assessment, and public consultation.

MOA and Partnership Agreement

In accordance with the Mayors' Council's Transportation and Transit Plan, the City will need to enter into a Partnership Agreement with TransLink on the delivery of the Surrey LRT Project. Staff are currently working with TransLink on a Memorandum of Agreement (MOA) at a staff level for the PPP Canada application and preparation of the P3 Business Case.

The intention of the MOA is to ensure that every effort will be made by TransLink and Surrey to accelerate the Phase 3 work program to complete a P3 Business Case to satisfy Round Seven timelines and requirements. It also intends to uphold Surrey's interests and objectives with respect to the scope, design, and schedule for the implementation and operation of the LRT Project.

City Efforts Concurrent to Phase 3 Design

Staff have undertaken the following initiatives to ensure that the City's transportation, land use, and liveability goals can be achieved with the delivery of the Surrey Light Rail Transit Project:

- City Project Overview Committee:
An interdepartmental Committee has been established to coordinate City response and timely review of ongoing design work.
- Land Use Planning:
A major update to the Official Community Plan was completed in 2014 that included LRT supportive land uses and policies. In addition, a program of secondary land use plan preparation is under way that will ensure that appropriate detailed land uses and policies are in place for all segments of the proposed LRT corridors. To date, planning for the City Centre, Newton Town Centre, Fleetwood Town Centre and West Clayton are well advanced with completion anticipated this year. Planning processes are expected to begin this year for key segments of the LRT corridors that are currently without a detailed land use plan. These include the 104 Avenue corridor (including Guildford Town Centre) as well as the Fleetwood West Frequent Transit Development Area (at Fraser Highway and 152 Street). Staff will seek approval from Council at a later date to initiate these planning processes.
- Economic Benefits of Surrey LRT Report:
The May 2015 report, attached as Appendix I, provides an independent analysis of the Surrey LRT Project’s employment and economic benefits. The analysis found that LRT has the following benefits:

		Jobs	Wages	Tax Revenue
Construction	BC	24,600	\$.4 billion	\$132 million
	Canada	4,200	\$242 million	\$354 million
Operations & Maintenance	BC	14,000	\$810 million	\$101 million
	Canada	1,200	\$135 million	\$116 million

The Surrey LRT Project will also improve access to Surrey Memorial Hospital and Innovation Boulevard; stimulate investment and high-quality residential, commercial, and civic development in Surrey; provide a pedestrian-friendly, human scale, and urban style neighbourhood design form of transport; and assist with affordability by making single or no household cars more feasible.

SUSTAINABILITY CONSIDERATIONS

Progress toward the delivery of Surrey’s LRT Project advances the following actions items in the City’s “Sustainability Charter”:

- EC16: Increase Transit and Transportation to Support a Sustainable Economy;
- SC13: Create a Fully Accessible City; and
- EC7: Promote Sustainable Building and Development Practices.

CONCLUSION

PPP Canada is satisfied with the progress on the design work for the Surrey LRT Project and the full cooperation between the City and TransLink. At PPP Canada's request, TransLink has applied to Round Seven of the P3 Canada Fund in collaboration with the City of Surrey and with acknowledgement of the City as a project partner. It is anticipated that the Surrey LRT Project will be successfully screened-in for Round Seven. Staff and TransLink are working on a Memorandum of Agreement to ensure that every possible effort will be made to fulfill Round Seven requirements and that Surrey's interests are upheld.

Phase 3 of the Surrey Light Rail Transit Study will include the work necessary to complete the P3 Business Case required to support the P3 Canada Fund Application. Staff have undertaken a number of initiatives to ensure that the City's transportation, land use, and liveability goals will be achieved in this next phase of technical work.

A handwritten signature in black ink, appearing to read 'Fraser Smith'. The signature is stylized and cursive.

Fraser Smith, P.Eng., MBA
General Manager, Engineering

JB/PL/PN/clr/brb

Appendix I – May 2015 Economic Benefits of Surrey LRT Report



ECONOMIC BENEFITS OF SURREY LRT

May 2015

Shirocca Consulting

Table of Contents

Executive Summary	1
1. Introduction	3
2. Methodology	5
3. Economic Benefits from Construction & Service Expansion	8
4. Economic Benefits from Operations & Maintenance	11
5. Contributions to Economic Development	15
6. Conclusions	19
Bibliography	21

Executive Summary

The following highlights the key findings on:

- an analysis of the Surrey LRT's employment and economic benefits to the Province of BC and Government of Canada;
- how the project benefits Surrey's economy in terms of expanding and diversifying local employment, attracting investment and development, and promoting focused urban growth; and,
- how the project contributes to the City's economic development plan as well as BC's economic *BC Jobs Plan* and Canada's *Economic Action Plan*.

The analysis found that **Surrey LRT construction** over a 12-year period **and service expansion** over a two-year period will generate:

- **24,600 direct, indirect and induced jobs¹** in BC and **4,200 jobs** in the rest of Canada;
- **\$1.4 billion in direct, indirect and induced wages and salaries** in BC and **\$242 million** in the rest of Canada; and,
- **\$132 million in BC personal income and sales tax revenues** and **\$354 million in Federal personal income tax revenues** that will help offset any capital grants by the Province or Federal government to the LRT project.

Operation and maintenance of the Surrey LRT over a 30-year operating period will generate:

- **14,000 direct, indirect and induced jobs** in BC and **1,200 jobs** in the rest of Canada;
- **\$810 million in direct, indirect and induced wages and salaries** in BC and **\$135 million** in the rest of Canada; and,
- **\$101 million in BC personal income and sales tax revenues** and **\$116 million in Federal personal income tax revenues** that will help offset any capital grants by the Province or Federal government to the LRT project.

In addition, implementation of the Surrey LRT project will:

- **Make a significant contribution to BC's GDP** by generating thousands of jobs in construction, which is also a major local, regional and provincial employer;
- **Add sought-after higher-value jobs** in LRT operations and maintenance in Surrey on a permanent basis;

¹ Person-years or full-time equivalent (FTEs).

- **Provide a vital incentive that is critical for the recruitment and retention of high-tech employees**, thereby expanding businesses and employment in this highly-competitive field and attracting more higher-value job in this sector;
- **Improve access to Surrey Memorial Hospital and its health/life sciences cluster**, making it more desirable as a workplace and creating better connections to other regional health facilities, which are critical to the success of this sector, and will help it grow;
- **Stimulate investment and high-quality residential, commercial and civic development that will generate additional employment and increase the tax base** in Surrey and Langley's Town Centres, especially Surrey City Centre, in support of the Regional and both City's Development Plans;
- **Increase sharing and usage of community amenities** with potential savings to the City of Surrey;
- **Provide a pedestrian-friendly, human scale and urban-style neighborhood design form of transport** that offers both eyes on-the-street and from-the-street visibility, is compatible with lower density portions of the lines, and adds lighting and other amenities that enhance community ambiance, comfort and quality;
- **Supports a mix of development densities** that help maintain Surrey's role as a provider of affordable family-oriented housing;
- **Makes single or no car households more feasible** that may assist affordability;
- **Promote concentration of urban growth, indirectly contributing to the sustainability of the agricultural sector.**

All of the above findings support the goals for job creation, labour force diversification and contained in the City of Surrey's OCP and *Economic Development Strategy*, BC's *Jobs Action Plan* and Canada's *Economic Action Plan*.

1. Introduction

The City of Surrey is one of the fastest growing municipalities in Canada. In 2014, it was the second largest municipality in BC with an estimated population of 513,322; second only to Vancouver (640,469).² Surrey's population is projected to increase by 300,000 over the next 30 years³ and is poised to meet and surpass the City of Vancouver⁴ over this period. In so doing, it will become the Region's second metropolitan hub and counterpoint to Vancouver.

Surrey is also the largest municipality South of the Fraser and is increasingly developing into the "downtown" for this rapidly growing sub-region, supporting the area's largest acute care hospital (Surrey Memorial) and adjunct campuses for Simon Fraser and Kwantlen Universities. Approximately 175,000 jobs are situated in Surrey⁵ and another 125,000 to 150,000 are expected to be added over the next 30 years. At the same time, Surrey's land area is almost three times that of Vancouver (316.4 km² versus 115.0 km²) and includes one-third of the Region's agricultural land. These factors create a unique urban/agricultural duality and challenge for Surrey in managing growth and economic development.

The City's *Official Community Plan* (OCP) sets out to concentrate urban development in the City Centre and five Town Centres, linking these centres with high-quality transit service as a means of focusing and intensifying development and creating synergies between them. To achieve these objectives, Surrey's *Economic Development Strategy* targets City Centre development as a catalyst for broadening investment, economic growth and employment throughout the City, and focuses on increasing high-value jobs in the health/high-tech sector, one of the City Centre's existing strengths. The City's *Transportation Plan* complements and augments these economic development strategies by prioritizing the construction of LRT between the City Centre and three of its Town Centres (Guildford, Newton and Fleetwood) as well as Langley Town Centre, thus ensuring linkages that enable envisaged shared resources and trickle-down benefits between the centres.

The Surrey LRT project consists of two lines. The first line, a 10.9 kilometer L-shaped line linking Guildford Town Centre, Surrey City Centre and Newton Town Centre is proposed to start construction in 2016 and be complete within 7 years. Construction of the second 17.1 kilometer line between Surrey City Centre and Langley Town Centre is proposed to commence by 2026 and be complete by 2028. The total cost of the LRT project is estimated to be \$2.1 billion (\$2015). The project also includes a service expansion in approximately 2041 that will support an increase in service frequency from every 5-minutes to every 3-minutes. The service expansion requires the addition of 18 LRT vehicles and enlarging of the operating and maintenance centre at a total estimated cost of \$168 million (\$2015).

Operating costs starting in around 2023 are projected to be \$23.2 million per year (\$2015) for 5-minute service frequency, and increase to \$38.9 million per year (\$2015) when service frequency increases to every 3-minutes in approximately 2041.

² BC Stats, *Municipal Population Estimates*, December 2014.

³ City of Surrey, Planning and Development Department.

⁴ BC Stats, *Municipal Population Projections*, December 2014.

⁵ City of Surrey, *Official Community Plan*, 2014.

Cost data and information needed for these analyses have been derived from the City of Surrey and TransLink. Other data, including input-output multipliers, have been derived from Statistics Canada, BC Stats and Revenue Canada. All dollar figures in the report are net present value (\$2015). The assumptions, analysis and findings of the report have been independently developed and are those of the author of this report.

This report presents the findings from a quantitative analysis of job and income creation as well as tax benefits resulting from LRT construction, expansion and operations/maintenance to the Province of BC and Government of Canada. Furthermore, it examines how the LRT project will benefit Surrey's economic development in terms of attracting and focusing growth and investment as well as diversifying and increasing employment in the City. It also looks at how the project contributes to the BC's economic development strategy (*BC Jobs Plan*) and Canada's *Economic Action Plan*.

2. Methodology

The employment and economic benefits to BC and Canada as a whole, which are examined in this report, are as follows:

- Direct, indirect and induced employment resulting from the Surrey LRT's design and construction over its expected 12-year duration, operations and maintenance of the LRT over a 30-year operating period and expected service expansion in 2041;
- Wages and salaries associated with direct, indirect and induced employment generated by the LRT's design, construction, operations/maintenance, and service expansion; and,
- Federal and BC income taxes resulting from wages and salaries paid as well as expected BC sales tax paid on materials purchased for the LRT's design, construction, operations/maintenance, and service expansion.

Direct, indirect and induced employment and associated wages and salaries were calculated using the most recent economic multipliers developed by Statistics Canada⁶ for BC from their 2010 Input-Output Model (I-O). The I-O model is based on survey data, which can vary from year to year, and represents an average of output impacts in various industries as defined by the North American Industry Classification System (NAICS).⁷

For construction and future expansion expenditures, two scenarios were modelled. The first was a simplified calculation using multipliers for construction, rolling stock and property. The second used a detailed industry breakdown of construction activities. For operations and maintenance, only a detailed industry breakdown of activities was used. A breakdown of operations and maintenance activities was developed based on a similar recently implemented LRT project. The final estimate figures were rounded.

Personal income taxes resulting from wages and salaries earned as a result of the LRT project's design, construction, operations/maintenance and future expansion expenditures were based on BC and Federal 2015 personal tax rates (See Table 2-1 below). As taxes are graduated by income level, income earned was distributed between tax brackets with the majority assumed to be in the 22% tax rate at the Federal level and the 7.7% tax rate at the Provincial level⁸. This assumption reflects the average annual income for full-time workers in construction and professional/technical industries in BC, who comprise the majority of the workforce estimates⁹. However, as the precise breakdown of part-time and full-time workers as well as information on personal deductions, income sharing, etc., that factor into tax calculation are unavailable, this estimate is an approximation.

⁶ Statistics Canada, *Provincial Input-Output Multipliers*, 2010.

⁷ For additional details, please refer to Statistics Canada, *User's Guide to the Canadian Input-Output Model*, 2010.

⁸ The assumed distribution of income is described in more detail in Section 3.3.

⁹ BC Stats, *Average Weekly Wage Rate by Industry*, 2014.

Table 2-1: Federal and Provincial 2015 Personal Tax Rates

Federal		BC	
Tax Bracket	Tax Rates	Tax Bracket	Tax Rates
		Up to \$37,869	5.06%
Up to \$44,701	15%	\$37,870 to \$75,740	7.70%
\$44,702 to \$89,401	22%	\$75,741 to 86,958	10.50%
\$89,402 to \$138,586	26%	\$86,959 to \$105,592	12.29%
\$138,587 +	29%	\$105,593 to \$151,050	14.70%
		\$151,051 +	16.80% ¹⁰

Source: Canada Revenue Agency, 2015. <http://www.cra-arc.gc.ca/tax/individuals/faq/taxrates>

GST is not a factor in this benefit calculation as the City and/or TransLink¹¹ are refunded GST. Provincial sales tax would apply to materials purchased as well as services procured in some other provinces with HST (e.g., Ontario). As LRT construction as well as operations and maintenance are labour intensive, sales tax would apply to a relatively small percentage of project construction, operations and maintenance costs and most of these expenditures are also likely to be spent in BC. The exception is LRT vehicle procurement. Vehicles, apart from minor exceptions in assembly, are generally manufactured outside Canada and include internationally sourced components that may or may not include Canadian content and, if so, these components are primarily sourced from Ontario and Quebec manufacturers.

As the project has not yet been awarded, the following assumptions have been made regarding material procurement and BC sales tax application:

- Provincial sales tax (PST) typically represents 1.5% of total hard construction costs¹²;
- PST on operations and maintenance costs were assumed to apply to 30% of contracts and material costs plus 100% of the cost for gas and power¹³; and,
- Of these amounts, 90% are assumed to be procured in BC at the current 7% PST rate.

If the currently proposed additional Congestion Sales Tax is successful, it is assumed that this would increase the current budget by 0.5% on BC material sales but, as this additional sales tax would presumably flow through to the Transit Authority, the net project effect has been assumed as zero and it has not been factored into this analysis.

¹⁰ BC introduced a new temporary sixth bracket effective January 1, 2014 for individuals earning more than \$150,000 in a taxation year. The new bracket has a tax rate of 16.8%. This two-year temporary measure expires December 31, 2015 and therefore will not apply to income resulting from this project, which will be earned in 2016 and beyond.

¹¹ TransLink, as the Region's Transportation Authority, may be responsible for overseeing the construction and operation of Surrey's LRT.

¹² This percentage was provided by the cost estimator for the project. Hard construction costs exclude design, project management, property and vehicle costs.

¹³ The calculated percentage of cost for PST relative to total estimated Surrey LRT operating and maintenance costs based on the assumptions was compared with reported PST costs by existing rail operators to ensure the reasonableness of the estimate. Nevertheless, these costs will vary from year to year according to supplies procured and suppliers.

As the project is intended to be a P3 (public-private) contract, the concessionaire would also be expected to pay corporate taxes to BC and the Federal government over the operating period. However, as the P3 contract terms and the concessionaire and its financial structure are as yet unknown, this contribution cannot be estimated. Potential corporate taxes payable by sub-contractors, suppliers and others also cannot be calculated due to lack of data and estimating complexity.

3. Economic Benefits from Construction & Service Expansion

3.1 DIRECT, INDIRECT AND INDUCED EMPLOYMENT

The Surrey LRT project will generate direct employment in design, construction, and equipment and vehicle supply/installation as well as indirect jobs with suppliers and services to the companies providing these inputs. In total, 19,000 direct and indirect person-years of employment or full-time equivalent jobs (FTE's) are expected to result in BC and another 2,100 jobs (FTE's) in the rest of Canada over the next twelve years.

In addition, the expenditure of wages and salaries by direct and indirect workers will support additional or induced employment in a variety of goods and service industries. In BC, induced employment resulting from LRT construction is expected to add another 3,800 person-years of employment or full-time equivalent jobs (FTEs) and 1,700 person-years of employment (FTEs) in the rest of Canada.

Altogether, construction of the LRT project is expected to generate 22,800 person-years of employment in BC and a total of 26,600 in Canada as a whole over the next twelve years.

Table 3-1: Direct, Indirect & Induced Employment (FTEs) from LRT Construction

	BC	Other Provinces	Canada in Total
Direct & Indirect	19,000	2,100	21,100
Induced	3,800	1,700	5,500
Total LRT Construction	22,800	3,800	26,600

Service expansion in 2041 is expected to generate 1,500 direct and indirect jobs (FTE's) in BC and another 200 jobs (FTE's) in the rest of Canada. Induced employment is expected to add another 300 jobs (FTE's) in BC and 200 jobs (FTE's) elsewhere in Canada. In total, service expansion will generate 1,800 jobs (FTE's) in BC and 2,200 jobs (FTE's) in Canada as a whole in 2041.

Table 3-2: Direct, Indirect & Induced Employment (FTEs) from Service Expansion

	BC	Other Provinces	Canada in Total
Direct & Indirect	1,500	200	1,700
Induced	300	200	500
Total Service Expansion	1,800	400	2,200

However, these figures understate the “actual” number of jobs and individuals that will benefit from direct, indirect and induced employment. This is because “actual” employment will include a mix of part-time and full-time positions that total the number of person-years or FTE's cited above. Also, “actual” employment will involve different people at different stages of project implementation.

3.2 WAGES AND SALARIES

Wages and salaries resulting from direct and indirect employment associated with the Surrey LRT project construction are expected to total \$1.1 billion in BC plus \$136 million in the rest of Canada. Another \$190 million in wages and salaries is expected to result from induced employment in BC and \$84 million in other parts of Canada. In total, the project construction is expected to generate almost \$1.3 billion in wages and salaries in BC and over \$1.5 billion in Canada as a whole.

Table 3-3: Wages and Salaries (\$ Millions) from LRT Construction

	BC	Other Provinces	Canada in Total
Direct & Indirect	\$1,100	\$136	\$1,236
Induced	\$190	\$84	\$274
Total LRT Construction	\$1,290	\$220	\$1,510

Direct and indirect employment resulting from service expansion in 2041 is expected to generate \$80 million in wages and salaries in BC and another \$14 million in other parts of Canada. Induced employment is expected to generate another \$14 million in BC and \$8 million elsewhere in Canada, bringing the total amount of wages and salaries generated by service expansion to \$94 million in BC and \$116 million in Canada as a whole.

Table 3-4: Wages and Salaries (\$ Millions) from Service Expansion

	BC	Other Provinces	Canada in Total
Direct & Indirect	\$80	\$14	\$94
Induced	\$14	\$8	\$22
Total Service Expansion	\$94	\$22	\$116

3.3 TAX REVENUES

Income tax rates for BC and the Federal government are graduated by income level. To calculate income taxes resulting from wages and salaries earned in construction and service expansion of the Surrey LRT, it was assumed that the majority of worker income (80%) would fall into the Federal tax bracket between \$44,702 and \$89,401 and the BC tax bracket between \$37,870 and \$75,740. These assumptions are based on an average 2014 annual income of between \$56,000 and \$62,000 per year¹⁴ for construction and professional, technical and scientific occupations in BC, which represent the majority of jobs generated.

¹⁴ Based on BC Stats reported average weekly income earned January to December 2014.

Table 3-5: Assumed Income Distribution to Federal & BC Tax Brackets

Federal		BC	
Tax Bracket	Income Distribution	Tax Bracket	Income Distribution
Up to \$44,701	5%	Up to \$37,869	3%
\$44,702 to \$89,401	80%	\$37,870 to \$75,740	80%
\$89,402 to \$138,586	10%	\$75,741 to 86,958	7%
\$138,587 +	5%	\$86,959 to \$105,592	5%
		\$105,593 +	5%

Based on the above assumptions, construction is expected to return \$104 million in personal income taxes to BC over the next twelve years and \$328 million to the Federal government. These revenues will benefit BC and the Federal government by being recycled back into the Provincial and Federal treasuries and will partly offset proposed Provincial and Federal capital contributions to the LRT's construction.

BC will also benefit from Provincial sales tax paid on materials procured in BC. Construction of the LRT project is expected to result in \$18 million in BC sales tax revenue. Unfortunately, although additional corporate tax contributions from sub-contractors and suppliers and possibly the P3 concessionaire will result to both BC and the Federal government, the amount of these contributions cannot be calculated but should nevertheless be noted.

Table 3-6: Personal Income & BC Sales Tax Revenues (\$ Millions) from Construction

	BC	Canada	Total
Personal Income Tax	\$104	\$328	\$432
Sales Tax	\$18	N/A	\$18
Total	\$122	\$328	\$450

Service expansion in 2041 is expected to return \$8 million in personal income taxes to BC and \$26 million to the Federal government. Sales tax paid to BC is estimated to return another \$1.5 million to BC. Once again, this excludes corporate tax contributions to both levels of government.

Table 3-7: Personal Income & BC Sales Tax Revenues (\$ Millions) from Service Expansion

	BC	Canada	Total
Personal Income Tax	\$8	\$26	\$34
Sales Tax	\$1.5	N/A	\$1.5
Total	\$9.5	\$26	\$35.5

4. Economic Benefits from Operations & Maintenance

4.1 DIRECT, INDIRECT AND INDUCED EMPLOYMENT

Operating and maintaining the Surrey LRT will generate direct employment in operations and maintenance of track, station stops, support facilities, vehicles and equipment as well as indirect jobs with suppliers and services to the companies providing these inputs or activities. Operations and maintenance to support 5-minute service is expected to generate 310 person-years of direct and indirect employment or full-time equivalent jobs (FTE's) annually in BC and another 30 jobs (FTE's) in the rest of Canada.

As with construction, induced employment will also result from the expenditure of wages and salaries by direct and indirect LRT operations and maintenance workers. An additional 70 induced jobs (FTEs) are expected to result in BC and 30 induced jobs (FTEs) in the rest of Canada. In total, LRT operations and maintenance are expected to annually generate 380 direct and indirect jobs (FTE's) in BC and 60 jobs (FTE's) elsewhere in Canada.

Over the expected 20 years¹⁵ between the commencement of 5-minute service and the expected increase to 3-minute service, the LRT's operations and maintenance employment is expected to total 7,600 person-years of employment in BC and 1,200 person-years in the rest of Canada.

Table 4-1: Direct, Indirect & Induced Annual Employment (FTEs) from Operations and Maintenance for 5-Minute Service.

	BC	Other Provinces	Canada in Total
Direct & Indirect	310	30	340
Induced	70	30	100
Total O&M 5-Min. Service	380	60	440

When service increases to 3-minute frequency, direct and indirect employment in operations and maintenance will grow to 520 jobs (FTE's) per annum in BC and 50 jobs (FTE's) in other provinces. Induced employment will also increase, growing to 120 jobs (FTE's) per year in BC and 50 jobs (FTE's) in other provinces. In total, 3-minute service is expected to annually generate 640 jobs (FTE's) in BC and another 100 jobs (FTE's) in other provinces. Assuming a 30-year concessionaire contract, 3-minute service would generate 6,400 person-years of employment in BC over the last 10 years of the contract and 1,000 person-years in other provinces.

¹⁵ Implementation of service expansion is assumed to commence in 2041 and take two years for delivery of vehicles and completion of the operating and maintenance centre expansion.

Table 4-2: Direct, Indirect & Induced Annual Employment (FTEs) from Operations and Maintenance for 3-Minute Service.

	BC	Other Provinces	Canada in Total
Direct & Indirect	520	50	570
Induced	120	50	170
Total O&M 3-Min. Service	640	100	740

Based on the above, over a 30-year concessionaire period, LRT operations and maintenance would generate 14,000 person-years of employment in BC and 15,200 person-years of employment in Canada as a whole.

Again, these figures understate the “actual” number of jobs and individuals that will benefit from direct, indirect and induced employment generated by LRT operations and maintenance. This is because “actual” employment will include a mix of part-time and full-time positions that total the number of person-years cited. Also, “actual” employment will involve different people over the 30-year operating period.

4.2 WAGES AND SALARIES

Wages and salaries resulting from direct and indirect LRT operations and maintenance employment to support 5-minute service are expected to total \$19 million annually in BC and \$2 million annually in the rest of Canada. Another \$3 million per year in wages and salaries is expected to result from induced employment in BC and another \$1.5 million in other parts of Canada. Over an assumed 20-year operating period, operations and maintenance for 5-minute service are expected to generate \$440 million in wages and salaries in BC and \$70 million elsewhere in Canada.

Table 4-3: Wages, Salaries & Benefits from Direct, Indirect & Induced Employment from Operations and Maintenance for 5-Minute Service (\$ Millions)

	BC	Other Provinces	Canada in Total
Direct & Indirect (per year)	\$19	\$2	\$21
Induced (per year)	\$3	\$1.5	\$4.5
Total O&M 5-Min. Service	\$22	\$3.5	\$25.5
20 Year Total	\$440	\$70	\$510

When service increases to 3-minute frequency, wages and salaries from direct and indirect employment are expected to increase to \$32 million annually in BC and \$3 million annually elsewhere in Canada. Those from induced employment are anticipated to increase to \$5 million per year in BC and \$2.5 million in other parts of Canada. Over the remaining 10-year concessionaire contract period, this totals \$370 million in wages and salaries paid in BC and another \$55 million paid in other provinces.

Table 4-4: Wages, Salaries & Benefits from Direct, Indirect & Induced Employment from Operations and Maintenance for 3-Minute Service (\$ Millions)

	BC	Other Provinces	Canada in Total
Direct & Indirect (per year)	\$32	\$3	\$35
Induced (per year)	\$5	\$2.5	\$7.5
Total O&M 3-Min. Service	\$37	\$5.5	\$42.5
10 Year Total	\$370	\$55	\$425

Over 30 years, LRT operations and maintenance are expected to result in \$810 million in wages and salaries in BC and \$125 million in other provinces, totaling \$935 million in Canada as whole.

4.3 TAX REVENUES

Applying the same tax calculation assumptions used for construction and service expansion, the Surrey LRT's operations and maintenance employment to support 5-minute service is expected to generate \$2 million annually in personal income tax revenues for BC and \$6 million annually for the Federal government. BC will also benefit from sales tax paid on materials procured in BC, which is estimated to amount to approximately \$250,000 per year. Over the expected 20-year period for 5-minute service frequency, this would total a \$45 million return to BC and \$120 million to the Federal government.

Table 4-3: Tax Revenues from 5-Minute Service Operations and Maintenance (\$ Millions)

	BC	Canada	Total
Income Taxes (per year)	\$2	\$6	\$8
Sales Tax (per year)	\$0.25	N/A	\$0.25
Total Annual O&M Taxes	\$2.25	\$6	\$8.25
20 Year Total	\$45	\$120	\$165

When service expands to 3-minute frequency, personal income taxes paid to BC are estimated to increase to \$5.2 million per year and to \$9.6 million for the Federal government. BC sales tax receipts are also expected to increase to approximately \$400,000 per year. Over the 10 remaining years in the 30-year operating concession, these tax contributions would amount to \$56 million to BC and \$96 million to the Federal government.

Table 4-4: Tax Revenues from 3-Minute Service Operations and Maintenance (\$ Millions)

	BC	Canada	Total
Income Taxes (per year)	\$5.2	\$9.6	\$14.8
Sales Tax (per year)	\$0.4	N/A	\$0.4
Total Annual O&M Taxes	\$5.6	\$9.6	\$15.2
10 Year Total	\$56	\$96	\$152

Over 30 years, the total amount of taxes returned would amount to \$101 million to BC and \$216 million to the Federal government. All of these tax revenues benefit the Province and Canada as a whole, as they recycle back into their treasuries and again offset Provincial or Federal capital grants to the Surrey LRT project.

5. Contributions to Economic Development

5.1 CONTRIBUTIONS TO ECONOMIC DEVELOPMENT IN SURREY, GREATER VANCOUVER & BC

EMPLOYMENT AND LABOUR FORCE

As previously shown in this report, construction, service expansion, operations and maintenance of the Surrey LRT will generate thousands of new jobs in both BC and Canada as a whole in construction, manufacturing and related service and supply industries. Employment in construction represents over half of all goods-producing jobs held by Greater Vancouver residents and 8% of the total employed labour force in both the Region and Surrey.¹⁶ At the Provincial level, construction is both the third largest employer¹⁷ and contributor to the province's GDP¹⁸ and Greater Vancouver's labour force represents 60% of the Provincial total. Thus, maintaining a strong construction industry and demand for construction, related industries and labour force in Greater Vancouver is an asset to the local, regional and provincial economies.

Although operations and maintenance employment is smaller on an annual basis than that generated for LRT construction, it will continue on an on-going basis and, more significantly, add sought-after higher-value jobs primarily to Surrey where the operations and maintenance facility will be located.

High-Tech Sector

Rail transit is a highly-sought after amenity that positively influences the recruitment of high-tech labour force, the fastest-growing industry sector in BC. As high-tech is a knowledge-based, highly competitive field, attraction and retention of well-educated employees is a paramount consideration. Studies have shown that high-tech companies gravitate to locations that offer a high personal quality of life and accessibility for its workforce,¹⁹ explaining why Microsoft is one of the biggest proponents of rail transit systems and increased transit funding in the US.

With this in mind, the LRT, by improving access and encouraging high-quality retail, entertainment and civic development in Surrey's urban core, should be instrumental in attracting higher-value jobs to the Surrey City Centre especially and thereby expanding and diversifying Surrey's labour force.

Health and Life Sciences Sector

Surrey's Economic Development Plan specifically targets the health and life sciences sector as a higher-value job growth industry. The health and life science sector contributed over \$14 billion to BC's GDP in 2012, ranking third in Canada behind Ontario and Quebec.²⁰ It is a recognized growth industry that attracted 48% of all venture capital investment in BC in 2010. A 2007 report on Boston/Cambridge's life sciences sector found that high-quality transportation connections, particularly investment in rapid transit, provide a critical competitive advantage for businesses in this sector. Like the high-tech industry, employee recruitment and

¹⁶Stats Can, *Labour Force Estimates, for Vancouver CMA*, 2013 and Stats Can, *2011 Household Survey for Surrey*.

¹⁷BC Stats, *Employment and Unemployment by Industry*, 2013.

¹⁸BC Stats, *BC GDP by Industry 2013 (chained 2007 dollars)*.

¹⁹Feldman, MP and AN Link, *Innovation Policy in the Knowledge-based Economy*, 2001.

²⁰BC Stats, *BC GDP by Industry 2013 (chained 2007 dollars)*.

retention are crucial to the success of health and life sciences organizations and related businesses and are a significant determinant for location decisions by agencies and businesses in these fields.

The LRT will improve access and the desirability of working at Surrey Memorial Hospital and the cluster of health science agencies, labs and other related facilities in its vicinity, including over 180 health service businesses.²¹ It will also strengthen links between this health sector cluster and SFU's Digital Health Hub and Kwantlen's Health Connex in the City Centre core and create better connections to other major regional health facilities served by SkyTrain, including Royal Columbian Hospital, the Oak Street Hospitals and VGH. All of these factors should increase Surrey's attraction for health service providers and their employees.

INVESTMENT AND DEVELOPMENT

The LRT's ability to attract investment and development is evident from higher land values, sales and rental demand for residential development as well as significantly lower office vacancy and higher lease rates near rapid transit throughout the Lower Mainland.²² Surveys of prospective developers also confirm that rapid transit would increase their interest in investing in Surrey.²³ There is estimated to be 40.6 million square feet of redevelopment capacity around the LRT stations in addition to 15.8 million square feet at existing SkyTrain stations in Surrey City Centre.²⁴ While absorption of this potential will take years to fully achieve, the economic return to Surrey in terms of an expanded tax base will be substantial.

Surrey City Centre

The City Centre, which is Surrey's priority for high-density development, currently includes over \$1.2 billion in public investment and another \$1.1 billion from the private sector. This includes Simon Fraser University and Kwantlen's Health Connex hub, a new City Hall, Library and Civic Plaza and over 40 major residential and commercial developments at various stages of completion.²⁵ This nucleus already constitutes a significant critical mass upon which to leverage additional development and economic growth. As the epicenter of the LRT system and connection point to SkyTrain, the City Centre will be the LRT's primary beneficiary, as it will provide unparalleled rapid transit access that is second only to downtown Vancouver. This together with having more community amenities (e.g., Guildford's new recreation and pool facility and Newton's wave pool) and the Region's second largest shopping mall at Guildford within easy reach, strongly support the City's goal to promote City Centre development.

Additional Development Benefits

Apart from Surrey City Centre, the LRT's improved access to employment, retail and recreation areas both within and outside Surrey/Langley should also enhance investment and development potential in the other Town Centres as well as the corridors in-between. In addition to increased taxes, the City may also benefit from economies that result from increased sharing and usage of community facilities because of improved access from other areas.

²¹ City of Surrey, *Innovation Boulevard*.

²² Jones, Land & Lasalle, Real Estate Services, *Rapid Transit Office Index*, Vancouver Research, Q3 2014.

²³ City of Surrey.

²⁴ TransLink/Ministry of Transportation Infrastructure, *Surrey Rapid Transit Alternatives Study*, 2012.

²⁵ City of Surrey, *Surrey City Centre: The Future Lives Here*; Colliers International.

Scale and Quality of Life

While promoting investment and development in Surrey City Centre, the Guildford, Newton, Fleetwood and Langley Town Centres and corridors in-between, Surrey's LRT will embody a pedestrian-friendly form of transportation with eyes both on-the-street and from-the-street. This will ensure visibility for local businesses and personal safety in both environs that are investment and development incentives and assets for residents, entrepreneurs, investors and developers.

Unlike Rapid Bus or SkyTrain alternatives, the LRT will have a permanent physical presence in their exclusive rights-of-way and yet be at a human scale and have a gentle footprint in keeping with the lower density portions of the lines. Adopting an urban-style neighbourhood design, it will result in direct links to key destinations, with more stops than SkyTrain, which operates more on a railway format. To operate effectively, the LRT will also need to incorporate strong urban design elements, including wayfinding to stops through landscaping and pedestrian lighting on access routes, road crossings and at stops that offer additional enhancements to the ambiance, quality and comfort of communities served, which are prized by residents and developers.

Investing in LRT rather than SkyTrain also makes both economic and land use sense in Surrey as it can provide more kilometers of line per dollar spent, which is what Surrey needs given its geographic size, variation, spread of its component communities and rapidity of its expected growth. By providing service to a larger area that both includes and supports a mix of development densities, the LRT will also help maintain Surrey's traditional role as a provider of more affordable, family-oriented housing. In addition, by enabling more single or no car households as found near existing rapid transit stations, the LRT may assist families with affordability.

The combination of enhanced urban design, quality of life, accessibility and affordability are compelling incentives not only to investors and developers but also existing and prospective residents and employers that must woo and retain workers in highly competitive fields.

5.2 CONTRIBUTION TO SURREY, BC AND CANADA'S ECONOMIC PLANS

The City of Surrey's OCP recognizes the need to accommodate urban development in such a way as to preserve agriculture, which is an important contributor to the local and provincial economy. In support of the OCP, the City's *Economic Development Strategy* sets out three principal objectives:

- Expand and diversify employment, including higher-value jobs;
- Encourage development and investment; and,
- Strengthen Surrey's dual roles as a vibrant urban economy and centre of agricultural production.

To achieve these objectives, it places particular emphasis and priority on encouraging City Centre development as a catalyst for economic growth. It also targets employment growth in the health sector and high tech as a means of attracting higher-value jobs and diversifying Surrey's employment base. As outlined in Section 5.1 above, LRT will play a fundamental role in achieving these goals.

BC's *Jobs Action Plan* and Canada's *Economic Action Plan* share the City's economic development goals. Both focus on job creation, especially in higher value industries. Canada's *Economic Action Plan* places particular

importance on promoting knowledge-based industries that innovate and create high-quality jobs. In addition, BC specifically targets expanding employment in life sciences, emerging technology and agrifoods.

Clearly, the LRT will create thousands of higher-value jobs in construction as well as operations and maintenance, many of which are in knowledge-based industries, such as engineering design, computer science, etc. However, by helping to attract workers in high tech and emerging knowledge-based industries and improving access and connections to the Surrey Memorial Hospital and health cluster, the LRT promotes employment growth in key job growth sectors identified in the Provincial and Federal plans. Furthermore, by supporting the concentration of urban development, the LRT also indirectly contributes to the sustainability of the agricultural sector.

Another objective of BC's *Jobs Action Plan* is to expand exports and invest in infrastructure that facilitates goods transportation. To the extent that the LRT will reduce traffic growth in Surrey, which accommodates truck traffic to the US border especially, it will positively contribute to this Provincial goal. Construction of the LRT also clearly meets the objectives of *Build Canada*, a component of Canada's *Economic Action Plan* that seeks to invest in infrastructure to create jobs and economic growth.

6. Conclusions

In summary, construction of Surrey's LRT is expected to support 22,800 person-years of direct, indirect and induced employment (jobs or FTE's) in BC over the next twelve years and a total of 26,600 jobs in Canada as a whole. Service expansion of the LRT in 2041 is expected to result in another 1,800 jobs in BC and 2,200 jobs throughout Canada. Furthermore, operations and maintenance is expected to generate a total of 14,000 person-years of employment²⁶ in BC over a 30-year concession period and 15,200 person-years of employment in Canada as a whole.

Wages and salaries generated by jobs created by LRT construction are estimated to be \$1.3 billion in BC and \$1.5 billion in Canada as a whole. Service expansion is estimated to generate \$94 million in BC and \$116 million in all of Canada. Operations and maintenance are expected to add another \$1.1 billion in wages and salaries in BC over the 30-year operating period and \$1.2 billion in Canada as a whole.

Table 6-1: Summary of Benefits to BC & All of Canada

BC		
	Construction & Service Expansion	30-Yrs Operation
Direct, Indirect & Induced Employment	24,600 person-years	14,000 person-years
Wages & Salaries	\$1.4 billion	\$810 million
BC Tax Revenues	\$132 million	\$101 million
All of Canada		
Direct, Indirect & Induced Employment	28,800 person-years	15,200 person-years
Wages & Salaries	\$1.6 billion	\$935 million
Federal Tax Revenues	\$354 million	\$216 million

Tax revenue on personal income earned resulting from construction of the LRT is estimated to contribute \$122 million to BC and \$328 million to the Federal government over the next twelve years. BC will also benefit from approximately \$9.5 million in sales tax as a result of LRT construction. Service expansion in 2041 will generate \$8 million in personal income tax for BC plus \$1.5 million in sales tax as well as \$26 million in personal income tax for the Federal government. Operations and maintenance over 30 years is expected to generate \$92 million in personal income tax for BC plus \$9 million in sales tax. The Federal government is expected to receive \$116 million in personal income tax. Both governments will also benefit from corporate

²⁶ 380 FTE's per year over 20 years of 5-minute service and 640 FTE's per year over 10 years of 3-minute service.

taxes paid by the concessionaire and suppliers to the LRT system, which cannot be estimated due to lack of information and data but should be noted.

Construction of the Surrey LRT will generate thousands of jobs to an industry that is a major local, regional and provincial employer as well as important contributor to BC's GDP. Operation and maintenance of the LRT will add much sought-after high value employment to Surrey in perpetuity. It will also promote residential and commercial investment and development in the town centres, in particular the City Centre, that will generate additional employment and earnings as well as expand Surrey's tax base. Resulting high-quality retail, entertainment and civic development in Surrey's urban core together with improved accessibility are crucial location factors for high-tech and health/life science employers and should bring more high-value jobs in these sectors to Surrey. Furthermore, by supporting the concentration of urban development, the LRT also indirectly contributes to the sustainability of the agricultural sector.

In addition, the LRT's pedestrian-friendly, human scale and urban-style neighbourhood design offers a number of community advantages. These include:

- ensuring visibility and safety as it is an eyes on-the-street and from-the-street form of transport;
- greater compatibility with the lower density portions of the lines;
- added lighting, landscaping and other urban design amenities at stops that enhance neighbourhood ambiance, comfort and quality;
- support for a mix of development densities thus maintaining Surrey's role as a provider of affordable, family-oriented housing; and,
- making single or no car households more feasible that may assist affordability.

All of these advantages are compelling incentives to investors and developers as well as existing and prospective residents and employers. In so doing, the LRT clearly supports the City's OCP and economic development strategy objectives as well as those of BC's *Job Action Plan* and Canada's *Economic Action Plan*.

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