



# Surrey-Newton-Guildford Light Rail Transit

Environmental Review Process Summary

October 2017



## About This Document

As part of the implementation of the Mayors' Council 10-Year Vision for Metro Vancouver Transit and Transportation (2014), TransLink and the City of Surrey (the City) are proposing to develop 27 kilometres of Light Rail, expanding rapid transit south of the Fraser River. The first phase is the 10.5-kilometre Surrey-Newton-Guildford Line (the Project).

This Environmental and Socio-economic Review (the Review) summary provides a plain-language overview of the review process, including a description of the Project, its purpose and anticipated benefits, how the Review will be conducted, and a description of the studies that will be completed to assess potential effects of the Project and how to appropriately address them. The content of this document has been informed by relevant environmental regulations and policies, past reviews of similar transportation projects, and by stakeholder and partner feedback on the Project that has been received to date.

This document and the detailed draft Terms of Reference are available for public comment from October 19 to November 6. Comments will also be obtained through meetings with First Nations Groups and key stakeholders. For more information about the Review and to download a copy of the draft Terms of Reference, please visit [surreylightrail.ca](http://surreylightrail.ca).

## Project in Context

### Project Purpose

Planning for rapid transit south of the Fraser traces back as far as the 1960s. In 2011, TransLink commenced detailed planning for the Project. Concurrently, the City began developing a new long-term vision to develop connected, complete and livable communities as Surrey continues to grow. Working with the City and the Mayors' Council, the following Project objectives were developed, to help achieve the broader regional transportation vision and address Surrey's anticipated population and employment growth:

1. Meet current and future ridership needs and travel demand, provide improved transit service quality, shift and shape corridor travel demand to transit in an effort to reduce dependence on cars in Surrey.
2. Shape and help achieve future land use and increased development in keeping with the Regional Growth Strategy and municipal plans.
3. Help achieve mode share and emissions targets.

## Anticipated Project Benefits

The Project is designed to deliver the following benefits:

- **Reduce Congestion** — more people using public transit means fewer vehicles on the road.
- **Increase transit network capacity** — LRT has the flexibility to add train cars to meet long-term ridership demand to 2045 and beyond.
- **Help transform communities** — LRT will help create integrated, pedestrian-friendly communities along two of Surrey's busiest transportation corridors. Experience in other jurisdictions shows that LRT revitalizes urban neighbourhoods, attracting developers who want to build near public transit and people who want to live near public transit.

- **Protect the environment** – LRT runs on electricity, with no operating emissions, reducing greenhouse gases and the region’s dependency on fossil fuels. Providing improved transportation choices also helps encourage those who can take transit to do so, reducing the number of cars on the road.
- **Create jobs and attract employment** – LRT will help diversify Surrey’s economy by helping to attract workers for highly-skilled jobs in education technology and health services.
- **Meet the City and Regional vision** – the Project is part of the Mayors’ Council Vision and Surrey’s Official Community Plan. The Project also is consistent with public opinion—polling in Stage 2 engagement for the Project found that 82 per cent of Metro Vancouver residents (72 per cent of Surrey residents) support the Project.

## Project Description

The Project is a 10.5-kilometre light rail transit (LRT) line with 11 stops that will connect Newton and Guildford Exchanges to Surrey Central and the existing SkyTrain Expo Line. The Project will run west from Guildford along 104 Avenue to City Parkway, south along City Parkway to 102 Avenue, east along 102 Avenue to King George Boulevard, and then south along King George Boulevard to the Newton terminus near 71 Avenue and 136b Street (Figure 1).

### Key Project Components

Key Project components include LRT alignment and guideways, LRT stops and exchanges, LRT-supporting infrastructure, and LRT vehicles. Each is described below.

### LRT Alignment and Guideways

LRT guideways, or tracks, will generally run along the centre of the road, at street level along the entire route. The width of the guideway will be just under eight metres and will be separated by a curb from other vehicle lanes. King George Boulevard and 104 Avenue will be modified to accommodate the guideways and other vehicle traffic, as well as bicycles and pedestrians. Other than at major road crossings, general purpose traffic will not be permitted on the guideway.

On 104 Avenue (see Figure 2), which currently has two travel lanes in each direction, one travel lane in each direction will be repurposed for LRT, with an additional lane for through or right-turning traffic at key intersections. King George Boulevard (see Figure 3), which currently has two to three lanes in each direction, will be reconfigured to accommodate the LRT guideway, leaving at least two travel lanes in each direction. Existing King George Boulevard bicycle lanes will be re-constructed as new, separated paths.

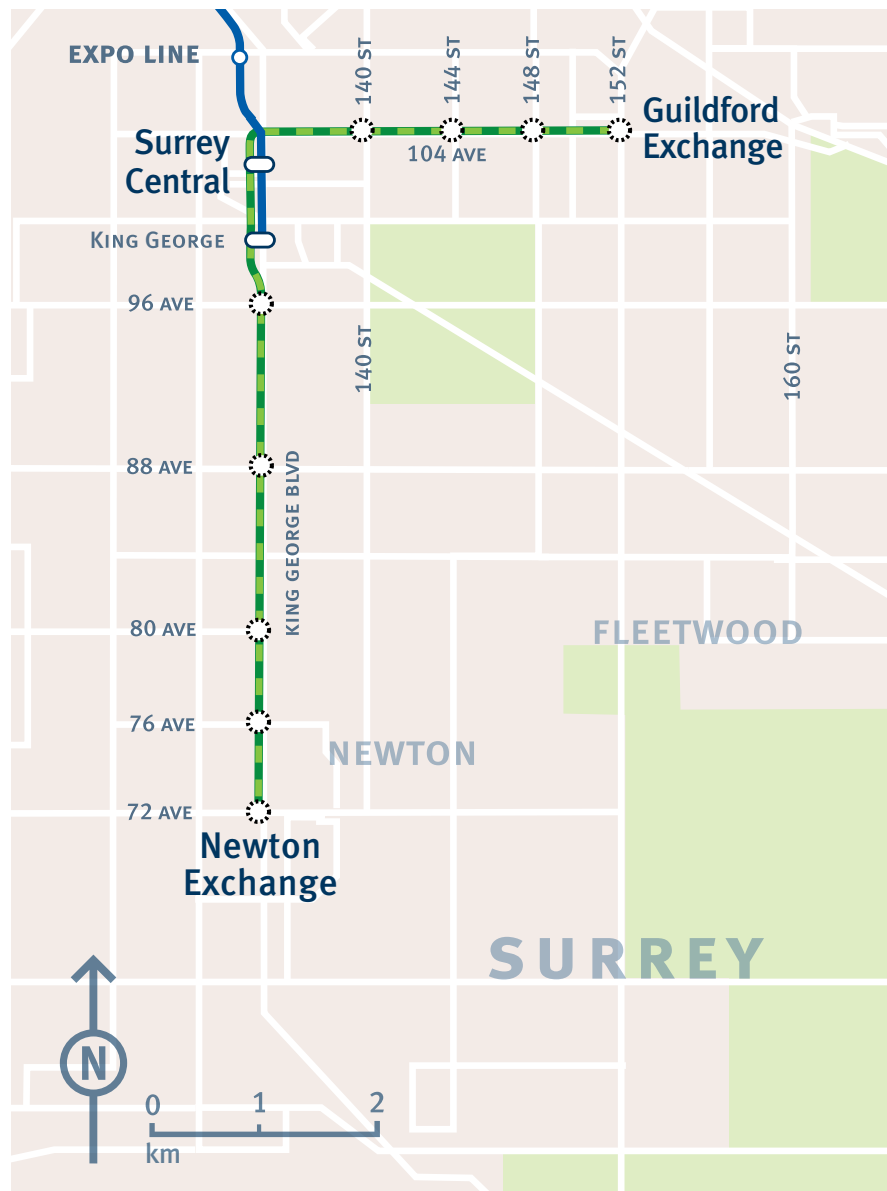


Figure 1 Project Route Map



*Figure 2 104 Avenue Alignment*



*Figure 3 King George Boulevard Alignment*

### **LRT Stops and Exchanges**

A total of 11 LRT stops will be constructed. This includes expanding existing transit hubs at Guildford and Newton, which will incorporate LRT and provide convenient connections to other transit services. LRT stops will include side platforms adjacent to sidewalks or centre platforms (see Figure 4) located between tracks.

### **LRT Supporting Infrastructure**

To help run the LRT and keep it in good operating order, supporting infrastructure will be constructed. These include:

- An LRT operations and maintenance facility near King George Boulevard.
- Power, control, and communications system using overhead catenary lines that supply DC power from eight proposed sub-station units, connected to the local BC Hydro distribution system.
- Radio communications and signalling systems.



*Figure 4 Sample Centre Platform LRT Stop*

### **LRT Vehicles**

The design of the LRT vehicles has yet to be finalized; however, current plans call for approximately 30-metre-long articulated vehicles, with a capacity of more than 200 passengers (see Figure 5).

### **Construction Activities**

The main construction activities for the Project are construction of the guideway, stop and exchange upgrades. Construction includes site preparation, utility relocation, operation and maintenance facility construction, implementation of environmental mitigation measures, operating systems installation, and system commissioning.



*Figure 5 Sample LRT Vehicle Design*

### **Operations Activities**

#### ***LRT Service:***

Once operational, the Project will replace the 96 B-Line transit service; local buses will continue to operate. During peak periods, the LRT vehicles will run every five minutes, northbound and southbound, travelling the 10.5 km between the Newton and Guildford terminals in about 27 minutes.

## Maintenance and Refurbishment

Ongoing maintenance will occur as needed throughout operation. This includes LRT vehicle and track servicing and building maintenance. This is expected to include refurbishing the LRT vehicles after about 20 years in operation.

Experience with electric tram and streetcar systems throughout Europe suggests that, with periodic maintenance, LRT systems can operate indefinitely (some systems have been operating continually for well over 100 years). As such, TransLink does not plan to include Project decommissioning in the scope of the Review.

## Proposed Project Schedule

Environmental baseline studies in support of the Review began in February 2016. These studies will continue through to the end of 2017, once the draft Terms of Reference is finalized. The Environmental Review is expected to take place in late 2017/early 2018. Following confirmation of funding, Project construction could start as early as fall 2019. The target date for start of operations is 2023. **Figure 6** provides a summary of the target timeline for remaining key Project activities.

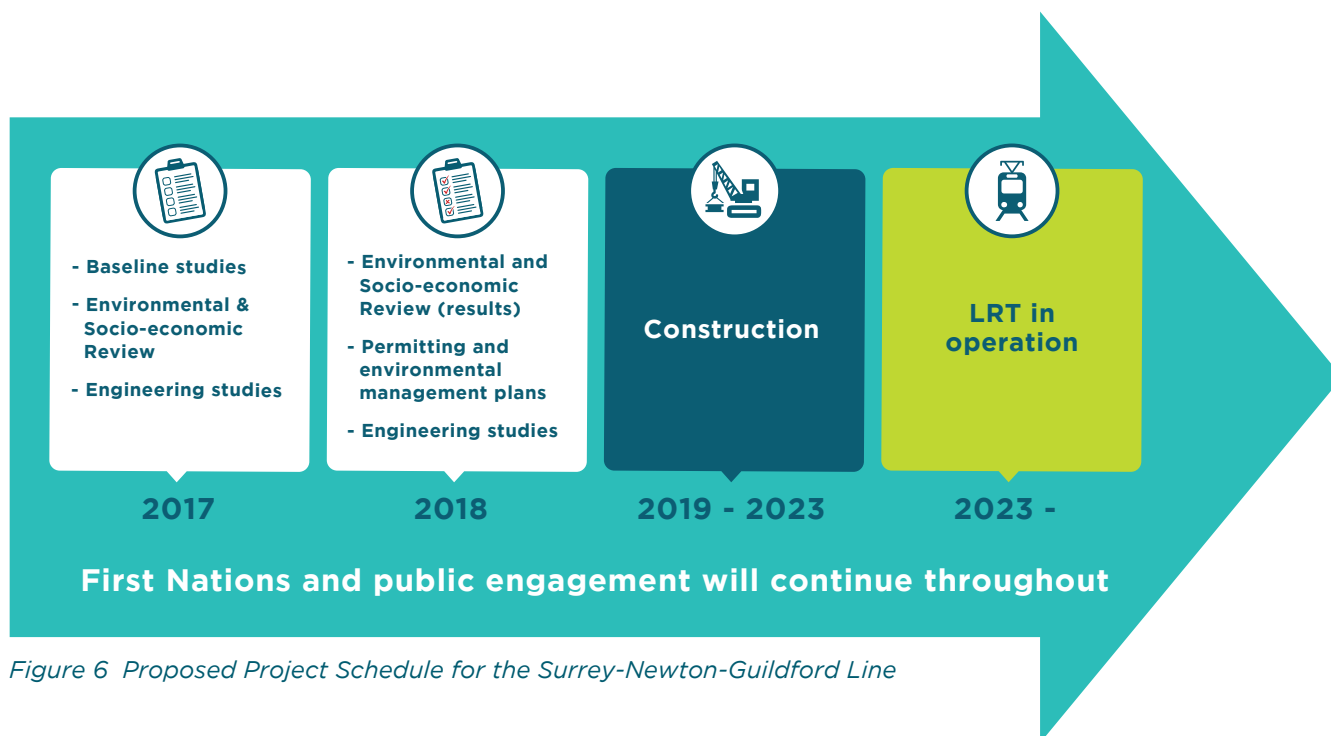


Figure 6 Proposed Project Schedule for the Surrey-Newton-Guildford Line

## Environmental and Socio-economic Review Process

### Purpose

TransLink and the City are committed to delivering the Project in a manner that respects the environment and considers its social, ecological and economic effects, both positive and adverse. TransLink and the City have developed an environmental review process that identifies and analyzes potential Project-related effects and appropriately responds to them in finalizing Project design, construction and operating requirements.

Goals for the Review are:

- Transparency
- Accountability
- Identifying environmental and socio-economic considerations for the Project design

## Process Description

The environmental review process for this Project is as follows:

- Preparing a **Terms of Reference** for the Review.
- Retaining subject matter experts to conduct studies that assess potential Project-related effects and to identify mitigation and management strategies to address these effects.
- Preparing an **Environmental Review Report** that documents outcomes to be incorporated as input and specifications for Project procurement, final design and construction.
- **Engaging the public, First Nations groups, government agencies** and subject matter experts in finalizing the draft Terms of Reference for the review, the study findings and the draft Environmental and Socio-economic Review Report.
- **Implementing a communications and engagement program** to support awareness, due diligence and transparency of the Project and the Review and to encourage participation.
- Retaining an independent process advisor with expertise in environmental reviews to guide the review process for the Project.

The review process is expected to take approximately six months.

## Process Reporting

### *The Terms of Reference*

The Terms of Reference outlines the methods and content for the Environmental Review of the Project, including:

- The Review elements to be addressed
- The specific criteria to be measured within each study
- How First Nations, public and government agency input will be considered

A copy of the detailed draft Terms of Reference is available on the project website at [surreylightrail.ca](http://surreylightrail.ca).

### *Environmental Review Report*

The Environmental Review Report will present the findings of the Environmental Review. The report is planned to include the following sections:

- Project Description, including the Project location, purpose and scope; Project benefits (transportation, community, economic and environmental); Project alternatives; Project components and activities.
- Overview of the review process.
- Overview of engagement approaches with First Nations groups, the public and government agencies.
- Summary of past and planned engagement activities with First Nations groups, the public and government agencies, including a list of the First Nations groups and key stakeholders consulted.
- Documentation of input and comments gathered during the engagement process and summary of how input has been considered in developing mitigation measures and arriving at conclusions.
- Technical Appendices for applicable Review Elements.
- Assessment of potential Project-related effects, in consideration of anticipated Project interactions and proposed mitigation measures.

- A list of Environmental Management Plans that will be prepared and a description of the contents of each Management Plan.
- Summary of conclusions.

### **The Engagement Process**

Stage 3 Engagement in support of the Review is scheduled to take place between mid-October 2017 and mid-February 2018, including:

- Online public comment period for the draft Terms of Reference (October 19-November 6, 2017)
- Input on the environmental technical analysis through meetings and workshops with interested and affected Project stakeholders (currently planned for late October 2017 - early January, 2018)
- Open houses and online comment on the proposed environmental mitigation measures and the draft Environmental Review report (currently planned for late January-February 2018).

## **Evaluation of Potential Effects**

The Review will employ a variety of methods to study the potential effects caused by the Project’s construction and operations, and to evaluate the likely effectiveness of mitigation measures as required. While Project effects on the environment can be both positive and adverse, the Environmental Review studies focus on potential adverse effects and how to avoid, minimize or appropriately address these effects. Study results will be used to finalize project designs and set quality and performance standards for future Project construction and operations.

Based on experience with LRT in other jurisdictions, professional judgment of subject matter experts, best management practice, and the results of consultation and engagement to date, potential effects have been identified. The Review elements, potential effects to be assessed and assessment area/boundaries are summarized in **Table 1**. Specific criteria that will be used to assess the effects are contained in the detailed draft Terms of Reference.

*Table 1 Summary of the Review Elements Identified for the Surrey-Newton-Guildford Project*

<b>Review Element (RE)</b>	<b>Rationale for Selection</b>
Socio-economics	<ul style="list-style-type: none"> <li>• Project will temporarily disrupt traffic flows during construction and will change travel patterns and choices over the long term.</li> <li>• The Project may affect access to residential properties and is being developed to support planned changes in residential development.</li> <li>• Construction may change access to some commercial operations along the corridor.</li> <li>• Consultation participants have asked about safety and security.</li> </ul>
Archaeological and Heritage Resources	<ul style="list-style-type: none"> <li>• Project construction may affect archaeological resources.</li> </ul>

Review Element (RE)	Rationale for Selection
Fisheries and Aquatics	<ul style="list-style-type: none"> <li>The Project has the potential to affect freshwater fisheries and aquatic resources during one or more phases of the project.</li> </ul>
Vegetation and Wildlife Resources	<ul style="list-style-type: none"> <li>Project activities may impact the viability of plant species of interest, and may alter species level diversity.</li> <li>Project activities could alter wildlife habitat (through actual loss of habitat or indirectly due to sensory disturbance).</li> <li>Project construction or operation could result in harmful contact for wildlife.</li> </ul>
Noise and Vibration	<ul style="list-style-type: none"> <li>Noise and vibration from construction may exceed generally accepted levels, which could cause impacts for local residents, businesses and sensitive receptors like schools or bird nesting areas.</li> <li>Project operations may result in measurable or perceived noise and vibration levels.</li> </ul>
Air Quality and GHGs	<ul style="list-style-type: none"> <li>Construction equipment may result in changes to criteria air contaminants (SO<sub>2</sub>, NO<sub>2</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub>), dust and greenhouse gases.</li> </ul>
Contaminated Sites	<ul style="list-style-type: none"> <li>There is potential for encountering contaminated material during construction.</li> </ul>
Electric and Magnetic Fields	<ul style="list-style-type: none"> <li>Project may result in measurable or perceived effects of EMF emissions (from electrified transit lines).</li> </ul>
Other Project Considerations	<p><b><i>Accidents, Malfunctions, and Natural Hazards:</i></b></p> <ul style="list-style-type: none"> <li>Risk of accidents and malfunctions (fire, fuel leak or spill, power outage, train derailment) and consequence of such an event.</li> <li>Measures to reduce risk or mitigate effects of the environment on the Project.</li> </ul>

## Key Dates and Next Steps

The draft Terms of Reference is open for public comment from October 19 to November 6, 2017. To submit comments, please visit [surreylightrail.ca](http://surreylightrail.ca).

Once the Terms of Reference is finalized, studies in support of the Environmental and Socio-economic Review will be completed. Draft findings will be reviewed with First Nations groups, government agencies and stakeholders with subject matter expertise. The findings from these studies will be incorporated into a draft Environmental and Socio-economic Review Report for public feedback in early 2018. Feedback will be incorporated as appropriate in finalizing the report and completing the Review by spring 2018.

Once all project funding is confirmed TransLink will undertake a competitive selection process for detailed design and construction.