

NO: R161

COUNCIL DATE: July 23, 2018

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **July 19, 2018**

FROM: **General Manager, Engineering**

FILE: **8740-01**

SUBJECT: **Surrey Long-Range Rapid Transit Vision**

RECOMMENDATION

The Engineering Department recommends Council receive this report for information.

INTENT

Update Council on the development of a long-range rapid transit vision for the City of Surrey intended to influence TransLink's update of the Regional Transportation Strategy ("RTS").

BACKGROUND

The City of Surrey is growing rapidly. Projections from Metro Vancouver's Regional Growth Strategy show the population of the City of Surrey will exceed the City of Vancouver by 2041. The communities of Whalley, Newton and South Surrey will be in the top 10 most populated communities in Metro Vancouver. South Surrey, for example, is estimated to grow to 157,000 people - more than the current population of Coquitlam.

Metro Vancouver has a long history of coordinating land use and transportation investments. Metro Vancouver introduced its first "Livable Region Plan" in 1975, establishing an urban development pattern aimed at focusing growth and development in compact urban centres supported by an integrated, multi-modal transportation network. The Livable Region Plan evolved into the Regional Growth Strategy. In support of the Regional Growth Strategy, TransLink prepares regular updates to the RTS which guides major transportation investments in Metro Vancouver. The RTS was last updated in 2013 and will be updated for 2019.

Priority transportation investments in the RTS are being delivered through the Mayors' Council 10 Year Vision. The Phase 1 Investment Plan was approved in November 2016 and includes new SkyTrain cars, increased bus service, new B-Line routes and expansion of the Major Road Network. The Phase 2 Investment Plan was approved on June 28, 2018 and includes construction of Surrey-Newton-Guildford LRT, the Broadway Extension and Pattullo Bridge replacement. The Phase 3 Investment Plan (yet unfunded) will include construction of Surrey-Langley LRT on Fraser Highway.

The RTS update will look at global and regional trends, opportunities and challenges, and the development of a long-term strategy to meet growing transportation demands. City of Surrey will provide important input into TransLink's update of the RTS, in particular, pertaining to its vision for the future of rapid transit in the City.

The City has an opportunity to inform the update of the RTS through a long-range rapid transit vision that will provide TransLink with the City's preference for the phased implementation of rapid transit over the next 10-20 years (and beyond) including future investments after the Surrey-Langley LRT line is delivered.

DISCUSSION

Key Principles

Key principles to consider when developing the City of Surrey's long-range rapid transit network include:

- Provide connections to all communities in the City of Surrey and the rest of the Metro Vancouver region;
- Serve existing development and shape future development;
- Encourage continuous development along key corridors and at connection points;
- Accommodate existing transit users and encourage long-term transit ridership growth;
- Provide access to transit service for the majority of the City of Surrey's residents and jobs;
- Enable freedom of movement for a diverse range of people and trips; and
- Ensure the system is simple to use, easy to understand, safe and accessible for all people.

The City will engage the public and other regional stakeholders during the process of designing the long-range rapid transit network.

Benchmarks for the Extent of the Future Rapid Transit Network

To inform the development of a long-range rapid transit vision staff reviewed rapid transit networks in a number of peer cities across North America, Australia and Europe. Staff looked for cities of a similar size and population density to the City of Surrey (now and projected for the future). In general cities similar to Surrey (with a projected population around 800,000 to 1,000,000 people) have between 100-200 kilometres of rapid transit (including metro, light rail and streetcars/trams; not including heavy commuter rail or bus rapid transit). The City of Calgary, for example, is planning to expand its 60 kilometre LRT network to about 150km in the future.

The City of Vancouver plans to expand rapid transit along the arterial street grid by converting its grid-based network of high frequency, high productivity bus services to rapid transit. When all the projects in the Transportation 2040 Plan are delivered, Vancouver will have approximately 140-150km of rapid transit. This local context, combined with examples from international peer cities, offers a benchmark for the development of the City of Surrey's long-range rapid transit vision. Based on projected population and employment, the City will target a rapid transit network in the range of 140-150km.

Rapid Transit Network Types

More important than the technology of individual services is how rapid transit lines come together to form a network. The design of the overall rapid transit network is a powerful tool in shaping a city and serving the needs of its citizens. A rapid transit network, combined with other forms of transportation (like buses, walking, cycling, car share, etc.), gives people freedom to move within their city.

The most effective rapid transit networks are fully integrated into the community and other modes of transportation. Collaboration with regional and local stakeholders is important to ensure the coordination of land use and transportation. The result will be a network that is greater than the sum of its individual parts; efficient, productive and versatile in enabling freedom of movement for a diverse range of people and trips.

What Type of Network is Right for Surrey?

One of the most efficient and effective network types is a grid network. Grid networks provide service to a high number of people and have the ability to attract many new riders because they are simple, direct, easy to understand and useful to a broad range of people making a wide variety of trips. A grid network works best in a city that has many places of origin and destination (sometimes called polycentric) and a grid-based arterial road network. The City of Surrey has both a polycentric development pattern and a strong arterial grid-based road network. This makes a grid-based rapid transit network the right choice for the City of Surrey to serve existing development and help shape future development.

Grid systems typically require people to make connections between services to reach their destinations. The key to making easy connections is providing high frequency service to minimize wait times and building a pleasant waiting environment at stops. A LRT system is an effective way of facilitating connections between services because transfers are made at-grade without the need for escalators or elevators. Cities also have an important role to play in ensuring multi-modal facilities are in place for walking and cycling, in and around stops, so people have easy access to the rapid transit network.

Preliminary Long-Range Network Concept

Based on the key principles outlined above, staff have formed initial thoughts on what a high-frequency, grid-based, long-range rapid transit network might look like. The attached map, Appendix I, illustrates a potential rapid transit vision concept for the City of Surrey at a population of 1 million people and 500,000 jobs. The network is grid-based, serving all major communities and corridors. It assumes all rapid transit lines operate in an exclusive right-of-way. B-Lines (high frequency, limited stop, articulated buses) and frequent buses (operating every 15 minutes or better from early morning, into the evening, seven days a week) fill gaps in the network and connect people to rapid transit. The total rapid transit network length is approximately 140-150 kilometers. Stops are spaced an average of 800 metres apart, maximizing people's access to transit.

How Will People Use the Network?

People could use the network to loop through different communities, making easy connections between services as necessary, while others could travel along a continuous corridor. The network is simple and logical. Many people will have multiple paths to their destination. The network would be as effective for short, local trips as it would be for longer commutes. In this way the network would support all user groups, regardless of age and ability or trip purpose. Initial analysis shows that over 90% of people and jobs would be within a 5-10 minute walk from a transit stop (i.e., LRT, SkyTrain or B-Line service). Regardless of where you live, or where you are going, you could get there by transit.

Phased Implementation

Metro Vancouver has had significant success building its rapid transit network in phases, starting with frequent bus service and followed by B-Line service to build ridership demand and establish the locations of key stops. B-Line service is also a signal to the development community that a corridor is planned to be upgraded to rapid transit in the future. In this way frequent buses and B-Line can help shape development and future ridership demand.

The Canada Line and Evergreen Extensions both began as frequent buses and transitioned to B-Lines before rapid transit was introduced. The 96 B-Line is a precursor to the Surrey-Newton-Guildford LRT and is one of the fastest growing bus services in the region serving over 5 million passenger boardings per year. TransLink plans to introduce new B-Line services in the City of Surrey including Fraser Highway (coming in 2019) and Scott Road/72 Avenue (2020-2021). Phase 3 of the Mayors' 10 Year Vision will include B-Line service on King George Boulevard to South Surrey and along 200 Street in Langley. All these B-Line corridors are included in the long-range rapid transit vision for the City of Surrey.

Medium-Term Concept

Appendix II illustrates what the rapid transit network could like in the medium term. This network includes approximately 100-120km of rapid transit, including the S-N-G and Fraser Highway lines. Potential key north/south rapid transit corridors are Scott Road, King George Boulevard to South Surrey and 192nd Street. Potential east/west corridors include a 104th Avenue extension to Highway 1, 96th Avenue, 72nd Avenue from Scott Road to Newton Exchange, 64th Avenue and 24th Avenue. Rapid transit lines would begin as frequent buses and be upgraded to B-Line before LRT is introduced.

Next Steps

The City will continue to develop the long-range rapid transit vision, including dialogue with neighbouring cities and the public. Also planned is evidence-based ridership modelling of different buildout scenarios over the next 12 months to help refine concepts and determine priorities. The City will continue to work with TransLink on the update of the RTS using the rapid transit vision to influence the future development of the City of Surrey's rapid transit network.

Collaboration with neighbouring cities and TransLink	Summer 2018
Evidence-based ridership modelling	Fall 2018 to 2019
TransLink update of RTS	Fall 2018 to 2019
Finalize long-range rapid transit vision	Fall 2019

CONCLUSION

By 2041 the population of the City of Surrey is projected to exceed the City of Vancouver. The Regional Growth Strategy and RTS guide urban development and transportation investments to ensure urban centres are supported by an integrated, multi-modal transportation network. The RTS was last updated in 2013 and will be updated in 2019. The City will provide important input into TransLink's update of the RTS, in particular pertaining to our vision for the future of rapid transit in our city.

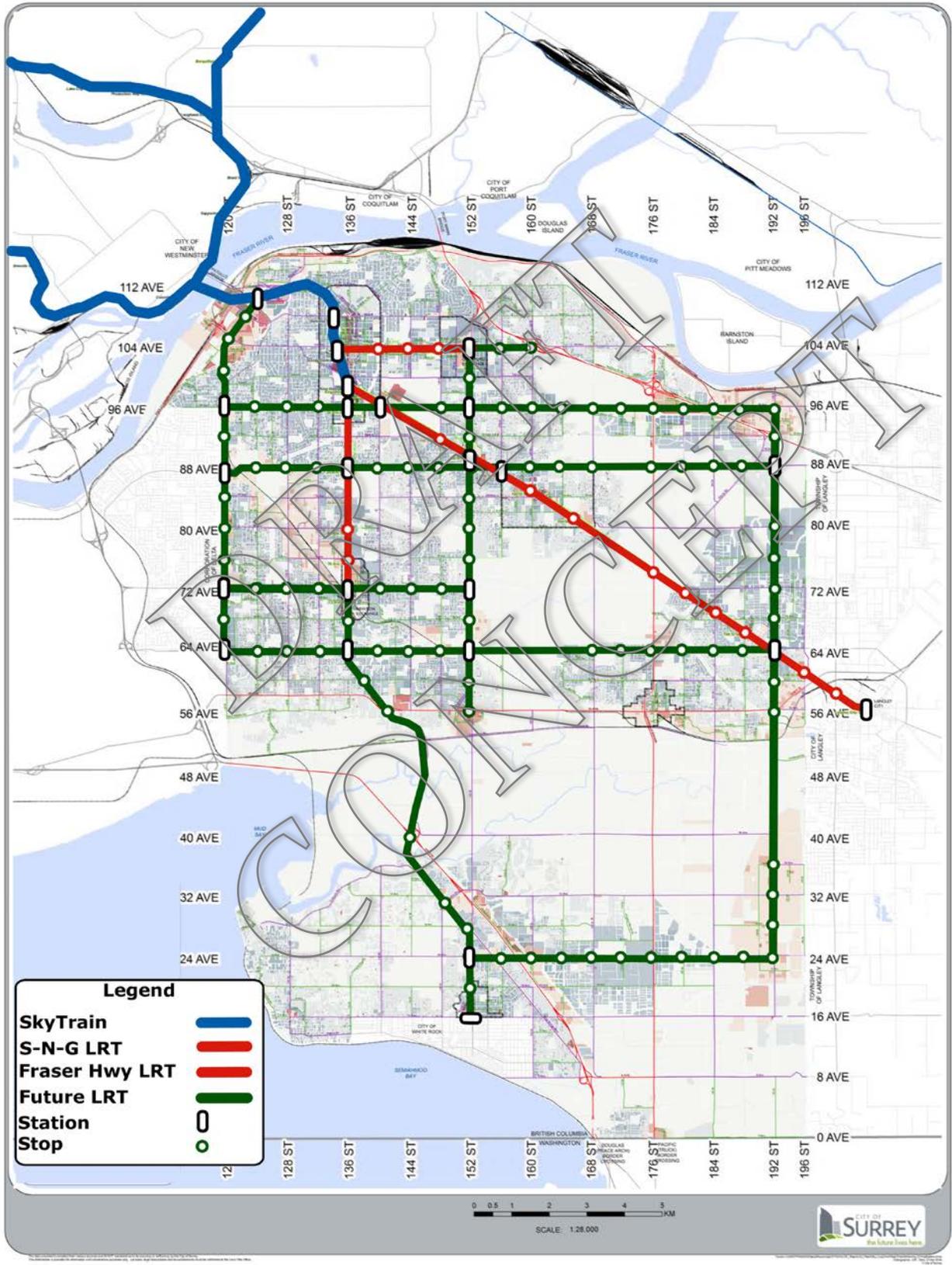
The long-range rapid transit network is expected to be built in phases, consistent with Metro Vancouver's successful practice of starting with frequent bus service, followed by B-Line service, to build ridership demand, establish the locations of key stops and signal to the development community that a corridor is planned to be upgraded to rapid transit in the future. The City is building towards rapid transit on key corridors with B-Line service on King George Boulevard/104 Avenue, Fraser Highway (2019), Scott Road/72 Avenue (2020-2021), King George Boulevard to South Surrey (Phase 3 TBD) and along 200 Street in Langley (Phase 3 TBD).

Further work is required to refine the preferred network and determine phasing. The City and TransLink will continue to work together on developing the long-range vision for transit in the City of Surrey through the update of the RTS.

Based on the discussion outlined in this report, the Engineering Department recommends Council receives this report for information.

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APPENDIX "II"

DRAFT for Discussion
Concept for the City of Surrey's **Medium-Range** Rapid Transit Vision

