



To: General Purposes Committee  
From: Lloyd Bie, P.Eng.  
Director, Transportation  
Re: R7 RapidBus Update

Date: October 27, 2023  
File: 10-6480-03-01/2023-  
Vol 01

**Staff Recommendation**

That staff continue to pursue the R7 RapidBus as presented in the staff report titled "R7 RapidBus Update" dated October 27, 2023, from the Director, Transportation.

Lloyd Bie, P.Eng.  
Director, Transportation  
(604-276-4131)

Att. 1

REPORT CONCURRENCE		
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Policy Planning	<input checked="" type="checkbox"/>	
Engineering	<input checked="" type="checkbox"/>	
<b>SENIOR STAFF REPORT REVIEW</b>	<b>INITIALS:</b>	<b>APPROVED BY CAO</b>

## Staff Report

### Origin

A new express bus linking the town centres of Richmond and Burnaby has been identified in regional transit network plans since 2014. The express bus project in Richmond is known as the R7 RapidBus. Six RapidBus projects have been developed and implemented by TransLink. The R7 was envisioned to be the next RapidBus project for implementation in the region.

On this basis, staff have been working with TransLink on developing high level alignment options for the R7 in Richmond.

At the General Purposes meeting of October 16, 2023, the staff report titled “TransLink Bus Rapid Transit Program – Update on Proposed Richmond Corridor” dated October 5, 2023, from the Director, Transportation was considered. The resolutions for Bus Rapid Transit (BRT) commitment by the City and the preferred R7 RapidBus corridor were not endorsed. This report provides additional background information to address Committee’s questions and discussion regarding the planned RapidBus program for Richmond.

TransLink is currently prioritizing nine RapidBus/ BRT projects to be rolled out from 2025 to 2035 in three phases. It is unlikely that the R7 project will be included as a Tier 1 project as municipal support is a criteria for prioritizing which RapidBus projects advance first. Staff are seeking Council direction to continue to pursue the R7 RapidBus.

This report supports Council’s Strategic Plan 2022-2026 Strategy #2 Strategic and Sustainable Community Growth:

*Strategic and sustainable growth that supports long-term community needs and a well-planned and prosperous City.*

*2.4 Enhance Richmond’s robust transportation network by balancing commercial, public, private and active transportation needs.*

### Findings of Fact

#### What is RapidBus?

RapidBus is a rebranding of TransLink’s previous B-line bus service that offers transit customers a grid network of fast, frequent and reliable buses connecting regional centres across Metro Vancouver (Figure 1). RapidBus is designed to be at least 20 per cent faster than the local bus service. Time-savings are achieved through increased frequency and fewer stops with bus priority measures such as traffic signal priority, queue jump lanes and turn restrictions.

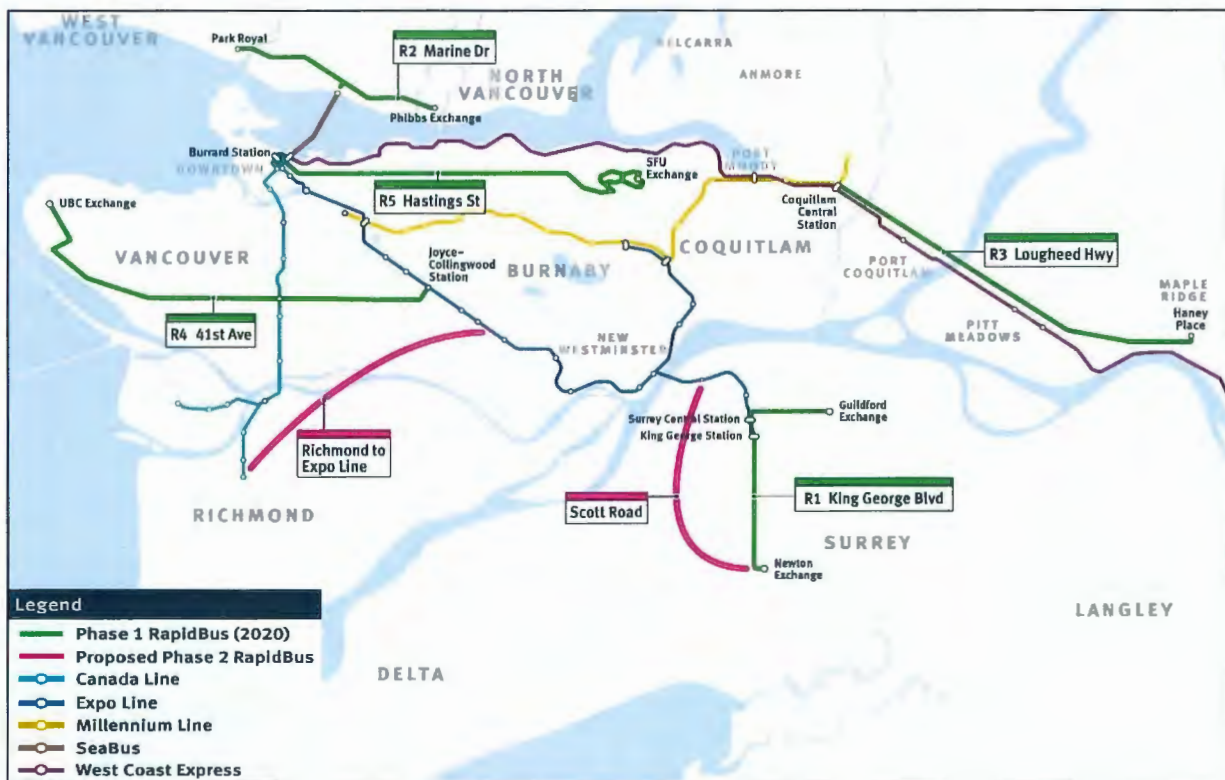


Figure 1: RapidBus Routes

RapidBus service also delivers an enhanced passenger experience through high capacity articulated buses, all-door boarding and improved passenger amenities. Improved signage includes real-time digital information, new branded bus stop poles, wayfinding information and accommodations for visually impaired customers.

**Analysis**

R7 Project Background

Richmond - City Centre and Burnaby - Metrotown are both designated Regional City Centres, providing strong regional anchors with Sky Train connections at each end of the R7 corridor. In 2014, the Mayors’ Council created a Vision for the next 30 years to meet the transportation needs of the region. A new express bus service between Richmond-Brighouse Station to Metrotown via Knight Street Bridge was identified for implementation in the first decade of the Vision to address growth and congestion in both cities.

The R7 project objective is to provide a faster, more direct service than today to more people; that fills a geographic gap within the rapid transit network, relieves current crowding and provides capacity for future growth.

### R7 Ridership Demand

Currently, two bus routes (430 and 410) connect Richmond to the Expo Line in Burnaby. Of the 27 bus routes in Richmond, the 410 via Cambie Road and the 430 via Bridgeport Road experience the highest number of daily passenger boardings. There are other transit options for travel between Richmond and Metrotown (e.g. Canada Line to 41<sup>st</sup> Ave, Canada Line to Expo Line, etc.). However, 2021 data for the 410 and 430 routes confirm the high demand for a direct bus service between Richmond and Burnaby as these buses experience an average of 13,000 daily weekday boardings in total.

Ridership potential for the R7 is also established with Compass Card data that TransLink collects to analyze the transit travel patterns between Richmond and Burnaby.

Where other RapidBus corridors have been implemented in the region, local bus service is also available. No specific changes to the existing local 410 and 430 bus routes were confirmed as part of the alignment planning stage for the R7.

### High Level Route Alignment Options

TransLink’s initial screening and technical assessment of the existing and anticipated ridership demand, determined three potential corridors for the R7 in Richmond. Bridgeport Road, Cambie Road and Alderbridge Way were examined as the east-west road segments to connect City Centre via Garden City Road to the Knight Street Bridge (Figure 2).

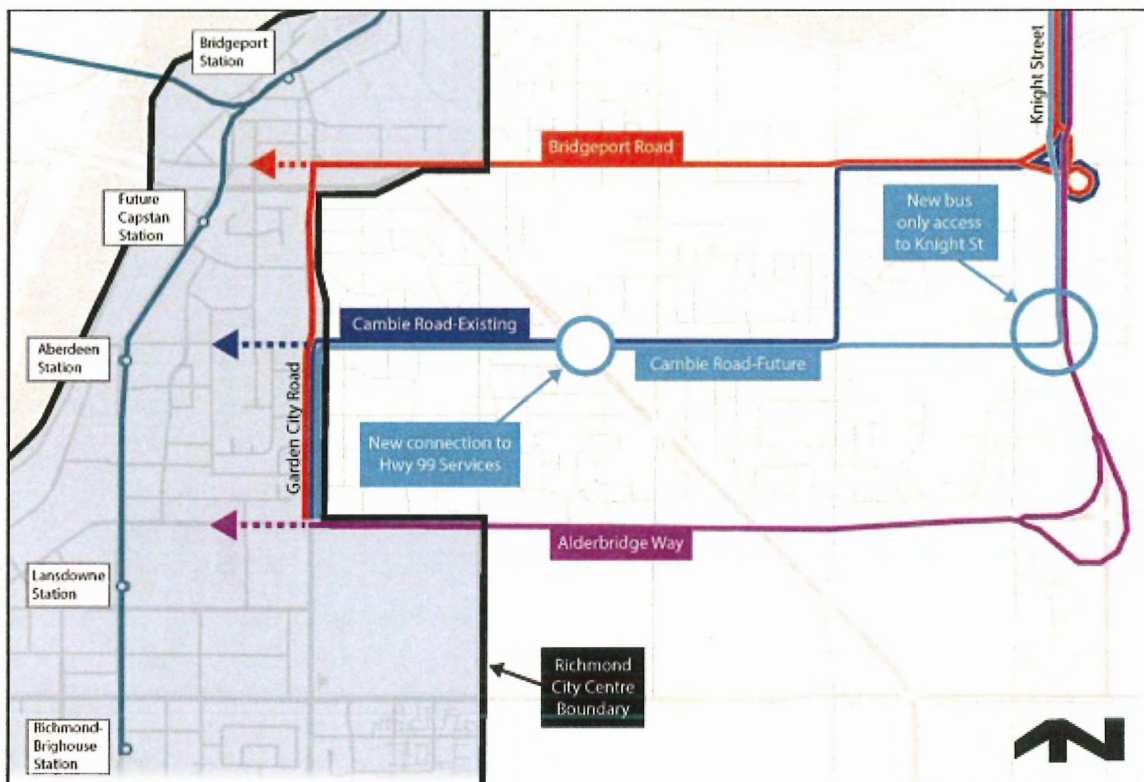


Figure 2: High Level Route Options

An alignment along Westminster Highway was also explored. Due to low trip generation and additional route length, Westminster Highway was not advanced for further study.

A high level network analysis evaluated the three corridors using inputs such as ridership potential, bus travel time and land use considerations including population and job density (Table 1).

**Table 1: R7 Route Assessment**

<b>Corridor Assessment</b>	<b>Bridgeport</b>	<b>Cambie</b>	<b>Alderbridge</b>
Population / Jobs per km	1,200 / 1,200	1,400 / 1,000	900 / 600
Potential Bus Travel Time Improvement	12%	27%	35%
Corridor Peak Buses per Hour	8	12	5
Corridor Daily Passenger Loads	2,300	3,500	1,400

*Preferred Alignment: Cambie Road*

The results of the analysis found that the Cambie Road corridor provides the greatest benefits to ridership and bus operations for the Richmond segment of the corridor. The Cambie Road corridor has the highest existing ridership and bus volumes out of all three corridors.

The Cambie Road corridor has the potential to significantly grow transit ridership on the R7 through integration with regional buses on Highway 99, particularly once the dedicated bus lanes as part of the future Fraser River Tunnel project are in service. This will provide faster and convenient transit access to other major destinations across the region (Delta, Surrey and BC Ferries) for Richmond residents.

The preferred alignment supports the City’s Official Community Plan land uses, as it will serve City Centre (including the future Richmond Centre and Lansdowne redevelopment sites), West Cambie neighbourhood and the East Cambie Neighborhood Centre.

Richmond Terminus Options

The western terminus of the R7 in Richmond, where buses will take recovery after their trip, requires layover and turnaround functions. The Mayors’ Council Vision and previous TransLink investment plans specifically identify Brighthouse Station as the preferred western terminus of the R7 corridor.

As the Brighthouse Bus Mall is currently over capacity, staff recommend TransLink examine alternate terminus locations at Aberdeen and the future Capstan stations to streamline the route and explore off-street layover options (Figure 3).

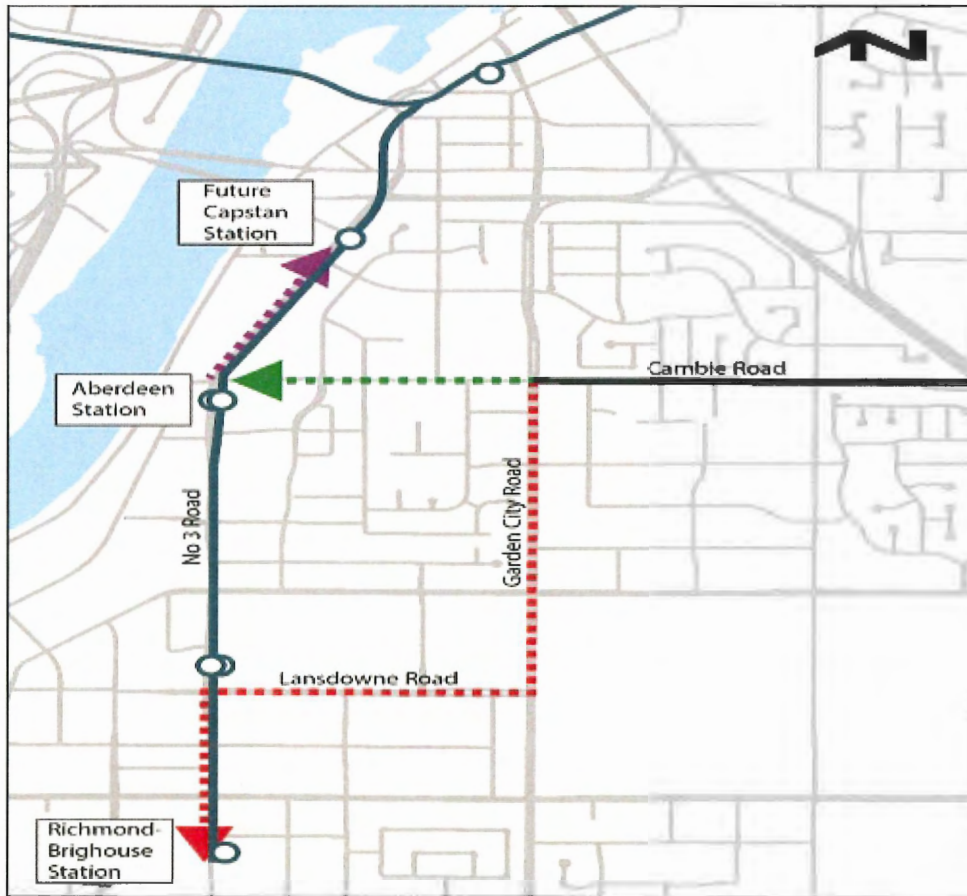


Figure 3: R7 Western Terminus Options

*Brighthouse Station*

Transit data indicates most of the benefits of the R7 service will be realized in Richmond south and west of Richmond Centre. The benefit of a Brighthouse Station terminus is it facilitates direct transfers to the R7 and 10 local bus routes connecting to other parts of the City. The proximity to the Richmond Centre and Lansdowne Mall redevelopments is also an advantage to growing ridership. The challenges with a Brighthouse Station terminus is the additional travel time and circuitous route to Cambie Road and the limited opportunity for bus layover due to the built environment around Brighthouse Station. Consideration of an on-street layover position is possible, however, this could displace operations of another existing on-street bus due to limited curb space.

*Aberdeen Station*

A terminus near Aberdeen Station provides a more direct route to Cambie Road from City Centre. There are neighboring properties around the station that staff have recommended TransLink investigate for bus layover purposes. Although there are fewer local buses connecting to Aberdeen Station compared to Brighthouse Station (two versus 10).

An Aberdeen terminus does provide for equidistant connections via the Canada Line - Bridgeport and Brighthouse stations that unlock the potential for transfers to/from other local and regional bus lines.

#### *Future Capstan Station*

The new station is anticipated to be in operation in Q1 2024. A Capstan Station terminus for the R7 will also provide a more direct route to Cambie Road over the Brighthouse Station option and will be supported by ridership from development in the Capstan Village area. Staff are currently undertaking a Capstan Station integration study. There is opportunity for a western terminus at Capstan to be reviewed as part of this process should the R7 project proceed.

#### Next Steps

TransLink's Transport 2050: 10-Year Priorities has identified up to nine potential corridors for RapidBus or Bus Rapid Transit investment throughout the region to better serve existing transit passengers and grow ridership (Attachment 1). The R7 Rapid Bus in Richmond was identified as the next RapidBus project for implementation in the region.

Endorsement to continue pursuing the R7 project by the City is an important criterion in developing TransLink's prioritization process and phasing of the RapidBus/BRT projects.

#### *Do Not Pursue R7 (not recommended)*

Should the City decline pursuing the R7 project, it is likely that the R7 project will be cancelled and another community will be advanced for RapidBus implementation in the next ten years.

#### *R7 Further Study (Recommended)*

A RapidBus typically advances through several stages of development prior to implementation, including alignment planning, concept design, detailed design and construction. The preliminary alignment planning of the R7 RapidBus project has yielded Cambie Road to be the best fit for the main east-west segment of the corridor in Richmond.

The following project elements for the R7 RapidBus would be further developed and assessed during the concept and detailed design planning stages should this project continue to be pursued:

- Corridor Alignment Refinement
- Western Terminus location
- Specific RapidBus stop locations
- Bus priority opportunities
- Configuration of transit service connection points, particularly to higher order transit at Hwy 99 and a direct on-off ramp to Knight Street Bridge via Cambie Road

Staff recommend the City continue to pursue the R7 RapidBus, to advance the project as a priority for implementation in the next 10-year Investment Plan.

This will facilitate further technical assessment and public engagement to occur for the proposed RapidBus service in Richmond. Staff would provide updates to Council at key milestones of the project.

**Financial Impact**

None.

**Conclusion**

A high frequency, limited stop bus service connecting the regional town centres of Richmond City Centre and Metrotown was first identified in the Mayors' Council Vision in 2014. The proposed service, identified as the R7 RapidBus, will better match service levels with the high transit demand on this corridor. TransLink has initiated a process to evaluate and prioritize nine RapidBus/BRT corridors identified in Transport 2050: 10-Year Priorities for funding and implementation. Although it is unlikely that the R7 will be advanced as part of the first phase of RapidBus projects, staff are seeking Council endorsement to continue pursuing a R7 RapidBus in Richmond.

The Canada Line is an example of the proven effectiveness of growing ridership from an express bus service to rail rapid transit. The establishment of the R7 Project in Richmond will help build ridership and support ongoing land use planning for long-term rapid transit between Richmond and Burnaby.

If the R7 RapidBus project is not pursued, the current level of bus service between Richmond and Burnaby will remain until at least 2035 and TransLink will redirect potential funds from the R7 project to other RapidBus or BRT projects elsewhere in the region.

*Sonali Hingorani*

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Att 1: Transport 2050: 10-Year Priorities - RapidBus/BRT Corridors



### Transport 2050: 10-Year Priorities - RapidBus/BRT Corridors

