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DISTRICT OF WEST VANCOUVER
750 17TH STREET, WEST VANCOUVER BC V7V 3T3

COUNCIL REPORT

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| Date: | June 23, 2025 |
| From: | Sean O'Sullivan, Senior Manager Roads & Transportation |
| Subject: | Bus Speed and Reliability Report |
| File: | 1700.09 |

RECOMMENDATION

THAT

The staff report dated June 23, 2025, regarding Bus Speed and Reliability be received for information.

THAT

With project funding from TransLink, staff proceed with the following projects recommended in the Bus Speed and Reliability study:

1. fill in the westbound bus bays at 21st and 22nd Streets;
2. construct a bus bulge at the westbound 17th Street bus stop;
3. remove select eastbound and westbound bus stops; and
4. complete a detail study of left turn bays on Marine Drive at 15th Street and report back to Council with the study findings.

1.0 Purpose

The purpose of this report is to provide Council with an update on the outcome of the Bus Speed and Reliability (BSR) Study and to seek Council support to proceed with next steps to advance short-term priority projects identified in the study, with project funding from TransLink.

2.0 Legislation/Bylaw/Policy

The policy context for transportation is provided by the District's Official Community Plan (OCP) Bylaw No. 4985, 2018 and the District's Strategic Transportation Plan, 2010.

3.0 Council Strategic Objective(s)/Official Community Plan

Council's Strategic Plan

This report aligns with Council's Strategic Objective to:
Goal 4.0 Mobility - Enhance the mobility within the community.

Objective 4.3: Diversify, expand, and improve the safety and appeal of active transportation options through infrastructure upgrades and traffic management solutions.

Official Community Plan (OCP)

This report supports the mobility and circulation policies set out in the Transportation and Infrastructure section of the OCP:

2.4.7 Work with partners, including TransLink, to improve transit infrastructure, service area, frequency and efficiency.

2.4.8 Support the expansion of frequent transit services, prioritizing connections between Park Royal and Dundarave by expanding bus priority measures and transit-supportive road treatments along Marine Drive to improve reliability and speed of transit service, and to facilitate future rapid bus service.

4.0 Background

Throughout the Greater Metro Vancouver area 80% of travel times for bus routes are slower now than 5 years ago. As a result, 15% of transit operating costs are attributable to mitigating impacts from roadway delay (\$80,000,000 per year).

TransLink needs to protect transit from congestion on the region's roads so that it is an attractive and reliable transportation choice for everyone. The Bus Speed & Reliability (BSR) Program was created to develop and deliver cost-effective transit priority measures to improve bus speed and reliability.

For 2025, Translink's BSR Program has funding of \$4,000,000 available for allocation to eligible studies, pilots, and capital projects.

4.1 History

Delay is distributed across the region, but nearly 60% of the passenger delay in the transit system in the fall of 2021 was concentrated in the top 20 corridors, which make up only 9% of the transit network in kilometres. The Marine Drive corridor was one of the top 20 corridors for delay. In 2023 TransLink conducted a high-level review along the Marine Drive Corridor and provided potential solutions to address concerns.

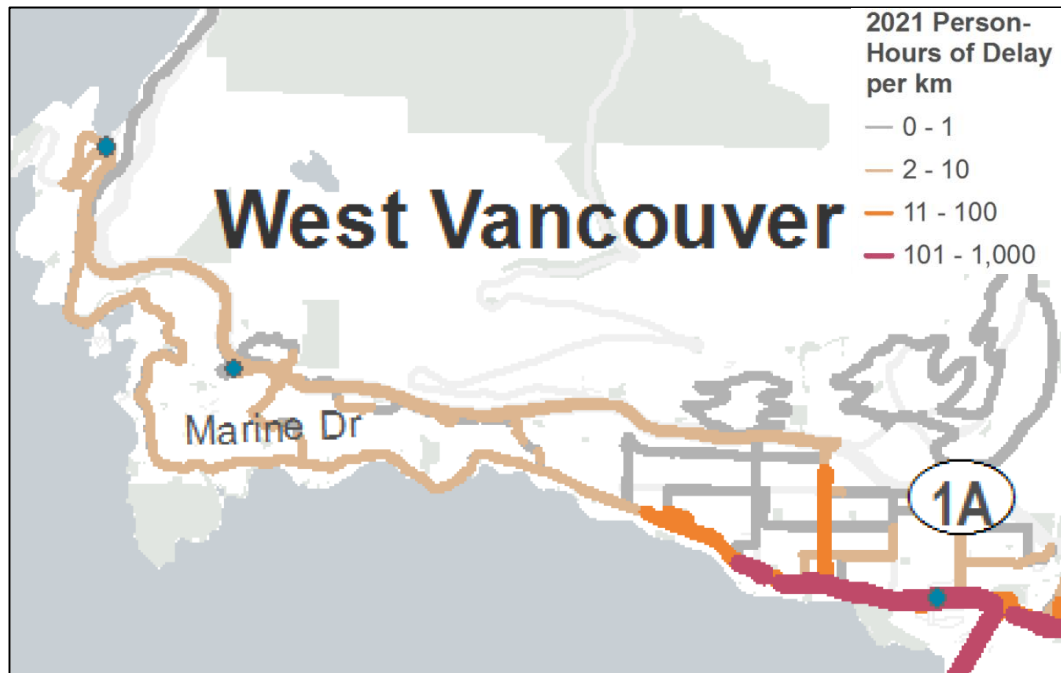


Figure 1 - 2021 Person-Hours of Delay in West Vancouver

In 2024, the District partnered with TransLink and hired a consultant to conduct a detailed BSR analysis of Marine Drive between 13th Street and 25th Street. The key measures that were identified to improve bus speed and reliability along the corridor include:

- Constructing bus bulges and filling in bus bays so that buses stop in the travel lane instead of the parking lane.
- Remove select eastbound and westbound bus stops where bus stops are closely spaced together.
- Complete a detail study of constructing eastbound and westbound left turn lanes on Marine Drive at 15th Street.

TransLink has approved funding for the three projects.

5.0 Analysis

5.1 Discussion

TransLink has developed a toolbox of mitigation measures to improve bus speed and reliability along a corridor. Customers and TransLink accrue the most benefits when multiple priority measures are focused along a corridor.

If the measures are effective and result in significant savings, TransLink can reinvest the savings to expand or enhance service. For example, bus stops were removed at the same time as bus bulbs were added along West 4th Avenue in Vancouver. Together, these measures helped reduce travel time by 10 – 20% through the corridor.

In addition to transit riders, mitigation measures can also benefit drivers and pedestrians. Measures such as bus bulbs improve safety by shortening pedestrian crossing distances and calming traffic; supporting retail areas by expanding room for pedestrian activity, loading and unloading, landscaping, and patios; and creating opportunities to install bus shelters.

Bus Bulges/Bus Bay Infill

Along Marine Drive between 13th Street and 25th Street, buses stop in the travel lane at 62% of the westbound stops and 75% of the eastbound stops. The District’s BSR study identified 3 westbound stops that are candidates to add a bus bulge or to fill in the bus bay. This would increase the percent of westbound bus stops where the buses stop in the travel lane to 85%.

The 3 westbound candidate locations are:

1. 17th Street (bulge)
2. 21st Street (infill)
3. 22nd Street (infill)

By not having to exit the travel lane to stop at a bus stop, bus delay (caused by vehicles parked in the bus stop and safely pulling back into the travel lane), and collision risk are reduced. It is estimated that stopping in the travel lane rather than in the parking lane will save each bus an average of 3 seconds. When a bus stops in the travel lane, vehicles following the bus, if they can not change lanes, will have to wait an average of 20 seconds while passengers board and exit the bus. An average bus has 30 passengers, so the cumulative time savings is 3 seconds x 30 passengers for 90 seconds of savings per bus. That cumulative time saving will offset the cumulative time costs for general purpose traffic and will create a more consistent and reliable bus service.

| Project Type | # of projects | Travel time savings (Weekdays) |
|---------------------|---------------|--------------------------------|
| RapidBus route* | 3 | 25-35% |
| Bus Stop Balancing* | 5 | 5-10% |
| Bus/BAT lanes | 11 | Up to 10% |
| Approach lanes | 3 | Up to 35% |
| Queue jump | 2 | ~15% |
| In-lane bus stops* | 5 | Up to 15% |
| Signal upgrade | 6 | Up to 15% |
| Turn restrictions | 1 | ~10% |

Table 1. Measures to Increase Bus Speed and Reliability

In addition to bus travel time savings, filling in the bus bays at the westbound 21st Street and westbound 22nd Street stops, as shown in Figure 2, will increase the sidewalk width making the bus stops wheelchair accessible and reduce conflicts between waiting passengers and sidewalk users.

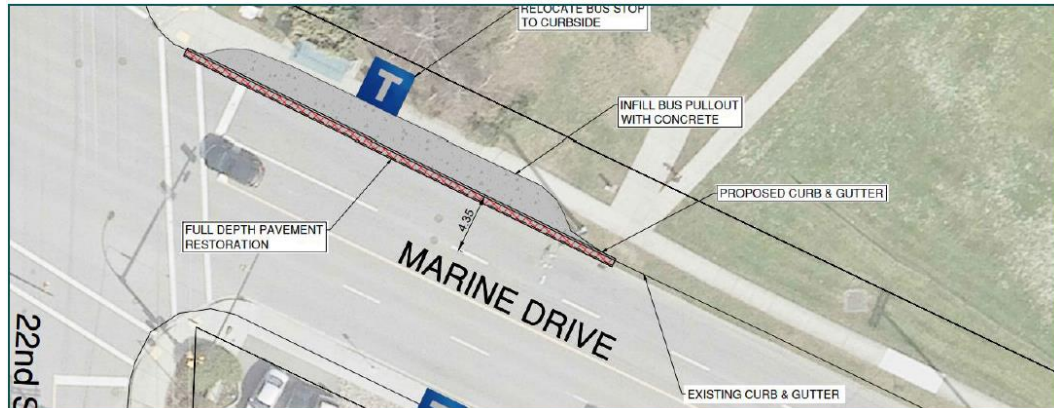


Figure 2. Example of Bus Bay Infill at 22nd Street

At the westbound 17th Street bus stop, adding a bus bulge will have several benefits:

- the clearance distance to pull off the travel lane will not be required, and 3 parking spaces can be created
- the 17th Street stop is the only stop between Taylor Way and 25th Street without a bus shelter, the bulge will make it possible to add a shelter
- the distance to walk cross Marine Drive will be reduced which can increase safety for pedestrians
- the bus bulge may reduce the speed of vehicles turning right onto 17th Street

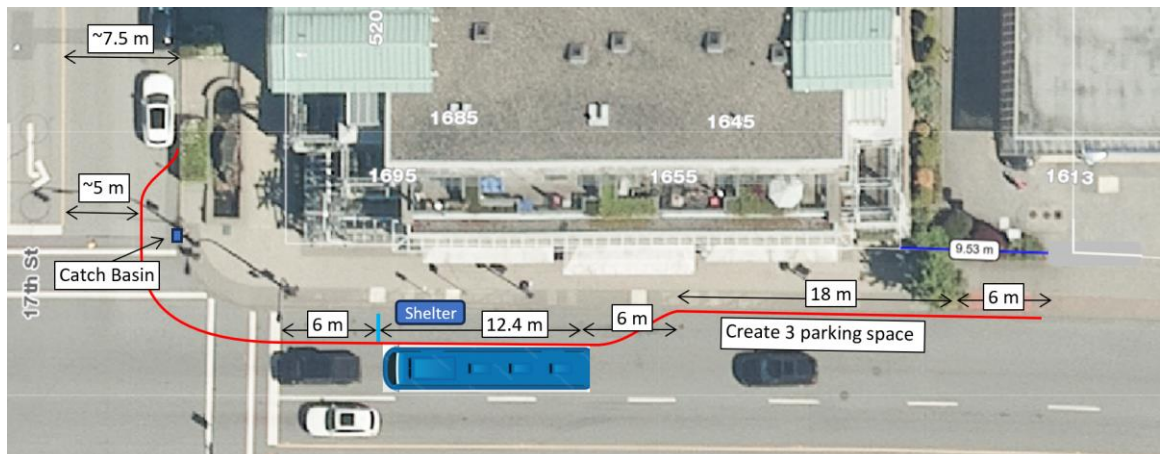


Figure 3. Sketch of Bus Bulge at 17th Street

Removing bus stops will have some negative impacts. It will mean that some transit users will have to walk further to reach a stop. For example, transit users heading to the Library will have to walk 40 m further if the eastbound stop at 20th Street is removed and will have to walk 20 m further if the westbound stop is removed.

TransLink's Transit Service Guidelines, based on international best practices recommends an average spacing of 300 to 800 meters for all-day frequent routes. The District will ensure that if bus stops are removed, the spacing between the remaining stops will be within TransLink's guidelines.

Detail Study of Left Turn Lanes on Marine Drive at 15th Street

The Marine Drive/15th Street intersection is a busy intersection because 15th Street provides a connection to Highway 1. On the westbound approach to the intersection, there is a 16 m long, 2.7 m wide right turn lane that does not function effectively because it is too short and too narrow. (A typical truck with mirrors can be 3.0 m wide.) There are no left turn lanes at the intersection. Instead, westbound left turns are prohibited from 4 pm to 6 pm Monday to Friday and eastbound left turns are accommodated with a 6 to 10 second protected left turn signal.

During the evening peak period, approximately 23% of westbound vehicles turn right onto 15th Street and 15% of eastbound vehicles turn left onto 15th Street. The left and right turning traffic must compete with around 120 pedestrians trying to cross 15th Street on the north side of Marine Drive. The high vehicle and pedestrian volumes, with no eastbound left turn lane and an ineffective westbound right turn lane, creates uncertainty and congestion at the intersection. The level of service for the intersection is C which means the average delay is 20 to 55 seconds per vehicle.

The Marine Drive / 15th Street intersection is the second highest collision location on District owned roads behind the Marine Drive / Park Royal Mid Mall North-South intersection. Between Jan 2019 and Dec 2023 there were 99 collisions including 3 pedestrian collisions. A recently completed Network Screening Study of intersection safety within the District recommended installing left turn lanes as a cost effective improvement to reduce the number of collisions.

The BSR study recommended conducting a detail study to determine the costs and benefits of constructing left turn lanes on Marine Drive. A high-level analysis of the intersection estimated that:

- Adding left turn lanes could reduce delays at the intersection by 2 to 5 seconds per vehicle during the evening peak period.
- While travel time improvements are modest, a key benefit of the left turn bays is improved reliability and lane balancing among vehicles. A single left turning vehicle can cause noticeable delays for traffic behind

it and cause variations in travel times during peak hours. Left turn lanes with proper storage eliminates this problem and encourages general traffic to use the fast lane, improving transit times in both the curb and fast lanes.

- Adding left turn lanes can reduce the collision frequency.
- Adding left turn lanes and removing the right turn lane can improve pedestrian safety.
- Approximately 8 parking space will be lost on the north side of Marine Drive, and approximately 14 parking spaces will be lost on the south side of Marine Drive.

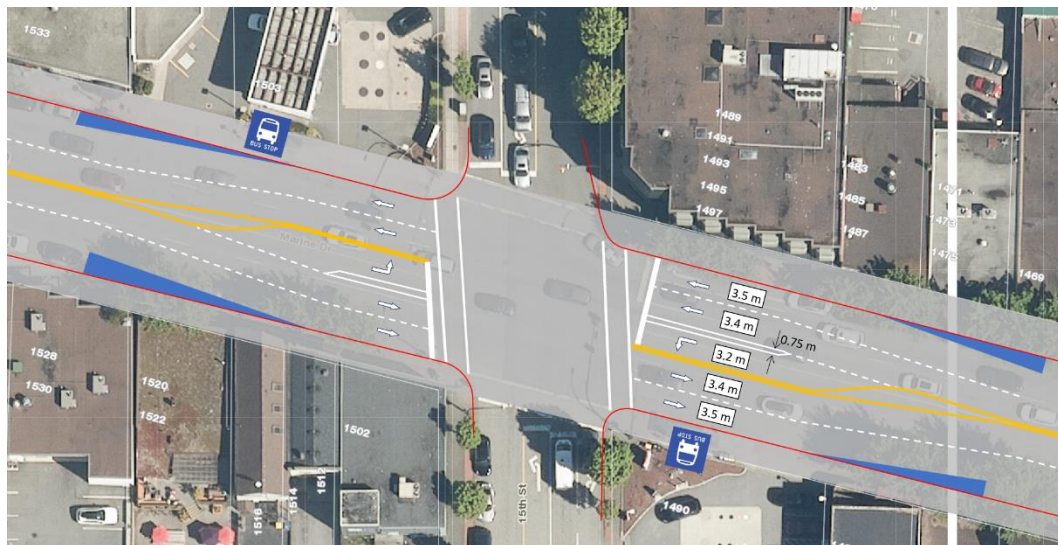


Figure 5. Sketch of Left Turn Lanes on Marine Drive at 15th Street

Only a study is being recommended at this stage. Once the detail study is complete, staff will report back to Council to present the findings and recommendations of the study.

5.2 Climate Change & Sustainability

By increasing bus speed and reliability, transit becomes a more competitive mode of transportation which can attract more riders to transit. This contributes to the District's goal of increasing transit's mode share and reducing greenhouse gas emissions.

5.3 Public Engagement and Outreach

Before removing bus stops, the District will notify the public about the stops being considered for removal and allow for a period to receive feedback before determining which stops should be removed.

No public outreach is planned for the bus bulges/ bus bay infill.

Prior to implementation, the Ambleside Dundarave Business Association will be engaged following the completion of the detail study for left turn bays on Marine Drive and 15th Street.

5.4 Other Communication, Consultation, and Research

The BSR study was conducted in consultation with West Vancouver Transit and TransLink. West Vancouver Transit supports the projects discussed in this report.

6.0 Financial Implications

TransLink has approved grants to fund 100% of the projects discussed in this report.

- bus bulges and bus bay infill – design, construction, and contingency - \$294,100
- bus stop removals – public notification, consultation, and shelter relocation - \$30,000
 - *If bus stops are removed, staff will work with the shelter provider to relocate the shelters from bus stops that are being closed to bus stops that do not have shelters.*
- detail study of left turn bays on Marine Drive at 15th Street – preliminary design, class C cost estimate, parking impacts, collision reduction benefits - \$40,000

The total cost of implementing all the projects will be \$364,100, which is 100% funded by TransLink. The risk to the District is that any costs over the TransLink grants will need to be covered by the District.

7.0 Options

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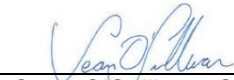
7.1 **Considered Options**

Council may request further information or provide alternative direction (to be specified).

8.0 **Conclusion**

To make transit a competitive mode of transportation, the speed and reliability of the service must be maximized, and the impacts of increasing road congestion delays must be minimized. The projects recommended in this report will help achieve those objectives and benefit transit users as well as pedestrians and drivers.

Author:



Sean O'Sullivan, Senior Manager, Roads & Transportation