Bus Speed and Reliability Funding Program (BSR)

2027 Program Guidelines

September 2026

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1 INTRODUCTION

The Bus Speed & Reliability (BSR) Program was created to develop and deliver cost-effective transit priority measures to improve bus speed and reliability. This document guides how TransLink will work with local governments to identify issues, develop solutions, and implement changes to improve bus service through the Bus Speed and Reliability Program. This document is subject to periodic changes or enhancements as required.

Table 1.1: Bus Speed and Reliability Program Overview

Program Components	Description
Program Objectives	Deliver new projects in the near term to enhance bus speed and reliability through a local government funding program.
Program Eligibility	Project located on Frequent Transit Network (FTN), at major transit nodes, or other locations identified by TransLink as a high priority.
Project Types	Three categories of projects eligible for funding: • **Studies** to evaluate alternatives and ultimately develop conceptual designs; • **Pilots** to design, deliver, and evaluate short-term trials that will inform decisions about permanent design of facilities to improve bus speed and reliability; and • **Capital Projects** to design, deliver, and evaluate permanent changes to the roadway or traffic control operations to improve bus speed and reliability.
Allocation & Evaluation	Allocation based on competitive score: • No limit to the number of projects that a sub-region may submit. However, no sub-region may receive more than 50% of total available funds. • Sub-regions may allocate funds to another sub-region to address issues, or local governments from adjacent regions may submit a cross-jurisdiction project.
TransLink Funding	Up to 100% for high-priority projects in the 2027 BSR Program year.

2 PROGRAM OVERVIEW

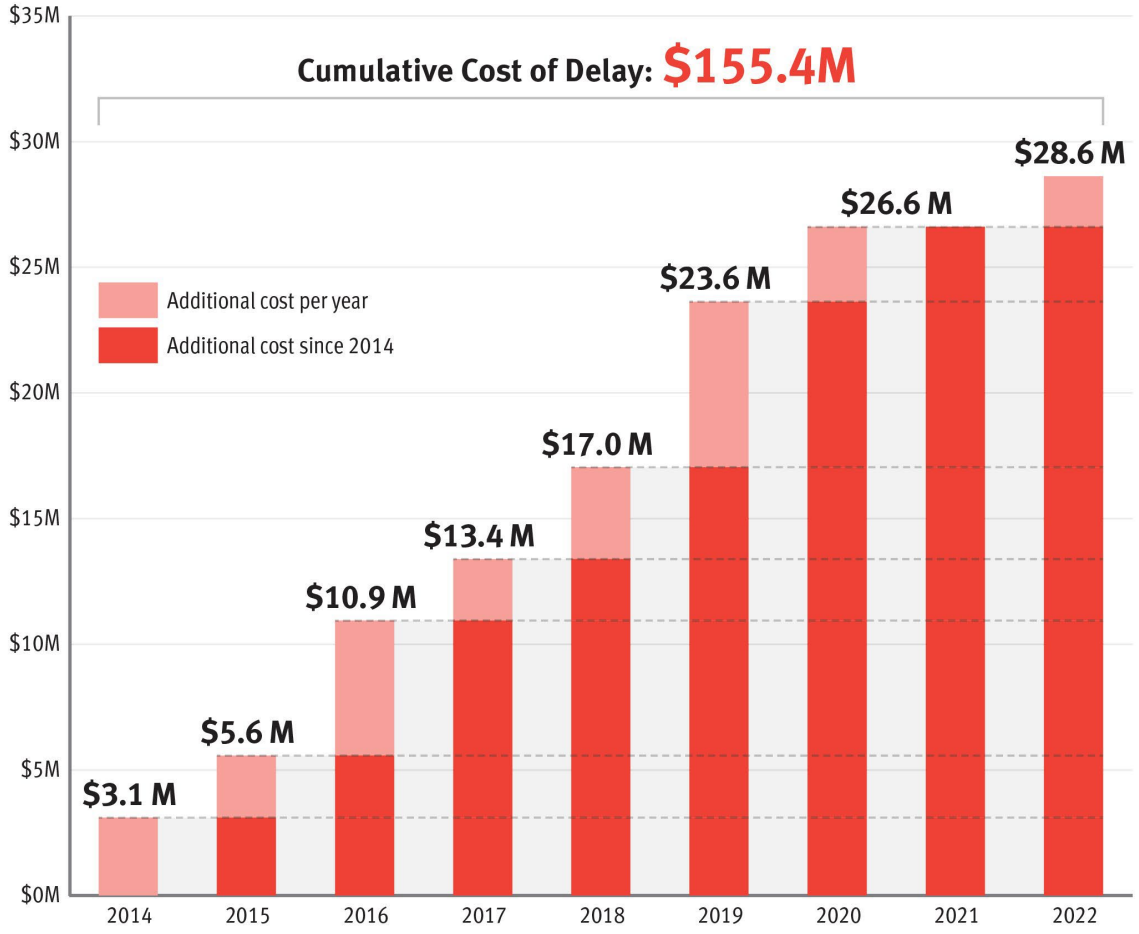
2.1 PURPOSE

TransLink envisions a future where people and goods spend 20% less time stuck in congestion than today. Better bus travel time is a key component of that goal.

Each year, TransLink adds over $2M worth of service due to traffic congestion and lack of transit priority in critical areas. As a result, each year, the region spends more operating funds trying to maintain the current frequency of our buses — **now spending nearly 1 in 5 service hours on the impacts of delay**. In fact, over an 8-year period, TransLink spent $155.5M on additional bus hours spent in congestion as delays increased each year.

Overall bus-delay is now at the same levels, or worse than before COVID-19. As our region continues to grow, we will need to protect transit from congestion on the region's roads so that transit is an attractive and reliable transportation choice for everyone.

Figure 2.1 -Annual Operating Cost Increase due to Slower Bus Speeds, 2014 – 2022



The Bus Speed & Reliability (BSR) Program was created to develop and deliver cost-effective transit priority measures to improve bus speed and reliability. As directed by the Mayor's Vision, through the BSR Program, TransLink has:

- Developed a transit priority program in consultation with local governments;
- Developed a local government funding program to fund and deliver projects; and
- Implemented best practice operating strategies and capital investments to improve bus speed and reliability.

TransLink operates bus service on roadways in 23 local governments, each of which is responsive to a variety of stakeholders. Few local governments have dedicated staff for transit planning. As a result, slowing or reversing the trend of declining operating speed requires TransLink to play an active role in guiding or facilitating development of transit priority projects in collaboration with operating companies, local governments, and numerous community stakeholders.

2.2 Funding Available

Since the introduction of the program in 2019, TransLink has dedicated $31 million for the Bus Speed and Reliability Program. Over a five-year period, the amount of eligible funding each year has ranged between $1.5 million and over $8 million based on demonstrated needs in Metro Vancouver.

For 2027, **BSR Program has funding of just over $4 million** available for allocation to eligible studies, pilots and capital projects.

3 PROJECT TYPES AND COST ELIGIBILITY

3.1 PROJECT TYPES

TransLink will take a comprehensive approach to develop a robust and continuously updated list of transit priority projects. Through the Bus Speed and Reliability Program, TransLink will fund **studies** to identify issues and develop solutions, **pilots** to demonstrate new concepts and evaluate benefits, and **capital projects** to implement physical and/or operational changes to roadways.

These three eligible project types are described in more detail below.

3.1.1 Studies

Through the Bus Speed and Reliability Program, TransLink will fund studies to identify issues and develop solutions.

Studies must consider new transit-priority solutions or additional benefits over existing transit priority measures and should preferably lead to implementation of a capital works project in the subsequent BSR funding cycle. All studies must consider an option with dedicated transit priority such as dedicated bus lanes, queue jumps, bus bulbs, or bus-only signal phases. Studies cannot be used to redesign existing facilities without offering additional transit operating benefits.

Each study is eligible to receive up to $200,000. Bus Speed and Reliability Program funding can be spent on internal or external services to identify and diagnose issues, develop and analyze alternatives, and draft designs or operating plans to address those issues. **See section 3.2** for more details about eligible costs.

Studies must be completed within two years of award. Designs and/or operating plans completed as part of a Study may be submitted as part of an application for a Pilot or Capital Project in subsequent years.

Studies can vary in scope from single locations investigations to city-wide hot spot studies. The costs of each study will vary depending on the project scope, extent of the area, available data, and local variables. The table below shows the typical costs for different types of study for information purposes only.

Table 3.1: Expected Study Costs

Type of Study	Expected Typical Cost
Hotspot studies	$50,000 to $100,000
Proposal includes changes to lane regulations, wayside signs and pavement markings	$50,000 to $100,000
Proposal includes physical changes to street and/or signals for 1-2 intersection approaches	$75,000 to $150,000
Proposal includes physical changes to street, relocation of curbs, signals, utilities, larger extent project	$100,000 to $200,000

3.1.2 Pilot Projects

Through the Bus Speed and Reliability Program, TransLink will fund pilots to demonstrate new concepts and evaluate benefits. Pilot projects are characterized by:

- **Quick implementation.** Pilot projects are easily implementable over a short period time, allowing for immediate demonstration of impacts.
- **Use of inexpensive, low-impact materials.** The purpose of pilot projects is to quickly test ideas on the ground and providing short-term proof of concept solutions for future implementation. Pilots should use inexpensive, low-impact materials where possible to allow for quick implementation and easy modification if changes to the pilot are needed. Examples of successful pilots in other cities have included the use of cones to simulate bus lanes, modular materials to demonstrate bus bulbs, road paint used to indicate a piloted change, or taping queuing lines on the pavement to trial a more organized boarding process.
- **Short evaluation period.** Pilot projects are temporary demonstrations of a potential larger capital project. Pilot projects are generally six to twelve months long.

Pilots must offer new bus priority measures and are expected to provide meaningful learnings for future projects. Pilots will be evaluated based on their expected benefit to bus performance. Bus Speed and Reliability Funding cannot be used to demonstrate that a proposed design does no harm to bus service.

Pilots are eligible to receive up to $250,000 if accompanied by an ROI analysis, or $75,000 without this requirement. Bus Speed and Reliability funding can be spent on internal and/or external services to plan, design, and implement a Pilot. Unlike other project types, funds may be used for operations and enforcement during the Pilot if critical to success of the project. See section 3.2 for more details about eligible costs.

Pilots must be completed within two years of award. The documented results of a Pilot may be submitted as part of an application for a Capital Project in subsequent years.

3.1.3 Capital Projects

Through the Bus Speed and Reliability Program, TransLink will fund capital projects to implement physical and/or operational changes to roadways. Capital projects are distinguished from pilot projects by the permanence of design and materials. Capital projects include—but are not limited to—bus lanes, queue jumps, bus bulbs, and dedicated signals. Funding may also be used to upgrade a pilot project to a permanent project.

Capital projects must offer measurable operations benefits to bus speed and reliability. Therefore, Capital Project funding cannot be used for a like-for-like replacement of existing facilities. In this category, proposed capital projects should mitigate existing transit issues, or improve bus speed and reliability at the intended location. Other TransLink programs or senior government funding may be paired with BSR funding. Capital projects that may also yield public benefits outside of bus speed and reliability are recommended to apply for other TransLink funding programs such as:

- **Walking** – Walking Infrastructure to Transit (WITT)
- **Cycling** – Bicycle Infrastructure Capital Cost Share (BICCS)
- **Transit** – Bus Speed and Reliability (BSR)
- **Roads** – Major Road Network Structures (MRN Structures)
- **Roads** – Major Road Network Operations, Maintenance and Rehabilitation (MRN–OMR)*****
- **Cycling/Walking/Roads** – Major Road Network and Bicycle (MRNB)

Capital projects may be awarded up to $1.5 million. Bus Speed and Reliability funding can be spent on internal and/or external services to plan, design, and implement a Capital Project. Funding may also be used to upgrade a pilot project to a permanent project. See section 3.2 for more details about eligible costs.

Capital projects must be completed within three years of award.

Table 3.2: Bus Speed and Reliability Project Type Overview

	Study	Pilot	Capital Project
Definition	Identify issues, analyze alternatives, and develop designs and/or operations plans to improve bus speed or reliability. May be a precursor to Pilot or Capital Project.	Plan, design, and implement demonstration of bus priority measure to evaluate the benefits. Characterized by quick implementation, short evaluation period, and use of inexpensive, low-impact materials. May be a precursor to a Capital Project.	Plan, design, and implement capital projects to improve bus speed and reliability.
Example Projects ***Not an exhaustive list***	Development of conceptual design for specific project to improve bus speed and reliability.	Implementation, enforcement, and evaluation of parking restrictions, turn restrictions, or lane restrictions for a finite period to evaluate benefits and impacts.	Design and construction of bus bulbs, bus pads for stop relocations, signal timing or infrastructure upgrades, lane striping, etc.
Maximum Award	Up to $200,000 *per project*	Up to $250,000 / $75,000 *per project*	Up to $1.5 million *per project*
Maximum Timeframe for Completion	2 years	2 years	3 years

3.2 Cost Eligibility

Project components that are considered essential to the successful delivery of the project are eligible for funding. This includes planning, design, consultation, and construction.

The costs of project components acquired or completed prior to the approval of Bus Speed and Reliability Program awards are not eligible for "retroactive" funding under this program. Once a project is approved by TransLink's Capital Management Committee (CMC), costs incurred after January 1 of the program year are eligible. Any expenses incurred prior to Jan 1 are not eligible.

Any project related property acquisitions in 2002 or later are eligible for funding at its original purchase price, not at current market value. Such costs are eligible only for property required to complete an approved project and are only reimbursed when the approved project is completed. Property required for a proposed "ultimate" alignment is not eligible if the current project involves construction to an "interim" standard.

Some project costs are not eligible for funding under the Bus Speed and Reliability Program. Ineligible project costs may include (but not be limited to):

In general, the costs of project components acquired or completed prior to January 1st of that program year of the BSR program (except for preliminary planning & design work and certain property costs) are not eligible for "retroactive" cost sharing under this program. In other words, only those costs incurred as of January 1st, 2027, will be eligible for cost sharing.

- Project components acquired or completed prior to approval of the project (except for preliminary planning & design work and certain property costs)
- Project costs associated with additional roadway capacity, if not on the MRN (e.g., an additional travel lane) except to provide specific transit priority (e.g., queue jumps, transit approach lanes, turn pockets)
- Senior Management Time (Note: Consultancy support towards the design and management of a project is eligible)
- Foregone revenues (e.g., parking revenue)
- Utility costs (including regular, long-distance or cellular phone charges)
- Financing (e.g., internal or external costs of borrowing TransLink's contribution, from the date of actual expenditure to the date of receipt of TransLink's contribution following completion of the project)
- Assets such as small tools that are normally charged against income
- Equipment, furnishings and fittings used for normal administrative purposes (e.g., office furniture, personal computers)
- Vehicles, travel, meals, or accommodations
- Gifts in-kind
- Auditing or accounting fees, incurred in the normal course of local government operations
- Legal services (excluding property acquisition which is eligible)
- Operations (except operating costs necessary for pilot projects, requiring prior approval from TransLink)
- Maintenance
- Repair, rehabilitation or replacement of existing infrastructure. The exception to this is where temporary pilot installations (from a previous project) are proposed to be replaced by permanent infrastructure.

3.3 Maintenance and Rehabilitation

In general, Bus Speed and Reliability funds are not eligible for operations, maintenance, and rehabilitation. TransLink provides local governments with an annual allowance for the operation, maintenance, and rehabilitation of MRN roads within their jurisdiction through the Operations Maintenance and Rehabilitation (OMR) Program. which is independent of the Bus Speed and Reliability funds. Similarly, TransLink provides funding to local governments to repair or replace structures such as bridges on MRN roads through the MRN Structures cost share program.

To minimize both costs and traffic disruptions, local governments may choose to undertake maintenance, or rehabilitation works on existing road infrastructure concurrently with construction of new infrastructure funded under the Bus Speed and Reliability program. Components of a Bus Speed and Reliability project that comprise maintenance or rehabilitation of existing

infrastructure must be identified as such in the application process. The costs for maintenance or rehabilitation components that are covered by OMR and MRN Structure funds are not eligible for funding under the Bus Speed and Reliability funds.

4 FUNDING FRAMEWORK

4.1 Competitive Funding Distribution

Funding will be distributed on a competitive basis.

Each project application will first be assessed to ensure it is eligible and meets minimum readiness criteria. To be eligible for funding, projects must be located on the Frequent Transit Network, major bus node (e.g. bus loop), or another high-priority location confirmed by TransLink staff. Readiness will be evaluated based on the project schedule, budget and cost estimates, scope/design, and/or local support.

Studies will be scored based on the level of need for transit priority. This will be approximated by the bus performance in the study location(s).

Pilots and Capital Projects will be scored based on the expected benefits of a project. Travel time and reliability benefits for customers and potential operating savings for TransLink. This will be approximated by the proposed transit priority measure(s), location(s), and times of operation.

Pilots and Capital Projects will also be evaluated on their expected return on investment (ROI) to TransLink's operational savings. The expected ROI is calculated based on the runtime reduction per trip in each hour of the day in a segment multiplied by the service hour cost over 10 years, recognizing that there is also value to deferred service cost increases. Projects that are anticipated to have a higher ROI will be prioritized more highly. The resulting payback period appears in the application form.

Pilots and Capital Projects will be prioritized based on the level of transit priority provided and their alignment with the Bus Priority Vision. Projects that provide dedicated transit priority and that fulfill the objectives of the Bus Priority Vision will be considered for funding before other projects. See section 5.4.2 for more information about scoring.

Funds will be distributed to the top-ranked projects until all available funds are distributed. In an event where the remaining funding can only partially fund a project, TransLink staff will start a discussion with the local government about this partial funding. TransLink reserves the right to withhold funding for projects that do not cost-effectively support transit.

In general, each year TransLink aims to allocate 12% of funding for studies and 88% of funding for pilots and capital projects. TransLink reserves the right to adjust those percentages if, for example, one category is oversubscribed, and another is undersubscribed.

4.2 Funding Limits By Sub-Region

All local governments are eligible to apply for the Bus Speed and Reliability Program. There is no limit to the number of projects or amount of funding that a local government may submit or request.

Awards will be limited by sub-region. No sub-region will be eligible to receive more than 50% of funding. Local governments within the same sub-region are therefore encouraged to openly communicate about intended requests.

Local governments may submit joint applications to address issues that span more than one sub-region. Multi-jurisdictional applications must include documentation indicating support from each road authority involved. For the purpose of determining if a sub-region would receive more than 50% of funding, the costs of projects that span two sub-regions will be divided equally between both regions.

Figure 2: Transit Service Sub-Regions

4.3 Unallocated Funds

Unallocated funds will become eligible for bus speed and reliability improvements identified by TransLink or Coast Mountain Bus Company. Unused funds may be rolled into available funds for future years

5 ADMINISTRATIVE PROCEDURES

5.1 PROJECT APPLICATION

Local governments must submit project application forms to TransLink by **January 29th, 2027,** to be considered for the 2027 Bus Speed and Reliability Program.

Local governments must fill one application form per project. If a proposed project straddles two or more jurisdictions, one applicant must submit a single application. See section 4.2 for details about multi-jurisdictional projects.

5.2 PROJECT PRESENTATIONS

Local government staff may meet with TransLink staff to present additional project details to support Bus Speed and Reliability Program applications. Project presentations are optional. Please indicate on your application form if you would like to present your project to TransLink.

Offers to make presentations in advance of the annual "call for projects" period will also be considered, especially if this will assist the applicant to refine their intended submission.

5.3 SUPPORTING INFORMATION FOR PROJECT APPLICATION

Local governments must submit the following supporting information for all project applications:

- **Terms of Reference (with map indicating project location(s))** for the study, pilot, or capital project. This should provide a clear description of the project objectives, timeframe of implementation, major elements, and overall cost.
- **Named staff or consultant Project Manager.** Identify who will lead project implementation and estimate their time commitment and availability over its duration. (Note: Attached documentation not needed, indicate in application form)
- **Staff-time and rates.** Identify staff time, rates, and total cost for local government staff that will lead or support the project, including final design/tender and construction phases. (Note: Attached documentation not needed, indicate in application form)
- **Supportive policy language.** Copies of any relevant documentation should be provided to indicate support for the project. Examples of documentation include:
    - Relevant excerpts from the Official Community Plan and/or Transportation Master Plan.
    - Supporting strategies such as modal hierarchies, and/or goals to implement transit priority, or designate transit corridors.
    - Letters of support from stakeholders.
    - Capital Plan extracts related to the project or program.

  - Note: Letters of support will also be required if the proposed project extends into other jurisdictions, e.g., Ministry of Transportation, neighbouring local government. Refer to section 5.3.1.
- **Support from senior leadership**. Acceptable forms of support include:
  - Council resolutions or approvals related specifically to the project.
  - Countersigning of the application by the Transportation Manager or City Engineer.
- **Documents demonstrating funding commitment** – If the applicant is contributing funds to the project, then copies of relevant documentation should be provided to indicate resolution from funding source(s) approving the project and the local government's cost-share of the project. For multi-jurisdictional projects, all relevant road authorities should provide documents demonstrating funding commitment.

  In addition, applications shall include a summary of **any other anticipated funding sources for the project**. Any previously approved and anticipated amount of funds from each source shall be noted, with the total amount equaling the project cost estimate. Sources of funding may include (but are not limited to):

  - Local government sources (e.g., local government general revenues, development cost charges, development levies, work agreements with private developer);
  - Requested amount of TransLink funds from other local government funding programs (e.g., MRNB Upgrade funding, MRN Minor Capital funding, BICCS funding, MRN Major Capital funding, WITT Funding);
  - OMR funding (only for rehabilitation components of the project).

  For additional information about third-party active transportation infrastructure cost-sharing grants, please email ipme@translink.ca.

In addition to the documents above, local governments must also submit the following supporting documents for Pilot and Capital Project applications:

- **Plan Drawings and Cross Sections** - All developed design drawing packages should be provided to indicate the project scope, and provide a basis for the cost estimates
  - Capital Projects and Pilots shall be developed, at a minimum, to a concept-level stage of design; sufficient to clearly demonstrate the new proposal as well as its physical and operational impacts upon the existing roadway profile and identify new and relocated infrastructure associated with the proposal appropriate for concept-level detail; these may include
    - New and relocated signal infrastructure (may include specifications if these exist)
    - Relocated and generally-impacted curbs, sidewalks, travel lanes
    - Pavement markings and pavement alterations
    - Contingency for utility protection and/or relocation
    - Other associated impacts (i.e., property, landscaping, topographical, etc.)
- **Engineering report(s)** prepared during previous design phases should accompany any design package(s), prepared by a registered Professional Engineer(s), as appropriate. These should include any analysis of alternatives considered to demonstrate how the proposed solution was selected. The final report from a previously-funded study can fulfill this requirement.

- **Detailed project cost estimate** – prepared by a registered Professional Engineer, commensurate with the level of design detail undertaken.
  - For Pilots, a Class D estimate with aforementioned design details
  - For Capital Projects, a Class C estimate is required; Some discretion may be applied for capital projects with sufficient design work demonstrated or that are developed through a BSR study.
- **Certification by Professional Engineer** – A blank certification page is included with the Application form template, to be completed by the Professional Engineer who will be responsible for the Pilot or Capital Project. Completed certification pages should be submitted electronically as an attachment (.PDF format only).
- **Project photos** – 'Before' and 'After' photos of the project need to be submitted to demonstrate project improvements prior to funding disbursement. The 'Before' photos are required at the project application stage, and the 'After' photos will be requested at the Payment Request stage after the project has been completed. [See also section 5.7.]

Table 5.1 provides guidance on the expected design considerations for the Class D / 4, Class C / 3, and Class B / 2 estimate thresholds, for various project types. These considerations should be included in any project development (either as a BSR-funded study or carried out through some parallel process) that is undertaken prior to Pilot or Capital Project application.

Table 5.1: Project Design Requirements – Overview

Type(s) of Project	Class D / 4 Estimate	Class C / 3 Estimate	Class B / 2 Estimate
Pilot (Temporary Materials and Installations)	Project location(s) on plan; technical memo providing a list of elements, typical design(s) assumptions/examples based on industry practice, current local government standards.	Optional	Optional (Exceeds Minimum Requirement Needed for Application). Would include specifics of materials to be used, design of markings/signs, timing, traffic management plan for implementation.
Conversion of street within existing curb lines; Signal Re-Timing	Concept design package indicating street configuration, relocation of markings, signs Signal timing & lane configurations plans developed from traffic/transit operations study.	Aforementioned items, plus: Design drawings plus references to specifications for construction materials, design standards Signal modifications drawing/report to support re-timing.	Aforementioned items, plus: Additional specifics provided regarding construction materials, timing, traffic management plan/staging of construction. Electrical design associated with signal re-timing.

Spot Widening/Other Curb Relocations/	As above, plus Utility conflicts and drainage facilities identified from desktop review. Cost allowance for modifications. Desktop review to confirm if any potential issues exist with soils, water resources, biological resources or contaminants	Preliminary design package for streets including plan/profiles and cross sections for new construction. Utility conflict and stormwater management/drainage strategies developed as plan/profile to support costing. Survey to verify utility, drainage, and sewer locations. Also verify ROW limits if design encroaches within 1m of assumed limits.	Draft final design and construction specifications, construction materials, timing, traffic management plan/staging of construction.
Signal Installation or Relocation (typically triggered by curb relocations, street widening, removal/modification of channels etc)	As above.	As above plus: Signal relocation design including associated structures/detection systems.	As above plus: Structural and electrical designs associated with relocated signals.
Right of Way strip(s) required to fit construction	As above plus: Property footprint for concept design, Cost allowance based on market trends.	As above plus: Survey to verify ROW. Property acquisition plan, with costs based on assessed values. Include signal requirements where applicable.	As above. Include signal requirements where applicable.

Table 5.2 provides a checklist summary of the documents required for each project type.

Table 5.2: Supporting Information Requirements Overview

Supporting Information	Project Type		
	Study	Pilot Project	Capital Project
Terms of Reference (Including Project Map)	Required	Required	Required
Schedule of Milestones (IN APPLICATION FORM)	Required	Required	Required
Named Project Manager (IN APPLICATION FORM)	Required	Required	Required
Project Staff Time & Rates (IN APPLICATION FORM)	Required	Required	Required
Supportive Policy Language	Required	Required	Required
Support from Senior Leadership	Required	Required	Required
Documents demonstrating funding commitment	Required if funding is proposed	Required if funding is proposed	Required if funding is proposed
Plan Drawings and Cross Sections		Class D / 4 Design Required	Class C / 3 Design Required Class B / 2 Design Preferred
Certification by Professional Engineer		Required	Required
Engineering Report		In Support of Class D / 4 Design	In Support of Class C / 3 + Design
Detailed construction cost estimate		Class D / 4 Required	Class C / 3 Required Class B / 3 Preferred
Project Photos (Progress updates and completion)		Required	Required

5.3.1 Additional Requirements for Projects Requiring Coordination

Local governments must provide additional supporting documents for any project on the Major Road Network (MRN) and must note in application form any impacts and mitigations for Truck Route Network, or Major Bicycling Network. These requirements are identified in Table 5.3. All Pilot and Capital projects applications that impact people-moving capacity on the MRN must include a TransLink approval letter (signed by the Infrastructure Program Director).

Local governments must submit letters of support from adjacent jurisdictions for any project on or crossing jurisdictional boundaries. The lead authority making the application should attach letters of support from the overlapping and adjacent jurisdictions, indicating their collaboration

and/or support for the proposed project. Other jurisdictions may include other local governments, the Ministry of Transportation and Transit, or First Nations.

Table 5.3: Supporting Information – Additional Considerations

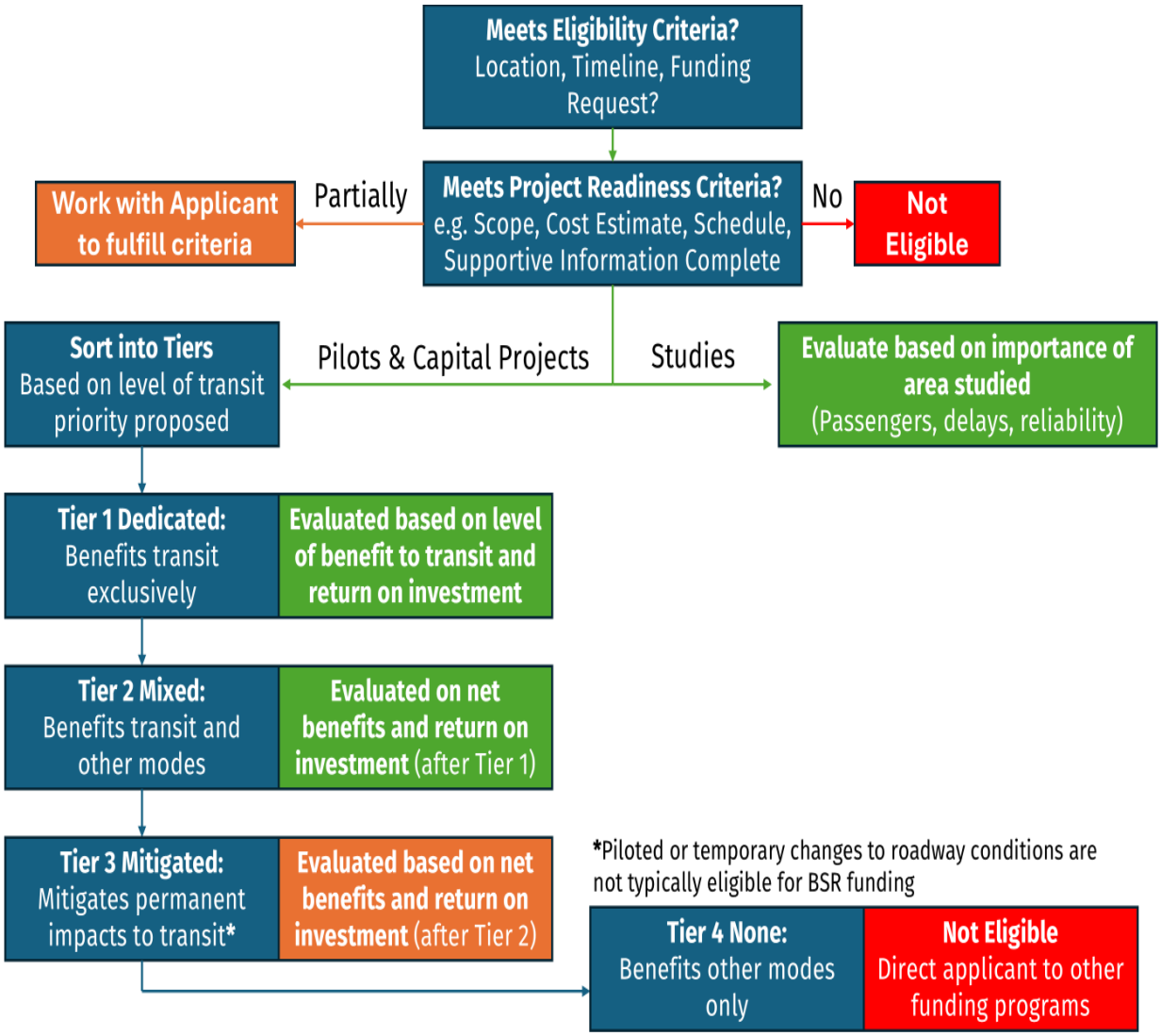
Supporting Document	Project Type		
	Study	Pilot Project	Capital Project
On the Major Road Network (MRN) ***(See Appendix D for more detail)***			
Terms of Reference for MRN Capacity review	Required		
Approval from TransLink MRN Capacity review (letter from Director of Infrastructure Programs), per SCBC Transportation Authority Act		Required	Required
On the Major Bicycling Network (MBN) ***(Entered in form)***			
Evidence of discussion with TransLink System Plans and/or Local Government Funding Program teams	Required	Required	Required
On the Truck Route Network (TRN) ***(Entered in form)***			
Evidence of discussion with TransLink System Plans and/or Goods Movement Team		Required	Required
Multiple Jurisdictions			
Letter of support from adjacent, overlapping, or collaborating jurisdictions	Required	Required	Required
Conversion from Pilot Project			
Documentation of scope, costs, and benefits from pilot project	N/A	N/A	Required
Results from monitoring program	N/A	N/A	Recommended

5.4 Project Evaluation and Approval

TransLink staff will review all Applications for the Bus Speed and Reliability program. Incomplete applications will be returned to the local government for completion. Additional information or clarification may be requested during the review process.

Projects requesting Bus Speed and Reliability Program funding will be reviewed for eligibility per Section 5.4.1 and scored by TransLink staff according to evaluation criteria in Section 5.4.2. Subsequently, the endorsed projects are submitted to TransLink for funding approval. Once approved, TransLink will draft project specific contribution agreements and administer the funding. Figure 5.1 shows the project evaluation process. TransLink evaluates Capital and Pilot projects and studies separately.

Figure 5.1 Project evaluation process



Screening and scoring criteria are summarized in Table 5.4. Based on these scoring criteria, each project is eligible to receive up to 100% of available points. Further details about the evaluation criteria are provided in the following sections, with scoring details laid out by **Appendix C.**

Table 5.4. Project Evaluation Criteria

Project Type	Category	Criteria	Scoring Range
Studies	Readiness	Formal assessment of readiness based on clearly defined requirements, including proposed scope, timeline, staff commitment and supporting documentation	Pass/Fail
	Need	Combination of bus delays, reliability and ridership for each bus stop location and direction within the study area.	100%
Pilot or Capital Projects	Readiness	Formal assessment of readiness based on clearly defined requirements, including proposed scope, timeline, staff commitment and supporting documentation, including appropriate levels of design and costs	Pass/Fail
	Benefits	Combination of proposed transit priority measures, time(s) of day and days of week in effect, and location(s) where project is proposed.	100%
	Return on Investment	Combination of number of trips and estimated reduction in runtime per trip, and time(s) of day and days of week in effect	Up to 10 years

5.4.1 Screening for Eligibility and Readiness

TransLink will screen projects to determine eligibility and readiness. This will ensure that proposals fit the location and purpose of the program and can be implemented within the funding timelines and thresholds for the individual project category.

TransLink will first screen projects to determine eligibility. Eligibility will be determined by screening location, timeline, and funding request.

- **Location** - Proposed projects must be located on the Frequent Transit Network (FTN), at a major node such as a bus loop or exchange, or other priority locations identified by TransLink.
- **Timeline** - Proposed projects must be scheduled for completion within the timeframe allowed for each project type, as shown in **Table 3.2**.
- **Funding Request** - Funding requests must fall within the allowable range for each project type, as shown in **Table 3.2**.

Applications which fail to pass this screening may be disqualified from consideration.

TransLink will then screen projects for readiness. Readiness will be determined based on the completeness of the supporting documents requested in Section 5.3. Applicants missing one or more items, or if the attached information is incomplete or unclear, will be provided one (1) reminder to complete these, to provide an opportunity to pass the screening stage that year.

5.4.2 Scoring

Projects will be scored based on their need or benefits and anticipated return on investment. The Bus Speed and Reliability Program application form will automatically generate preliminary scores, to be confirmed and evaluated by TransLink staff. Project tiers will be generated and evaluated by TransLink staff review.

Studies will be scored based on the need for transit priority. Local governments will provide information about the project location(s) and will receive a score based on the need for transit priority based on existing bus performance metrics. A metric that combines passenger delays, bus delays, and travel time variability is used to assess the overall performance of each bus stop segment in the bus network. Locations with higher need are those with higher numbers of delayed passengers, higher per-bus delays, and greater variability in travel times. This allows all studies to be compared based on relative "need" within the funds allocated for studies.

Pilot and Capital projects will be scored based on the net benefits of proposed changes. Local governments will provide information about the proposed type(s) of priority measures, time period(s) in effect, and project location(s). A score for the potential net benefit of the project will be assessed based on these factors.

- Time frame or period(s) that the bus priority measure is active. Expected benefits and score will only be calculated based on periods when priority is active. (E.g. A peak hour measure will only have benefits assumed during peak hours)
- Total delay within a segment based on the routes that pass through the segment(s) or stops where priority is proposed. Locations with more delay will provide more potential benefit and have a higher score.
- Proposed type of priority given or the degree to which it removes the impact of general purpose traffic impact on bus performance. (E.g. A queue bypass lane will yield a greater benefit than a queue jump signal change without dedicated lane infrastructure)

Capital projects will also be scored based on their anticipated return on investment for proposed changes. BSR projects aim to recoup their cost within 10 years through delay reduction associated service costs. Projects will also be prioritized based on their anticipated return on investment timeline. Return on investment is calculated from:

- Number of trips (within affected segments, during active time periods)
- Estimated reduction in runtime per trip (within affected segments, during active time periods)
- Annual service hour cost projections

The application form generated return on investment scores should be considered preliminary and final assessment will be confirmed and evaluated by TransLink staff.

As indicated in Figure 5.1, three tiers of projects would produce benefits:

- Tier 1. Dedicated. Includes measures that benefit transit exclusively and provide benefits that remove buses from the impacts of general-purpose traffic congestion.

- Tier 2. Mixed Projects. Benefits transit and other modes, such as capacity or signal timing improvements that speed up the general flow of traffic.
- Tier 3. Mitigation. Project addresses impacts to transit resulting from other permanent changes made to the street. BSR funding will not be approved for addressing impacts associated with temporary or piloted changes. In addition, negative capacity changes led by local governments on the MRN are expected to be mitigated from local government funding.

Projects producing no transit speed or reliability benefit ("Tier 4") will not be approved for BSR funding but may be eligible for different funding programs.

This approach allows the pilot and capital projects to be compared based on relative net benefits, within the funds allocated for those types of projects. Higher return on investment will be achieved by proposals that include measures that provide greater priority to transit, operate during more time periods, and are at locations where the existing need is higher and are evaluated against the expected cost of the infrastructure proposed. More extensive projects serving more locations or with a greater number of buses passing through a segment would accumulate greater potential benefits.

Projects will be prioritized according to the Tier they fall under, starting with Tier 1, then Tier 2, then Tier 3. Projects with elements in more than one tier will be prioritized based on their relative extent. Final assignment to each Tier is at the discretion of TransLink's review and may be informed by factors such as:

- If a proposal included Tier 1 components overlaid with Tier 2 items over the same extent, the project would be considered Tier 1.
- If the proposal included limited Tier 1 components and primarily included Tier 2 elements, then the project would be considered after all other Tier 1 projects, but before the rest of Tier 2.
- If projects include multiple locations and the elements are in different Tiers, the application's probability of success may be improved by splitting the project geographically. If the Tiers apply to the same location, then the guidance in the previous two points would be applied.

If a project has several elements taken from Tiers 1 to 3, but also Tier 4, the non-eligible Tier 4 elements will be flagged for removal from the funding request. [These may continue as part of the project scope if they have alternative funding identified.]

Bonus points for local government contributions to overall project costs will not be assigned. However, larger projects made possible by these contributions may produce greater benefits and therefore still achieve a higher evaluation score. Local government contributions may also be used to fund non-eligible elements that the applicant plans to construct at the same time as the BSR elements. The tiers listed above are meant to reflect how transit focused a proposed project is; These are separate from the levels of intensity or priority envisioned in the *Bus Priority Vision*. TransLink reserves the right to reject applications for projects that would reasonably preclude the implementation of higher order transit priority for locations outlined in the *Bus Priority Vision*.

5.5 Project Implementation and Funding Deadline

Local governments are solely responsible for the implementation of approved Bus Speed and Reliability projects in accordance with a project-specific contribution agreement. Local government responsibilities include, for example, project management, permitting, design, construction, and inspection. TransLink responsibility is limited to the provision of funding per the contribution agreement.

Projects must be completed within 2 – 3 years to be eligible for Bus Speed and Reliability Program funding, depending on project type:

- **Studies** and **Pilots** must be completed within 2 years.
- **Capital Projects** must be completed within 3 years.

The Program year from which the funding was first awarded is considered Year 1. For example, all capital projects that receive awards from the Bus Speed and Reliability Program in 2027 are to be completed by December 31, 2029.

Local governments must submit a Request for Payment for all completed Bus Speed and Reliability Program projects.

5.6 Communications Materials and Project Signage

Local governments will notify TransLink when preparing any communication materials related to TransLink-funded projects (i.e. project signage, press releases, newsletters and brochures, public events), so that TransLink staff has an opportunity to provide input prior to the release of information. Refer to the project funding agreements for additional details.

5.7 Project Status Update

TransLink requires project updates four times a year for all active projects until the Project is completed. This will provide TransLink with an overview of the progress of the work for the purposes of cash flow forecasting and budgeting. Photo evidence of 'before', in progress, and 'after' conditions for Pilot and Capital Projects is required.

Project updates must be submitted by the following deadlines in each year:

- End of February,
- End of May,
- End of August, and
- End of November.

5.8 Project Data

A data licensing agreement may be required if Local Governments need access to data that is not publicly accessible to support a project. TransLink may provide data on Bus Speed and Reliability

as part of the project, with particular attention to Pilot projects. Some open data (e.g. bus routes, frequencies, travel times/speeds) are already publicly available. To access data that is not already publicly available (e.g. bus ridership estimates), a data licensing agreement may be required. The following caveats apply in these cases:

- The recipient will not insert all or any part of the data into any report, record, research paper, publication or other type of output without first having obtained TransLink's written consent to such use and disclosure.
- The recipient agrees to take precautions and appropriate measures to keep the data confidential and to do all things necessary to prevent the unauthorized disclosure or use of the data by any of its consultants, employees, agents, or servants, for any purpose other than this project.
- Upon conclusion of the project, the recipient will destroy all copies of the data in its possession or under its control.
- In no event will TransLink be liable to [the recipient] for damages, whether direct, indirect, or otherwise, resulting from the use or accuracy of the data provided by TransLink.

5.9 Request for Change of Approved Projects

5.9.1 Scope of Work Changes

If a local government plans to change the scope of work of an approved project, the local government must request the scope change in writing, along with supporting documentation, to TransLink for consideration. The request will be subject to approval by the Director of the Infrastructure Programs. All scope of work changes will require that projects still meet the anticipated return-on-investment and other eligibility requirements. Projects that are significantly re-scoped may have funding reallocated to other project proposals with higher potential return-on-investment. Approval of all changes must be confirmed in writing by TransLink.

5.9.2 Extension of Completion Deadlines

The project completion deadlines for approved Bus Speed and Reliability Program projects may be extended for projects that have received documented commitments demonstrating significant senior government funding or that have documented significant extenuating circumstances beyond the control of the applicant.

5.9.3 Funding Transfers

Local governments may request funding be transferred from a cancelled project to an alternative project within the same funding year. Alternative projects will be evaluated on their benefits to transit as newly proposed projects and will be required to provide all typical prerequisites of a capital or pilot project. Alternatively, remaining TransLink funding may potentially be transferred to one still-open project in a different funding program but in the same program year; however, this is dependent on the approval of the transfer.

The Director of Infrastructure Programs may approve the transfer requests up to $100,000. Requests for funding transfers greater than $100,000 must be approved by CMC (Capital Management Committee).

5.10 Trading or Combining of Local Government Allocations

Local governments may combine their funding allocations for projects that cross local government boundaries or that otherwise benefit both local governments. Combining of allocations would only be done with the consent of each affected local government, as confirmed by an appropriate resolution of each Council or letter of agreement from senior local government staff, and approval of TransLink.

5.11 Request for Payment

TransLink will reimburse a local government for up to 100% of the eligible costs for a BSR project, net of contributions by any provincial or federal governments or agencies, up to a maximum dollar amount as set out in the relevant contribution agreement.

TransLink will pay its share of costs directly to the local government when:

- The contribution agreement for the project has been properly executed by both TransLink and the local government; and
- The project is complete; or
- If the Project is not completed by the project deadline but construction is greater than 50% complete, TransLink will reimburse the local government for up to 100% of actual Eligible Costs incurred by the project deadline, or the sum of the total approved TransLink contribution(s) for the project, whichever is less.

Otherwise, TransLink will not provide any reimbursement for the project.

TransLink does not provide progress payments. For projects that have multiple TransLink contribution agreements, all funding from TransLink will be paid at the same time.

As defined in the contribution agreement, a project is deemed to be complete when:

- The work is ready for use, or is being used, for its intended purpose; and
- The total value of all incomplete, defective and/or deficient work does not exceed 3% of the maximum project budget set out in the contribution agreement.

Requests for payment of TransLink funds must be made in writing and accompanied by the following:

1) **Contribution Payment Request Form**:

- Description of the actual work completed and any scope change from the original application;
- Certification by the City Engineer (or equivalent) that the project is complete, as defined in the agreement, and that the project met or exceeded specifications and standards set out

in the contribution agreement, if any, and those standards or specifications set by the local government;

- Certification by the Chief Financial Officer (or equivalent) that the Eligible Costs as stated have been incurred by the local government, are attributable to this Project, are correct, and are net of any provincial or federal tax rebate.

2) **Project Cost Statement** which must include the total amount of eligible costs, and the total amount of provincial and federal contributions, if any; and the project cost statement must be sufficiently detailed to confirm that the project costs are:

- Actual expenditures (e.g. not commitments, forecasts or budget amounts) for the components identified as part of the BSR application (e.g. separate cost for components of a project that may consist of work on the MRN, Ministry roads, and local government roads);
- Eligible for reimbursement under the BSR program;
- Net of any HST or provincial or federal tax rebate; and
- Net of contributions made by provincial or federal governments or agencies.

3) All proof of costs (for cost items that exceed $10,000) expended by the project deadline, including invoices from consultants, progress payments from contractors and accounting spreadsheets for internal work that show enough detail to identify that costs are eligible under the program guidelines.

4) Photos of the completed project ("After" photo) to demonstrate the completed work.

5) For projects with added vehicle travel lane-km to the MRN, supporting information that clearly depicts the location of new/revised lanes is required. Such information can be any image or sketch with landmark reference points that show the new lanes. Examples are PDF maps of recent aerial photos or spatial data with as-built lane configurations.

6) **Request for Payment Checklist** to ensure that the submission package meets all requirements set out by TransLink.

A request for payment will not be processed until it is completed to TransLink's satisfaction. The Contribution Request form and Request for Payment Checklist can be obtained by reaching out to TransLink staff (ipme@translink.ca)

APPENDIX A – CHALLENGES AND TRANSIT PRIORITY STRATEGIES

	SPECIFIC CHALLENGES													
	INTERSECTION	ROADWAY	SIGNAL	RIGHT TURN	LEFT TURN	ACCESS TO BUS STOP	LEAVING BUS STOP	DWELL TIME	INSUFFICIENT RUNNING TIME	PEDESTRIANS	CYCLISTS	MOTORISTS	$ UNDER $50,000 $$ $50,000 - $100,000 $$$ $100,000 - $250,000 $$$$ OVER $250,000	
STRATEGY	**CONGESTION**		**DELAY**			**OPERATIONS**				**SAFETY**			**COST/COORDINATION**	
A. Bus Stop and Curb Management														
A1. Bus Stop Placement	★		★			★★★	★★	★	★	★★	★★		$–$$	Medium/ High
A2. Curb Management		★				★★	★	★		★	★	★	$–$$	Medium
B. Traffic Regulations														
B1. Movement Restrictions	★★★		★	★★★	★★★		★★		★★	★	★	★★	$–$$$$	Medium/ High
C. Street Design														
C1. Bus Stop Infrastucture						★★	★★	★★★		★★★	★★★		$–$$$	Low
C2. Turn Pockets	★		★★	★	★							★★	$–$$	Medium
C3. Vertical Control Devices		★★★				★★	★		★★	★★★	★★★	★	$	Medium
C4. Queue Jumps	★★★		★★★						★★				$–$$	Medium
C5. Transit Approach Lane	★★★		★★★						★★				$	Medium
C6. Peak-Hour Bus Lane	★★	★★		★★	★★	★★	★★	★★	★★★		★	★★	$$–$$$$	High
C7. Dedicated Bus Lane	★★★	★★★		★★★	★★★	★★★	★★★	★★★	★★★		★	★★	$$–$$$$	High
D. Signal Priority														
D1. Passive Signal Priority	★★	★	★★						★★	★	★	★★	$–$$	Medium
D2. Transit Signal Priority (Active)	★★★		★★★	★★★	★★★				★★★				$$–$$$$	High
E. TransLink Practices and Policy														
E1. All-Door Boarding								★★★	★★	★				Low
E2. Schedule/Operator Recovery									★★★					Low

Benefits: ★ LOW ★★ MEDIUM ★★★ HIGH

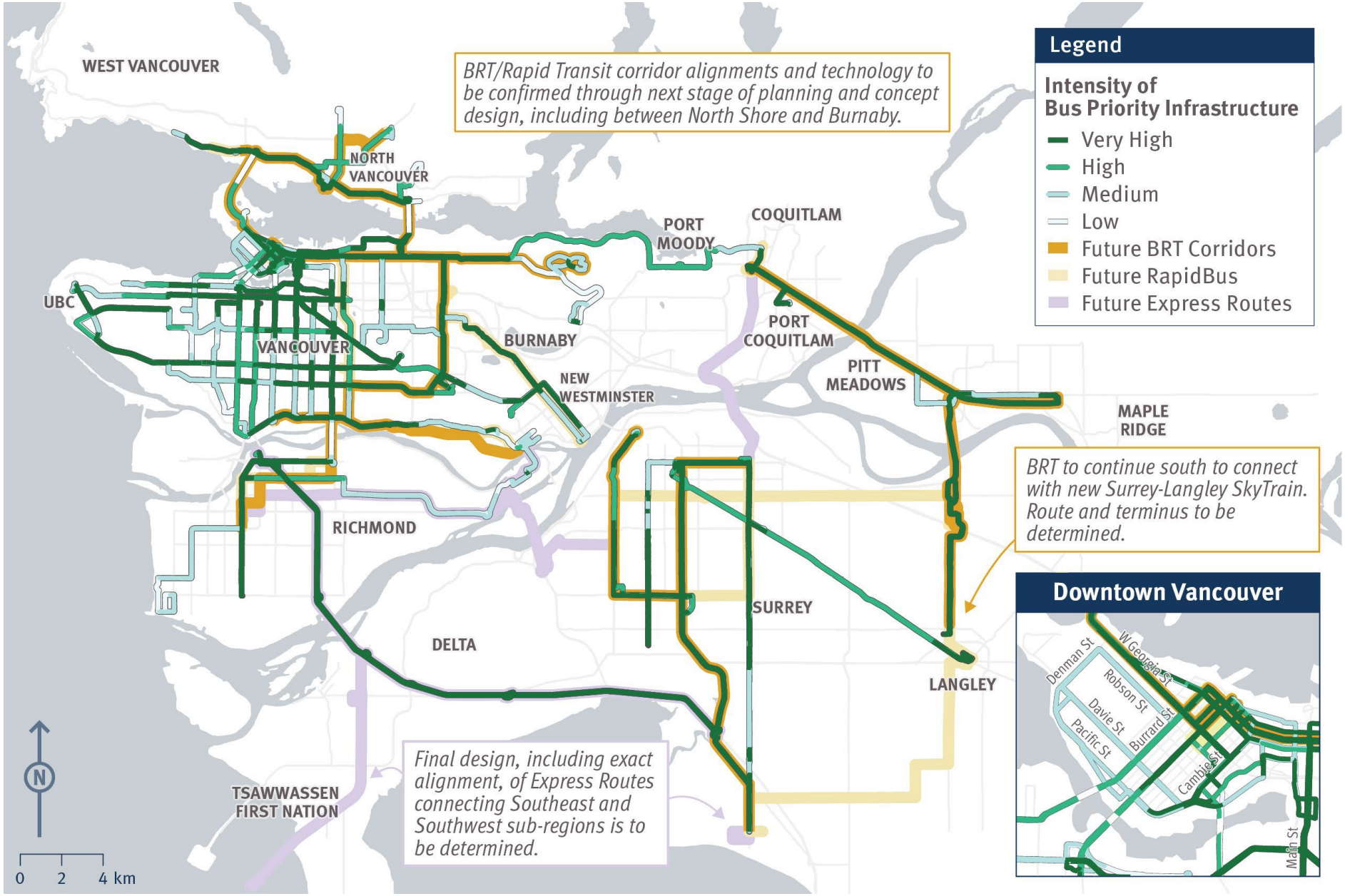
APPENDIX B – BUS PRIORITY VISION MAPS

The Regional Bus Priority Vision map below classifies the FTN into categories that describe the relative intensity of bus priority infrastructure needed to address bus delay due to congestion. The Vision illustrates where different levels of priority are needed across the FTN. The Bus Priority Vision uses data and policy to assess where there is a strong case for better bus priority measures.

The *Vision* focuses on the FTN; this is where we run the most buses, carry the most passengers, and can see the highest return from bus priority. We considered where there is the greatest need to provide more bus priority using two measures of how fast and reliable current service is:

- **Transit delay,** in terms of person-hours, accounts for both delay to buses and the number of riders affected.
- **Travel time reference ratio,** a measure of reliability, compares typical travel times in each hour to the best typical travel time during daytime hours (6 am – 10 pm).

The Bus Priority Vision should broadly provide a guide for prioritization of future Bus Speed and Reliability investments and act as preliminary guidance for local government project prioritization. Projects that are within the outlined corridors and that align with the intensity of suggested transit priority will receive prioritization for BSR funding, recognizing that TransLink reviewer discretion will still be applied.


WEST VANCOUVER
BRT/Rapid Transit corridor alignments and technology to be confirmed through next stage of planning and concept design, including between North Shore and Burnaby.
Legend
Intensity of Bus Priority Infrastructure
Very High
High
Medium
Low
Future BRT Corridors
Future RapidBus
Future Express Routes
NORTH VANCOUVER
PORT MOODY
COQUITLAM
UBC
VANCOUVER
BURNABY
PORT COQUITLAM
PITT MEADOWS
NEW WESTMINSTER
MAPLE RIDGE
BRT to continue south to connect with new Surrey-Langley SkyTrain. Route and terminus to be determined.
RICHMOND
SURREY
DELTA
LANGLEY
Downtown Vancouver
Denman St
W Georgia St
Robson St
Davie St
Burrard St
Pacific St
Cambie St
Main St
TSAWWASSEN FIRST NATION
Final design, including exact alignment, of Express Routes connecting Southeast and Southwest sub-regions is to be determined.
N
0 2 4 km

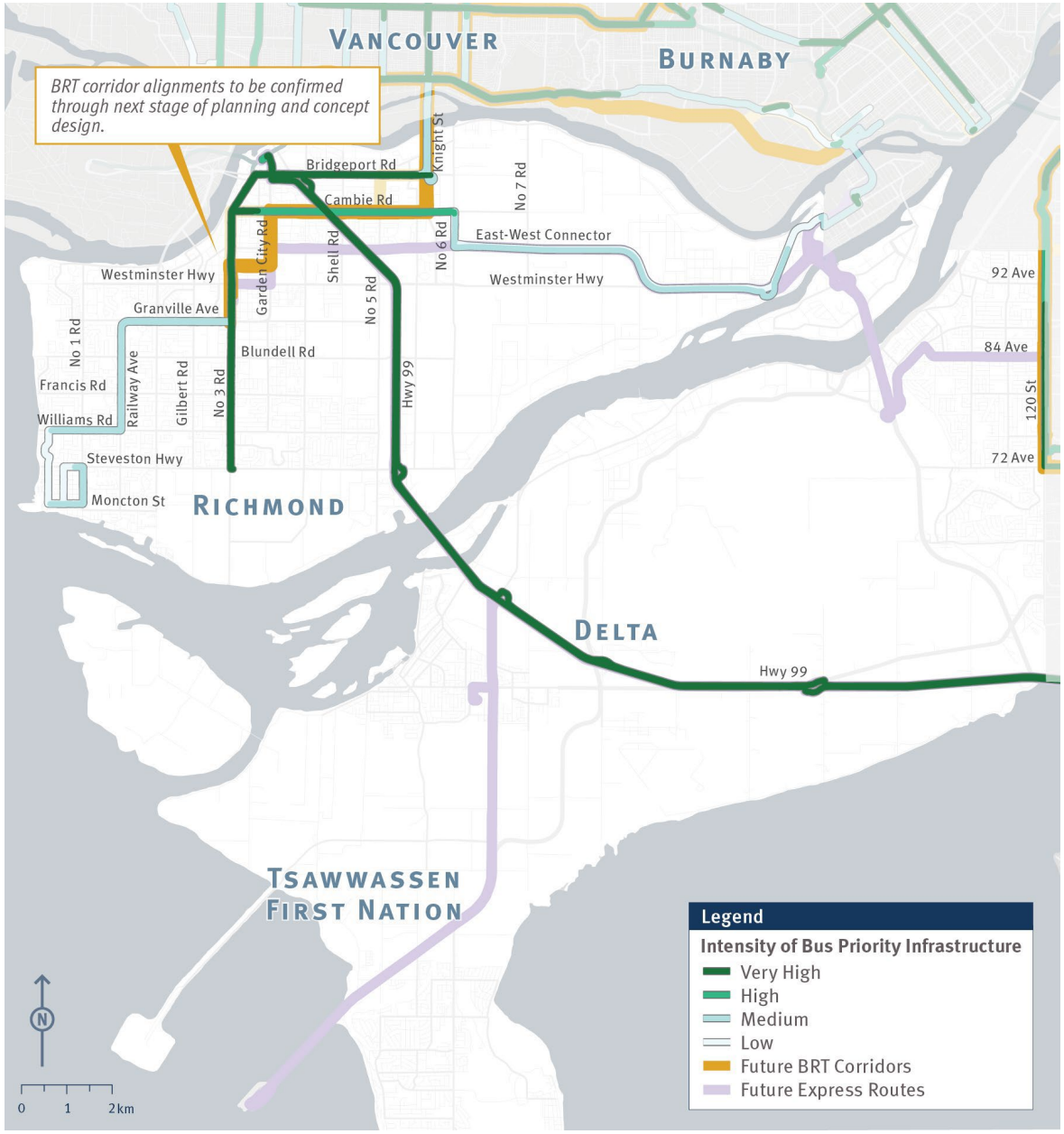
Port Moody
Coquitlam
Burnaby
New Westminster
Delta
Hastings St
Barnet Rd
University Dr W
Gilmore Ave
Willingdon Ave
Delta Ave
Holdom Ave
Kensington Ave
Sperling Ave
Duthie Ave
Burnaby Mountain Pky
Gaglardi Way
Broadway
Production Way
North Rd
Lougheed Hwy
Canada Way
Kincaid St
Moscrop St
Burke St
Burris St
Kingsway
Imperial St
Elwell St
Edmonds St
6th St
Eighth Ave
Sixth Ave
Eighth St
Royal Ave
Front St
14th Ave
10th Ave
Boundary Rd
Joffre Ave
Patterson Ave
Nelson Ave
Royal Oak Ave
Gilley Ave
Marine Dr
Southridge Dr
Marine Way
Ewen Ave
BRT/Rapid Transit corridor alignments and technology to be confirmed through next stage of planning and concept design, including between North Shore and Burnaby.
Legend
Intensity of Bus Priority Infrastructure
Very High
High
Medium
Low
Future BRT Corridors
Future RapidBus
Future Express Routes
N
0
1
2km

Legend
Intensity of Bus Priority Infrastructure
Very High
High
Medium
Low
Future BRT Corridors
Pitt Meadows
Maple Ridge
Electoral Area A
Langley
Lougheed Hwy
Harris Rd
Hammond Rd
Bonson Rd
Golden Ears Way
203 St
206 St
207 St
Laity St
216 St
224 St
227 St
Dewdney Trunk Rd
West St
BRT corridor alignments to be confirmed through next stage of planning and concept design.
N
0
1
2 km

Legend
Intensity of Bus Priority Infrastructure
Very High
High
Medium
Low
Future BRT Corridors
Future RapidBus
West Vancouver
North Vancouver District
BRT/Rapid Transit corridor alignments and technology to be confirmed through next stage of planning and concept design, including between North Shore and Burnaby.
21st St
15th St
11th St
Taylor Way
Marine Dr
Capilano Rd
Marine Dr
Westview Dr
Jones Ave
Lonsdale Ave
E 29th St
Lynn Valley Rd
Mountain Hwy
E 15th St
W 13th St
Grand Blvd E
Lions Gate Bridge
North Vancouver
E Keith Rd
Mt Seymour Pky
E 3rd St
Esplanade E
Main St
Iron Workers Memorial Bridge
Vancouver
N
0
1
2 km

Legend
Intensity of Bus Priority Infrastructure
Very High
High
Medium
Low
Future BRT Corridor
Future Express Routes
ANMORE
PORT MOODY
COQUITLAM
PORT COQUITLAM
Barnet Hwy
Clarke Rd
North Rd
St Johns St
Morav St
loco Rd
Guildford Way
Woodland Dr
Pinetree Way
Westwood St
Lougheed Hwy
Oxford St
Coast Meridian Rd
Shaughnessy St
Kingsway Ave
0
1
2 km
N

Legend
Intensity of Bus Priority Infrastructure
Very High
High
Medium
Low
Future BRT Corridors
Future RapidBus
Future Express Routes
COQUITLAM
BRT corridor alignments to be confirmed through next stage of planning and concept design.
Scott Rd
108 Ave
104 Ave
100 Ave
96 Ave
96 Ave
96 Ave
88 Ave
80 Ave
120 St
128 St
King George Blvd
156 St
160 St
Fraser Hwy
SURREY
72 Ave
68 Ave
64 Ave
60 Ave
58 Ave
152 St
168 St
176 St
184 St
192 St
200 St
64 Ave
60 Ave
56 Ave
BRT to continue south to connect with new Surrey-Langley SkyTrain. Route and terminus to be determined.
DELTA
LANGLEY
Fraser Hwy
Colebrook Rd
200 St
152 St
32 Ave
32 Ave
144 St
148 St
160 St
164 St
24 Ave
192 St
WHITE ROCK
North Bluff Rd
N
0
1
2 km


VANCOUVER
BURNABY
BRT corridor alignments to be confirmed through next stage of planning and concept design.
Bridgeport Rd
Knight St
Cambie Rd
No 7 Rd
East-West Connector
Garden City Rd
Shell Rd
No 6 Rd
Westminster Hwy
Westminster Hwy
92 Ave
Granville Ave
No 5 Rd
No 1 Rd
Blundell Rd
84 Ave
Francis Rd
Railway Ave
Gilbert Rd
No 3 Rd
Hwy 99
120 St
Williams Rd
Steveston Hwy
72 Ave
Moncton St
RICHMOND
DELTA
Hwy 99
TSAWWASSEN FIRST NATION
Legend
Intensity of Bus Priority Infrastructure
Very High
High
Medium
Low
Future BRT Corridors
Future Express Routes
N
0
1
2 km

Downtown Vancouver
Legend
Intensity of Bus Priority Infrastructure
Very High
High
Medium
Low
Future BRT Corridors
Future RapidBus
BRT/Rapid Transit corridor alignments and technology to be confirmed through next stage of planning and concept design, including between North Shore and Burnaby.
SEE INSET
NORTH VANCOUVER
VANCOUVER
UBC
RICHMOND
Denman St
Robson St
Davie St
Burrard St
Granville St
W Pender St
Water St
Pacific Blvd
Main St
W 2nd Ave
W 4th Ave
Burrard St Bridge
Lions Gate Bridge
McGill St
Powell St
E Hastings St
Prior St
Cornwall Ave
Chancellor Blvd
W 4th Ave
W 10th Ave
Broadway
E Broadway
Clark Dr
Commercial Dr
Nanaimo St
Renfrew St
Rupert St
Wesbrook Mall
W 16th Ave
Dunbar St
Arbutus St
E Kingsway
Edward Ave
Main St
Kingsway
E 22nd Ave
E 29th Ave
SW Marine Dr
Granville St
Oak St
W 41st Ave
E 41st Ave
Joyce St
Boundary Rd
W 49th Ave
E 49th Ave
Cambie St
Main St
Fraser St
Knight St
SE Marine Dr
SE Marine Dr
N
0
1
2 km

APPENDIX C – EVALUATION CRITERIA

These evaluation criteria apply to Study, Pilot Project and Capital Project Applications.

Need

This evaluation category applies to studies, to develop or design individual projects, or identify and prioritize groups of projects. Each segment of the bus network is assigned a score based on the most recent measured travel times and passenger loads in the weekday AM, midday and PM peak periods, and on weekend days.

This score is a composite of:

- **Transit vehicle travel time** relative to a benchmark travel time. The benchmark reflects operations in light traffic, plus the time it takes pulling out of the first stop and into the second stop. Larger differences between the measured times and benchmark times mean there is more delay per bus. This occurs where there is more congestion, queuing and time waiting at traffic signals. [The benchmark time has been defined as the 20th percentile observation, to eliminate outlier data. This is compared to the median travel time.]

- **Variability of travel time**, the standard deviation of measured times compared to the mean. Higher ratios mean that bus times are more random, usually due to factors present that only affect some buses and that might be mitigated. High values of variability often occur where buses experience lane blockages, uneven queuing by other traffic, or encounter traffic signals with long cycle times.

- **Person-hours of delay** estimated as the per-bus delay (measured travel time in excess of the benchmark time), multiplied by the passenger loads on buses in that segment of the route. The inclusion of passenger loads helps highlight parts of the transit system where more people are affected by delays, which make them a higher priority.

The raw results of combining these values are normalized for distance, so in effect, the measurement is based on ***seconds and passenger-seconds per 100m of bus network***. This approach was used as most bus stops are within 400m, but some on the highway are over 10km apart.

A combined score is calculated using these three metrics, for each bus stop and direction of travel, for each period (AM peak, midday, PM peak, weekend). The application form reports back a composite score, which is the time-weighted average of the four periods.

The program application looks up these scores for each bus stop and combines the scores for stops within the project limits to estimate a preliminary score for the application. Need - Maximum Theoretical Score = 100

Return on Investment (ROI)

Expected return on investment is applied to all Capital Projects and Pilots with an anticipated budget over $75,000.

Return on investment is assessed on the basis that projects should recoup their cost within 10 years through delay reduction associated service costs. Projects will also be prioritized based on their anticipated return on investment timeline, projects that are that shorter ROI timelines will be prioritized. Return on investment is calculated from:

- Number of trips (within affected segments, during active time periods)
- Estimated reduction in runtime per trip (within affected segments, during active time periods)
- Annual service hour cost projections
- Expected project cost

Benefits

Benefit scores apply to pilot and capital projects, based on:

- The proposed measures,
- Time periods in effect, and
- Affected bus stops [the underlying need rating for each segment, in each time period.

Points will be assessed to each project based on the types and quantities of transit priority measures implemented. Positive scores are assigned for the addition of elements, while in cases where existing measures are being removed or replaced, negative scores are assigned for removal.

The following table shows the scores being awarded by the evaluation framework for each transit priority element. (Note: for the per meter items, the equivalent per 200m (a typical segment length) is indicated to provide an idea of relative effect.

Category	Transit Priority Measure	Unit	Base Score (per Peak Period)	Notes
Bus Stop Location	Stop relocation	# Stops	2	
	Stop consolidation/removal	# Stops	3	
	New bus stops	# Stops	-3	-3 if adding stop, +3 if removing
Bus Stop Design	Stop lengthening	# Stops	1	
	Bus bulge	# Stops	2	
	Boarding island	# Stops	2	
	Bus bay Infill	# Stops	1	
Intersection Controls	Left-turn restriction	# Restrictions	1	
	Right-turn restriction	# Restrictions	1	
	Bus exemption	# Exemptions	2	
Signal Controls	New signal	# Signals	-2	
	New turn-signal/phase	# Signals	3	
	Passive signal priority	# Affected Signals	3	
	Active transit signal priority	# Affected Signals	5	
	Queue Bypass Lane	# of Locations	4	
	Queue Jump / Approach Lane	# of Locations	4	

Category	Transit Priority Measure	Unit	Base Score (per Peak Period)	Notes
	Queue jump signal	# Queue Jumps	4	
Roadway Design	Lane channeling/striping	# Locations	1	
	GP Lane	Length (per m)	0.01	*2 per 200m*
	Turn radius improvements	# Intersections	1	
	Left-turn (transit only)	# Lanes/Pockets	2	
	Left-turn lane/pocket	# Lanes/Pockets	3	
	Right turn (transit only)	# Lanes/Pockets	2	
	Right-turn lane/pocket	# Lanes/Pockets	3	
Transit Lanes	HOV (High Occupancy Vehicle) lane	Length (per m)	0.015	**3 per 200m*
	BAT Lane	Length (per m)	0.02	**5 per 200m*
	Peak Hour bus lane	Length (per m)	0.02	**5 per 200m*
	Dedicated bus lane - curbside	Length (per m)	0.02	**5 per 200m*
	Dedicated bus lane - median	Length (per m)	0.035	**7 per 200m (stop-to-stop)*

Scale Factors – *Time Periods*

AM and PM peak periods each account for 3 hours per weekday, five days a week. Midday periods account for 6 hours per weekday. Busy times on weekends nominally extend at least 12 hours per day. Based on these assumptions, the duration effects of the measures are explained by this table. The 'x' refers to the nominal score in the previous table for a transit priority measure (or group of measures) implemented at a specific location. Scores are only accumulated for time periods the measure is in effect. The two examples show how the time periods have a significant effect on scores.

Time Period	AM	PM	MD	Sat Sun	Total
Score	**x**	**x**	**2x**	**1.6x**	**5.6x**
Example (Dedicated Bus Lane)	5	5	10	8	28
Example (Peak Period Bus Lane)	5	5	n/a	n/a	10

This scale factor treats the twelve core hours of operations on weekday and weekend days equally. A measure in place at least 12 hours per day, 7 days a week, would be allocated 5.6 times the score of a measure that only applies in one weekday peak period.

The dedicated bus lane achieves 28 points in the example, while the peaks-only lane receives 10.

Scale Factors – *Potential Benefits in Each Time Period*

This factor accounts for the existing conditions in each bus network segment, at each time of day. This helps account for variations in transit travel times and reliability, specific to each location. Time periods with greater passenger/bus delays and higher travel time variability would be expected to achieve greater benefits. The metrics for this are essentially the same as the "need" calculation for studies;

however, in this case the results are used one-by-one to estimate scores for each time period, for each proposed measure.

As indicated here, the adjustments related to the potential benefits per time period include:

- Increased benefits are assessed progressively for D, E and F segments.
- C segments are considered to be the "base" condition, with no up or down adjustment. The number of segments in A/B and in D/E/F is approximately the same, so 'C' is the middle group of bus network segments.
- Decreased benefits are assumed for A and B segments, since there are fewer delays to be addressed. These locations may nevertheless be part of an application to provide project continuity.

Rating	**Base Value**	**A**	**B**	**C**	**D**	**E**	**F**
Score	X	0.25X	0.5X	X	1.5X	2X	4X
Example – Bus Lane (continued from above)							
AM	5				**7.5**		
PM	5					**10**	
MD	10			**10**			
Sat Sun	8		**4**				
Total	28	**31.5**					

In the illustration, the effect of the mix of 'D' (AM), 'E'(PM) 'C' (MD) and 'B' (Sat Sun) ratings increases the scores for certain time periods and reduces others. Overall, the effect is a modest increase over the base scores, reflecting the greater than average delays in certain time periods.

Maximum theoretical score is being updated. Most projects would include up to one or two elements per category, so the realistic maximum is expected to be around 100 points

9 APPENDIX D – MRN CAPACITY CHANGE FRAMEWORK

The Major Road Network Capacity Change Process guide can be found linked here.