Fast. Frequent. Reliable.

Rapid transit systems feature high-capacity vehicles and priority over general traffic, providing fast, frequent, and reliable service beyond what is achieved with conventional transit systems.

Rapid transit in Metro Vancouver

Metro Vancouver’s rapid transit systems include the Expo, Millennium, and Canada Lines, as well as the planned Evergreen Line.

A key goal of Transport 2040, TransLink’s long-term transportation strategy, is to shift most trips to transit, walking and cycling. Expanding rapid transit service is part of the plan.

Technology options

A number of different rapid transit technologies are in operation around the world. Three technologies could meet Metro Vancouver’s future rapid transit needs: bus rapid transit (BRT), light rail transit (LRT), and rail rapid transit (RRT).

BRT

LRT

RRT

Learn more about rapid transit technologies in Metro Vancouver

www.translink.ca

1600-4730 Kingsway, Burnaby, B.C.

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bepartoftheplan.ca

Typical operating environments

Finding the right technology solution

Each community is unique and finding the right solution for each depends on a number of factors. Cost is a key factor that can vary widely, particularly depending on the vertical alignment of the rapid transit technology. Typically, tunneled options are most expensive, followed by elevated options and then street level options.

While cost is an important consideration, a wide range of benefits and impacts for local communities and the region must also be considered.

When assessing technology options, TransLink considers economic development, environmental, financial, social and community, transportation, urban development and deliverability benefits and impacts. Stakeholder and public consultation will also help determine the best rapid transit solutions for Metro Vancouver.

Common features of rapid transit systems

Some examples of common features include:

- Stations are sheltered and feature ticket vending machines, closed circuit TV for security, real-time information and wayfinding.
- Tickets or electronic fare media are purchased off the vehicle for faster, more efficient boarding.
- Multiple doors and level boarding make getting on and off rapid transit vehicles faster, more efficient, and universally accessible.
- Systems can be designed to integrate with the communities they serve, including station locations and how the stations and vehicles look.
About BRT
Driver-operated bus technology that provides faster, more frequent and more reliable service than conventional bus service such as B-Line or even frequent bus service. Unique branding sets BRT apart, making the system easy to identify and reflecting community character.

Power source: Diesel, compressed natural gas (CNG) or hybrid diesel-electric. Electric trolley buses can be used with overhead lines.

Right of way: Typically operates in the street but in separate lanes from other traffic at an average speed of 30 km/h. Most BRT systems run on the surface; however, they can also run in tunnels or on elevated structures.

Frequency: Typically high; as frequent as every 2 minutes. Dedicated lanes, moderately spaced stops and signal priority at intersections improve travel time and reliability.

Capacity: Typically medium; up to 3,500 passengers per hour per direction.

Vehicles: Typically 18-metre-long articulated buses. Vehicles use low-floor, kneeling technology and/or ramps for easy and universal accessibility.

Typical Operating Environments

BRT examples from around the world
BRT systems are in operation around the world in cities such as Ottawa, Toronto, Curitiba and Lyon.

About LRT
Driver-operated rail technology using trains that utilize unique vehicle and station design to help the system integrate into the communities it serves.

Power source: Electric power from overhead lines.

Right of way: Typically operates in the street, but in separate lanes from other traffic at an average speed of 30 km/h. Most LRT systems run on the surface; however, they can also run in tunnels or on elevated structures.

Frequency: Typically high; as frequent as every 2 minutes. Dedicated rights of way, widely-spaced stops in lower-density areas and signal priority at intersections improve travel time and reliability.

Capacity: Typically high; up to 15,000 passengers per hour per direction.

Vehicles: Light Rail Vehicles (LRVs) range in size from 25 - 80 m long and can operate singly or in trains of up to four cars. Vehicles and platforms are designed to allow level boarding for easy and universal accessibility.

Typical Operating Environments

LRT examples from around the world
LRT systems are in operation around the world in cities such as Portland, Houston, Paris, Berlin and Lyon.

About RRT
Driver-operated or driverless rail technology that has a high passenger capacity. RRT operates completely separated from other traffic, which improves travel time and reliability.

Power source: Electric power from a rail beside the track.

Right of way: Typically operates in a tunnel or on an elevated structure at an average speed of 40 km/h. Surface level operation is possible; however, it must be fully segregated for safety.

Frequency: Typically high; as frequent as every 2 minutes. Complete segregation from other traffic provides fast and reliable journeys.

Capacity: Typically high, Metro Vancouver’s SkyTrain system is built to carry up to 25,000 passengers per hour per direction. Other systems around the world use different vehicles and operations to accommodate more passengers.

Vehicles: Mark II SkyTrain vehicles are 17 m long per car and can operate in 2- or 4-car trains. 3- and 5-car trains are possible in the future. Vehicles and platforms are designed to allow level boarding for easy and universal accessibility.

Typical Operating Environments

RRT examples from around the world
Metro Vancouver’s Canada Line and SkyTrain are smaller examples. Large-scale RRT systems are found in major cities worldwide, including Toronto, New York, London, Tokyo, and Beijing.