

2018 Green Bond Impact Report



A Message from our CFO



Welcome to TransLink's first-ever **Green Bond Impact Report**, an important resource for information on our Green Bond Program.



We have committed to a capital investment of \$10.4 billion over the next 10 years. This represents an unprecedented investment in transit and transportation, in British Columbia and is the largest capital program in TransLink's history. It includes numerous system and program expansions, coupled with robust state of good repair projects. This historic level of investment in capital projects provides TransLink with opportunities to better serve more customers while demonstrating our commitment to environmental sustainability.

In 2018, TransLink issued its first Green Bond. We are the first transit agency in Canada to do so. The net proceeds are being used exclusively to finance clean transportation and energy efficiency projects.

In recent years, there has been an increasing demand for socially and environmentally responsible investment opportunities. By investing in Green Bond offerings, we are able to deliver tangible and sustainable outcomes, both financially and environmentally, including reductions to our carbon footprint. We're proud to be a leader in this area, and excited about our ability to make real change.

I encourage you to learn more about TransLink through our Accountability Report and our Green Bond Program.









Sincerely,

Christine Dacre
Chief Financial Officer
TransLink

About TransLink

TransLink is a regional multi-modal transportation authority delivering services and programs to meet the needs of 2.5 million people in Metro Vancouver.

TransLink serves "21 municipalities, one Electoral Area and one Treaty First Nation

| | | | |
|--|--|---|--|
|  BUS |  SEABUS |  SKYTRAIN |  COMMUTER RAIL |
|  WALKING |  CYCLING |  ROADS |  BRIDGES |

Our organization covers

+1,800
square kilometres.

In 2018, we achieved record ridership of

437.4
million
boardings.

Key investment attributes include:

- More than \$5.4 billion in assets
- Strong fiscal management and investment-grade ratings
- Diversified and dedicated revenue sources
- Government-legislated entity
- Only issuing transportation authority in Canada

For more information about TransLink, please see our [Accountability Report](#).

Our Commitment to Sustainability

TransLink is guided by our regional mandate: to provide a regional transportation system that moves people and goods, while supporting growth strategy, environmental objectives and economic development in the region.

In 2009, TransLink's Board of Directors approved a sustainability policy that articulates TransLink's commitment to ensuring sustainability is a central component of our organizational decision-making, plans, practices and operations. To fulfill this commitment, we need to not only be world-class in creating a sustainable region through transportation excellence, but we also need to operate our business to the highest standards of sustainability governance.

TransLink's sustainability efforts earned distinction in 2012, with TransLink being the first transportation agency in North America to achieve Gold level under the American Public Transportation Association (APTA) Sustainability Commitment. In 2016, TransLink was



awarded Platinum level status, and was the first transportation agency in Canada to earn the level. We are honoured that, in 2019, the APTA selected TransLink to receive the Outstanding Public Transportation System Achievement Award. This award recognizes a transit agency's ridership growth, operational efficiency, maintenance initiatives, customer service, financial management, marketing and sustainability efforts.

To further demonstrate our commitment to sustainability, TransLink, with support from our Board of Directors and the Mayors' Council, adopted two significant environmental sustainability targets in 2018:

80% reduction of greenhouse gas emissions (GHGs)

BY 2050

100% utilization of renewable energy in all operations


BY 2050

TransLink 2018 Green Bond Program


In 2018, TransLink developed a Green Bond Program to align with our commitment to sustainability and assist in our capital development plan.

This Green Bond Program aligns with the International Capital Market Association (ICMA) Green Bond Principles, which promote integrity in the market through transparency, disclosure and reporting.

Under the program, net proceeds of TransLink’s 2018 Green Bond issuance were used to finance or refinance, in whole or in part, existing and future capital projects that provide environmental benefits to TransLink and the region, and support the achievement of environmental and climate goals. RBC Capital Markets and TD Securities were Joint Bookrunners on the transaction. TransLink’s Green Bond Framework received a Second-Party Opinion from Sustainalytics.



| | |
|------------------------|-------------------------|
| Evaluation date | October 1, 2018 |
| Issuer Location | New Westminster, Canada |



Sustainalytics is of the opinion that the TransLink Green Bond Framework is credible and impactful, and aligns with the four components of the Green Bond Principles 2018.

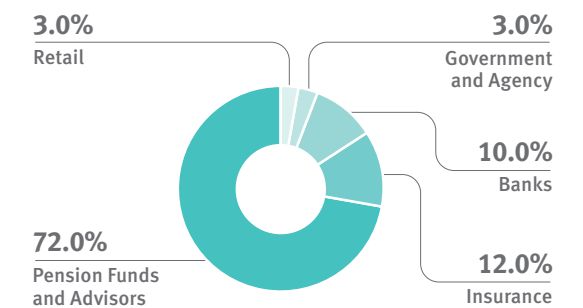
“It’s clear that a lot of effort has gone into formulating TransLink’s Green Bond Framework. From a best practices perspective, I think it is very strong.”

Amy West, Head of Sustainable Finance, TD Securities

Key Features

- On Thursday, November 15, 2018, TransLink successfully priced its inaugural Green Bond of \$400 million (ISIN:CA83740TAG28), making it the first transit authority in Canada to issue a Green Bond.
- The \$400 million 10-year bullet maturity bond was priced with a coupon interest rate of 3.25 per cent, payable semi-annually until maturity on November 23, 2028.
- With orders from 42 investors, the issue was over-subscribed. Investors with Green mandates and/or UN PRI (Principles of Responsible Investment) signatories represented 73 per cent of overall sales.
- Demand was primarily concentrated in Canada, with 92 per cent placed domestically.

The Green Bond yielded 3.267 per cent to investors. There was strong participation from a variety of investor types, including Pension Funds and Advisors (72 per cent), Insurance (12 per cent) and Banks (10 per cent).



“TransLink’s inaugural Green Bond issuance marks the largest Green Bond in the Canadian municipal sector and the success of the transaction is a testament to the hard work put in by the TransLink team leading up to this transaction. All the more impressive given the challenging capital market backdrop at the time of issuance.”

Alex Caridia, Managing Director and Head of Government Finance, RBC Capital Markets

TransLink 2018 Green Bond Program

Reporting Periods

The Green Bond Impact Reporting period is January 1 – December 31, to align with our Accountability Report and most recent fiscal year. The Use of Proceeds period is reported to as of June 30, 2019.

Use of Proceeds

Capital raised by the 2018 Green Bond was used to fund portions of the Millennium Line Evergreen Extension, SkyTrain station and rail network upgrades, new higher-capacity rail cars, Transit Centre upgrades, electric trolley fleet maintenance and new battery electric buses, as well as improvements to the cycling infrastructure throughout the system, such as bike parkades and BC Bike Parkway maintenance.

The net proceeds after issuance costs amounted to \$397,824,000 and were

maintained in a segregated bank account. From December 2018 to June 2019, all of the ~\$398 million proceeds of this bond issuance were released from the segregated account, representing funds invested in eligible projects.

KPMG provided an assurance audit on the Use of Proceeds. Refer to [KPMG's Independent Auditors' Report](#) on the Schedule of Use of Bond Proceeds for the period ending June 30, 2019.

Project Evaluation and Selection

The selection of eligible projects is the responsibility of the corporate finance department where the Corporate Sustainability, Treasury and Capital Asset Management functions reside. Evaluating and screening projects is completed in consultation with TransLink's bus and rail operating companies, and other internal business units.





| PROGRAM PROJECT NAME | BOND NET PROCEEDS (\$000s) |
|--|----------------------------|
| Millennium Line Evergreen Extension | 225,000 |
| SkyTrain Station Upgrades | 103,147 |
| SkyTrain Operations and Maintenance Projects | 44,371 |
| Refurbishment and Purchases of New Rapid Transit Vehicles (Train Cars) | 12,092 |
| Electric Bus Projects | 8,200 |
| Transit Centre Energy Efficiency Upgrades | 3,358 |
| Cycling and Pedestrian Infrastructure | 1,656 |
| Total | 397,824 |

The use and management of the proceeds of Green Bonds are described in TransLink's Green Bond Framework, and can be found in the [Investor Relations](#) section of our website.

Impact Reporting

In 2018, TransLink's Green Bond raised capital to support environmental sustainability, with a focus on Clean Transportation, Energy Efficiency and Conservation, and Renewable Energy project categories.

TransLink uses the best available methodologies to select projects and programs that demonstrate positive environmental impacts. TransLink's Green Bond proceeds fund project categories that support the United Nations Sustainable Development Goals (UN SDGs).

| GREEN PROJECTS | KEY PERFORMANCE INDICATORS | TRANSLINK GREEN BOND PROJECT CATEGORY | | | UNITED NATIONS SDGS |
|--|---|---------------------------------------|------------------------------------|------------------|---|
| | | CLEAN TRANSPORTATION | ENERGY EFFICIENCY AND CONSERVATION | RENEWABLE ENERGY | |
| Public transit projects | Ridership and GHG emissions reduced/avoided (tCO ₂ e) from using electric propulsion for bus and SkyTrain and through mode shift | ✓ | ✓ | ✓ |    |
| | Air quality improvements (reduce particulate matter and nitrogen oxide) | | | | |
| | Energy saved per year (GJ/yr) | | | | |
| | Renewable energy consumed (MWh/yr) | | | | |
| | Support for biking infrastructure (km) | | | | |
| Building energy efficiency improvements | Energy saved per year (kWh/yr) | ✓ | ✓ | |  |
| | Building energy efficiency (kWh/m ²) | | | | |

Millennium Line Evergreen Extension – \$225.0M



The Millennium Line Evergreen Extension, which opened in December 2016, added 11 kilometres of guideway and 6 new stations to our existing network, to service Burnaby, Port Moody and Coquitlam.



Infrastructure at each station also supports bus, cycling and pedestrian travel modes. TransLink's total contribution to the Millennium Line Evergreen Extension project was \$400M. Of that, \$225M was included in the 2018 Green Bond Program.

Project Benefits

106.9 million boardings

The Millennium Line Evergreen Extension had 106.9 million boardings in 2018.

We saw an **11 per cent increase in boardings over 2017**, which was the highest growth on the SkyTrain system.

The Millennium Line Evergreen Extension used **16,800 megawatt hours of renewable energy** for propulsion.¹

We estimate a reduction of **2,015 tonnes of CO₂e** by people choosing transit over single occupancy vehicles (mode shift).²

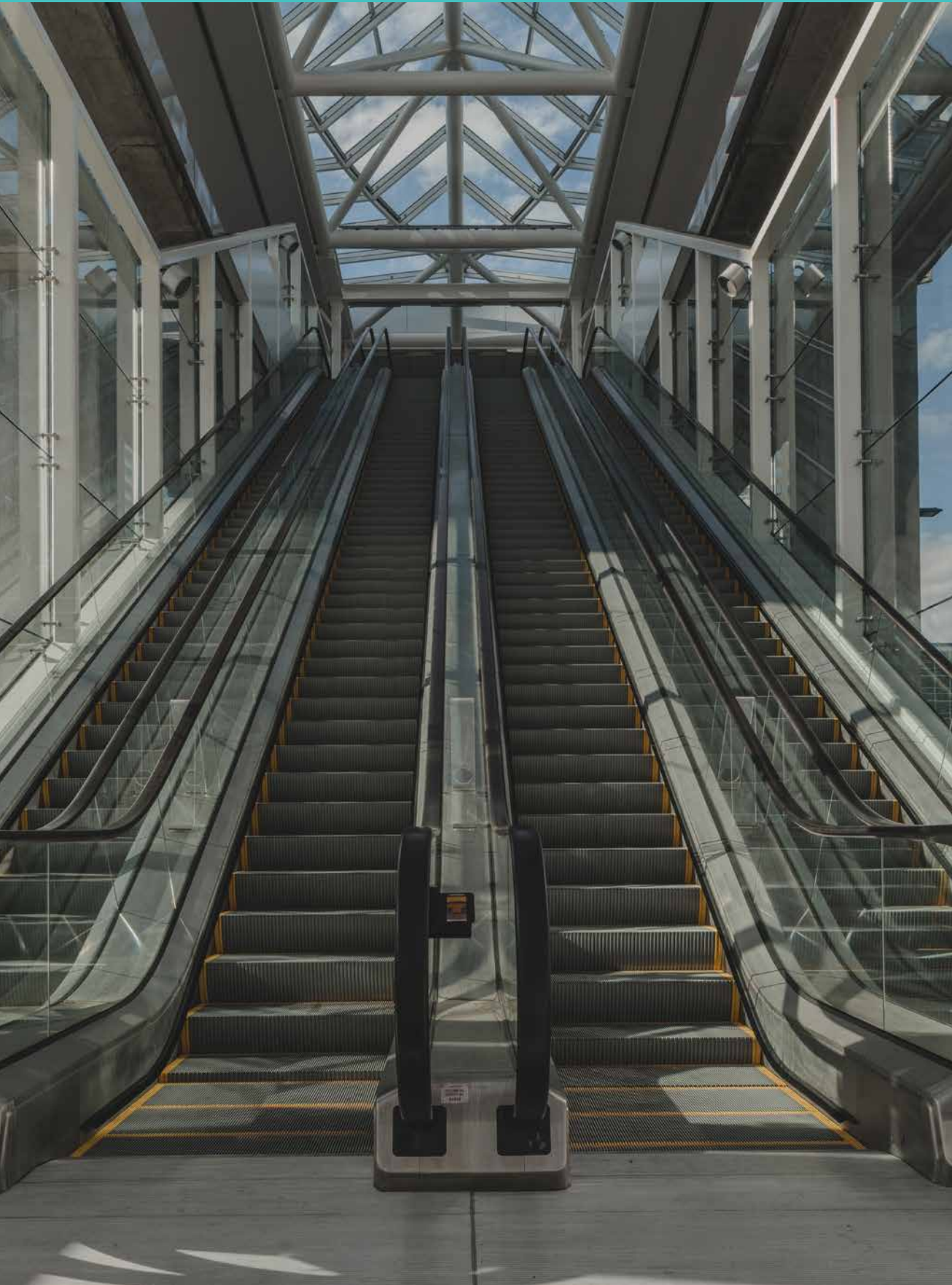
That's like taking **428 cars** off the road for a year.



¹ This utilized 93 per cent renewable energy from the BC Hydro grid.

² TransLink internal methodology assumes 10 per cent mode shift and 10.3L/100km fuel efficiency, and uses emission factors for all CO₂e calculations from 2017 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions.

SkyTrain Station Upgrades – \$103.1M



Funding for SkyTrain station upgrades included new energy-efficient escalators, LED lighting fixture upgrades, increased customer capacity and improved accessibility.

SkyTrain station upgrades occurred at the following locations:

- 1 New Westminster
COMPLETED NOVEMBER 2016
- 2 Metrotown
COMPLETED MARCH 2018
- 3 Commercial-Broadway
COMPLETED FEBRUARY 2019
- 4 Surrey Central
COMPLETED FEBRUARY 2019
- 5 Joyce-Collingwood
COMPLETED JUNE 2019
- 6 Canada Line Station
(escalator enhancements)
IN PROGRESS/TO BE COMPLETED
FALL 2019



Program Benefits

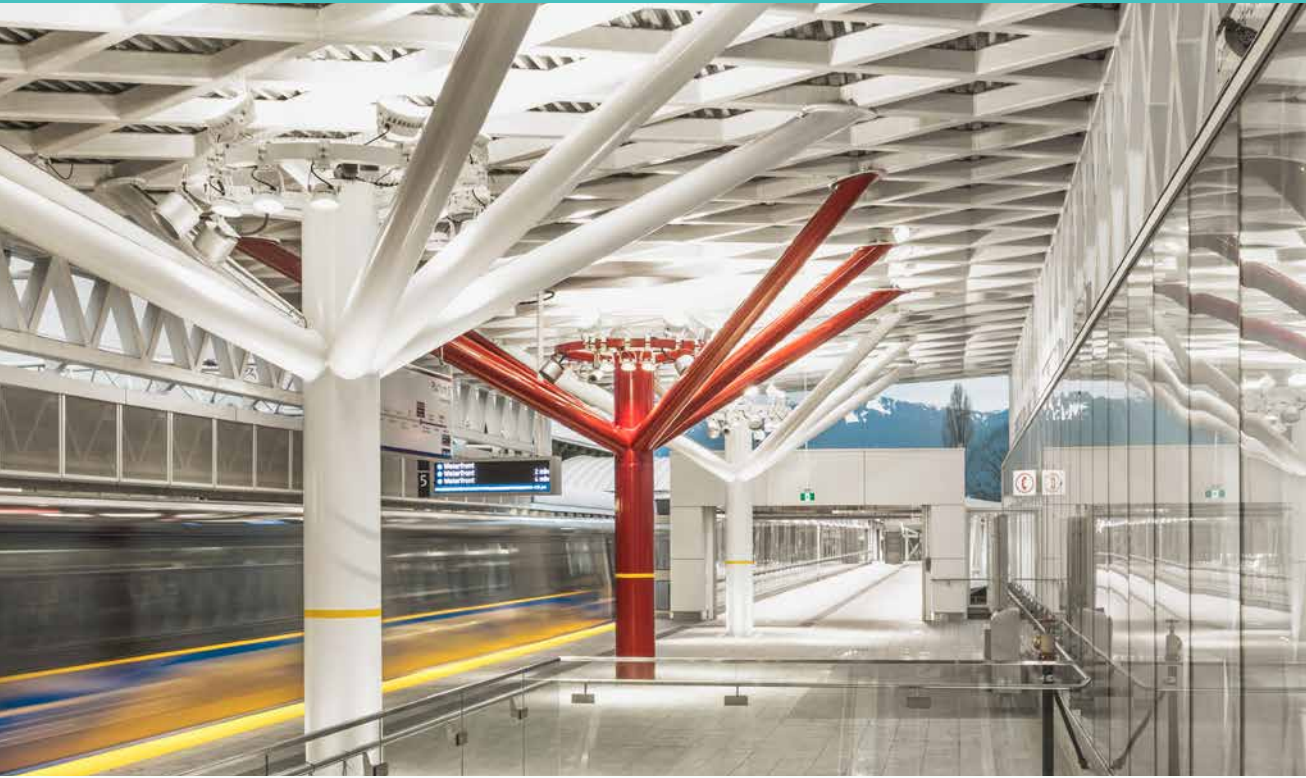
We increased overall station capacity, supporting growth in ridership and access to clean transportation.

In 2018, the overall energy consumption at our SkyTrain stations was **4.5 per cent lower than 2017** (a reduction of over 6,500 gigajoules).

111.3 million boardings

in 2018, SkyTrain ridership was 111.3 million boardings, an **increase of 5.9 per cent over 2017.**

Station Upgrade Highlights

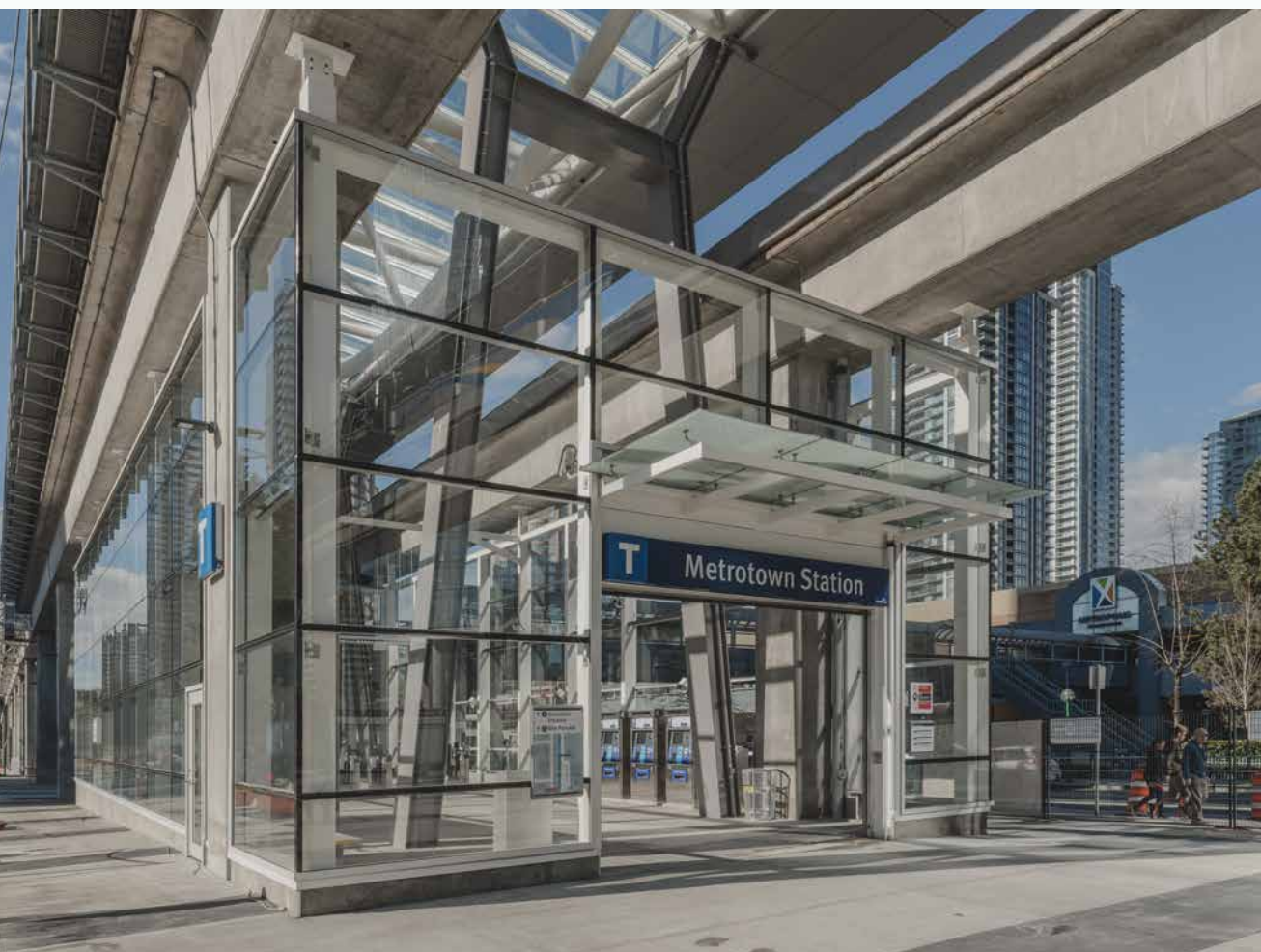


Commercial Broadway Station Upgrades

As TransLink's largest-ever SkyTrain station upgrade, Commercial-Broadway Station is one of the busiest stations on the network, with **150,000 customers** passing through the station every day.

HIGHLIGHTS OF THE UPGRADES INCLUDED:

- Installation of four new energy-efficient EcoMod escalators, with an estimated 20 to 40 per cent improvement in energy efficiency over replacement models
- Expansion of LED lighting system throughout the station
- Glazed glass panels to improve natural lighting and provide temperature control
- Installation of a new 42-bike-capacity parkade, supporting clean transportation connections



Metrotown Station Upgrades

Metrotown Station is the fifth busiest station in the system, **servicing over 50,000 boardings** each day.

HIGHLIGHTS OF THE UPGRADES INCLUDED:

- Installation of 7 new energy-efficient EcoMod escalators, with an estimated 20 to 40 per cent improvement in energy efficiency
- Expansion of new LED lighting throughout the station
- New platform design to increase capacity of the station by 100 per cent
- Glazed glass panels to improve natural lighting and provide temperature control
- Upgrades to the existing BC Parkway bicycle and pedestrian path leading to Metrotown
- Installation of a new 26-bike-capacity parkade, supporting clean transportation connections

SkyTrain Operations and Maintenance Projects – \$44.4M



At 79 kilometres, SkyTrain is the oldest and longest automated driverless electric light rapid transit system in North America.

It connects major town centres of Metro Vancouver including Vancouver, Burnaby, Coquitlam, New Westminister and Surrey. Utilizing BC Hydro’s renewable electricity grid, it gives customers **a zero-emission transportation option** for travelling throughout the region.

Maintaining our SkyTrain system is critical to ensuring a reliable transit network. Project highlights supporting this program include:

| PROJECT HIGHLIGHTS | SUPPORTING CLEAN TRANSPORTATION |
|--|--|
| Automatic train control system upgrades | ✓ This provides automatic driverless SkyTrain operations on the electric rail network, supporting mode shift away from personal vehicles, and reducing GHGs and other air pollutants. |
| Running rail and rail pad replacement | ✓ As part of our commitment to keeping the system in a state of good repair, approximately 5,000 linear metres of running rail, and an average of 7,800 rail pads, are replaced every year. |
| Traction and propulsion power upgrades | ✓ The SkyTrain power supply and distribution system is made up of electric propulsion power substations, which is fed through BC Hydro’s utility service. This service provides TransLink with electricity derived from a clean renewable energy source (93 per cent renewable). |

Program Benefits

4.5% less energy

SkyTrain propulsion **energy consumption was 4.5 per cent lower than 2017**, using 141,000 megawatt hours of renewable energy.

5.9% increase in ridership

In 2018, SkyTrain saw 111.3 million boardings, an **increase of 5.9 per cent over 2017**.

3 Assumes 10 per cent mode shift and alternate car km trips equaling 10.2. and 10.3L/100km fuel efficiency

Refurbishment and Purchases of New Rapid Transit Vehicles – \$12.1M



This program included 80 new rail cars (56 Mark III and 24 Hyundai Rotem), as well as the refurbishment of 36 existing rail cars.

In 2018, the SkyTrain system had 160 million boardings, which included an additional 8.7 million boardings over 2017.⁴ The average SkyTrain car operates more than 180,000 kilometres every year, reducing customer personal vehicle kilometres travelled, and **lowering associated greenhouse gas and air pollutant emissions.**

Program Benefits

80 new rail cars

increase capacity by approximately **10 per cent** on the Expo Line, **23 per cent** on the Millennium Line, and **30 per cent** on the Canada Line, adding **8,200 additional spaces** per peak hour in both directions on all three SkyTrain lines

We estimate a reduction of **500 tonnes of CO₂e** through mode shift.⁵

That's like taking **106 cars** off the road for a year.



New Mark III Rail Car Benefits

Energy efficiency is improved from previous models due to the combination of lightweight aluminum train car material and a linear induction motor (LIM) propulsion system, as well as highly effective regenerative braking that enables the reuse of energy released during braking.

Refurbishment of Mark I Rail Car Benefits

- New LED lighting improves energy efficiency of the cars
- Upgraded LIM improves energy efficiency from previous models



⁴ <https://www.translink.ca/Plans-and-Projects/Managing-the-Transit-Network/Transit-Service-Performance-Review.aspx>

⁵ Estimating 180,000 km per new rail car, 10 per cent mode shift factor and 10.3L/100 km fuel efficiency

Electric Bus Projects – \$8.2M



Electric Trolley Buses



TransLink’s electric trolley bus system has been in operation since 1948, and serves some of Vancouver’s densest neighbourhoods. It consists of 262 electric trolley buses, all of which have zero tailpipe emissions. **Maintaining the trolley overhead infrastructure is key in retaining a clean, zero-emission transportation option** for our customers.

To maintain our network of 315 kilometres of trolley wires and trolley buses, we rely on electric trolley bus equipment upgrades and replacements, trolley bus overhead pole installation, wire replacement and bus maintenance. The ongoing upgrades also improve energy efficiency throughout the system.

Program Benefits

- 60 million boardings** on the trolley bus fleet
- 98 per cent reduction in GHG emissions** compared to diesel bus equivalent kilometres
- Zero tailpipe air pollutants**
(i.e., particulate matter, nitrogen oxides, non-methane hydrocarbons)

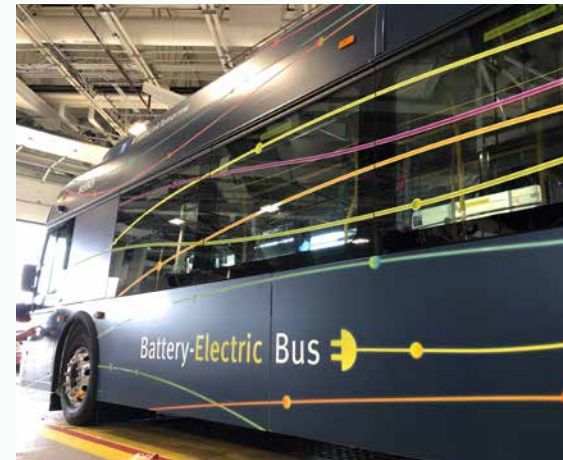
We estimate **26,000 tonnes of CO₂e have been avoided** by operating electric trolleys versus diesel buses.

That's like taking **3,982 cars** off the road for a year.

Electric Bus Projects – \$8.2M



Battery-Electric Buses



TransLink is one of three agencies in Canada that is participating in a test project of **battery-electric buses and on-route charging infrastructure**. This 2.5-year demonstration project is being led by the Canadian Urban Transit Research and Innovation Consortium (CUTRIC).⁶ The purpose of this demonstration is to test interoperability between bus and charger manufacturers, and to collect data on bus performance, maintenance and overall customer experience.

Project Benefits

Annual reduction of approximately 150,000 litres of diesel fuel per year

Zero tail pipe air pollutants

(i.e., particulate matter, nitrogen oxides, non-methane hydrocarbons)

Reduction in noise pollution

(exterior noise levels of electric buses are approximately 11 dbA lower than diesel buses)

We estimate
400 tonnes of CO₂e have been avoided
by operating four battery-electric buses versus diesel buses.

That's like taking **85 cars** off the road for a year.



⁶ Find out more about [TransLink's electric bus trial](#).

Transit Centre Energy Efficiency Upgrades – \$3.4M




TransLink’s seven transit centres are the hubs of Metro Vancouver’s bus transit system.

Transit centres serve as maintenance, fueling and bus washing facilities for the bus fleets they house. These transit centres are key to sustaining our operations to serve our customers.

To keep the transit systems running as efficiently as possible, TransLink consistently identifies areas of improvement, with **a major focus on energy consumption**. We have a long-standing relationship with our utility provider, BC Hydro, and are an active participant in its PowerSmart⁷ program, which incentivizes program members to reduce energy waste and improve efficiency. We also incorporate a facilities energy management system which tracks real-time energy data at our transit centres, allowing us to monitor energy consumption and identify areas to improve.

TransLink has completed energy upgrades – that include lighting retrofits, HVAC and internal mechanical processes – at our Richmond, Vancouver, West Vancouver and Surrey Transit Centres. Here are some results:

Project Benefits

| TRANSIT CENTRE LOCATION | ENERGY SAVED (KWH) | BUILDING ENERGY PERFORMANCE IMPROVEMENT (KWH/M ²) | PROJECT COMPLETION |
|-------------------------|--------------------|---|---|
| Richmond | 1,600,000 | 10% | Lighting completed July 2017; mechanical May 2018 |
| Vancouver | 1,500,000 | 22% | Lighting completed May 2018; mechanical May 2019 |
| West Vancouver | 51,000 | 10% | October 2018 |
| Program Total | 3,151,000 |  Energy saved is the equivalent to energy used to heat 270 homes in one year. | |

Energy efficiency improvements for the Surrey Transit Centre are currently being assessed under our Facilities Renewable Energy Plan study.

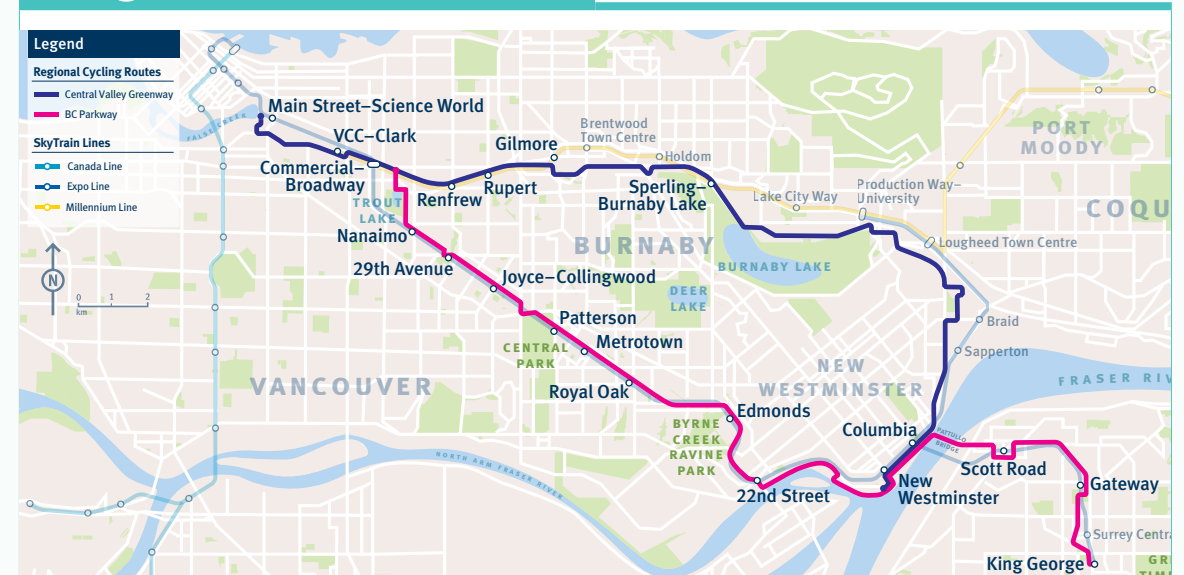
⁷ <https://www.bchydro.com/powersmart/business/programs.html>

Cycling and Pedestrian Infrastructure – \$1.7M



TransLink partners with municipalities and other stakeholders to improve cycling and pedestrian infrastructure throughout Metro Vancouver.

Program Benefits



Maintenance of cycling infrastructure on **BC Parkway**, the 26-kilometre multi-use path that roughly parallels our SkyTrain system

Installation of **250 new bike stations and parkades** at 6 SkyTrain stations, increasing capacity to 300 bike stations

Reduction of GHG emissions and other air pollutants, due to customer use of the cycling network, instead of using cars

Installation of **electrical infrastructure to support e-bikes**



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