2023 BC TRANSIT

Climate Change Accountability Report

BC Transit

We acknowledge with respect that BC Transit delivers our mission on the ancestral territories of Indigenous Peoples across British Columbia, and their historical relationships with the land continue to this day.

Overview

BC Transit is proud to announce that in 2023 the organization has successfully met and surpassed fleet greenhouse gas reduction targets for 2025, achieving this milestone a full two years ahead of schedule. This achievement has been largely fueled by the increased utilization of renewable fuels across the provincial bus fleet, which resulted in a net emission reduction of 25% from 2007 levels, exceeding the targeted 16% reduction.

Key accomplishments include a 38% increase in the use of biofuels, including renewable natural gas and hydrogenation-derived renewable diesel. These efforts align with BC Transit's strategic transition towards low-carbon and electric transit solutions, as demonstrated by the continued development of battery electric bus charging infrastructure.

Facility emissions have decreased year over year but lag behind the target of a net reduction of 50% from 2010 levels, largely due to growth in size and number of facilities throughout the province.

BC Transit has continued to prioritize climate adaptation measures, building on the risks identified in a previous year climate risk assessment. This ongoing commitment includes advancing a feasibility study aimed at retrofitting an existing maintenance garage with cooling systems to mitigate the impacts of extreme heat events. These steps illustrate BC Transit's commitment to not only reducing its carbon footprint but also enhancing resilience against climate-induced challenges.

Looking ahead, BC Transit is focused on maintaining its momentum in reducing emissions, with plans for further fleet electrification and infrastructure enhancements scheduled for 2024. The organization is finalizing its first Environmental Sustainability Plan, set for completion in 2024. This plan outlines key goals and actions to enhance sustainability across the organization. Developed through extensive stakeholder engagement and aligned with the Government of British Columbia's CleanBC Roadmap, the Sustainability Plan will serve as a blueprint for enhancing BC Transit's efforts across six primary dimensions of sustainability. This document will outline the long-term strategic and operational goals that aim to address the most pressing environmental sustainability priorities.

This report has been prepared in accordance with the Climate Change Accountability Act requirements and offers a comprehensive view of BC Transit's greenhouse gas emissions inventory. It details emission reduction projects completed in 2023, outlines climate adaptation activities, and discusses planned future actions.

2023 Greenhouse Gas Emissions

Emissions Scope

BC Transit categorizes reportable greenhouse gas (GHG) emissions into three distinct scopes – Scopes 1, 2 and 3. System boundaries and methodology are as defined by *2023 B.C. Best Practices Methodology For Quantifying Greenhouse Gas Emissions.*

- Scope 1 emissions originate directly from BC Transit's own assets, such as vehicles and facilities. These are emissions released right at the source, such as vehicle tailpipe emissions.
- Scope 2 emissions, although not emitted directly by BC Transit's assets, are directly linked to the electricity and energy used by these assets. These emissions occur at the site of energy production, such as a power plant. As BC Hydro generates electricity primarily through hydroelectric dams, BC Transit's Scope 2 emissions are fairly minor.
- Scope 3 emissions are those that are not directly tied to energy consumption of BC Transit but occur elsewhere in the value chain of the organization. In the case of reportable BC Transit emissions, Scope 3 emissions are limited to office paper consumption.

The breakdown of BC Transit's emission sources can be seen in the below table.

Scope 1 Direct emissions from sources owned or leased by BC Transit[1]	**Scope 2** Indirect emissions from purchased electricity	**Scope 3** Other Indirect Emissions
Building Heating – Natural Gas	Building Heating - Electric	Paper Consumption
Vehicles powered by fossil fuels or biofuels	Other electricity use in buildings	
	Electric vehicles	

1 Per *2023 B.C. Best Practices Methodology For Quantifying Greenhouse Gas Emissions* and the *Scope Summary for Reporting B.C. Public Sector Greenhouse Gas Emissions*, facilities and other assets not owned or leased by BC Transit are outside of the scope of this report.

BC Transit's GHG Targets

CleanBC has established ambitious targets for reducing GHG emissions across the province, and specifically for public sector organizations.

BC Transit is proud to announce that in 2023 the organization has successfully met the fleet GHG targets for 2025, achieving this milestone a full two years ahead of schedule.

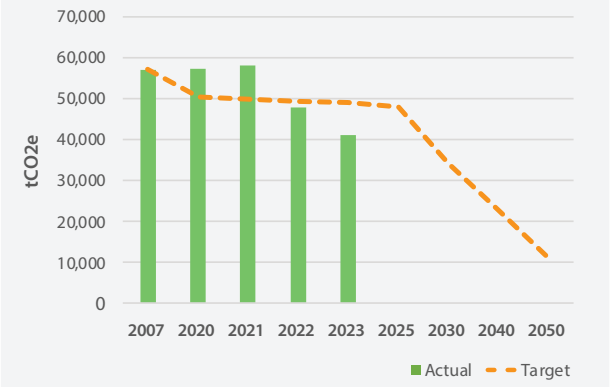
While there have been external factors, such as service interruptions and an unusually warm winter, the predominant driver of emission reductions has been the extensive use of renewable fuels across the provincial bus fleet. These efforts have resulted in a net emission reduction of 25% from 2007 levels, far surpassing the 2025 target of a reduction of 16%. Contingent on adequate funding, this puts BC Transit well on its way to achieve the next target of a 40% emission reduction by 2030.

Facility GHG emissions have decreased year over year but continue to lag behind the target of a net reduction of 50% from 2010 levels, largely due to the size of the facility portfolio increasing over 180% during this period.

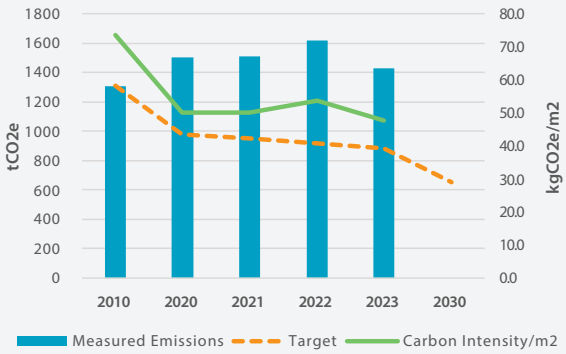
Normalized per square metre, facility emissions have decreased by 35% since 2010, meaning facilities are becoming more efficient but the portfolio is growing even faster.

It is relevant to note the growth in facility portfolio emissions are in part due to a distinction of the *2023 B.C. Best Practices Methodology For Quantifying Greenhouse Gas Emissions* and the *Scope Summary for Reporting B.C. Public Sector Greenhouse Gas Emissions* wherein facilities not owned or leased directly by BC Transit are out of reporting scope, meaning as additional facilities are moved from operating partner control to BC Transit control, so too will emissions increase.

Fleet Greenhouse Gas Targets



Facilities Greenhouse Gas Targets



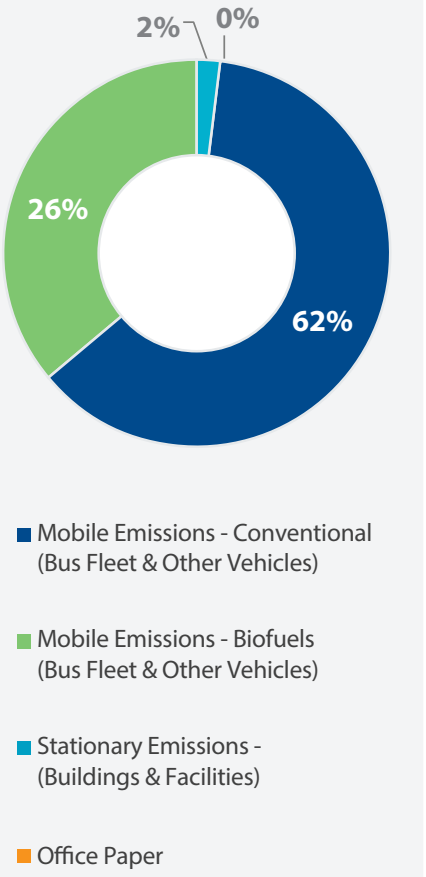
2023 Emission Profile

Across 2023, 98% of BC Transit GHG emissions were produced by the bus fleet deployed throughout the province. Of the fleet emissions, 36% of the fuel comes from renewable biofuels, with the remaining being conventional diesel and gasoline. Over the year BC Transit has continued to enhance the sustainability of its operations by boosting the use of biofuels. The proportion of biofuels employed increased by 38% from 2022 to 2023, reflecting a strong commitment to GHG reductions and more environmentally friendly fuel alternatives.

A comparatively small 2% of GHGs were emitted by in-scope[2] stationary sources which is primarily comprised of operations and maintenance (O&M) facilities that perform upkeep on the bus fleet as well as provide for administrative spaces.

GHG emissions from office paper accounted for a mere 0.01% of total organizational emissions.

BC Transit Greenhouse Gas Emission Sources 2023



Year-Over-Year Comparison

BC Transit has achieved a notable 14% reduction in conventional[3] GHG emissions between 2022 and 2023. This reduction has brought down organization-wide emissions from 49,208 tonnes of carbon dioxide equivalent (tCO2e) per year to 42,617 tCO2e.

This decrease in emissions was able to be achieved largely through the use of biofuels such as Renewable Natural Gas (RNG) and Hydrogenation-Derived Renewable Diesel (HDRD) which increased 38% from 17,138 biogenic tonnes carbon dioxide equivalent (bio tCO2e) to 23,617 bio tCO2e. Biogenic emissions come from renewable sources and are not counted against the climate targets of BC Transit or the Province of British Columbia.

Total energy usage (including biogenic) stayed very consistent year over year, with a mild 0.5% decrease related to service interruptions in the Central Fraser Valley and a warmer winter with subsequent decreased heating load.

2 As per *2023 B.C. Best Practices Methodology For Quantifying Greenhouse Gas Emissions*

3 Conventional GHG emissions are those from fossil fuels, and do not include emissions from biofuels

Mobile Emissions (Fleet)

In 2023 BC Transit continues to make large strides towards reducing the GHG emissions associated with the bus fleet. Between 2022 and 2023, conventional mobile emissions decreased 14%, continuing the trend of an 18% reduction in the prior year.

The 14% decrease in emissions was achieved by the injection of renewable fuels into the bus fleet fuel supply, and specifically the increased proportion of renewable fuels compared to prior years. This action is discussed further in the section *Actions Taken to Minimize Emissions*.

Throughout 2023, low carbon biofuels accounted for more than 36% of BC Transit's total fleet fuel supply. This represents a substantial growth from 26% in 2022 and just 7% in 2021. These actions are the primary method BC Transit has used to achieve and surpass carbon reduction targets ahead of reduction timelines.

The use of biofuels allows for an effective use of existing fleet infrastructure to lower GHG emissions substantially and immediately, setting the stage for a smoother transition to newer electric technologies in the future.

A service interruption in the Central Fraser Valley region also contributed to a reduction in fleet emissions. However, the estimated impact of this service interruption is a mere 376 tCO2e. If the interruption had not occurred the total 2023 emissions would be increased less than 1%, still significantly below targets.

Campbell River Transit Facility

Stationary Emissions (Buildings & Facilities)

Between 2022 and 2023, total in scope GHG emissions from BC Transit stationary sources including transit facilities and office spaces decreased by 11% .

This decrease was driven by a 12% drop in natural gas consumption, partially offset by a 4% increase in electricity consumption. These figures reflect the impact played by fuel switching from natural gas to low carbon electricity, which reduced natural gas load at the expense of increased electricity requirements, as well as a warmer winter overall in 2023 that necessitates less fuel overall for heating facilities.

Per *2023 B.C. Best Practices Methodology For Quantifying Greenhouse Gas Emissions*, facilities not owned or leased by BC Transit are excluded from analysis.

Paper

In 2023, BC Transit observed a 31% increase in emissions from office paper use, which is largely attributed to an increased presence of employees in office operations following remote work periods.

BC Transit continues to minimize paper related GHG impacts by using the low-carbon Sugar Sheet paper which is made from sugarcane waste. The majority of the year-over-year paper related emissions increase is linked to the heightened use of legal-sized paper, a format for which sugar sheet alternatives are currently unavailable. Despite this uptick, the overall impact remains minimal, contributing an additional 1.44 tCO_2e to emissions. This increase, while notable, is not a significant concern within the broader scope of BC Transit's environmental impact, given the relatively small volume and the specific circumstances driving the change.

It is additionally relevant to note that while there was an increase in office paper emissions this year, this is largely due to significant reductions in previous years. Consequently, the overall trend in BC Transit's paper emissions continues to be downward. The current levels are comparable to those of 2021, significantly lower than those recorded in 2020, and nearly half of what was seen in 2019.

Actions Taken to Minimize Emissions:

BC Transit is actively pursuing emission reductions through a multifaceted approach that encompasses infrastructure upgrades, fleet modernization, supply chain improvements, and the adoption of renewable fuels. These efforts are designed to integrate sustainability into all aspects of BC Transit's operations.

Mobile Emissions (Bus Fleet & Other Vehicles)

What are Biofuels?

Biofuels are renewable fuels that are derived from biomass, which is organic matter such as plants, trees, agricultural and food waste, and animal waste. These biofuels are produced through sophisticated processes like fermentation, transesterification, and hydroprocessing, which all transform sugars, fats and oils into fuel. Using biofuels helps reduce emissions of carbon dioxide, supporting a commitment to a cleaner, greener public transportation system. By integrating biofuels into the energy mix, BC Transit not only diminishes its dependency on fossil fuels but also encourages the growth of the renewable energy sector.

Renewable Natural Gas (RNG)

RNG is created by processing methane emissions from organic waste decomposition at landfills, agricultural operations, and wastewater treatment facilities. This process not only captures harmful methane that may otherwise escape into the atmosphere but also repurposes it as a clean, effective fuel alternative.

RNG can typically be used in any application that conventional natural gas is used, whether that's heating a home or being compressed to fuel a vehicle. In the compressed natural gas (CNG) process, natural gas is pressurized to less than 1% of its typical volume, making it possible to store and transport larger amounts of gas on board vehicles.

Throughout 2023, BC Transit has prioritized raising the proportion of renewable fuel utilized in the CNG fleet and is proud to announce the milestone of 100% of the fuel consumed throughout the year has been RNG. This results in a reduction of CNG fleet emissions by 51% from 2022 figures, or 85% from 2021.

Biodiesel

Biodiesel is a renewable low carbon biofuel that is made from organic materials, typically vegetable oils, animal fats, or recycled cooking oils. Biodiesel is typically blended with conventional fossil fuel based diesel as most engines are unable to run 100% biodiesel without modifications.

Hydrogenation-Derived Renewable Diesel (HDRD)

HDRD is a type of advanced biofuel distinct from biodiesel in that it is fully compatible with existing diesel engines, allowing for use at high percentages. It is made through a process that hydrogenates vegetable oils or animal fats, converting them into a diesel that closely mimics the chemical properties of conventional diesel but with far lower emissions.

For each litre of bus diesel replaced with HDRD, more than 98% of the fuel's GHG impact is avoided[5]. Therefore, by raising the amount of HDRD in the fuel supply blend, overall fleet emissions will subsequently decrease.

Following the encouraging results of a pilot in 2022, BC Transit increased the usage of HDRD in the fleet fuel supply. This initiative has led to a reduction in fleet carbon footprint, contributing significantly to the overall decrease in GHG emissions. Biofuels now comprise 11.2% of the total diesel supply, an increase of 169% year over year.

5 As per *2023 B.C. Best Practices Methodology For Quantifying Greenhouse Gas Emissions*, calculated using biodiesel emissions factor as per direction from Climate Action Secretariat

Low Carbon Fleet Program

For BC Transit's Low Carbon Fleet Program, this year introduced significant challenges.
BC Transit's contract for its first battery electric buses was with Proterra Inc. to be delivered as a turn-key solution charging infrastructure, software monitoring systems, and technical support. At the time of contract, Proterra was a leader in this turnkey solution and had the most electric buses deployed in North America.

In July 2023 Proterra filed for Chapter 11 bankruptcy protection and completed a subsequent sale to Phoenix Motors in January 2024. For BC Transit this process has ultimately concluded with BC Transit's contracts not being assumed or assigned to Phoenix. BC Transit will not take delivery of the 10 heavy duty battery electric buses (BEB) from Phoenix.

While the delays to the first 10 buses is disappointing, there is also much optimism on the progress of electrification otherwise.


Charging pantograph

In 2023 BC Transit:

- Announced $396M of funding for 115 Heavy Duty battery electric buses (low floor 40 foot public transit style) and more than 134 charging points.
- Announced $36M of funding for battery electric double decker buses, with charging infrastructure to be deployed in Langford.
- Announced $4.6M of funding for six (6) light duty battery electric buses, with charging infrastructure to be deployed in the new Victoria handyDART facility.
- Installed 11 charging points at the Victoria Transit Centre to support future battery electric buses and completed the necessary utility upgrades.
- Operated the electric demo bus "BEB Lite" in transit service with passengers for 15,000 kms.
- Released new procurements for:
  - New heavy duty bus vendors to support the funded projects.
  - New charging equipment vendors to support the funded projects.
  - Power distribution equipment.
- Secured engineering design firms for the charging infrastructure design work for announced and funded projects and initiated design work.
- Completed a Request for Information for software systems like charge management which will support battery electric bus operations.

The transformation to a fully electric fleet by 2040 is complex and while BC Transit has dealt with unexpected adversity, great progress has been made towards an electric future. Teams across BC Transit have come together and laid the foundations for greater successes, with exciting announcements coming in 2024.

Non-Revenue Vehicles

Across the year BC Transit successfully transitioned two dual-fuel non-revenue maintenance vehicles, historically operated primarily on gasoline, to more environmentally friendly alternatives. These vehicles have been retrofitted with new fueling nozzles that are compatible with the infrastructure at the Langford Transit Centre. This key upgrade means that these vehicles can now be fully fueled with 100% RNG available at the Langford facility that could not otherwise be accessed, allowing these vehicles to operate with nearly zero carbon emissions.

This transition not only supports BC Transit's broader goals of reducing its carbon footprint and promoting environmental sustainability but also sets a practical example of how existing vehicles can be adapted to integrate with new, sustainable technologies.


Abbotsford Transit Facility

Stationary Emissions (Buildings & Facilities)

In 2023, BC Transit undertook, advanced, or completed a range of retrofit projects, new constructions, policies, and programs. These initiatives are designed to reduce stationary emissions in the future and align with provincial CleanBC objectives.

A comprehensive Environmental Sustainability Plan was under development across 2023 and is expected to be completed in 2024. This plan will include future goals and targets for climate action and other aspects of sustainability including notable ramifications for built infrastructure. Further details are discussed under the *Environmental Sustainability Plan* section below.

What is LEED Gold & Energy Step Code

BC Transit has made a commitment to build all new Transit Facilities to LEED Gold equivalency and future office spaces to at least Energy Step Code 3, but what are these certifications?

LEED

LEED is a globally recognized green building certification system that awards points to buildings that excel in various sustainability and energy efficiency aspects. The certification assesses a building's performance across multiple categories, such as water efficiency, energy usage and atmosphere management, materials and resources, site sustainability, and indoor environmental quality. Buildings achieving LEED certification demonstrate a comprehensive approach to sustainability by meeting stringent criteria set in these categories.

BC Energy Step Code

The BC Energy Step Code is a progressive framework of provincial building standards designed to enhance the energy efficiency of new constructions and reduce GHG emissions. This code is organized into a sequence of escalating steps, each setting increasingly rigorous energy efficiency benchmarks. As builders and designers advance through these steps, they integrate innovative energy-saving technologies and strategies into their buildings.

BC Energy Step Code 3 is the third step in the code, and it represents a significant advancement in energy efficiency requirements compared to previous steps and base building code. Buildings designed to meet Step Code 3 are generally highly insulated and airtight, with high-performance windows and doors, efficient heating and cooling systems, and other energy-saving features. Achieving Step Code 3 certification demonstrates a high level of commitment to reducing energy consumption and associated GHG emissions.

Step 3 in Part 3 vs Part 9 Buildings

The structure of Energy Step code is broken down between two different categories of buildings – Part 3 and Part 9. Part 3 buildings are typically larger commercial or multi-unit residential buildings, requiring detailed energy modeling and more complex engineering solutions. In contrast, Part 9 buildings include smaller residential structures, where the focus is on achieving efficiency through simpler modifications such as improved insulation, window upgrades, and efficient heating systems.

As of May 1, 2023, the BC Building Code requires 20%-better energy efficiency for most new buildings in British Columbia. This is equivalent to Step 3 for Part 9 buildings and Step 2 for Part 3 buildings. As BC Transit's building portfolio is comprised of Part 3 buildings, the Energy Step Code 3 policy positions the organization above and beyond the current provincial standards.

handyDART Transit Facility Rendering

New handyDART Facility

The new handyDART facility in the Victoria Regional Transit System is under construction and poised to set new sustainability benchmarks for BC Transit. This project is notable as it will be the first BC Transit facility to achieve LEED Gold certification and the first to meet BC Energy Step Code 3 in its administrative areas. These designations mark significant advancements in reducing energy consumption and associated GHG emissions, among other environmental benefits.

Construction, which progressed throughout 2023, incorporates several innovative technologies to enhance energy efficiency and sustainability. The facility will feature high-efficiency heat pumps, which also provide cooling in the maintenance bay during summer, heat recovery systems, bay door air curtains, and electric forklifts. These technologies will eliminate the use of fossil fuels in building operations, significantly reducing GHG emissions compared to standard construction and improve the facility's climate resiliency by maintaining operations during extreme heat events.

In addition to technological advancements, the new handyDART Centre has achieved a milestone by being certified as Vancouver Island's first "Salmon Safe" site. This certification recognizes the facility's excellence in water conservation, effective stormwater management, and particularly its efforts in restoring a stream and creating one acre of protected riparian area. Environmental considerations included thoughtful planning in consultation with environmental professionals and local streamkeepers to protect the ecologically sensitive features of the property. This area now serves as a crucial habitat for amphibians and a potential rearing habitat for Coho salmon and other juvenile fish.

Community engagement has been a key component of the project, featuring pop-up events, neighbourhood working group meetings, and a fish counting event, all contributing to the project's positive impact and environmental goals. The site's landscaping plan included planting hundreds of native trees and adding protective fencing to further enhance the site's ecological function.

The facility yard is being designed to support a fleet of electric buses, with the necessary charging infrastructure to promote sustainable transit solutions. This commitment to environmental sustainability underscores BC Transit's proactive approach in integrating eco-friendly practices into its infrastructure development, supporting both the community and the ecosystem.

Kamloops and Vernon Boilers

Throughout 2023, BC Transit has been actively engaged in a comprehensive project at the Kamloops and Vernon transit centres aimed at replacing outdated and high-emission equipment, including natural gas boilers, pressure washers and other HVAC infrastructure, with low carbon electric alternatives. This initiative is part of a broader strategy to update and modernize the infrastructure at these facilities, which are among the most significant sources of GHG emissions within BC Transit's facility portfolio.

This project, set to continue into 2024, represents a pivotal effort by BC Transit to meet environmental standards and reduce ecological footprints across its operations. The replacement of these key pieces of equipment with electric versions aligns with global trends and local policies advocating for reduced reliance on fossil fuels and heightened adoption of renewable energy sources.

Langford Transit Centre Air Handling Unit

In fall 2023 a project was initiated to replace a malfunctioning natural gas air handling unit with a high efficiency electric heat pump, with expected completion in 2024. This upgrade is expected to enhance the overall energy efficiency of the facility and is a crucial step towards reducing the site's GHG emissions.

Facility Lighting Upgrades

BC Transit has initiated plans for a series of LED lighting upgrades aimed at enhancing energy efficiency across multiple facilities, including the transit centre in Fort St. John, Kamloops, Vernon, and Whistler. Scheduled for future implementation, these projects are part of a broader initiative to reduce energy consumption and GHG emissions.

The transition to LED lighting not only significantly improves energy efficiency but also reduces maintenance costs and extends the lifespan of lighting fixtures. These upgrades are anticipated to yield reductions in electricity use, GHG emissions and operational expenses. Furthermore, LED lighting provides superior light quality, which can contribute to a safer and more comfortable working environment for BC Transit team members.

Climate Resiliency, Adaptation & Risk Management

Climate mitigation and climate resiliency (also known as climate adaptation) represent two essential, interrelated strategies crucial for tackling the multifaceted challenges posed by climate change. Climate mitigation focuses on actions designed to reduce GHG emissions and slow the progression of climate change. These efforts include transitioning to renewable energy sources, enhancing energy efficiency, and developing sustainable transportation options, all aimed at curbing the release of carbon into the atmosphere.

On the other hand, climate resilience projects are developed to anticipate, prepare for, and respond to the current and anticipated impacts of climate change. This approach involves strengthening the capacity of communities, infrastructure, and natural systems to withstand and recover from climate-related disruptions. Examples of resilience initiatives include upgrading flood defenses, implementing water conservation practices, modifying landscaping practices to suit changing climatic conditions, and reinforcing buildings and transportation networks to endure extreme weather events.

Together, climate mitigation and adaptation are critical for incorporating into decision making to ensure that human and natural systems can continue to function and thrive under changing climatic conditions. By investing in both mitigation and adaptation, communities not only reduce their environmental impact but also enhance their ability to manage the inevitable changes brought about by climate change.

Climate Risk Assessment

In the previous reporting year, BC Transit completed a Climate Risk Vulnerability Assessment for ten critical facilities across the province. This pivotal assessment, which utilized a modified version of the Public Infrastructure Engineering Vulnerability Committee (PIEVC) Protocol, enabled BC Transit to identify and quantify the key risks posed by climate change to its infrastructure and operations.

These risk assessments provide a systematic approach to understanding the intersections of climate variables with BC Transit's operational demands, enabling the organization to pinpoint critical vulnerabilities that may impact service continuity and safety. This process will be crucial in developing targeted strategies that bolster the resilience of transit systems against the adverse effects of climate change.

Leveraging the data and insights from these assessments, BC Transit has integrated climate risks into its New Facility Guidelines this year. This integration ensures that resilience and adaptability are embedded into the design and construction of all new facilities, preparing them to withstand future climate conditions.

Langford Transit Centre GHG Mitigation and Cooling

BC Transit has continued to engage in a project at the Langford Transit Centre, aimed at addressing the primary climate risk identified in the Climate Risk Vulnerability Assessment—extreme heat. This ongoing feasibility study involves assessing the installation of advanced cooling systems within the maintenance garage to ensure that working conditions remain safe and comfortable for employees, even during extreme weather events. Maintaining such conditions is essential not only for the safety of BC Transit team members but also for ensuring continuous transit service availability, which is crucial for the safety of the public in the communities served.

In parallel, the project also assesses the current heating systems at the facility. The goal is to identify retrofit opportunities that will reduce the carbon intensity of heating during the colder months, further enhancing the facility's overall energy efficiency and environmental footprint.

The feasibility study, which began in 2022 and continues into 2023, will provide a detailed roadmap for the installation of cooling systems that simultaneously reduce GHG emissions. Upon its expected completion in 2024, this project will not only inform pathways to improve the GHG impact and resilience of the Langford Transit Centre but will also generate insights and guidelines that can inform the design and retrofitting of other transit facilities across the network.

Emergency response in the Fraser Health Region

Saanich Transit Centre

A new facility to service the Victoria Regional Transit System is currently in the planning stage. This facility will build upon the knowledge base from the handyDART facility, meeting LEED Gold and Energy Step Code 3 requirements.

This facility will additionally be the first in BC Transit's portfolio to directly incorporate future climate projections into the design. By proactively considering future climate scenarios, the facility's design will incorporate features and materials that enhance its durability and functionality in the face of potential environmental challenges.

Emergency Response

Climate change has far-reaching impacts that extend beyond organizational infrastructure, and can have severe impacts upon BC communities. BC Transit recognizes the importance of taking proactive measures to prepare for and respond to the consequences of climate change and other emergencies throughout the province.

BC Transit Emergency Management team remains an integral part of the Provincial Regional Emergency Operation Centres, which are crucial for coordinating responses to increasingly frequent and severe emergency events.

Equipped with extensive expertise and resources, the team efficiently assesses risks, manages incidents, and delivers timely assistance to communities in crisis. Activities across 2023 include participation in the Totem Platinum Air Disaster Exercise, a large-scale multi-agency emergency training initiative led by 19 Wing Comox of the Canadian Armed Forces. BC Transit's bus fleet further continues to serve as a vital resource in emergency scenarios, being readily deployed to evacuate populations from areas threatened by wildfires and floods, and to provide air-conditioned shelters during heatwaves for firefighters and vulnerable populations.

Environmental Sustainability Plan

A primary activity across 2023 was the development of BC Transit's first Environmental Sustainability Plan, with the project expected to be finalized in 2024.

This comprehensive plan builds upon actions in prior years, focusing on long-term strategic and operational goals that target the most pressing environmental sustainability priorities. The plan, developed through extensive stakeholder engagement and aligned with the Government of British Columbia's CleanBC Roadmap, will serve as a blueprint for BC Transit to enhance its sustainability efforts across multiple dimensions.

The plan addresses six focus areas, split into strategic and foundational categories:

1. **Climate Mitigation:** reduce emissions through planning and investments and pursuing new and emerging low carbon technologies and energy sources;
2. **Air Quality:** enhancing the health and livability of local communities by identifying opportunities to improve air quality;
3. **Climate Resilient and Sustainable Infrastructure:** embedding climate risk, resilience and sustainable design into existing infrastructure, long term capital plans, technology and processes;
4. **Operational Resource Management:** minimizing waste, reducing water consumption, increasing energy efficiency and managing related impacts throughout operations;
5. **Sustainable Procurement:** reducing the environmental and climate impact of its supply chain by actively working with its suppliers and partners to adopt more sustainable practices; and,
6. **Environmental Governance and Risk Management:** robust environmental oversight and risk management through transparent governance, policies and decision-making frameworks.

The plan is crucial for BC Transit not just in terms of compliance with environmental standards but also as a driver of positive change within the provincial transit system. By addressing both direct impacts and broader community and ecological benefits, the plan positions BC Transit as a leader in sustainable public transportation. It also ensures that BC Transit's operations contribute to provincial climate goals, supporting a transition to a more sustainable future for all British Columbians.

Further details and actions related to the Environmental Sustainability Plan will be available upon completion in 2024.

Other Initiatives

Avoided Emissions Quantification

Public transit plays a crucial role in reducing community GHG emissions by providing an alternative to personal passenger vehicles, such as cars, trucks, and SUVs. The shift from personal vehicles to public transit not only decreases the direct emissions from these vehicles but also reduces the need for new road and highway infrastructure. This collective reduction in vehicle use and infrastructure expansion shrinks associated GHG emissions in the community. In this context the concept of Avoided Emissions refers to the GHG emissions that are not released into the atmosphere as a result of transit service in the community.

BC Transit continues to develop a project to evaluate the avoided emissions resulting from its operations. The primary goal of this project is to provide a model of how transit services contribute to community GHG emission reductions. Throughout 2023 and ongoing into 2024, a cross-disciplinary team are working on creating a tool that measures these impacts.

The Avoided Emissions project aligns with the objectives of CleanBC, illustrating how public transit can be integral in mitigating climate change and lowering emissions at the community level.

A note on scope: The scope of the avoided emissions project is to focus exclusively on the mode shift of getting people out of cars and into buses.

However, public transit systems also benefit urban densification, traffic congestion, and land use. These systems encourage denser, mixed-use communities around transit stations known as Transit-Oriented Developments, optimizing land use and reducing the spread of urban sprawl. This strategy helps conserve agricultural and forested lands, reducing the need for expansive new road networks and infrastructure that typically accompany suburban growth. Moreover, densification supports environmental sustainability by decreasing congestion, fostering compact living spaces, decreasing reliance on personal vehicles and increasing the efficacy of active transportation networks.

While the role of public transit in driving densification and improving land use is outside the scope of this project's measurement, these additional impacts underscores transit's extensive environmental benefits.

Sustainability Team Events

In 2023, BC Transit's Sustainability Team organized several impactful events aimed at promoting environmental stewardship and community engagement.

- **Esquimalt Lagoon Beach Cleanup** – BC Transit team members and community residents came together to clean Esquimalt Lagoon, removing various types of waste and enhancing the beauty of this local area.
- **Beat the Heat** – This event provided tips on energy conservation and climate resilience strategies, helping participants adapt to with the challenges posed by a changing climate such as wildfire smoke.
- **Vegan Cooking Class** – A vegan cooking class taught by the London Chef introduced sustainable eating practices through low environmental impact recipes.
- **Electronics Recycling Event** – An electronics recycling event enabled employees to responsibly dispose of old electronics, emphasizing the importance of reducing electronic waste.
- **Energy Conservation Day** – BC Transit held an organization-wide Energy Conservation Day, offering educational activities and resources to encourage team members to reduce their energy consumption and carbon footprint.

BC Scrap-it Program

The Victoria Regional Transit System offers a monthly pass incentive for vehicle owners to scrap their older, heavier-polluting vehicles and adopt transit. Five of these eco-passes were issued in 2023. Implementation of this program removed 63.7 tCO_2e that would have otherwise been emitted across the year.

CleanBC Integration

The Government of British Columbia's CleanBC plan aims to achieve the Province's climate goals, including GHG reductions and early-phase climate adaptation measures. BC Transit is committed to advancing these goals as outlined in CleanBC. To this end, BC Transit is actively reducing carbon emissions across its operations and fleet, while also enhancing the climate resilience of its infrastructure.

The CleanBC Transportation Pathway includes actions to encourage mode shifting towards more energy-efficient forms of transportation, such as walking, cycling, and public transit. BC Transit's core operations are directly aligned with this mode-shifting component of CleanBC, as the provincial bus fleet plays a vital role in meeting the pathway goal of increasing the share of trips made by public transit, walking, and cycling to 30% by 2030, 40% by 2040, and 50% by 2050.

The upcoming Environmental Sustainability Plan discussed earlier in this document, specifically the Avoided Emissions Quantification project and the Climate Mitigation focus area, will complement and support the CleanBC Transportation Pathway. This alignment extends to supporting transit-oriented development, where BC Transit plays a pivotal role by promoting and providing accessible, efficient, and reliable public transit services.

2023 GHG Emissions and Offset Summary Table

BC Transit 2023 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2023	
Total BioCO$_2$	*23,595*
Total Emissions (tCO$_2$e)	*66,234*
Total Offsets (tCO$_2$e)	*1,574*
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO$_2$e)	*117*
Grand Total Offsets for the 2023 Reporting Year	
Grand Total Offsets to be Retired for 2023 Reporting Year (tCO$_2$e)	*1,691*
Offset Investment ($)	*$42,275*

Declaration Statement

This PSO Climate Change Accountability Report for the period January 1, 2023 to December 31, 2023 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2023 to minimize our GHG emissions, and our plans to continue reducing emissions in 2024 and beyond.

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, *BC Transit* (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2023 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (**the Ministry**) ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to $25 per tonne of offsets retired on its behalf plus GST.

Executive Sign-Off

	May 31, 2024
Signature	**Date**
Erinn Pinkerton	*President and Chief Executive Officer*
Name (please print)	**Title**

Links to Additional BC Transit Sustainability Information

BC Transit Sustainability

https://bctransit.com/about/sustainability

Government Mandate Letter – 2023/2024

https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/organizational-structure/crown-corporations/mandate-letters/bc_transit_2023_2024.pdf

BC Transit Service Plan 2023/24 – 2025/26

https://www.bctransit.com/wp-content/uploads/215/749/bct0.pdf

BC Transit 2022/23 Annual Report

https://www.bctransit.com/wp-content/uploads/159/650/2022-23-BC-Transit-Annual-Service-Plan-Report-1.pdf

BC Transit Strategic Planning

https://www.bctransit.com/transforming-your-journey

BC Transit is a member of the Community Energy Association

http://communityenergy.bc.ca/

BC Transit Victoria Regional Transit System is member of BC Scrap It Program

https://scrapit.ca/rebatechoices