BCEHS | BC Emergency Health Services
Provincial Health Services Authority

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BCEHS' 'Proof of Concept' Electric Ambulance parked at Richmond Hospital and charging at the Surrey Memorial Hospital Ambulance Bay

2024 PSO Climate Change Accountability Report

British Columbia Emergency Health Services

May 2025

British Columbia Emergency Health Services
2024 PSO Climate Change Accountability Report

Title: 2024 PSO Climate Change Accountability Report

Organization: British Columbia Emergency Health Services

Declaration statement: This PSO Climate Change Accountability Report for the period January 1, 2024 to December 31, 2024 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2024 to minimize our GHG emissions, and our plans to continue reducing emissions in 2025 and beyond.

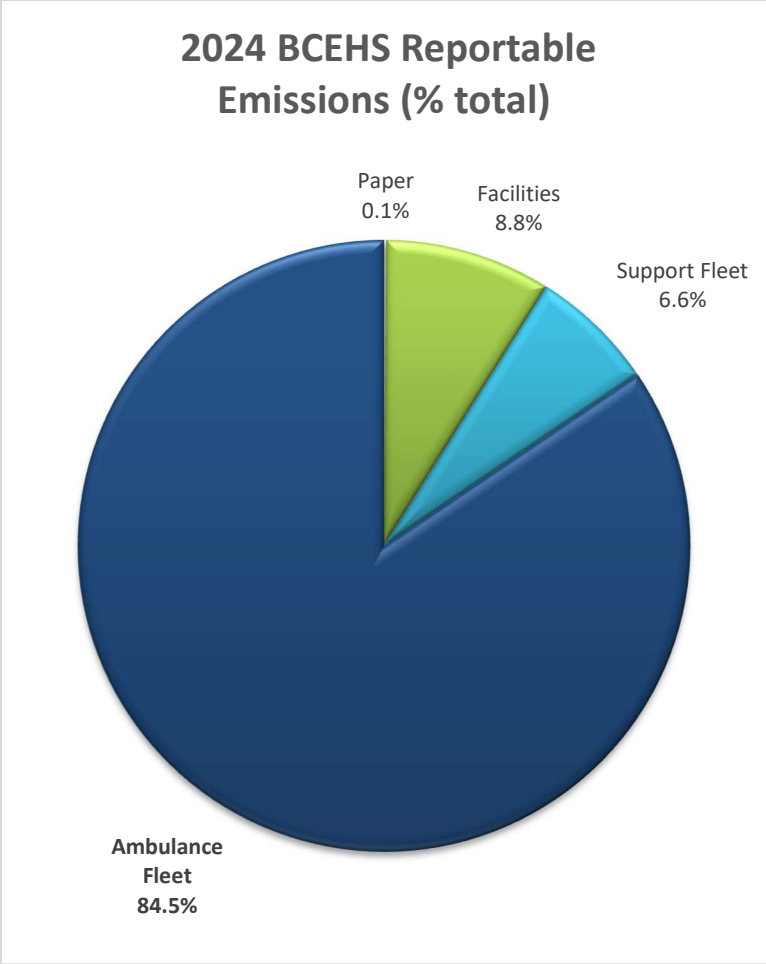
This Climate Change Accountability Report will be available our website at www.bcehs.ca.

Members of Vancouver's BCEHS bike squad

EMISSION REDUCTIONS: ACTIONS & PLANS

BCEHS recognizes that successfully decarbonizing and embedding sustainable practices across the organization requires a significant cultural shift. To support this transformation, BCEHS has developed two key plans: *the Strategic Sustainability & Decarbonization Plan*, which establishes a long-term foundation focused on culture and strategy, and the *Clean Fleet Plan*, which outlines short-term actions to reduce emissions.

The majority of BCEHS's emissions come from its Province-wide fleet, which covered a record of *over 29 million kilometers* in 2024. This fleet includes 650 active internal-combustion ambulances. Due to limited availability of electric ambulances from Original Equipment Manufacturers (OEMs), our decarbonization efforts have initially targeted the 283 support vehicles—primarily light-duty vehicles (LDVs). While electrifying support vehicles has been a practical first step, and today many of them are either hybrid or electric, it does not deliver the same emissions reductions as electrifying ambulances.



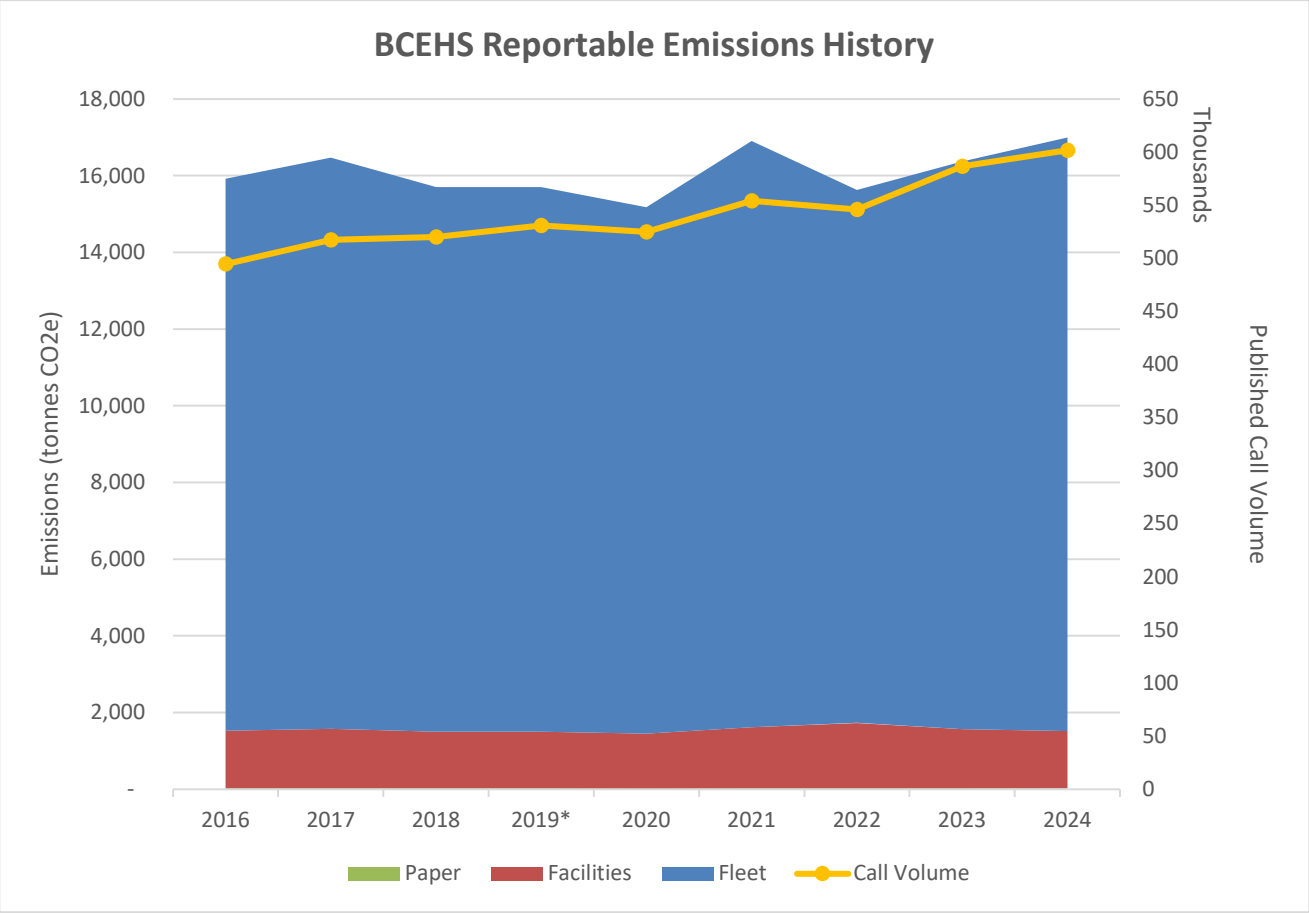
In 2024, BCEHS focused on laying the foundation for long-term decarbonization. A Fleet Decarbonization Manager was hired on Earth Day to lead these efforts. The strategic plan was developed in the first six months, and the Clean Fleet Plan was presented to BC Hydro in the fall. This milestone enabled BCEHS to access subsidies and incentives through BC Hydro's programs. During this time, three electric Ford eTransits were deployed in logistics roles, and existing support EVs were given more permanent assignments.

As the adjacent chart illustrates, support fleet electrification alone is insufficient to meet the CleanBC mandate and our climate targets. Decarbonizing and electrifying the ambulance fleet is essential. In 2025, BCEHS will prioritize addressing this challenge while continuing to expand EV use in support roles.

Facilities account for approximately 8.8% of BCEHS's total emissions. Efforts are underway to identify opportunities for reducing carbon, energy use, and waste. One initiative in early development involves

reducing plastic waste from ambulance kitting processes. As ambulance electrification progresses, we anticipate an increase in facility energy consumption where chargers are installed, offset by a significant reduction in fleet emissions.

Below is a graph showing the history of BCEHS's reportable emissions going back to 2013. BCEHS has regularly shown in an increase in call and response volumes as the population has grown significantly over the last decade.



BCEHS STRATEGIC PLANNING

STRATEGY

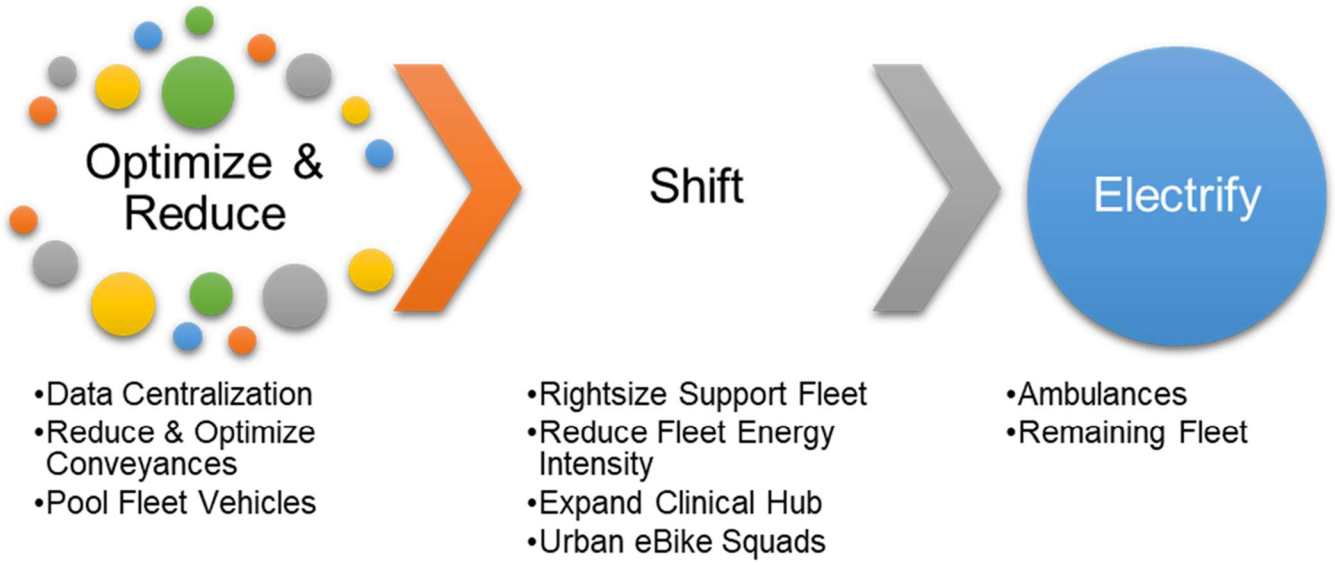
The newly created Fleet Decarbonization role, which started in April 2024, focused on developing BCEHS's decarbonization strategy and planning efforts. The resulting strategic plan is grounded in the methodology, pathway, and key objectives outlined below. This methodology aligns with BCEHS's Quintuple Aim approach to care and establishes the core principles guiding our long-term emissions reduction goals. The pathway outlines the organization's approach to decarbonization—prioritizing opportunities to optimize and right size operations while leveraging innovative programs such as the Clinical Hub and Bike Squads. The strategy is distilled into nine clear, achievable objectives and supported by an actionable framework designed to embed sustainability and decarbonization across the organization.

"A good ambulance (sic) system minimizes unnecessary transportation." - Lewis Mumford, 1958

STRATEGIC METHODOLOGY

- **Decarbonization ≠ Electrification**
- Every project demonstrates **Quintuple Aim + environmental** benefits.
- Electrification is the last step, after **operational efficiency** improvements, and **vehicle rightsizing**.
- Build **circularity** into our operations from ambulance modules to batteries.
- **Optimize capital, grants, and incentives** to maximize decarbonization impact.

OUR PATHWAY TO ZERO EMISSIONS



BCEHS KEY STRATEGIC OBJECTIVES

The strategy is built around the following 9 key objectives, that look beyond our fleet, and facilities, and integrates other Strategic Plans that BCEHS operates on today. The result is the following:

Culture	Foster a culture conscious of sustainability across the organization.
Policy	Enact policies and programs to improve operational efficiency and reduce energy use and waste.
Optimize	Reduce conveyances and increase efficiencies while enhancing patient care.
Decarbonize	Decarbonize the support fleet appropriately considering the operating environment.
Innovate	Seek and test innovative approaches to decarbonize the ambulance fleet.
Facilities	Reduce facility emissions through innovative approaches.
Data	Improve data quality, charging network, and emissions tracking tools.
Collaborate	Develop partnerships and collaborate with external organizations towards achieving zero emissions.
Promote	Publicly promote the organizational drive towards sustainability and zero emissions.

BCEHS CLEAN FLEET PLAN

The BCEHS Clean Fleet Plan is a multi-year, actionable roadmap for transitioning the organization's ambulance and support vehicle fleet to zero-emission alternatives. It outlines how BCEHS will align vehicle electrification with the deployment of charging and refueling infrastructure, while also identifying other actions to reduce greenhouse gas emissions from fleet operations. As more EVs are integrated into our operations, BCEHS expects to update the Clean Fleet Plan regularly to reflect lessons learned and evolving best practices.

At the core of the plan is the strategy to meet our first CleanBC target: a 40% reduction in fleet emissions by 2030. Of this, BCEHS estimates that 25% can be achieved through electrification of both ambulance and support fleets within the next five years. The remaining 15% may be realized through expanded Clinical Hub operations, including low-acuity responses, virtual care, and Link and Referral Units. Additional reductions are anticipated through continued optimization of dispatch processes and in the longer-term, broader implementation of the Central Reporting Station model, already in place in Greater Victoria. These targets are set with consideration for the province's growing population and increasing annual call volumes.

BCEHS has already implemented a Zero-Emission Vehicle (ZEV)-First Purchasing Policy for the support fleet, committing to the acquisition of suitable zero-emission vehicles, when operational requirements can be met.

DECARBONIZING THE AMBULANCE

A critical component of this plan is the recognition that reducing ambulance emissions is essential to meeting CleanBC-mandated targets. To address this, BCEHS has developed a three-pronged approach that focuses on key strategies for emission reduction. These include enhancing driver training, exploring alternative drivetrains and chassis for ambulances, and piloting technologies such as aerodynamic fairings and/or solar panels to improve fuel efficiency and lower emissions.

Figure 1: The three-pronged approach to Ambulance decarbonization

The matrix below illustrates the potential emissions reductions of different drivetrain options for our ambulances. The improvements range from the new Ford Transit Chassis to a potential Plug-in Hybrid Electric Vehicle (PHEV) or fully electric ambulance. If BCEHS successfully deploys fully electric ambulances, we could begin to significantly reduce emissions and make progress toward meeting CleanBC targets. The new Ford Transit Ambulance has potential to make a larger impact as more are deployed.

Ambulance Replacement Options (* When Available)	Est tCO2e Savings per Vehicle
Electric Ambulance Conversion	22
OEM Electric Ambulance*	22
PHEV Ambulance*	10
ICE Ford Transit Ambulance	4-5

Figure 2: Estimated per vehicle emissions reduction by Ambulance drivetrain type

"THE FOUR MOUNTAINS" OF FLEET ELECTRIFICATION

Guided by a model developed by Siemens, BCEHS has approached the Clean Fleet Plan with the understanding that for a successful deployment we must summit the "Four Mountains" of Fleet Electrification, also known as the VISO Model. Our strategy is structured around key sub-components, as outlined here. It is important to note that deploying an electric vehicle (EV) in any BCEHS fleet role requires a comprehensive support ecosystem. Specifically, each of these four mountains must be overcome to ensure a successful implementation.

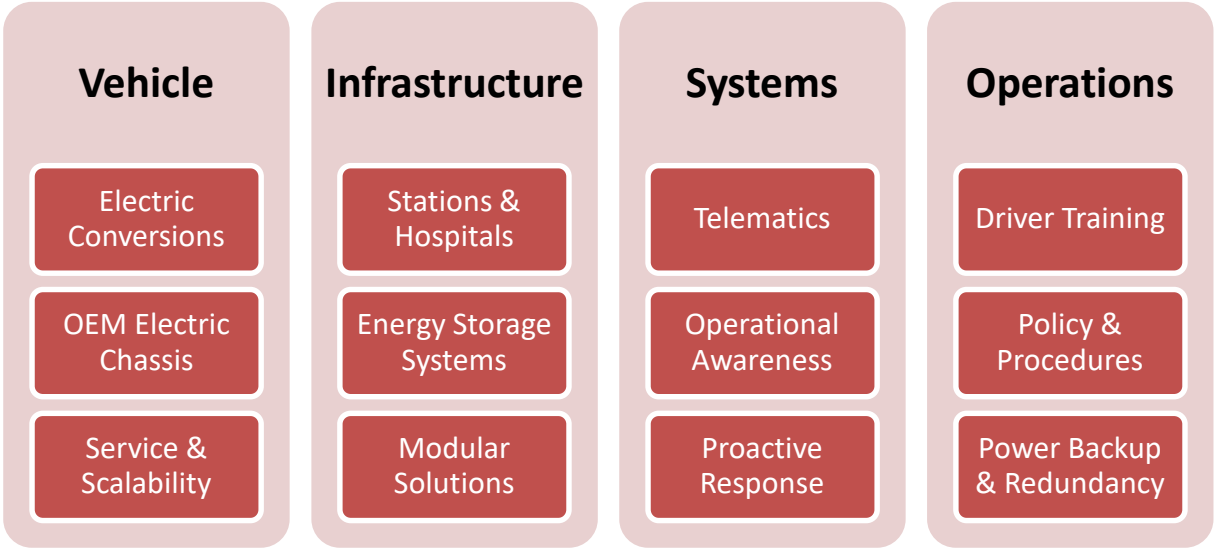


Figure 3: BCEHS VISO Framework


BC's First Electric Ambulance
EMERGENCY PARAMEDIC AMBULANCE
57000
57015


BC's First Electric Ambulance
EMERGENCY PARAMEDIC AMBULANCE
64000

2024 EMISSIONS REDUCTION ACTIONS & ACHIEVEMENTS

BCEHS has taken significant steps towards reducing greenhouse gas emissions this year. The focus has been on building the long-term strategic direction, and *Clean Fleet Plan*, with the goal to launch a Pilot evaluating the feasibility of electric ambulances in 2025. Below are some highlights from 2024:

- Hired a Fleet Decarbonization Manager.
- Expanded Vehicle Telemetry Pilot for gathering data critical to decarbonization.
- Updated & Distributed *BCEHS Ambulance Bay Guidelines* to Health Authorities with guidance on power requirements for EV chargers.
- Networked with local fleet decarbonization practitioners in both the public and private sectors.
- Deployed three new Ford eTransit EV vans in Logistics roles, supporting movement of medical equipment and supplies for Clinical Operations.
- Exploring opportunities for plastic waste reduction across our operations.
- Increased collaboration with PHSA, Health Authorities, and Municipalities.
- Deployed new, more efficient aircraft in our Air Ambulance fleet, and established emissions reduction and carbon offsetting requirements in the contracts with our aviation operators.
- Bike squads continued to play a role in both normal deployment in dense urban areas, and in the numerous Planned Events BCEHS participated in as emergency medical support across the province.
- Built relationships with those leading decarbonization programs at other Canadian, and international ambulance services, to share best practices.

GROUND FLEET

2024 IN NUMBERS

3.2M hybrid & 350k electric zero-emission kilometers in-service by 2024 year-end.

166k emission-free kilometers in the last half of 2024.

26,065 kWh delivered from BCEHS' own Level II chargers in 2024

Over 250,000 liters and $450k in fuel savings to date from EV and HEV operations.

270 tonnes CO2e saved annually from the EV and HEV fleet.

2024 EV AND HEV FLEET PROFILE

- **18 zero-emission BEV** vehicles deployed as Manager, Supervisor, Paramedic Response Units (PRU), Planned Events, and Logistics units, using Provincial Carbon Neutral Capital Program (CNCP) funding.
    - Clinical Operations - 14 Ford Mustang Mach-E's
    - Logistics - three Ford eTransits, including one High Roof
    - Planned Events - 1 Ford F-150 Lightning
- **70 hybrid-electric** Ford Interceptors in front-line response roles.

VEHICLE CHARGING INFRASTRUCTURE & DEPLOYMENT

- Installed one Level II charger at our Pemberton station for Supervisors and PRUs.
- Ensured the inclusion of 8 Level II chargers into the design and engineering specifications for the upcoming renovation and upgrade of our Lower Mainland Transfer Fleet facility – Stn 288.
- Commissioned Feasibility Study to be done for EV Chargers and Battery Energy Storage Systems installation at Delta Hospital and Stn 251 – Delta/Ladner in preparation for a future pilot.
- Actively working with the Health Authorities and the Facilities team to install more charging stations at Hospitals and strategic station locations for future pilots.

2024 DECARBONIZATION PROGRAM HIGHLIGHTS

2024 is a year that will set the pace for our decarbonization efforts going forward. The Logistics and Transportation Operations team spent a large part of the year on the following projects, all that have emissions reduction impacts, and will provide learnings for future lower or zero-emission vehicle deployment.

- **New Ford Transit Ambulance**

  - This project was a focus of the Fleet team during 2024, with potential to reduce operating costs and emissions.
  - Platform has a more efficient turbocharged engine, improved aerodynamics, ergonomics, and driver visibility.
  - Lithium-ion auxiliary batteries and idle-less capability to maintain patient compartment temperatures.
  - The Ford Transit platform has potential for future OEM hybridization or electrification, easing adoption.
  - Projected fuel and emissions savings of at least 15%.
  - Expected Deployment: June 2025

- **'Proof of Concept' Electric Ambulance**

  - Electric Conversion Type II Ambulance from Lightning eMotors
  - In 2024, this vehicle received its final upfitting and some basic testing was conducted, with limited Metro Vancouver deployment planned for 2025.
  - BCEHS has no plans to scale with this ambulance, it is being used to gather feedback from ambulance crews on the overall electric experience.

- **Logistics Ford eTransit Vans**

  - Three Ford eTransit vans added to Logistics operations in 2024.
  - Over 25,000 kms of use in 2024.

- Vehicles support all logistics work including ambulance and material movement and deep clean operations.
- Primarily operated out of Burnaby but are also being used in Surrey and in Central Island operations.

AVIATION FLEET - CONTRACT OPERATIONS

- BCEHS Aviation emissions are not reportable to CGRT as the aviation fleet is neither owned nor leased by BCEHS.
- If they were to be included, Aviation emissions make up more than half of BCEHS overall emissions, which makes it a priority to address avenues towards decarbonization.

Aviation Highlights

- New Fixed Wing Fleet of King Air 360CWH is more fuel efficient.
- Fixed-wing and Rotary-Wing contracts require carriers to achieve carbon neutrality for BCEHS in each year of the contract.
- Suppliers are to quantify emissions, and purchase offsets with preference for BC-based projects with demonstrable social and/or environmental co-benefits.
- Each year suppliers are to provide BCEHS Aviation with an Annual Report including details on consumption, actions taken to reduce emissions, supporting documentation of offsets purchased to achieve net zero.
- Our new Fixed and Rotary Wing fleet are fitted with the ground fleet-wide electric stretcher system that is compatible with those in our ambulances, allowing for seamless patient transfers and reducing additional equipment needs.

FACILITIES AND INFRASTRUCTURE

A key focus in 2024 has been to understand the processes necessary for BCEHS to deploy EV chargers at both small and large stations. We are also working with the health authorities to understand their processes for EV charger installations at hospital ambulance bays across the province.

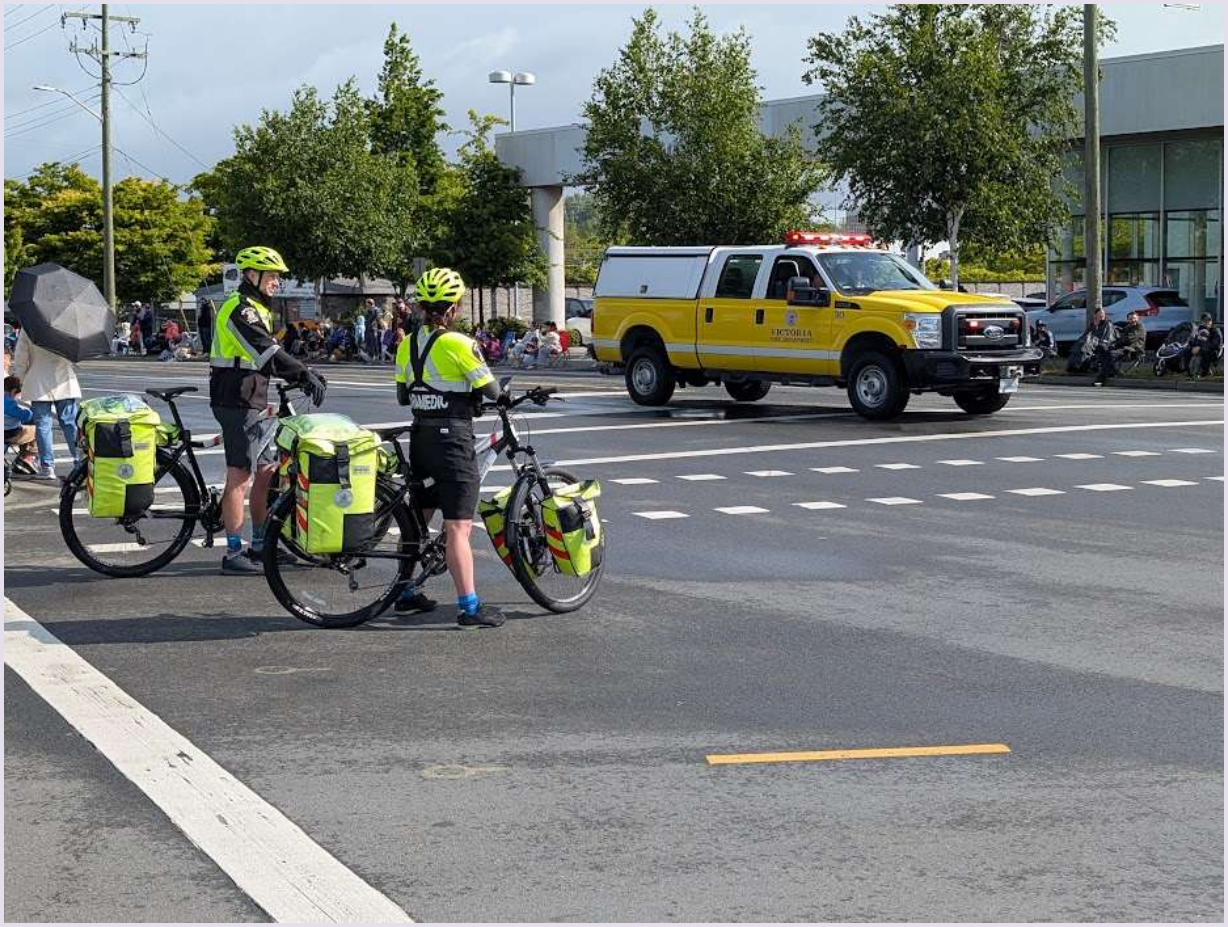
Additionally:

- PHSA and BCEHS are committed to further investigation through a planetary health lens into strategic planning and operations of our facilities.
- This commitment includes reducing facilities energy use intensity by 30% and GHG emissions in 2030 by 50% of 2007 emissions.
- New builds are built to LEED Gold standards, and building retrofits are to BCBC 2024 and conform to Step Code guidelines where applicable.

PAPER CONSUMPTION

- Paper consumption has been an action item at BCEHS over the years, and the organization is continually working towards digitalization of paperwork and administrative tasks.
- Exploring policy with our supplier in collaboration with PHSA around a shift to sustainable paper products.

Feature: BCEHS Planned Events & Bike Squads



Members of Victoria's BCEHS bike squad

BCEHS' bike squads continue to play a role in urban responses and planned events. The team responds to calls in the downtown cores of Victoria and Vancouver. Additionally, a bike squad is active at Vancouver International Airport (YVR) supporting both landside and airside emergencies. Bike squads can also play a supporting role in Planned Events, providing emergency support at multiple events across the province. In 2024, the Planned Events team supported events from the Whistler Grand Fondo, Vancouver Marathon and Sun Run, to Vancouver Whitecaps home games, Vancouver Canucks home games including during the NHL playoffs, and Taylor Swift's Eras Tour multi-day concert finale in December.

2023 GHG EMISSIONS AND OFFSETS

SUMMARY TABLE:

BC Emergency Health Service 2024 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2024	
Total BioCO_2	*570*
Total Emissions (tCO_2e)	*18,001*
Total Offsets (tCO_2e)	*17,431*
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO_2e)	*19*
Grand Total Offsets for the 2024 Reporting Year	
Grand Total Offsets to be Retired for 2024 Reporting Year (tCO_2e)	*17,450*
Offset Investment ($)	*$436,250*

RETIREMENT OF OFFSETS:

In accordance with the requirements of the *Climate Change Accountability Act* and the Carbon Neutral Government Regulation, British Columbia Emergency Health Services (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2024 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.

PUBLIC SECTOR CLIMATE LEADERSHIP

Beyond Electrification: Broader Decarbonization Efforts

While electrification remains a key component of BCEHS's sustainability efforts, we recognize that achieving provincial climate targets will require more than just transitioning to electric vehicles. Opportunities also exist in optimizing operations, rightsizing the fleet, and expanding Clinical Hub services—particularly in high-density urban areas—which can collectively contribute to meaningful emissions reductions.

In 2024, BCEHS continued engaging with Canadian ambulance manufacturers to explore reduced- and zero-emission ambulance platforms. We are currently reviewing early mock-ups and prototypes from the manufacturer retained under contract to deliver lower-emission vehicle solutions. As new hybrid and low-emission technologies become commercially available, BCEHS will continue to evaluate and pilot these options. BCEHS is also in regular attendance at CleanBC networking events and panels and annually attends the Everything Electric Canada show held in Vancouver, BC.

We are also actively collaborating with international partners to exchange best practices in decarbonization and ambulance electrification. Notably, BCEHS maintains regular engagement with ambulance services in the United Kingdom and the Netherlands. For example, as the UK's National Health Service (NHS) in London deploys its new electric Transit (eTransit) ambulance and explores additional electrification strategies, BCEHS has continued to learn from their experience through ongoing knowledge-sharing.

BCEHS receives funding through the Carbon Neutral Capital Program (CNCP), which supports investments in zero-emission vehicles and low-carbon infrastructure. We will provide justification for upcoming funding use in alignment with our Strategic Sustainability & Decarbonization Plan and the regularly updated Clean Fleet Plan. Participation in CNCP enables BCEHS to consider the full system-level requirements—including infrastructure and facilities—for fleet decarbonization, while also modeling projected GHG reductions and operating cost savings.

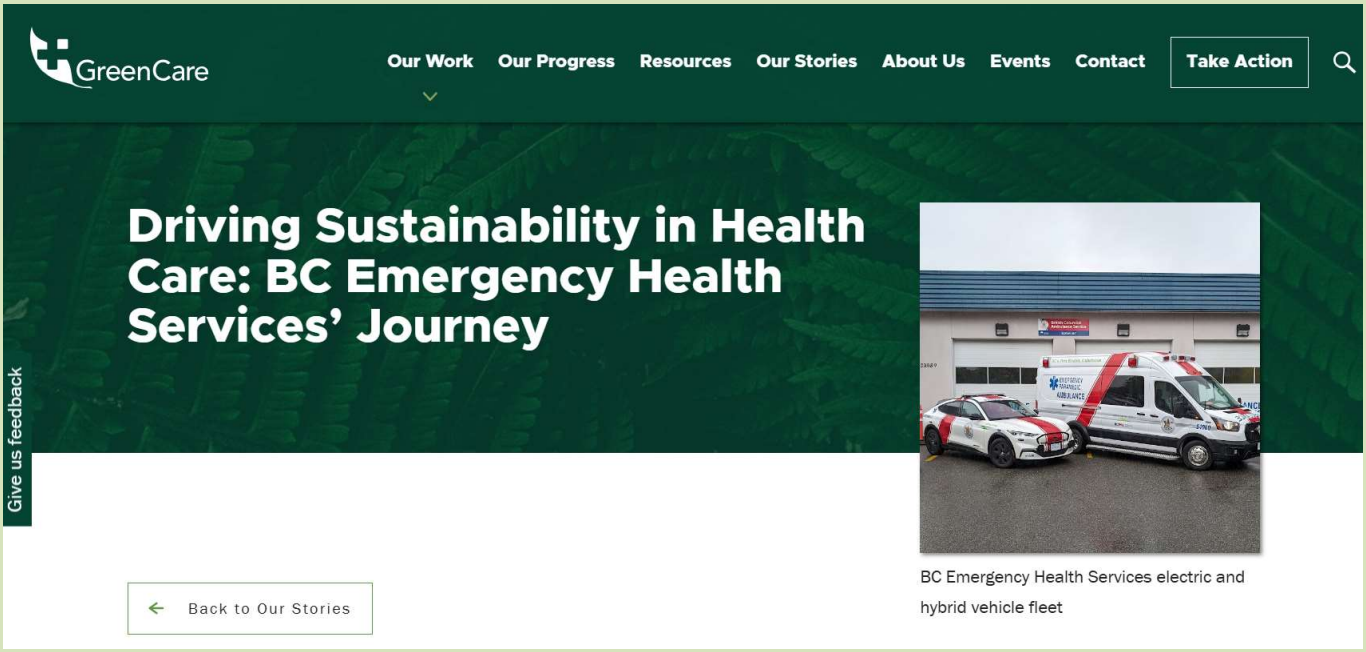
BCEHS is committed to becoming a global leader in the decarbonization of ambulance services and will continue to advance efforts to reduce overall emissions through a comprehensive and forward-looking strategy.

Climate Risk Management

Climate change has put a strain on the BC Emergency Health Services, through increasing heat and extreme weather-related dispatches, flood and wildfire support, evacuations and more. This results in increased operating expenses to support citizens in these events. Fleet decarbonization efforts through optimization, electrification, and vehicle rightsizing will help mitigate not only the environmental impacts of our services but reduce our operations costs as electrification and zero-emission fleet deployment accelerates in the coming years.

BCEHS has a Disaster Risk Reduction and Resilience (DR3) team focused on ensuring the organization is adaptable and can respond to adversity and disruption. Disaster resilience is the capacity of BCEHS to adapt to and recover from hazards, vulnerabilities, or stresses to continue providing pre-hospital care to British Columbians. As the BC Ministry of Environment and Climate Change Strategy (MECCS) recently stated "climate change hazards are impacting health determinants" (2018, p. 1) and that action "will strengthen our health care system and improve the resiliency of our communities" (2018, p.2). BCEHS needs to adapt and be flexible to rapid change and impacts to our organization, staff, and our patients.

Feature: BC GreenCare Story



BCEHS was featured on the [BC GreenCare] website for its work on Support Fleet decarbonization. The article highlights the 270 tonnes CO2e annual reduction in emissions, the challenges the team has had to overcome, and the journey ahead to decarbonize the support fleet.

Executive Signature:

Signature	Date: May 26, 2025
Manraj Chohan	Executive Director, Logistics & Transportation Operations