Backgrounder on Transportation (Personal Mobility) Emissions Trends in the Metro Vancouver Region

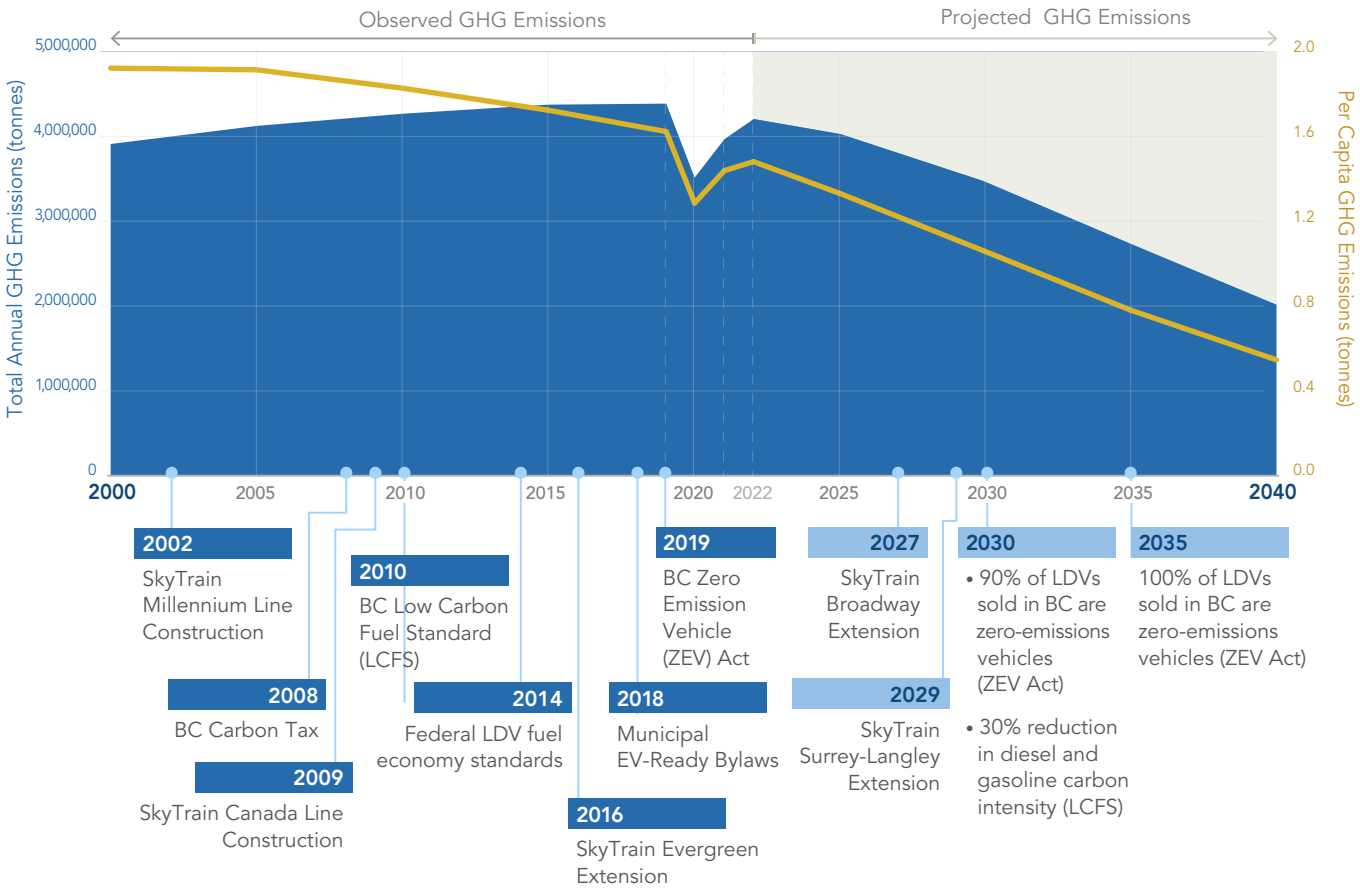
New data from Metro Vancouver's Emissions Inventory shows that greenhouse gas (GHG) emissions from personal light duty vehicles rose steadily from 2000 to 2019, holding personal transportation as the largest source of GHG emissions and a significant source of air pollutants that directly harm human health. Amidst this increase, some trends signal opportunities to accelerate this sector's projected emissions reductions.

A shift towards more walking, cycling, and remote work, and less travel in vehicles, is underway.

Electric vehicle sales have steadily increased, making the Metro Vancouver region a North American leader in uptake.

While ongoing trade, tariff, and policy uncertainty may impact current trends, there are opportunities for emissions reductions and economic growth from investing in clean transportation.

Figure 1: Timeline of total and per-capita GHG emissions from personal vehicles in the Metro Vancouver region, showing policies affecting these emissions, from 2000 to 2022, and projected to 2040



Source: Metro Vancouver 2022 Emissions Inventory[1]

Personal Vehicle Emissions Trends

- GHG emissions **increased by 3%** between 2010 and 2019.
- From 2010 to 2019, **per capita emissions decreased by 11%**.
- Both overall and per capita **emissions dropped sharply in 2020** due to COVID-19, **but largely rebounded by 2022.**
- **Health harming air pollutants have been decreasing** for several decades.

Outlook

- GHG and health-harming air pollutant emissions are expected to **continue to decrease**.
- Economic and policy uncertainty may slow progress but are **unlikely to reverse current trends** toward lower emissions.

Air Quality and Health

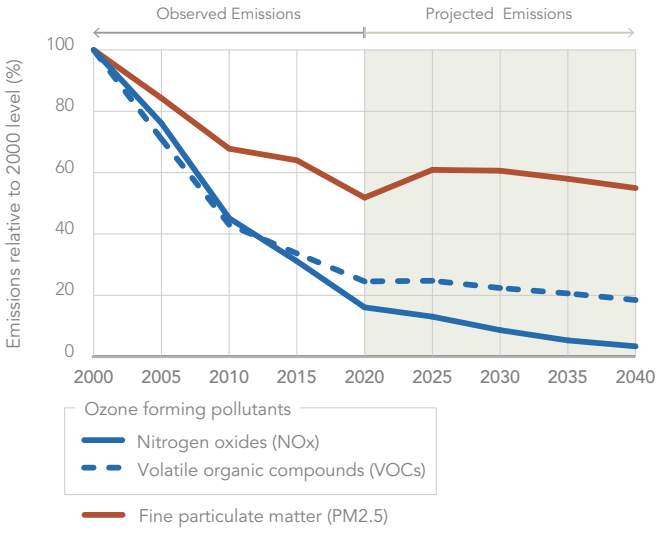
Personal vehicles release air pollutants like fine particulate matter (PM2.5), as well as nitrogen oxides (NOx) and volatile organic compounds (VOCs) that lead to ground-level ozone (smog).

These pollutants can damage the heart and lungs, especially in children, older adults, and people with existing health conditions. Even the smallest amounts of these pollutants can negatively impact health.

Over the next 15 years, continued uptake of EVs and increased use of transit, cycling, and walking is expected to lead to a continued decrease in air pollution, including GHG emissions.

Recent economic and policy shifts introduce uncertainty and may slow this trend but are not expected to reverse the current course toward an electric and lower-emissions transportation system by 2050.

Figure 2: Air pollutant emissions from personal transportation (light duty vehicles) in the Metro Vancouver region that directly harm human health have decreased between 2000 and 2022 – a trend projected to continue to 2040.



Source: Metro Vancouver 2022 Emissions Inventory[1]

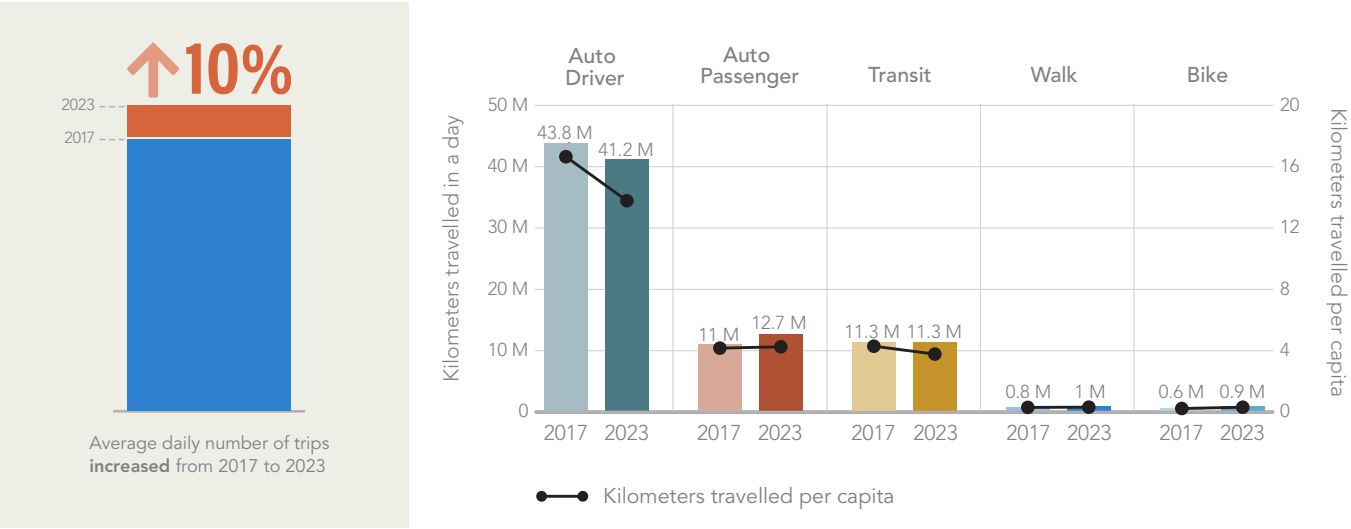
Shifting Travel Patterns Are Leading to Less Driving

- Between 2017 and 2023, average daily distance driven by vehicles in the region **decreased by 5%**, and per capita vehicle travel **decreased by 17%**[2].
- In 2023, on average **people took shorter trips** by car (as a driver and passenger), by foot, and by bike than in 2017[2].
- Following a sharp drop in 2020 during COVID-19, transit ridership has nearly recovered. However, **the share of trips taken by transit across the region fell slightly** from 11% in 2017 to 10% in 2023[2].
- Changes in transit ridership **vary widely across the region**, with some areas experiencing significant growth in transit trips and others decreasing (Figure 4)[2].
- Between 2017 and 2023, **the share of employees working from home grew from 11% to 24%**, driven by the shift to remote work during the pandemic[2].

Benefits of Reduced Driving

- Using cheaper transportation modes like transit, walking, rolling, and cycling **can reduce households' transportation costs**[3].
- Reducing distances travelled in vehicles **lowers air pollution**, providing health benefits across the region – particularly for people living with conditions such as asthma and heart disease[4].
- Less driving can **reduce congestion and car crashes**[5].

Figure 3: The total number of trips taken across all modes increased by 10% from 2017 to 2023, but shorter trips means that the average daily kilometers travelled have decreased. Despite remaining the most-used mode, travel by personal vehicle declined in both total and per-capita terms from 2017 to 2023.



Source: TransLink 2023 Trip Diary[2]

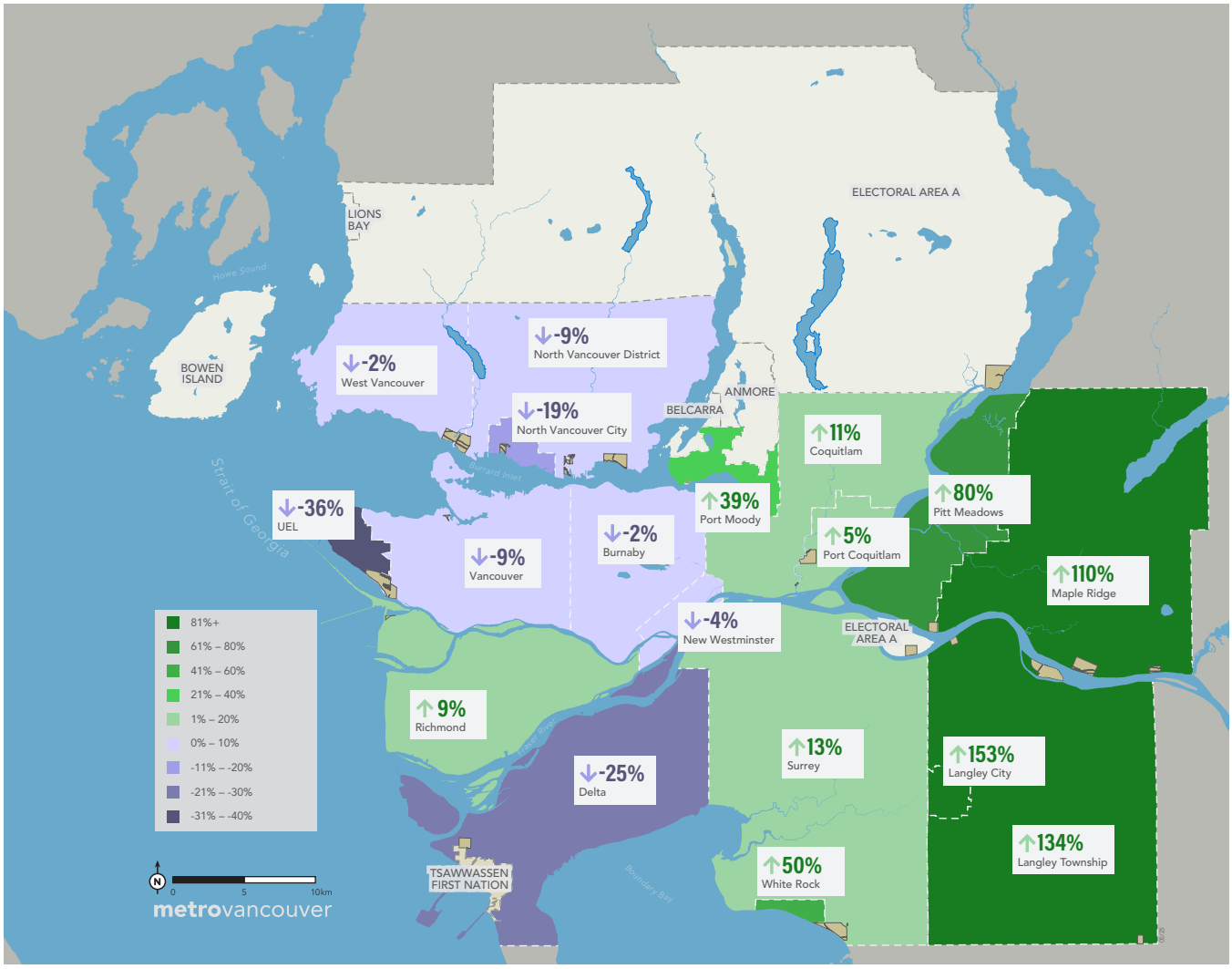
What Are the Risks to Progress?

- If more employers restrict remote working, commute trips will increase along with more driving.
- Stable and sufficient funding is still needed to keep transit running and to support planned expansions to ensure affordable and convenient transportation options for residents.
- Current economic uncertainty due to tariffs and trade disputes may put future investments in transit and active transportation at risk.

Transit Use Around the World

In 2023, 10% of all trips in the Metro Vancouver region were made by transit. In Seattle, 23% of all trips are made on transit. European jurisdictions also have higher transit use, such as London (UK) (21%), Stockholm (32%), and Oslo (30%). Singapore's unique geography and limited roadways have resulted in very high public transit ridership, at 44% of all trips.

Figure 4: Regional change in number of trips made on transit between 2017 and 2023.



Source: TransLink 2023 Trip Diary[2]

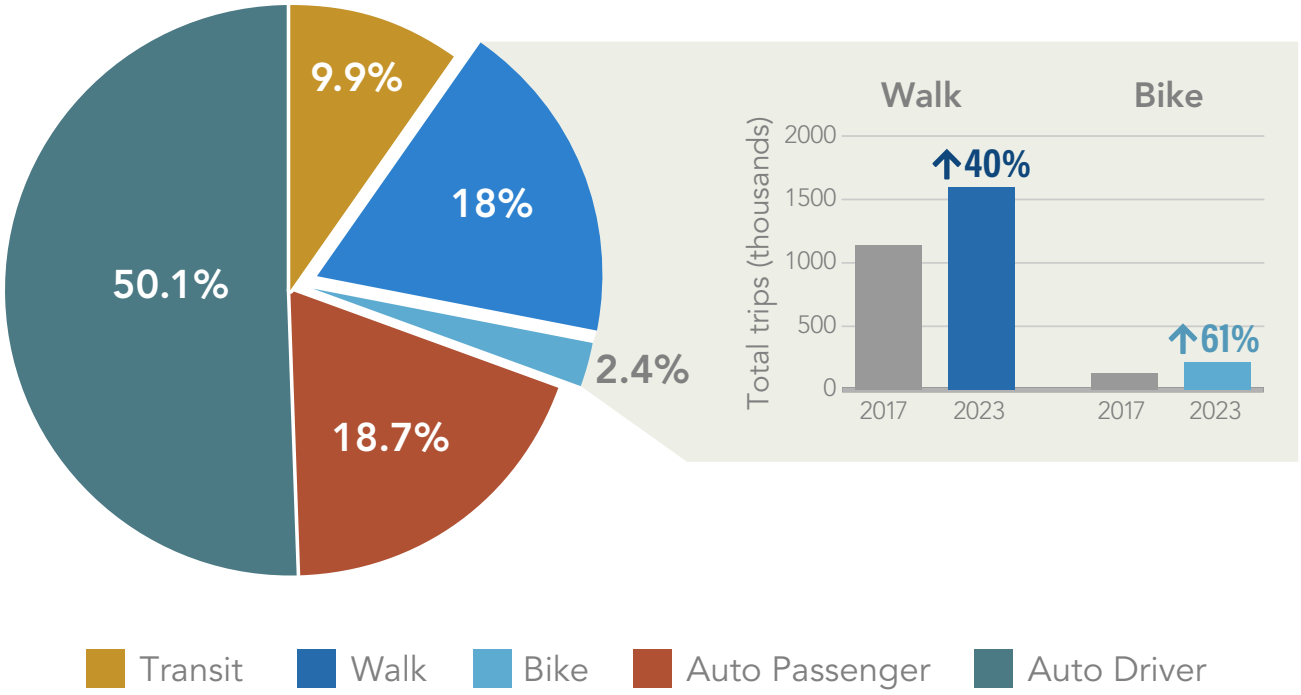
The Region's Residents Are Walking and Cycling More

- The share of **walking trips increased from 14% in 2017 to 18%** in 2023, **and trips by bike increased from 1.7% to 2.4%** over the same period[2].
- While walking trips increased in almost all areas of the region, **some municipalities experienced particularly high growth** in the number of walking trips between 2017 and 2023 compared to the regional average[2].
- In some parts of the region, the share of **e-bikes** among small personal mobility devices (such as bicycles, scooters, and skateboards) **rose from 4.5% in 2019 to 16% in 2023**[6].
- More Metro Vancouver communities are hosting shared bike, e-bike, and e-scooter options. Among those with bike share programs, **bike share trips accounted for 2.8% of all bike trips in 2023 – more than tripling** the 0.8% share in 2019/2020[6].

Benefits of Walking, Rolling and Cycling

- Walking, rolling and cycling **improve physical and mental health**[7].
- The advent of e-bikes and e-scooters has made **active transportation accessible to more people** with varying physical fitness and abilities.

Figure 5: While most trips in the region are still taken by private vehicle, Metro Vancouver residents are choosing to walk and cycle more. From 2017 to 2023 the number of trips made by walking increased by 40%, and trip made by bike increased by 61%.

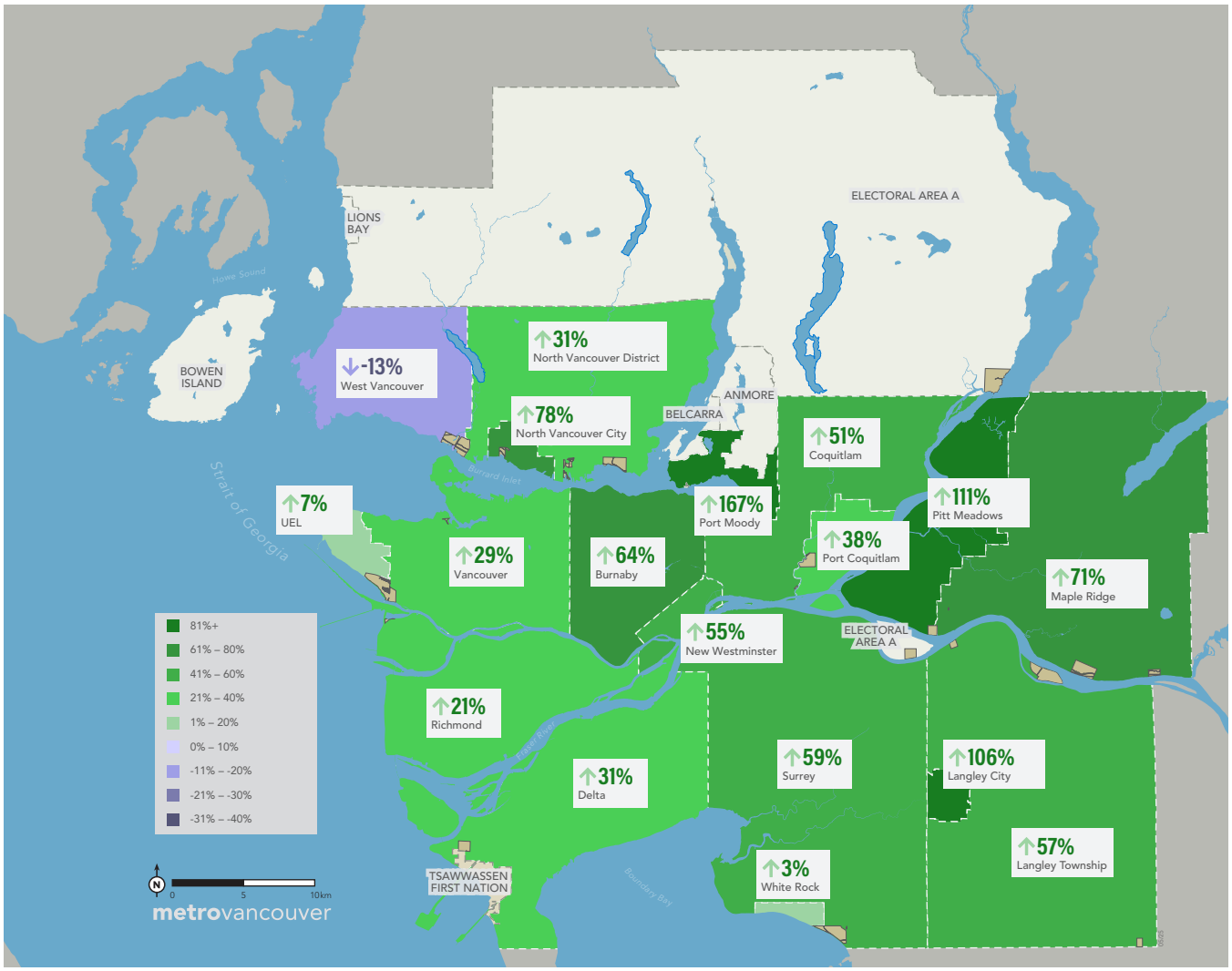


Source: TransLink 2023 Trip Diary[2]

What Are the Risks to Progress?

- Without financial support to offset upfront costs, some low-income residents may not be able to afford e-bikes. Past provincial rebate programs for e-bikes have been fully subscribed within hours of opening, but the Province has not renewed them.
- Bike share programs are not available in every municipality and prices may still be unaffordable for some residents.
- Many areas in the region lack protected bike lines, and infrastructure—such as sidewalks, bike lanes, and bike storage—is often not designed for e-bikes and e-scooters. Infrastructure improvements can help to ensure active transportation is safe, comfortable, and accessible for everyone.

Figure 6: Change in the number of walking trips between 2017 and 2023 across the region.



Source: TransLink 2023 Trip Diary[2]

Walking and Cycling Around the World

Paris, France recently made major improvements for walking and cycling in the central city, including reclaiming 50% of on-street parking for walking and cycling, restricting vehicle access to certain areas and major streets, pedestrianizing key routes, and expanding sidewalks. As a result, health-harming air pollution has dropped by 40%, and numbers of cyclists have surged.

London, United Kingdom has recently seen a notable rise in cycling following the introduction of dockless bike share programs.

Montreal provides an example in the Canadian context. Last summer, the city began the process of progressively implementing a pedestrian priority zone in the Old Montreal area, and the city has significantly expanded its cycling networks.

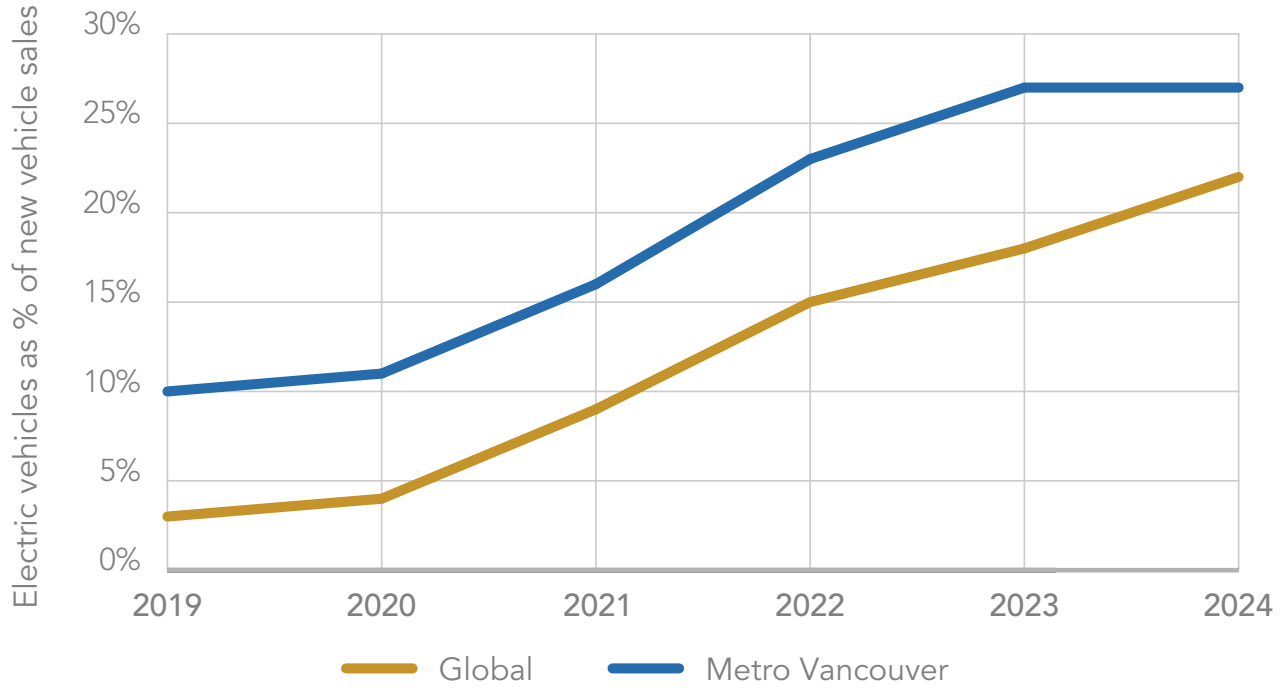
More of the Region's Car Buyers Are Choosing Electric

- In 2024, **electric vehicle (EV) sales accounted for 27% of all new vehicles** sold in the region[8].
- While EVs still represent a small share (about 5%) of the overall number of vehicles on the road, federal and provincial policies require all new vehicles sold by 2035 to be EVs, which will result in a **near-complete transition to EVs on the road by the year 2050**.[9]
- Recent public opinion research indicates that **69% of Metro Vancouver residents would purchase an EV as their next vehicle**, and 72% believe an EV would be cheaper to own than a gas vehicle[10].

Benefits of Electric Cars

- EVs are c**onsiderably cheaper to operate than gas cars** due to savings on maintenance and fuel costs over the vehicle's lifespan, despite higher upfront costs[10].
- EV owners are **less exposed to volatile global oil prices** and benefit from made-in-BC clean energy (Figure 8).

Figure 7: EV sales rapidly increased between 2019 and 2023 but levelled off in 2024.



Sources: S&P Canadian Automotive Insights (Metro Vancouver)[8]
International Energy Agency Global EV Outlook 2025 (Global)[11]

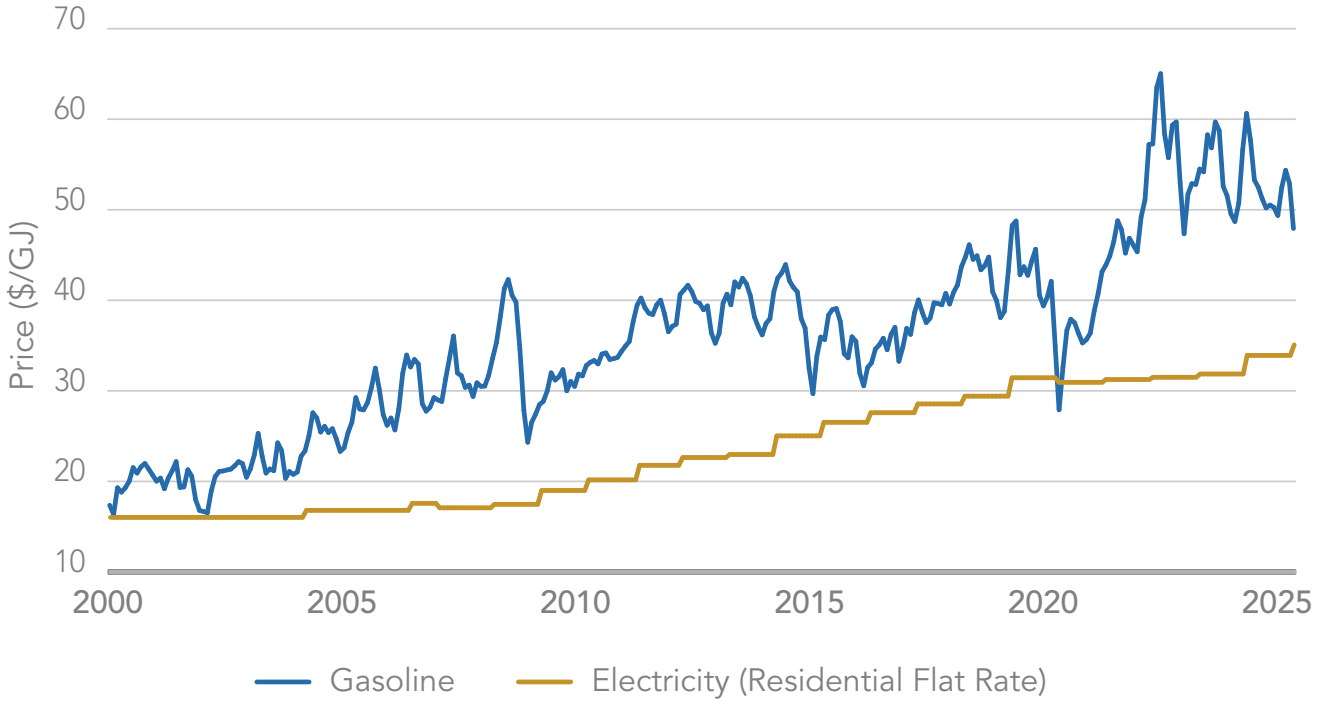
What Are the Risks to Progress?

- EV rebate programs at provincial and federal levels have recently been paused.
- A rapid scale up of EVs requires availability of public and at-home EV charging to keep pace.
- While a transition to an electric transportation system will reduce air pollution and GHG emissions, it will not reduce congestion or vehicle crashes, and a continued reliance on car-based mobility could discourage transit use or active transportation.

Tariff, Trade, and Policy Uncertainty

Tariffs levied by the United States against Canada and other countries are expected to raise the cost of all new vehicles, if they remain in place. However, emerging research suggests that most EVs in Canada are not subject to US automotive tariffs[12] and globally, overall car sales volume may be more at risk than the share of EV sales[11].

Figure 8: Gasoline prices have been volatile and almost always higher than stable BC electricity rates, resulting in lower and more predictable fuel costs for EVs compared to gasoline vehicles.



Sources: Statistics Canada (gasoline)[13]
BC Hydro (electricity)

EV Sales Around the World

In 2024, a surge in EV uptake in Montreal bumped the Metro Vancouver region out of the top rank for EV sales among Canadian urban areas for the first time[8]. Despite this shift within the Canadian context, the region remains among leading jurisdictions worldwide.

EV sales in the Metro Vancouver region are comparable to leading countries in Europe such as Germany (19%), France (24%), and the United Kingdom (30%). EV sales have been especially strong in the Scandinavian countries of Denmark (48%), Finland (50%), and Sweden (58%). Norway is a global leader in EV uptake, with EVs making up 92% of all new vehicle sales in 2024. By volume, China accounts for the largest amount of EV sales, with EVs making up 48% of new vehicle sales and over half all EVs sales globally[11].

Clean Transportation is a Growing Industry in BC

- As of 2023, an estimated 384 British Columbia companies and organizations were directly supporting **8,280 full-time jobs in the clean-energy vehicle sector**, which includes vehicles and their components, batteries and hydrogen fuel cells, charging stations, and other technologies[14].

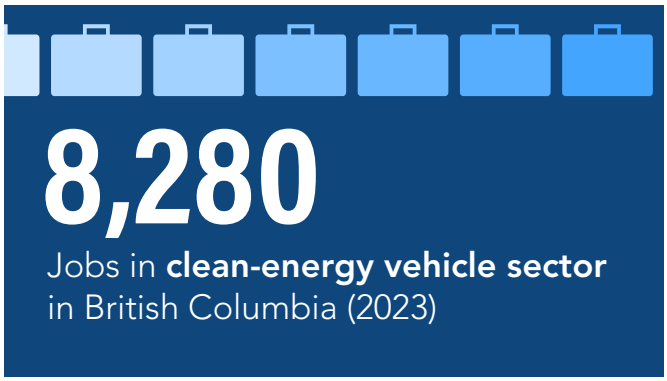
- The clean-energy vehicle sector **increased its contribution to provincial GDP by about 48%** between 2021 ($622 million) and 2023 ($920 million)[14]. Many of the companies driving this growth in jobs and GDP are located in the Metro Vancouver region.

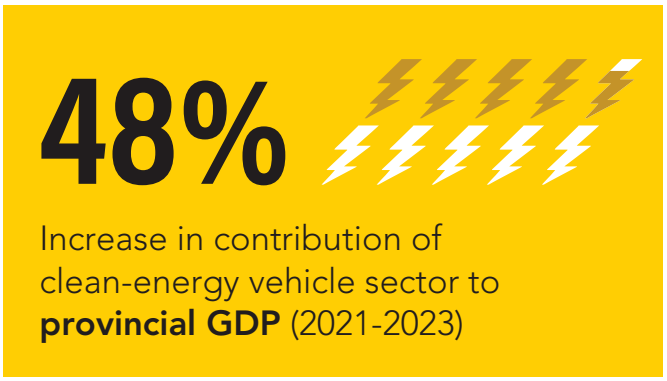
- This growth is part of a broader global investment in clean energy. In 2024, **$2.9 trillion was invested in the global energy transition** – an increase of 11% from 2023 and more than doubling investment levels in 2020[15].

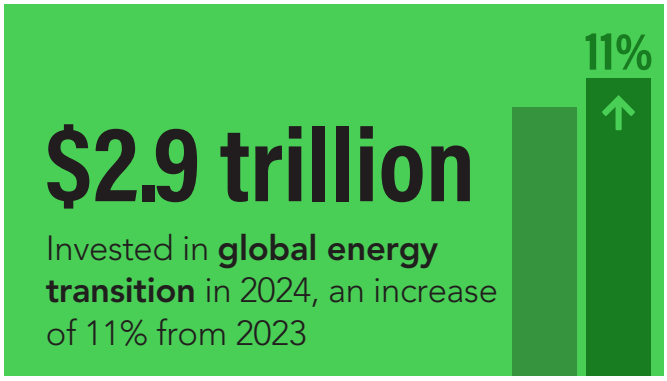
Benefits of a Growing Clean Transportation Industry

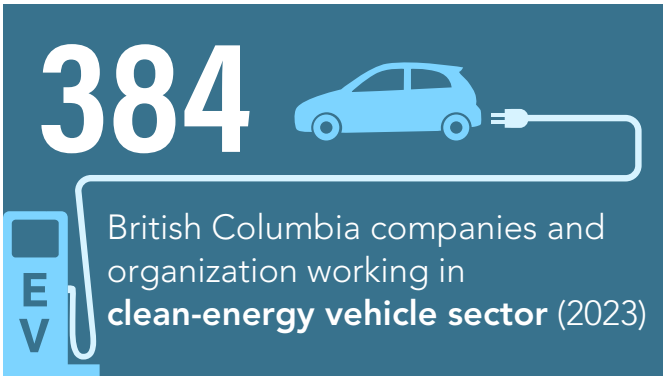
- Clean energy investments can **support domestic energy production and supply chains.** For example, the recent BC Hydro calls for power are driving investment in solar and wind energy.

- Local academic institutions are helping to **train workers for the growing clean technology sector, supporting the local economy.** For example, the BC Institute of Technology and Kwantlen Polytechnic University offer an EV Maintenance Training Program for automotive technicians[16].









What Are the Risks to Progress?

- Tariffs and shifting trade policies may have economy-wide impacts that lead to reduced economic growth, hesitant investors, and less funding for research and development.
- The Metro Vancouver region could lose private-sector investment to other jurisdictions if other governments commit more strongly to policy that signals stability to investors and businesses.

What is Working Elsewhere?

By virtually all metrics, China dominates global investment, production, and export of clean energy and transportation products and industries. The European Union is the second largest hub in many important aspects of clean economic growth, such as EV production. Strong government policy, whether through direct intervention or market signals, has been a critical force in supporting the growth in jobs and GDP from clean transportation in both of these economies. Canada has been taking steps to build domestic supply chain and economic growth in clean transportation, such as with the federal critical minerals strategy and support for EV manufacturing, notably in Southwestern Ontario.

References

1. Metro Vancouver. *Emissions Inventory*. https://metrovancouver.org/services/air-quality-climate-action/emission-inventories-and-forecasts

2. TransLink. (2025). *2023 Trip Diary Survey*. https://public.tableau.com/app/profile/translink/viz/Trip_Diary_2023/TripDiary

3. Metro Vancouver. (2015). *Housing and Transportation Cost Burden*. https://metrovancouver.org/services/regional-planning/metro-2050-performance-monitoring/goal-4/housing-transporation/housing-and-transportation-cost-burden

4. Health Canada. (2020). *Traffic-Related Air Pollution: asthma, Allergies, and Lung Function*. https://www.canada.ca/content/dam/hc-sc/documents/services/publications/healthy-living/traffic-related-air-pollution-asthma-allergies-lung-function-assessment/traffic-related-air-pollution-asthma-allergies-lung-function-assessment.pdf

5 World Health Organization. (2023). *Global status report on road safety*. https://iris.who.int/bitstream/handle/10665/375016/9789240086517-eng.pdf?sequence=1

6. Bigazzi, A., & Hassanpour, A. (2024, December). *Four-Year Trends of Personal Mobility Devices in Metropolitan Vancouver*. University of British Columbia, Faculty of Applied Science, Research on Active Transportation Lab. https://civil-reactlab.sites.olt.ubc.ca/files/2024/12/2024-Trends-Report_V3Revised.pdf

7. Devlin, A., Frank, L., & vanLoon, J. (2009). *Physical Activity and Transportation Benefits of Walkable Approaches to Community Design in British Columbia*. https://atl.sites.olt.ubc.ca/files/2011/07/BCRPA_Transportation_Study_2009.pdf

8. S&P Global Mobility. (2025). *Canadian Automotive Insights*.

9. Metro Vancouver. (2023, August). *Keeping it Current: Guidance for Collaborative Deployment of EV Charging in Metro Vancouver*. https://metrovancouver.org/services/air-quality-climate-action/Documents/keeping-current-guidance-collaborative-deployment-ev-charging-mv.pdf

10. Clean Energy Canada. (2025, March). *Electrifying the Lot*. https://cleanenergycanada.org/wp-content/uploads/2025/03/Report_2025_MURB_V4-1.pdf

11 International Energy Agency. (n.d.). *Global EV Outlook 2025 – Expanding Sales in Diverse Markets*. https://iea.blob.core.windows.net/assets/0aa4762f-c1cb-4495-987a-25945d6de5e8/GlobalEVOutlook2025.pdf

12. Electric Mobility Canada. (2025, May 15). *Setting the Record Straight: Most EVs in Canada are not Subject to Tariffs*. https://emc-mec.ca/wp-content/uploads/2025/05/SETTING-THE-RECORD-STRAIGHT-MOST-EVS-IN-CANADA-ARE-NOT-SUBJECT-TO-TARIFFS.pdf

13. Statistics Canada. (2025). *Monthly average retail prices for gasoline and fuel oil, by geography*. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000101

14. BC Ministry of Energy and Climate Solutions. (2025). *Zero-Emissions Vehicle Update 2023*. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/2023_zero-emission_vehicle_update.pdf

15. Bloomberg Finance L.P. (2025). *Energy Transition Investment Trends*. BloombergNEF. https://about.bnef.com/insights/finance/energy-transition-investment-trends/#toc-report

16. BC Ministry of Energy and Climate Solutions. (2025). *Zero-Emissions Vehicle Update 2024*. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/2024_zev_annual_report.pdf