

Montreal Commuting Costs & Carbon Footprint (2025 Analysis)

By 2727 Coworking Published October 27, 2025 33 min read



Executive Summary

This report provides a detailed analysis of commuting in Montreal in 2025, focusing on financial costs and carbon footprint for the city's three major modes of travel: the Métro (subway), bicycling, and private automobile. We compile and compare **up-to-date data** on fares, vehicle ownership costs, infrastructure, and greenhouse-gas (GHG) emissions. Key findings include:

- **Cost Comparison:** A Montreal transit user pays roughly **\$100 per month** for an unlimited Métro/bus pass (Source: www.artm.quebec) (**≈\$1,200/year**). By contrast, an average Canadian household spends on the order of **\$5,500 annually** to own and operate a typical car (including fuel, maintenance, insurance, depreciation, etc.) (Source: globalnews.ca). Bicycling incurs far lower costs: a modest annual expense for a personal bike (on the order of a few hundred dollars, amortized) and even a **BIXI bike-share membership at \$23/month** (Source: bixi.com) (**≈\$276/year**), which covers virtually unlimited rides.
- **Carbon Footprint:** Because most of Quebec's electricity is from clean hydro, Montreal's **Métro is effectively zero-emissions** per passenger-kilometre. Studies estimate Métro travel emits only about **0.015 kg CO₂ per km** (Source: fabmobqc.ca) (**≈15 g/km**), whereas a gasoline-driven car emits roughly **0.12-0.18 kg CO₂ per km** (Source: fabmobqc.ca). **Bicycling's operational footprint** is essentially zero; including bicycle manufacturing amortized over its lifetime yields on the order of **20-50 g CO₂ per km** (Source: ourworldindata.org). In practical terms, a **20 km round-trip** by car would emit roughly **2.4 kg CO₂**, compared to only **≈0.3 kg** via the electric Métro (Source: fabmobqc.ca) – a savings of **~2.1 kg per trip** (**≈210 kg annually for 100 roundtrips**) (Source: fabmobqc.ca).
- **Modal Shares & Trends:** Montreal commuters overwhelmingly use cars: the 2021 Census reported **~75-76%** of workers drive (as driver or passenger) (Source: www12.statcan.gc.ca). Only about **15%** used public transit and **7-8%** used active modes (walking or cycling) in 2021 (Source: www12.statcan.gc.ca). Post-pandemic travel surveys, however, show transit share

rebounding (~21% of commutes by May 2024 (Source: www150.statcan.gc.ca) and cycling/walking rising to ~8.3% (Source: www150.statcan.gc.ca). The City and regional planners have set ambitious goals (e.g. 50% of trips by transit/active modes by 2050 (Source: www.tvanouvelles.ca) which will require even larger shifts.

- **Policy Context:** Road transport is Montreal's single largest GHG source (~43% of city emissions) (Source: montreal.ca). City and regional plans emphasize *active and public transit* over cars (e.g. fully electrify buses by 2040 and double transit usage (Source: montreal.ca). Experts note structural and cultural barriers remain: the urban form and habits favor cars (Source: www.tvanouvelles.ca), and riders often overestimate transit's environmental impact (Source: www.mdpi.com).

Overall, the evidence strongly favors Métro or bicycling over car commuting for both cost-efficiency and climate. The remainder of this report lays out the comprehensive background, data analysis, and case studies that underlie these conclusions, with full citations to official statistics and research.

Introduction and Background

Montreal, the second-largest city in Canada (island population ~1.9 million as of 2021, CMA ~4 million), has long grappled with balancing mobility, fiscal costs, and environmental impact. The city built its rubber-tired Métro (subway) for Expo 67 and has since layered a broad transit and [bicycle network](#). By 2025, Montreal operates 4 Métro lines (Green, Orange, Yellow, Blue) with hundreds of stations, an extensive bus system (STM), and a year-round bicycle-share (BIXI). At the same time, most commuters still rely on cars. The City's official climate goals – carbon-neutral by 2050 – call for drastic cuts in transportation emissions (Source: montreal.ca). Achieving these goals hinges on shifting commuting habits to greener modes.

Transport's Emissions Context: In Montreal, road transport is the *single largest* source of greenhouse gases. The City's climate report notes **43%** of Montreal's total GHG emissions come from on-road vehicles (Source: montreal.ca). (By contrast, Québec's electricity is ~98-99% hydroelectric, meaning electric transit and vehicles generate almost no tailpipe CO₂.) Thus commuting choices play an outsized role in municipal carbon budgets. The City has set concrete targets – e.g. **electrifying the entire STM bus fleet by 2040** and developing “zero-emission” neighbourhoods that cut road emissions in half (Source: montreal.ca). However, shifting millions of trips off cars is challenging. Surveys show most Montrealers *underestimate* the environmental benefits of transit: a recent study found riders often (incorrectly) judged the Métro as *more* polluting than cars (Source: www.mdpi.com). This misperception underscores the need for clear data on actual costs and footprints.

Commuting Behavior: According to StatCan and City data, Montreal's modal split remains car-dominated. The 2021 Census (“Journey to Work”) reported **71.0%** of employed commuters drove themselves to work, plus **4.6%** as passengers – totaling ~76% by car (Source: www12.statcan.gc.ca). Only about **15.3%** used public transit (bus or Métro) and **7.5%** walked or biked (Source: www12.statcan.gc.ca). (Note: “active transport” includes both walking and cycling.) Post-pandemic surveys show these numbers are evolving: by May 2024, **21.3%** were transit users (nearly back to the 2016 level of 22.4%) (Source: www150.statcan.gc.ca), and 8.3% were walking/biking (up from 7.2% in 2016) (Source: www150.statcan.gc.ca). Nevertheless, cars still carry the bulk of commutes. [Congestion](#), parking scarcity, and air pollution are perennial problems – even though cars incur very high costs to owners and society.

Commuting Costs: Commuting imposes direct monetary costs on workers and governments, as well as indirect costs (road damage, pollution, time). In Montreal, a 2024 survey finds an average Canadian vehicle costs **\$5,497 per year** to own and operate (Source: globalnews.ca). Typical drivers spend ~14% of household income on cars (Source: globalnews.ca). By contrast, a Metro monthly pass is \$100 (Source: www.artm.quebec) (zone A, the whole city), which works out to ~**\$1,200 per year** even if used every day. Cycling carries minimal ongoing costs: aside from the one-time bike purchase and occasional repairs, riding is essentially free fuel. Montreal's bike-share (BIXI) offers unlimited short trips for **\$23/month** (Source: bixi.com).

This report proceeds to examine each mode in depth. We present the current infrastructure and usage statistics, then break down **financial costs** (fares, fuels, maintenance, etc.) and **carbon emissions** (per km and per trip). Where possible we use recent concrete figures and studies. We also consider qualitative factors (e.g. seasonality, safety, congestion) and policy context. Finally, we compare scenarios and case studies, and discuss implications for Montreal's sustainability goals.

Montreal Commuting Infrastructure and Patterns

Network and Service Overview

- **Métro (STM):** Montreal's Métro opened in 1966 and now has four rubber-tired lines serving the island and part of Laval. It carries **~1 million passengers per weekday** (pre-pandemic levels) on 68 stations (Source: environmentalsystemsresearch.springeropen.com). The system is fully electrified. In addition, dozens of bus routes fill gaps. Fares (in the ARTM unified system) are \$3.50 per ticket or **\$100 monthly pass (adult, all-zone)** (Source: www.artm.quebec). STM's **Sustainable Development Plan** targets dramatically reduced emissions: e.g. 100% of buses will be zero-emission by 2040 (Source: montreal.ca).
- **Buses and REM:** The commuter rail network (now branded ARTM/Exo) and the new REM light-rail line also serve regional commuters; however, our focus here is on the core Métro vs biking vs car, so we omit detailed analysis of commuter trains. Many Montrealers rely on subways/buses already, and several REM lines (e.g. downtown–South Shore) are under construction or operation (2023 onward) to boost transit share.
- **Bicycles:** Montreal has one of North America's largest cycling networks. The city *claims* a network totalling around **1,083 km** of bikeways (protected lanes, paths, etc.) covering the island (Source: montreal.ca) (Vélo-Québec maps list thousands of km when including neighbouring cities (Source: www.velo.qc.ca). In recent years Montreal rapidly expanded its bike network (over 1000 km by 2020 (Source: 2727coworking.com) and now envisions an "Express" bike highway network (RÉV) of 185 km of protected lanes (Source: 2727coworking.com). Montreal is also noted for its year-round cycling support: snow-cleared lanes and even winter-capable BIXI bikes. The BIXI program (launched 2009) now operates **~934 docking stations and ~11,000 bikes** (including 2,600 e-bikes) (Source: 2727coworking.com), with ridership breaking records (13 million trips in 2024 (Source: 2727coworking.com)).
- **Private Cars:** Montreal's road network includes major highways on the island (Autoroutes 15, 40, 20, etc.) and thousands of kilometers of city streets. Parking is limited and expensive downtown. Auto travel offers point-to-point convenience, but faces congestion delays. Car ownership is widespread: officially the Island of Montreal had over 1.3 million registered vehicles by 2021 (StatCan data) (Source: environmentalsystemsresearch.springeropen.com). Recent city strategies are explicitly aimed at curbing car use: e.g. converting big parking lots to green space, designating downtown EV zones, and reducing parking requirements.

Commuting Demand and Modes

Modal Split

According to the 2021 Census of Canada, among Montreal's **1.57 million** commuters (workers with a fixed workplace), **71.0% drove themselves in a car or truck** and **4.6% rode as passengers** (Source: www12.statcan.gc.ca) (total ~76% auto). Only **15.3%** took public transit (bus or Métro) and **7.5%** used active modes (walk or bike) (Source: www12.statcan.gc.ca). The remaining ~1.6% used "other" methods (motorcycle, taxi, etc.) (Source: www12.statcan.gc.ca).

Notably, that Census took place in May 2021 when pandemic-related work-from-home rates were still elevated. More recent Labour Force Survey data (May 2024) show transit usage rebounding: about **21.3%** of Montreal-area commuters now take transit (compared to 22.4% in 2016) (Source: www150.statcan.gc.ca), and walking/biking rose to **8.3%** (up from 7.2% in 2016) (Source: www150.statcan.gc.ca). However, these surveys refer to the entire Québec province and may aggregate Montreal with nearby cities; smaller-scale municipal surveys suggest transit's share in Montreal proper is climbing toward the mid-20% range.

Commute Distances and Times

Statistics Canada does not publish distance/time breakdowns for 2021 at the CMA level, but past data show the average Montreal commuter spends roughly **25–30 minutes each way** on their journey (comparable to Toronto). Modal differences are large: transit users often travel farther but have access to exclusive rights-of-way, whereas drivers tend to have shorter routes but suffer occasional congestion. Cycling commutes in Montreal typically average **5–6 km each way** for daily riders, although many shorter walks (especially downtown) replace short car trips altogether. Peer-reviewed studies indicate "Urban sprawl" in outlying boroughs leads to long auto commutes, while densification in city cores supports shorter bicycle trips. (As one Montréal transportation expert noted, many transit trips cover longer radial distances, whereas bikes absorb intra-city short trips (Source: www.tvanouvelles.ca).)

Trends and Goals

Montreal has seen a recent **“bike boom”**. One analysis notes that Montreal “already leads Canada in bike-to-work numbers” – roughly 20% of Canadians who cycle to work live in the Montreal region (Source: 2727coworking.com). A 2018–2024 travel survey indicated active-mode trips (walk + bike) rose by ~28% in Greater Montreal since 2018 (Source: 2727coworking.com). The city government’s own targets are ambitious: increasing the cycling mode share to **15%** by 2027 (Source: 2727coworking.com) and reaching **50% of all trips by transit or active** across Greater Montreal by 2050 (Source: www.tvanouvelles.ca). Achieving these will require major investments (expanding bike lanes and BIXI service – which the city has done, budgetting over \$30M in 2024 (Source: 2727coworking.com) – plus transit expansions like the REM and Métro extensions) and cultural shifts away from cars.

Cost Analysis of Commuting Modes

This section quantifies the monetary costs borne by commuters for each mode. We distinguish **direct costs** (fares, fuel, maintenance, etc.) and **indirect expenses** (vehicle purchase amortization, insurance, parking, etc.). All figures are in 2025 CAD unless otherwise noted.

Metro (STM) Costs

- **Fares:** The standard adult fare for Montreal’s transit (Métro + STM buses + commuter train within city) is currently **\$3.50** per single ticket or **\$100 per 30-day unlimited pass** for Zone A (the island of Montreal) (Source: www.artm.quebec). A monthly pass is valid on all STM Métro and buses, plus the REM and Exo train within Zone A. This \$100/month premium (¥\$1,200/year if used every month) offers unlimited rides. Converting to a *daily* cost (assuming ~22 workdays/month), a monthly pass is ≈\$4.55 per day (for round-trip travel).
- **Card Deposit/Fee:** The OPUS card system has a one-time cost (\$6 card purchase), but that is trivial over time. There are no unlocking fees like bike-share.
- **Additional Costs:** If a commuter rarely uses transit, pay-per-ride (\$3.50) or weekly/24-hr passes might be cheaper; but regular commuters almost always bet on the monthly pass. For occasional transit use (e.g. a few times a week), costs per trip (\$3.50) are still lower than even short drives (see Car section below).
- **Employer Subsidies:** Many Montreal businesses offer transit allowances or pre-tax benefit, in line with provincial incentives for ecomobility. (~10% of workers surveyed receive some transit reimbursement.) Such schemes can effectively lower the net cost of commuting by Métro, but are outside the scope of this report.

Car Commuting Costs

Private automobile ownership and operation entail multiple cost components:

- **Purchase/Depreciation:** The initial purchase of a car (new or used) is a major upfront cost. In Canada the average new car price is around \$50,000 (2024) and even used vehicles are \$20–30K or more due to high demand. Depreciation (loss of value over time) is roughly \$3,000–5,000 per year for a typical sedan. (For simplicity we amortize purchase into the annual ownership cost below.)
- **Fuel:** Fuel is a substantial ongoing expense. In 2025, crude gas prices in Quebec are about **\$1.30–\$1.50 per liter** (post-carbon-tax removal (Source: www.reuters.com)). A mid-size car might consume ~8 L/100 km (mixed driving), so fuel cost is ~\$0.10–\$0.12 per km. If a commuter drives 50 km per day (25 km each way) × 220 working days/year = 11,000 km, fuel alone is about **\$1,320/year** (at \$1.50/L) or lower if one’s vehicle is more fuel-efficient.
- **Maintenance and Repairs:** Routine maintenance (oil changes, tires, brakes, minor repairs) typically runs **\$800–\$1,200 per year** on a Canadian sedan. More if repairs needed. Tire replacements can exceed \$800 every few years.
- **Insurance:** In Quebec, auto insurance is mandatory via government DPA (règlement). For a typical driver, insurance premiums often average **\$1,000–\$1,500 per year**, depending on driving record and vehicle. Younger or new drivers often pay much more.

- **Registration & Taxes:** Vehicle registration and license fees cost a few hundred dollars annually (\$150–\$250). There are also provincial sales taxes on fuel (included in pump price) and a carbon tax currently frozen (as of 2025).
- **Parking/Tolls:** Many urban commuters pay for parking. Downtown monthly parking can be \$150–\$300 or more. We conservatively estimate **\$1,000/year** for city-dweller parking on average. (Outlying commuters may pay less but still incur some parking or tolls.)
- **Car-Sharing/Lease:** Note that some commuters use car-share services (like Communauto) instead of owning; those have their own fee structures (e.g. \$60/year membership + \$0.20+/min). These alternatives generally cost more per use than owning if commuting daily, but may suit occasional drivers. This report focuses on owning/operating a personal vehicle.

Aggregate Cost: Combining the above yields a typical annual car cost on the order of **\$5,000–\$7,000**. A recent consumer survey found the *average* Canadian spends **\$5,497 per year** on vehicle ownership and operation (Source: globalnews.ca). (Ontario drivers were highest at ~\$6,000; Quebec drivers likely somewhat lower.) This matches our sum of fuel + insurance + maintenance + amortization + fees. In percentage terms, automobile expenses can consume ~14% of a household's budget (Source: globalnews.ca).

As a **per-kilometre** figure, various calculators (CAA, Réseau) often estimate a full cost of ~\$0.50–\$0.60 per km for car ownership (including amortization) in Canada. Fuel alone is only ~\$0.12/km, but insurance/maintenance and depreciation roughly double that. Thus a 20 km commute would “cost” ≈\$10 per day (fuel ~\$2.40 + other \$7.60).

Bicycle Commuting Costs

Cycling is by far the lowest-cost mode:

- **Purchase:** A decent commuter bicycle in Canada costs anywhere from **\$300** (very basic) up to \$2,000+ (high-end or e-bike). Let us assume a typical quality bike costs \$800. If the bike's useful life is 8 years of regular commuting, the depreciation cost is \$100/year.
- **Accessories/Maintenance:** Mandatory gear (helmet, lights, lock) might cost \$100–\$200 initially. Ongoing, cyclists budget for tune-ups, new tires, chains – perhaps **\$100–\$150 per year**. With proper maintenance, component overhauls can be spaced out.
- **Bicycle-Share (BIXI):** Alternatively, many commuters use the public bike-share. BIXI's monthly pass is **\$23** (all winter months) (Source: bixi.com), with a seasonal option of ~\$90 (April–Nov) for unlimited short trips. At \$23/mo year-round, annual cost is \$276. (Compare to \$1,200 for transit or \$5,500 for car.) There are no per-ride fees for trips under 45 minutes; beyond that, a fee of \$0.18/min applies. For typical commutes, the unlocking deposit is \$0.
- **Other Costs:** Cyclists are not charged road or parking fees. Bicycles may be stolen (some riders insure expensive bikes), but otherwise the financial outlay is trivial. An e-bike (electric assist) costs more (\$1,500–\$3,000) but eliminates incremental fuel costs – still, charging an e-bike draws negligible electricity (a full recharge ~\$0.10) given Quebec's cheap power.

In summary, **annual cycling costs** are very low – on the order of **\$150–\$300** (assuming moderate maintenance and either bike amortization or a BIXI subscription). A bicycle commute yields by far the lowest expense per kilometre. Table 1 below compares representative annual costs for each mode.

MODE	KEY COST COMPONENTS (ANNUAL)	APPROX. ANNUAL COST (CAD)
Métro (Unlimited pass)	~12×\$100 monthly STM pass (Source: www.artm.quebec); minimal extras	≈\$1,200 (all-you-can-ride metro/bus) (Source: www.artm.quebec)
Car (gasoline)	Fuel (~\$1.30/L, ~8 L/100km), insurance, maintenance, amortization (Source: globalnews.ca), parking	≈\$5,500 (Atl. \$5–6k/year including everything) (Source: globalnews.ca)
Bicycling (own)	Amortized bike (\$800/8yr ≈\$100), maintenance \$150, gear	≈\$250 (bike + upkeep)
BIXI Bike-Share	\$23/month membership (Source: bixi.com) (applies to unlimited 45-min trips)	≈\$276 (12×\$23) (Source: bixi.com)

Table 1: Annual commuting costs by mode (Montreal, 2025). Sources: STM/ARTM fare table (Source: www.artm.quebec), market surveys (Source: globalnews.ca), BIXI pricing (Source: bixi.com), and cost estimates. (Personal car costs vary widely; the \$5,500 figure represents a typical mid-range case (Source: globalnews.ca).)

From Table 1 we see that **car commuting is roughly 4-5× more expensive per year than full-use métro**, and an order of magnitude costlier than cycling. Even factoring one-time bike purchase, cycling is essentially negligible cost relative to other modes. The financial burden of cars underscores why city governments often charge high parking fees and invest transit subsidies: they aim to internalize some of those costs borne by commuters and society (congestion, air quality).

Carbon Footprint Analysis

This section examines the **greenhouse gas emissions** associated with each mode of commuting. We use average emissions factors and life-cycle estimates to compare the CO₂-equivalent output per passenger-kilometre and per typical commute. All figures are in CO₂-equivalent (CO₂e).

Metro (Electric Rail)

Montreal's Métro is fully electric, drawing humanity-scarce energy. Crucially, Quebec's electric grid is over 95% hydroelectric (the remainder fossil/nuclear is marginal). Thus the **direct carbon emissions from operating the Métro are extremely low**. A transit-industry analysis finds:

- **Metro emissions ~15 g CO₂e per passenger-km.** In one user-oriented calculation, a 20 km Métro round-trip was estimated at only 0.3 kg CO₂, i.e. 0.015 kg/km (Source: fabmobqc.ca). That corresponds to **15 g/km**, roughly. (This figure includes upstream emissions for Quebec hydro; in reality fossil input is negligible so on average <0.02 kg/km.)
- **Stationary energy:** Ventilation, lights, escalators do consume electricity, but they too run on mostly hydro power. Even if one apportioned a share of substation energy, it would add only a few grams per km.
- **Life-cycle:** Building tunnels and trains has an embodied carbon cost, but amortized over decades and millions of riders this is negligible per trip (~a few grams at most). We focus on operational emissions.

By contrast, an average **internal-combustion car** emits on the order of **120-180 g CO₂e per km** (tailpipe CO₂ only). For example, a mid-size gasoline car might consume ~8 L/100km; since petrol emits ~2.3 kg CO₂/L, that's ~0.18 kg/km (180 g/km). A smaller car (or hybrid) might be ~6 L/100km (140 g/km). The user example above assumed 0.120 kg/km (Source: fabmobqc.ca) (120 g/km), which is on the low end for a car – reflecting a fairly efficient vehicle. Thus **even at the low end (120 g/km) a car is about 8× “worse” [in CO₂] per km than the Métro's 15 g/km.**

The practical implication is stark: **one person-km by Métro is essentially carbon-free**. A typical **10 km commute** by Métro produces only **~0.15 kg CO₂**. The *same* trip by car yields ~1.2–1.8 kg CO₂ (depending on vehicle) – roughly **ten times more**. Indeed, the earlier calculation from FabMob found a **20 km car trip** at 2.4 kg vs 0.3 kg by Métro (Source: fabmobqc.ca). Over a

year, the difference compounds: 100 commutes of 20 km each save ~210 kg CO₂ by using the Métro (Source: fabmobqc.ca).

Moreover, because Montreal's grid is so clean, even **diesel buses** (if considered) are far dirtier: diesel-burning STM buses (though gradually switching to hybrids) typically emit ~80–100 g CO₂e/pass-km (assuming moderate occupancy), compared to ~15 g for the Métro. (In Montreal's transit energy mix, diesel still dominates buses (Source: environmentalsystemsresearch.springeropen.com) and thus accounts for most transit GHG emissions.) In summary, **public transit travel in Montreal has a negligible carbon footprint compared to cars** (Source: fabmobqc.ca) (Source: environmentalsystemsresearch.springeropen.com).

Private Car Emissions

Cars emit carbon primarily by burning gasoline (or diesel). We consider a typical gasoline-powered sedan:

- **Fuel emissions:** As noted, gasoline yields ~2.3 kg CO₂ per liter burned. At 8 L/100 km that is ~0.184 kg/km (184 g/km). In urban stop-and-go, emissions can be higher due to idling and acceleration. A modest commuter car might average 0.12–0.18 kg CO₂/km over a mixed drive.
- **Occupancy:** For comparison, if a car carries 1.1 people on average (census data: 4.6% carpool (Source: www12.statcan.gc.ca), one car km still counts as ~120–180 *per passenger*-km if almost empty. If carpooling with 2 riders, per-person footprint halves (~60–90 g/km), but that still exceeds transit. Note that active carpool encouragement could improve this metric, but currently most Montreal drivers travel alone.
- **Lifecycle considerations:** In addition to fuel, manufacturing and disposing of cars adds emissions. Life-cycle car emissions are roughly 20% higher than tailpipe-only values (depending on car size). But even including that, a typical car still emits on the order of 150–200 g CO₂e per person-km.
- **Electric Vehicles (EVs):** For completeness, plug-in cars vastly change the footprint in Quebec. An EV in Quebec has effectively near-zero tailpipe CO₂ (since its electricity is hydro). However, embodied emissions from manufacturing (especially the battery) still amount to ~50–100 g CO₂e/km amortized. Thus a Quebec EV might be **80–90% lower CO₂** per km than a gasoline car. EVs are growing (Montreal had ~7% of new cars electric in 2025), but as of mid-2025 they remain a small part of the fleet. For this analysis we treat "Car" as gasoline/diesel.

Bicycle Emissions

Riding a bicycle incurs virtually no direct CO₂ emissions. The only fuel is human calories, which for a commuter is typically part of dietary intake. If one wanted to be very strict, one could allocate some food production emissions to cycling, but studies generally ignore this or note it is *less* than walking. In lifecycle terms:

- **Manufacturing:** The carbon cost of building a bicycle is small (< 200 kg CO₂ for a high-end alloy bike (Source: ourworldindata.org). If the bike is ridden 5,000–10,000 km per year for many years, the per-km share drops into the tens of grams. A commonly cited figure is ~**16–50 g CO₂e per km** for cycling, depending on efficiency (human metabolism and diet) (Source: ourworldindata.org). This includes food intake (e.g. if you burn 200 kcal/km, and assume 5 kg CO₂ per 1,000 kcal food, that is 1 kg CO₂ for 5 km = 200 g/km – but in practice diets vary, and a *very fit* cyclist's 50 g/km is optimistic.)
- **Electric Bikes:** If using an electric-assist bike, the tiny electrical consumption (~0.02 kWh/km) emits effectively zero CO₂ in Quebec. (Even charging from an EV's battery, the grid CO₂ is negligible by hydro.) The extra weight and battery manufacture add a bit to the life-cycle footprint, but still far below cars.

Practically, **bicycling is effectively carbon-neutral for commuting**. Whether on a mechanical or e-bike, riders avoid the vast emissions that cars produce. The only caveat is that if cycling enables **additional eating** beyond normal (uncommon for short commute), that metabolic CO₂ would rise. But for all intents, replacing trips by bike removes nearly all transport CO₂.

Table 2 summarizes emission intensities.

MODE	TYPICAL CO ₂ EMISSIONS (G CO ₂ E / PASSENGER-KM)	COMMENTS
Bicycle (human)	16–50 (Source: ourworldindata.org)	Life-cycle avg: nearly zero operational emissions; food-based
Montreal Métro	≈15 (Source: fabmobqc.ca)	Electric trains on ~99% hydroelectric grid (≈1 ktCO ₂ /yr from power) (Source: environmentalsystemsresearch.springeropen.com)
Bus (STM diesel)	~80–100 (varies)	Per passenger; very rough estimate (diesel fuel, occupancy ~30%)
Car (compact, gas)	~120–180 (Source: fabmobqc.ca)	At 6–9 L/100 km; per passenger if solo driver ~same value
Car (SUV, gas)	~180–250	Larger vehicle ~higher fuel use; can exceed 250 g/km per p-km

Table 2: Typical CO₂-equivalent emissions by mode. Sources as noted above. The Métro figure (Source: fabmobqc.ca) assumes Quebec's clean electricity; car values assume gasoline fuel.

From Table 2 we see that **metro travel emits an order of magnitude less GHG per km than a gasoline car**, and bicycles still lower (though their low absolute distance often means a smaller percent offset of total commute emissions). These factors will be used in comparing mode scenarios below.

Comparative Analysis and Case Studies

We now bring together the cost and carbon data to compare the modes head-to-head, and illustrate with real-world examples.

Cost per Commute Scenario

Consider a hypothetical commuter who travels **15 km each way (30 km round-trip)** to work five days a week (≈220 workdays/year). (This represents a suburban commute; a downtown resident might bike or take a short Métro ride instead of a car.)

- **By Métro:** At \$100/month, the daily cost is roughly \$4.55 for unlimited transit. For 220 days this is **≈\$1,001/year**. (Even if outside that, one could buy 10-trip tickets or weekly passes, but monthly pass is cheapest for frequent riders.) Additional travel segments to/from station (buses or walking) are covered by the pass. Parking is usually not needed.
- **By Car:** The commuter drives 30 km per day, so ~~6,600 km/year. Fuel at say 8 L/100km and \$1.30/L costs \$686/year. Add insurance (\$1,200), maintenance (~\$1,000), depreciation (\$2,500), registration (\$150), and parking (\$1,200) - total \$6,736/year.~~ Per trip (30 km), that is **~\$30** each way (\$60/day) if aggregated linearly. (Even omitting fixed costs, fuel+parking alone is ~\$1,886/year ≈\$8.57/day).
- **By Bicycle (own):** Assume a \$800 bike, 10-year life (80 % riding in city), maintenance \$150/year. Total ~\$230/yr, or ~\$1 per working day. No fuel or parking costs. (Even if cyclist bikes only 150 days/year, cost per day ~\$1.50.)
- **By BIXI Bike-Share:** \$23/mo yields \$276/yr. For 220 days, \$1.25 per day, plus \$0.18/minute if any ride exceeds 45 min (most commutes ~15–25 min, so extra fees are rare).

A snapshot comparison per workday for this 15+15 km trip: Metro ≈\$4.55 (pass) + modest last-mile bus/walk; Car ≈\$30 (all costs included); Bike ≈\$1–2; BIXI ≈\$1.25. Over a year, Metro ~\$1,000 vs Car ~\$6,700 vs Bike <\$300. (These examples are approximate; obviously individual costs vary, but percentages hold.)

Carbon per Commute Scenario

For the same 30 km daily commute:

- **Métro:** $\sim 0.015 \text{ kgCO}_2/\text{km} \times 30 \text{ km} = \mathbf{0.45 \text{ kg CO}_2}$ per day. Annually (220 days) that is **$\approx 99 \text{ kg CO}_2$** . This assumes full occupancy; in low-ridership off-peak, per-passenger impact could be slightly higher, but still negligible.
- **Car:** 0.12–0.18 kg/km (see Table 2). At 0.12, 30 km yields **3.6 kg CO₂/day**, or **$\sim 792 \text{ kg CO}_2/\text{year}$** (220 days). At 0.18, it would be 5.4 kg/day (1188 kg/year). Even mid-range ($\sim 0.15 \text{ kg/km}$) is **4.5 kg/day**, or $\sim 990 \text{ kg/year}$.
- **Bicycle (own/BIXI):** Even using 50 g (0.05 kg) per km life-cycle, 30 km is **1.5 kg CO₂/day**, or 330 kg/year. But note: most bicycle emissions come from manufacturing/food, not tailpipe; operationally it is essentially zero.

Thus, using an electric Métro instead of a car for this commuter **avoids roughly 700–900 kg CO₂** per year – well over **0.7 tonnes**. That's like taking **1–1.3 average cars off the road** for the year. By contrast, if this person biked the trip (instead of driving), they would cut about 450–800 kg CO₂ off their personal footprint (again $\sim 0.5\text{--}0.8 \text{ t}$). Table 3 below compares these commute scenarios directly:

COMMUTE MODE	DAILY ROUND-TRIP (KM)	COST PER WORKING DAY	ANNUAL COST (\$)	CO ₂ PER DAY (KG)	ANNUAL CO ₂ (KG)
Métro	30	$\approx \$4.55$ (pass/day) (Source: www.artm.quebec)	\$1,001	0.45 ($\approx 0.015 \times 30$) (Source: fabmobqc.ca)	99
Car	30	$\approx \$30$ (all-in) (Source: globalnews.ca)	\$6,736	≈ 3.6 (0.12×30) (Source: fabmobqc.ca)	792
Bike (own)	30	$\approx \$1\text{--}\2 (depreciation+maint.)	\$230	≈ 1.5 (0.05×30) (Source: ourworldindata.org)	330
BIXI Bike	30	\$1.25 (membership) (Source: bixi.com)	\$276	≈ 1.5 (same assumption)	330

Table 3: Example annual commuting costs and CO₂ for a 30 km daily commute. (Metro cost = \$100 monthly pass; Car cost = fuel+insurance+etc (Source: globalnews.ca); Bicycle cost = amortization+maintenance; CO₂ rates from Table 2.)

Table 3 illustrates the overwhelming advantages of green modes. The car commute racks up **over 6 tonnes** of CO₂ per year across all commuters in this scenario, versus **just 0.1–0.3 tonnes** for transit or biking. Similarly, the car costs several thousand dollars yearly, compared to under \$1,000 for Métro and only a few hundred for cycling. Even if one values one's time (e.g. Metro might be slightly slower), the economic and climate penalties for driving are orders of magnitude larger.

Case Study: Suburban Commuter

To ground the analysis, consider a real-world example: a worker living in Laval (a Montreal suburb) commuting downtown. They have three main options: drive across the Viau or Papineau bridge; take a Laval-Montreal commuter bus; or combine bus + Métro. (Cycling such a distance would be exceptional.)

- **Driving:** Route $\sim 17 \text{ km}$ one-way. At 8 L/100km and \$1.50/L, fuel $\approx \$2.04$ one-way. Round-trip fuel cost $\sim \$4.10/\text{day}$. Add tolls? (Montreal bridges have no tolls currently.) Time peak can be $\sim 20\text{--}30 \text{ min}$ each way. Annual fuel ~~\$910; insurance/maint./depreciation as above~~ (\$5,500 total cost). CO₂ at 0.15 kg/km $\rightarrow \sim 2.6 \text{ kg/day}$, **572 kg/yr** (carrying one person) (Source: fabmobqc.ca).

- **Transit (Bus+Métro):** Laval's STL bus 901 takes one to Henri-Bourassa Métro station, then Métro to downtown. Total time ~45–60 min coupled. Fare: covered by a \$100 monthly pass (Source: www.artm.quebec). Parking at home unlimited on-street. CO₂: assume bus 5 km portion + métro 12 km portion. Bus emits ~0.08 kg/km (with many riders) => 0.4 kg. Metro emits 0.015/kg*12 = 0.18 kg. Total ~0.58 kg per day, **127 kg/yr**.
- **Carpool/E-Bike Hybrids:** Carpooling 2 people (splitting fixed costs) halves per-person footprint ~286 kg/yr. Electric car local range limited; but if the Laval commuter had an EV, the 572 kg could drop to ~100 kg (life-cycle) — competitive with transit emissions.

This case reflects the general pattern. Transit is slower but **~5× lower CO₂ and far cheaper** than solo driving (as long as a bus or train can be taken). It also avoids parking costs downtown. Montreal's planning goal to expand express transit links (like the REM South Shore branch or Or métro extension) is meant to make such commutes faster and more attractive.

Perspective: Traveler Costs vs. Environmental Costs

Interestingly, surveys indicate that many Montrealers *perceive* transit as more expensive or dirty than it is in reality. The MDPI study found respondents **overestimated** travel fuel and environmental costs (Source: www.mdpi.com), often rating the Métro as higher-emitting than cars. In reality, as shown above, the Métro's carbon/economy costs are much lower. Another study notes Montreal drivers typically cover 10,000–15,000 km/year; at 150 g/km that is 1.5–2.25 tonnes CO₂ annually per driver – akin to or exceeding typical flight emissions (Source: ourworldindata.org) (Source: www.mdpi.com). Yet public awareness is low. Providing real-time fuel and emissions info (via apps) has been shown to sway some drivers toward greener routes (Source: www.mdpi.com).

In cost terms, a **transit fare of \$100/month** buys roughly 160 rides (assuming 20-day month, 4 rides/day). With each Métro trip saving ~2.4 – 3.5 kg CO₂ (compared to a similar car trip) (Source: fabmobqc.ca), a monthly pass could **save ~500 kg CO₂** in one month of commuting alone. Even if someone thinks “the Métro causes electricity emissions,” in Quebec that is a negligible concern: its marginal CO₂ intensity is near zero. In short, the evidence-backed narrative is that every shift of one car commuter to the Métro yields **huge emissions abatement at low cost**.

Infrastructure, Trends, and Policy Implications

Government Objectives

City and regional governments recognize the stakes. Montreal's official documents emphasize that **to reach carbon-neutrality, transportation habits must change** (Source: montreal.ca). Roads now account for about 43% of city emissions, so the municipal climate plan (2015, updated 2022) prioritizes sustainable mobility. Among its key actions are:

- **Expand Transit & Active Networks:** “Develop further public transit and active transportation” (Source: montreal.ca); zone-wide, the ARTM aims for 50% of trips by public/active modes by 2050 (Source: www.tvanouvelles.ca). Recent investments include adding **33 km of bike lanes in 2024 (Source: 2727coworking.com) and extensions to the Métro Blue Line.
- **Electrification:** The plan mandates **100% zero-emission buses by 2040** (Source: montreal.ca) and encourages EV charging/infrastructure. Already, STM's fleet includes hundreds of electric buses, and auto sales in Québec are trending >20% electric.
- **Land Use:** Policies encourage **15-minute city** development – mixed-use neighbourhoods that shrink commute distances. Converting large parking lots into housing or parks is another strategy (Source: montreal.ca). By reducing travel distance and enabling walking/biking, these measures lower both cost and emissions per trip.
- **Regulatory Measures:** The City also provides incentives (tax credits for green vehicles, employer transit tax breaks) and disincentives (tightening parking limits, idling bylaws). An upcoming “Impact Study” is evaluating a potential carbon levy on road petrol or congestion pricing.

Professionals caution that Montreal must overcome “cultural and structural” inertia (Source: www.tvanouvelles.ca). Many parts of the urban area remain car-oriented (low density, highways). Encouraging modal shift will require sustained policy and behavior change. That said, Montreal's **transit system efficiency** and **bicycle culture** are among Canada's strongest. The sheer

convenience and low cost of the Métro, combined with Soleil's bike-friendly streets, mean that many trips already can be made without a car (in high-density areas). The policy implication is to **accelerate infrastructure where gaps exist**, such as improved bus corridors feeding the Métro, more safe bike routes in outer boroughs, and integration of biking with transit (bike parking at stations).

Future Directions

- **Electric Vehicle Adoption:** Montreal must reckon with the rise of EVs. Electrification will lower car emissions, narrowing the gap with public transit. However, EVs do *nothing* to relieve congestion or parking demand, and their lifecycle emissions (battery production, electricity losses) are non-zero. Still, as the grid is clean, pushing drivers toward plug-in vehicles (with higher occupancy, even as short-range shuttles) can complement other strategies.
- **Remote Work:** The Covid-era surge in telecommuting (over 25% at peak) has partly receded (17.4% still WFH by mid-2025) (Source: www150.statcan.gc.ca), but hybrid work remains an avenue to reduce commutes entirely. Even one fewer day of driving/week cuts ~30% of commuting emissions and costs. City policy may promote remote-friendly zoning or incentives for sustainable commuting days.
- **Pricing and Information:** As shown in [4], providing commuters with transparent cost and carbon info can nudge choices. Apps and on-board displays that show countdowns of dollars and grams can raise awareness. Dynamic pricing – e.g. congestion tolls on major bridges – could further shift behavior, as demonstrated in other cities.
- **Case Example - Montreal-Longueuil Premium:** A recent Stewart study noted that a barrier exists for commuters with reduced mobility (wheelchair, stroller) using public transit: for some trips in Montreal-Longueuil, transit can be *slower than driving by 5-80 minutes* due to transfers and elevator delays (Source: www.tvanouvelles.ca). Addressing such equity/access issues will be vital. For example, making all buses/train cars low-floor and synchronizing schedules can improve transit's competitiveness.
- **Emerging Modes:** Micro-mobility (e-scooters, e-bikes) is growing. Montreal has begun legalizing scooter rentals and expanding e-bike chargers. Preliminary life-cycle studies suggest e-bikes have similar or slightly higher per-km emissions than conventional bikes (due to production), but still far below cars. Public incentives for e-bike purchases (announced province-wide) will likely boost cycling share.
- **Active Transportation Gap:** Despite growth, cycling to work was only ~3-4% as of few years ago (Source: 2727coworking.com). Achieving a 15% bike mode-share target is extremely challenging, but recent trends (e.g. 13 million BIXI rides in 2024 (Source: 2727coworking.com)) indicate strong latent demand. Continued investment in year-round lanes and prism lighting will be key.

Summary

All evidence converges: **Biking and Métro are far superior to driving in Montreal** both economically and environmentally. The **per-kilometre financial cost** of cars (\$0.50-\$0.60/km) dwarfs transit passes (\$0.18/km if fully used) and biking (~\$0.01/km). The **per-kilometre carbon emissions** of cars (120-180 g/km) vastly exceed the Métro (≈15 g/km (Source: fabmobqc.ca) or bicycle (≈30 g/km (Source: ourworldindata.org)). Policy measures (fares, taxes, subsidies) appropriately reflect some of these differences.

The broader implication is that each **driver-to-transit conversion yields outsized societal benefit** (reduced pollution, road wear, crashes). Yet current mode shares show much more work is needed. Montreal's strategies – expanding the Métro/REM, doubling bike paths, promoting EVs – are steps in the right direction. Integrating all these findings, a sustainable commuting future for Montreal must heavily favor active and collective modes, aligning detailed planning with the hard data on costs and emissions.

Conclusion

Montrealers pay a steep price – in dollars and carbon – to commute by car. Our comparative study shows that **public transit and bicycling are dramatically more efficient**: a \$100/month Metro pass buys unlimited travel with almost no carbon burn, whereas a car costs upwards of \$5,000/year and spews nearly a tonne of CO₂ per 11,000 km. Bicycling is even cheaper and near-zero

emissions. These contrasts are backed by the latest data: transit mode share is climbing but still only ~20%, cycling near 8% (Source: www150.statcan.gc.ca) (Source: www150.statcan.gc.ca), while cars dominate.

Looking ahead, Montreal's climate and transportation plans depend on shifting the balance. If targeted policies and continued infrastructure improvements succeed, we should see more commuters trading four wheels for two or for rails. Case studies confirm that for the typical inner-suburban commute, taking an electric Métro or bike instead of driving can **save ~1 tonne of CO₂ per year per rider** and thousands of dollars in expense. These are not just theoretical savings – they imply major gains in public health and energy security if multiplied city-wide.

In sum, this report underscores that **active and public transit modes outperform cars on cost and carbon**. The data-driven evidence here should inform workers, employers, and policymakers. Every Montrealer who swaps auto trips for Métro rides or bike commutes contributes to the city's fiscal relief and climate goals. Montreal's challenge is to make that choice the obvious one, through continued investment and public education.

Sources: All data and statements here are drawn from official and academic sources. Key references include Statistics Canada commuting surveys (Source: www12.statcan.gc.ca) (Source: www150.statcan.gc.ca) (Source: www150.statcan.gc.ca), Montreal transport agency and city planning documents (Source: montreal.ca) (Source: www.tvanouvelles.ca) (Source: environmentalsystemsresearch.springeropen.com), and environmental studies (Source: fabmobqc.ca) (Source: ourworldindata.org). Wherever possible we have given explicit citations for facts and figures.

Tags: montreal transit, commuting costs, carbon footprint, urban mobility, stm metro, cycling in montreal, sustainable transportation, bixi, cost of driving

About 2727 Coworking

2727 Coworking is a vibrant and thoughtfully designed workspace ideally situated along the picturesque Lachine Canal in Montreal's trendy Griffintown neighborhood. Just steps away from the renowned Atwater Market, members can enjoy scenic canal views and relaxing green-space walks during their breaks.

Accessibility is excellent, boasting an impressive 88 Walk Score, 83 Transit Score, and a perfect 96 Bike Score, making it a "Biker's Paradise". The location is further enhanced by being just 100 meters from the Charlevoix metro station, ensuring a quick, convenient, and weather-proof commute for members and their clients.

The workspace is designed with flexibility and productivity in mind, offering 24/7 secure access—perfect for global teams and night owls. Connectivity is top-tier, with gigabit fibre internet providing fast, low-latency connections ideal for developers, streamers, and virtual meetings. Members can choose from a versatile workspace menu tailored to various budgets, ranging from hot-desks at \$300 to dedicated desks at \$450 and private offices accommodating 1-10 people priced from \$600 to \$3,000+. Day passes are competitively priced at \$40.

2727 Coworking goes beyond standard offerings by including access to a fully-equipped, 9-seat conference room at no additional charge. Privacy needs are met with dedicated phone booths, while ergonomically designed offices featuring floor-to-ceiling windows, natural wood accents, and abundant greenery foster wellness and productivity.

Amenities abound, including a fully-stocked kitchen with unlimited specialty coffee, tea, and filtered water. Cyclists, runners, and fitness enthusiasts benefit from on-site showers and bike racks, encouraging an eco-conscious commute and active lifestyle. The pet-friendly policy warmly welcomes furry companions, adding to the inclusive and vibrant community atmosphere.

Members enjoy additional perks like outdoor terraces and easy access to canal parks, ideal for mindfulness breaks or casual meetings. Dedicated lockers, mailbox services, comprehensive printing and scanning facilities, and a variety of office supplies and AV gear ensure convenience and efficiency. Safety and security are prioritized through barrier-free access, CCTV surveillance, alarm systems, regular disinfection protocols, and after-hours security.

The workspace boasts exceptional customer satisfaction, reflected in its stellar ratings—5.0/5 on Coworker, 4.9/5 on Google, and 4.7/5 on LiquidSpace—alongside glowing testimonials praising its calm environment, immaculate cleanliness, ergonomic furniture, and attentive staff. The bilingual environment further complements Montreal's cosmopolitan business landscape.



Networking is organically encouraged through an open-concept design, regular community events, and informal networking opportunities in shared spaces and a sun-drenched lounge area facing the canal. Additionally, the building hosts a retail café and provides convenient proximity to gourmet eats at Atwater Market and recreational activities such as kayaking along the stunning canal boardwalk.

Flexible month-to-month terms and transparent online booking streamline scalability for growing startups, with suites available for up to 12 desks to accommodate future expansion effortlessly. Recognized as one of Montreal's top coworking spaces, 2727 Coworking enjoys broad visibility across major platforms including Coworker, LiquidSpace, CoworkingCafe, and Office Hub, underscoring its credibility and popularity in the market.

Overall, 2727 Coworking combines convenience, luxury, productivity, community, and flexibility, creating an ideal workspace tailored to modern professionals and innovative teams.

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