

Transportation choices

Key Points

Transportation impacts on climate - Climate impacts on transportation - Active transportation - Electrified transportation - Jobs in transformed transportation

What's going on?

The government of Canada has recently [introduced regulations](#) to increase the supply of zero-emission vehicles in an effort to reduce transportation-related pollution and [make electric vehicles more accessible to consumers](#) in Canada. We can expect to see changes in Alberta's transportation systems in the next few years, including an increase in personal and public electric vehicles and the charging stations to support them, increased access to micro mobility programs (like e-bikes and e-scooters) and initiatives that facilitate active transportation.

What are we doing right now?

Alberta is home to many innovative low-emissions transportation projects, including:

- [Alberta Electric School Bus Deployment Project](#) – Pollution Probe/Southland Transportation – Pilot project to analyze deployment of an electric school bus in Calgary.
- [Peaks to Prairies EV Charging Network](#) – Community Energy Association – A network of fast-charging stations to support EV travel to and within southern Alberta, connecting urban and rural communities.
- [Calgary High School Active Transportation Project](#) – Youth En Route – Removing barriers for youth to bike to school (bike fleets, secure storage, maintenance/repair classes, fostering student leadership).

What can I do?

- Support policies that promote alternative modes of transportation (EVs, transit, walking, rolling and cycling). Consider contacting your elected officials to request more options for safe, affordable and efficient public and shared transportation.
- Incorporate alternative transportation into your life whenever possible.
- If you must purchase a car, [consider an EV](#) and take advantage of government incentives and rebate programs that can help lower costs.

Overview

As electric transportation becomes more desirable for a growing number of Albertans, we also see it becoming more [accessible and affordable](#) — in all its forms. Active transportation is also trending as people look for convenience and diversification in the way they get around their communities while also benefiting their physical and mental well-being. Changing the way we move will have tremendous positive effects on both the economy and health of our communities.

Transportation impacts on climate

Transportation accounts for 15% of Alberta’s greenhouse gas emissions. By electrifying our modes of transportation, using emission-free forms of transportation (bikes, walking, etc.) and by increasing the use of shared transportation (buses, trains, carpooling, etc.), we could eliminate these greenhouse gas emissions entirely. Rural communities have some limitations in implementing long distance net-zero transportation solutions as they face the challenge of accessibility. Carpooling is the best option for reducing emissions during long commutes. Within communities, walking and biking can be a convenient way to get to and from local destinations. For both rural and urban environments, it is important for governments to meet the transportation infrastructure needs of citizens that can provide net-zero opportunities. By cleaning our energy grid and modernizing our transportation system, we can combat these sources of greenhouse gases and collectively mitigate climate change, which is already affecting our transportation systems and our health.

The Wind-Powered Green Economy



See how it can happen!
“An energy revolution is hitting the town of Tatamagouche, Nova Scotia. New 800 kW wind turbines are popping up everywhere, transforming the ever-present wind into electricity that’s used to power electric cars and offset the community’s reliance on fossil fuels. The move to renewable energy is not just reducing the community’s impact on the climate, it is also sparking a whole new green economy.”
Source: Prairie Climate Centre

Climate impacts on transportation

The transportation infrastructure in Alberta communities is created to cater to our specific climate. As climate changes, the stress from extreme climate events [degrades our infrastructure and has costly economic consequences](#). Permanent infrastructure such as railways and roads are especially vulnerable, as they aren’t built to withstand significant changes in temperature and can suffer early degradation and potential failure.¹ Changing temperatures and precipitation patterns lead to increased road weathering, forcing Albertans to deal with more springtime potholes and construction repairs. Road disruptions and more accidents due to winter rains, freezing rains and wet snow are also of high risk in addition to moderate risks of road washouts/blockages from high-intensity/low-duration rain events, which can lead to landslides and stormwater overflow. These impacts underscore the need to implement solutions such as diversifying transportation and supporting infrastructure to create resilience within our transportation networks, such as reducing pavement to divert stormwater flow, increasing bike trails that can reduce traffic on degrading roads, using [permeable pavement](#), and other infrastructure-based solutions.

¹ [Climate Change Risk Assessment and Adaptation Report: Ministry of Transportation Final Report](#)

Active transportation

Active transportation includes non-motorized, human-powered forms of transportation such as walking and biking. Communities within cities, downtown areas and rural towns have an opportunity to create and support active transportation infrastructure.

“Built environment improvements that support active transportation — e.g., traffic calming, streetscape improvements, traffic speed reductions and road space reallocation, etc. — can also generate safety advantages and reduce injury risks, which is a benefit not only for pedestrians and cyclists, but also transit riders and other road users.”

- Canadian Institute of Planners²

One way to create active transportation within a community is to re-purpose abandoned spaces such as lots with old and unused buildings or inactive railway tracks into walking/biking trails or parks and green spaces. Active transportation not only takes more vehicles off the road, making them safer, but it has economic and health co-benefits to people who use such mode of transportation — they save on fuel costs and boost their own cardiovascular health.³

Electrified transportation

In Canada, more than one in eight new vehicle registrations in 2022 was for a battery-electric, hybrid or plug-in hybrid vehicle.⁴ Though electric cars make up a small portion of vehicles in Alberta, they are increasingly becoming more common as technology advances. Between 2017 and 2021, the number of registered electric vehicles in Alberta alone increased by 835%.⁵ Vehicle manufacturers are responding to these trends, too, with many committing to going fully electric by 2023. Electric transportation can come in many forms other than just electric cars. Increasingly, we are seeing the uptake of micro mobility which includes the use of e-bikes, electric scooters or smaller forms of transportation that use no fossil fuels, take a fraction of the time to charge, and reduce traffic by allowing for passengers to take designated trails and paths (that may also reduce commuting times).

Where are Albertans at when it comes to electrifying transportation?

- 66% of Albertans say it is likely or very likely that EVs will become the majority of consumer vehicles sold around the world, and 45% of Albertans say they would choose an EV for their next vehicle purchase ([Abacus, 2022](#))
- Albertans and British Columbians are equally likely to purchase an electric vehicle for their next vehicle, which may contradict public perceptions of British Columbians often being viewed as “more green” than Albertans ([Leger, 2022](#))
- A considerable majority of Calgarians support policy measures that would help grow electric vehicle adoption in the city:

² [ACTIVE TRANSPORTATION, HEALTH AND COMMUNITY DESIGN:](#)

³ [National Active Transportation Strategy 2021-2026](#)

⁴ [New motor vehicle registrations: Quarterly data visualization tool](#)

⁵ [A wave of electric vehicles is coming at us. Are we ready? | CBC News](#)

- 76% support more electric-vehicle charging stations along major roads and shopping centres, while 65% support electric vehicle incentives.
- Electrifying buses is particularly popular, with 78% supporting updating public buses to electric or hydrogen versions, while 76% favour the idea of replacing conventional school buses with electric ones ([Clean Energy Canada, 2021](#))

Electric vehicles (EVs) include more than personal modes of transportation. Electrification on a community public transportation level can mean fully functional, fully electrified bus transit and railway train systems that allow commuters to make low-emission ride choices. Community-level change requires community-level engagement. To be able to benefit from these changes, Albertans need to let their local elected officials know that they want to have these choices made available to them.

Albertans can also consider greener options when using ride-sharing companies by setting their preferences to “hybrid” or “electric” on [ride-request apps](#). The use of electrified and [shared-ride systems](#) are the most efficient way to combat transportation emission. Using electrified shared-ride systems (Uber, Communauto, taxis) reduces energy use, which, with our current predominantly fossil fuel-based energy grid, reduces even more emissions. Ways to participate include riding electric buses and trains and carpooling.

“Despite having a fossil fuel-dominant electricity grid, Alberta’s electricity comes from a variety of sources including coal, natural gas, solar, wind and hydroelectric. Even with a grid powered largely by fossil fuels, electric vehicles produce less greenhouse gas (GHG) emissions than gas-powered cars overall.”

- MCCAC - [Mythbusting Electric Vehicles in Alberta](#)

The diversity in transportation and the movement away from fossil fuel-powered transportation not only reduces pollutants in the air that affect our personal health and contribute to the effects of climate change, but it also makes us more resilient against rising fuel costs. As more electrified forms of transportation become available, the technology will continue to advance and better serve our needs while also becoming more affordable.

The technology for electrified transportation is growing rapidly as engineers unlock the potential for individual EVs to integrate into the overall power grid. Implementing smart technology provides an opportunity to create a balance between drawing energy and providing energy, known as [bidirectional charging](#). This technology allows batteries that are initially pulling from the grid to also serve as a backup source of energy when the grid fails. In cases of extreme climate events causing power outages, those with access to these charged batteries can use it to power homes or community buildings for days.

“Pretty much all electric vehicles out there, whether those would be cars, buses, trains, even ferries that are being switched to electric, can both store enormous amounts of electricity, as well as push that electricity back to the grid when needed.”

- Rajko Pavic, Electric Vehicle Expert in Calgary

Jobs in transformed transportation

As the percentage of electric vehicles grows in Alberta, so does the need for experts in this field. The used electric car market is growing, and the number of repair shops specializing in electric car maintenance will grow as warranties run out and people seek out third-party shops for resale and maintenance. While electric vehicles are different from gas-powered vehicles, many of the skills needed to perform maintenance on these vehicles remain the same and [supplementary courses offer specific EV training](#). Cities will need engineers to put more EV public transportation on the roads and to maintain and keep it in top condition. The infrastructure needs associated with a growing use of charging stations for both municipal electric transportation and personal electric vehicles will increase the need for personnel to both build and maintain them across the province.

Recap

Electrification of transportation is soon to be the new normal globally, nationally and in Alberta. The different ways we get around in our lives fall along a long spectrum of transportation methods, all of which will be improved as transportation technology grows. Active transportation will benefit us in navigating within our communities, as well as improving our health and local economies. Increased electric and shared transportation will drastically reduce our greenhouse gas emissions, reduce the amount of pollution in the air and save us money. Citizens and decision-makers (e.g., elected officials and government staff) collectively need to make changes to contribute to the modernization of our transportation systems.

Resources from local organizations that support continued learning about electric and active transportation			
Resource	Organization	Audience	Description
Electric Vehicles for Municipalities Program	The Municipal Climate Change Action Centre	Local government	The Electric Vehicles for Municipalities (“EVM”) program provides funding to municipalities to assist their transition to an electrically fuelled vehicle fleet.
Zero-Emissions Vehicles Program	Government of Canada	Local government, businesses	Learn about zero-emission vehicles, programs, funding and research.
SCRAP IT Alberta E-bike rebate	SCRAP IT	General public, cyclists	\$500 from SCRAP IT when you purchase your new electric bike (minimum retail price of \$1,000) from a participating electric bike retailer.
Alberta EV charging stations directory	Charge Hub	EV owners	Find charging stations in Alberta.
EV	InOrbis	General	A destination-to-destination travel service that offers

Rideshare service		public	convenient zero-carbon transportation within Alberta and British Columbia.
Meet Southern Alberta EV Drivers	Peaks to Prairies	General public	This network of electric vehicle charging stations was established in 2016, spanning from Canmore to Waterton out to Medicine Hat. There are more than 20 charging stations in urban and rural centres, making it easy to explore southern Alberta by electric vehicle.

[Find more resources here](#)